Strategic Housing Development at Baldoyle-Stapolin Growth Area 3 (GA3), Baldoyle, Dublin 13

Environmental Impact Assessment Report (EIAR) Volume 1 – Non-Technical Summary

BSM Est. 1968

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Built. Environment.

Environmental Assessment **Built Environment**

Client: The Shoreline Partnership

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1 Introduction

An Environmental Impact Assessment Report (EIAR) has been prepared in support of a planning application for a proposed Strategic Housing Development (SHD) by The Shoreline Partnership (the Applicant) for Baldoyle-Stapolin Growth Area 3 (GA3), at Baldoyle, Dublin 13 (the proposed Project, hereafter).

This document (the non-technical summary (NTS)) provides a description of the proposed Project, its existing environment and its effects on the environment. It forms Volume I of the Environmental Impact Assessment Report (EIAR) for the proposed Project. The main text of the EIAR (Volume II) presents the results of the environmental assessments which have been completed for the proposed Project to inform the planning consent process. The assessment has been completed as a statutory environmental assessment.

Having regard to the 2014 Directive (2014/52/EU) and the Circular Letter PL 1/2017 of the Department of Housing, Planning, Community and Local Government (DHPLG), the main report (Volume 2) constitutes and fulfils the requirement of an Environmental Impact Statement (EIS) as required under the Planning and Development Act, 2000, as amended, (Part X); and Part 10 of the Planning and Development Regulations, 2001 – 2017.

The EIA process has been completed in line with 2014 Directive and the Environmental Protection Agency (EPA) Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2018).

1.1 The Applicant

The Applicant is The Shoreline Partnership, owner of the lands at Baldoyle-Stapolin GA3 that are the subject of this SHD application.

1.2 The Proposed Project

The proposed Project Site is located at Baldoyle-Stapolin, Dublin 13. It is a Site of c. 6.89 hectares (ha), and comprises lands referred to as Growth Area 3 (GA3) within the Baldoyle-Stapolin Local Area Plan (2013) (LAP). The lands are bound by the Dublin-Belfast / DART railway line to the west, existing and proposed residential areas to the south and east, and future Racecourse Park to the north.

The proposed Project will consist of the development of 1,221 no. residential apartment / duplex dwellings in 11 no. blocks, ranging in height from 2 to 15 storeys and including for residential tenant amenity, restaurant / cafe, crèche, car and bicycle parking and public realm. Residential tenant amenity facilities will be located in Blocks E3, E4, G3, G4 and G5, and external communal amenity space will be provided at ground, podium and terrace levels throughout the proposed Project.

Car parking will be provided in a mix of undercroft for Blocks E1 - E2, F1 and F2, and at basement level for Blocks G1 - G3 and G4 - G5. Cycle parking spaces will be provided for residents, visitors and commercial uses, in secure locations and within the public realm throughout the proposed Project.

A new central public space between Blocks E1 - E2, E3 and E4, and a new linear space between Blocks G2 - G3 and G4 - G5, will provide pedestrian and cycle connectivity from Longfield Road to the proposed future Racecourse Park to the north. A proposed new bus, cycle, pedestrian and taxi ramp to the south of the Site and north of Stapolin Square will provide access from Longfield Road to Clongriffin Train Station.

1.3 Format & Structure of the EIAR

The Environmental Impact Assessment Report is comprised of three volumes as follows:

- Volume I: Non-Technical Summary.
- Volume II: Environmental Impact Assessment Report (Main Report).
- Volume III: Appendices.

Table 1.1 below sets out the format and structure of the EIAR.

Table 1.1: Structure of the Environmental Impact Assessment Report

Chapter No.	Description
Volume 1: NTS	
NTS	Summary of the EIAR in non-technical language
Volume 2: Main Report	
Chapters 1 – 3	Provide an introduction and background to the proposed Project
Chapter 4	An assessment of the alternatives considered for the proposed Project
Chapter 5	Description of the proposed Project as assessed in the EIA
Chapter 6	Consultation

Chapter No.	Description
Chapter 7	Population and Human Health
Chapter 8	Biodiversity
Chapter 9	Land, Soils, Geology and Hydrogeology
Chapter 10	Hydrology
Chapter 11	Air Quality and Climate
Chapter 12	Noise and Vibration
Chapter 13	Landscape and Visual
Chapter 14	Cultural Heritage, Archaeology and Architectural Heritage
Chapter 15	Microclimate – Daylight & Sunlight
Chapter 16	Microclimate – Wind
Chapter 17	Traffic and Transportation
Chapter 18	Material Assets – Waste Management
Chapter 19	Material Assets – Services
Chapter 20	Presents an overview of all the major interactions between the different environmental topics above
Chapter 21	Addresses the cumulative impacts of the proposed Project in combination with existing, permitted and proposed plans and project
Chapter 22	Presents a list of the mitigation measures and monitoring set out in the preceding Chapters of the EIAR
Volume 3: Appendices	
Technical reference information supporting the EIAR Chapters	

1.3.1 EIAR Project Team

Brady Shipman Martin (BSM) are the planning consultants and project co-ordinators of the EIAR. The EIAR was prepared by Brady Shipman Martin with input from The Shoreline Partnership Design Team and various environmental specialist consultants, as listed in Table 1.2, below. Preparation of the EIAR has been co-ordinated by Lorraine Guerin, Environmental Consultant at BSM.

Table 1.2: EIAR Project Team

Name & Company	Role / Input	Qualifications & Experience
Thomas Burns BSM	EIAR Project Manager	**B.Agr.Sc. (Land.) Dip. EIA Mgmt., Adv. Dip. Plan. & Env. Law** ■ Environmental Planner and Landscape Architect ■ Member of Irish Landscape Institute & Irish Environmental Law Association ■ Over 30 years of experience in EIA and LVIA
Pauline Byrne BSM	Planner and Co-ordinator	**BSC (Mgmt.), Adv. Dip Marketing, Master Regional & Urban Planning (MRUP)** ■ Head of Planning ■ Member of Royal Town Planning Institute (MRTPI) ■ Member of Irish Planning Institute (MIPI) ■ Over 20 years of experience
Lorraine Guerin BSM	Population & Human Health; Material Assets – Services	**BSc (Hons) Ecology, MSc Environmental Management & Policy** ■ Environmental Consultant ■ Over 2 years of experience in EIA
Bryan Deegan Altemar Ltd	Biodiversity	**BSc (Hons) Applied Marine Biology, MSc Environmental Science** ■ Managing Director of Altemar Ltd ■ Environmental scientist and aquatic biologist. ■ NCEA National Diploma in Applied Aquatic Science ■ NCEA National Certificate in Science (Aquaculture) ■ Over 20 years of experience
Paul Conaghan AWN Consulting Ltd.	Land, Soils, Geology and Hydrogeology Hydrology (Surface Water)	**BSc MSc** ■ Environmental Consultant ■ Member of the International Association of Hydrogeologists ■ 9 years of experience
Niamh Nolan AWN Consulting Ltd.	Air Quality and Climate	**BSoc Sci (Hons) in Social Policy and Geography** ■ Associate Member of Institute of Air Quality Management (IAQM) and Institution of Environmental Science ■ Over 4 years of experience

Name & Company	Role / Input	Qualifications & Experience
Leo Williams AWN Consulting Ltd.	Noise and Vibration	BAI MAI PgDip ■ Member of Institute of Acoustics (MIOA) ■ Over 5 years of experience
Chris Kennett Kennett Consulting Ltd.	Landscape and Visual	BSc MSc, Diploma in Landscape Architecture & Diploma in Urban Design ■ Director of Kennett Consulting Limited ■ Chartered Member of the Landscape Institute ■ BSc in Landscape Design and Plant Science ■ MSc in Sustainable Development
Dr. Clare Crowley Courtney Deery	Archaeological, Architectural and Cultural Heritage	BA (Hons) Ancient History, Archaeology & French & PhD in Archaeology ■ Senior Heritage Consultant ■ Certificate in Repair and Conservation of Historic Buildings (Dublin Civic Trust, 2004) ■ Certificate in Condition Surveys of Historic Buildings (University of Oxford, 2017) ■ Over 20 years of experience
Carlota Álvarez O'Connor Sutton Cronin	Microclimate – Daylight / Sunlight	B.Eng. (Hons) in Marine Engineering ■ Lead of the Daylight and Sunlight section of O'Connor Sutton Cronin ■ Over 4 years of experience
Dr. Cristina Paduano B-Fluid	Microclimate – Wind	PhD in Mechanical Engineering, with M.Eng and B.Eng in Aerospace Engineering ■ Chartered Engineer (CEng) ■ Member of Engineers Ireland ■ Specialist in computational fluid dynamics applications for urban environment ■ Over 15 years of experience
Dr. Patrick Okolo B-Fluid	Microclimate – Wind	PhD in Aeroacoustics Eng., MEng in Mechanical Engineering ■ Chartered Engineer (CEng) ■ Member of Engineers Ireland ■ Specialist in computational fluid dynamics for urban environment ■ Ten years of experience
Dr. Arman Safdari B-Fluid	Microclimate – Wind	PhD in Mechanical Engineering, with M.Sc. and B.Sc. in Mechanical Engineering ■ CFD Modelling Engineer ■ Specialist in computational fluid dynamics applications ■ Expert in airflow modelling, heat and mass transfer and multi-phase flow simulations
Gordon Finn	Traffic and Transportation;	BA, BAI, MAI, MIEI ■ Roads and Traffic Engineer

Name & Company	Role / Input	Qualifications & Experience
Cronin & Sutton Consulting Engineers	Material Assets – Services	
Chonaill Bradley AWN Consulting Ltd.	Material Assets – Waste	BEnvSc ■ Environmental Consultant – Waste Management ■ AssocMCIWM ■ Member of CIWM ■ 7 years of experience

2 The Environmental Impact Assessment (EIA) Process

2.1 Purpose of an EIAR

The 2014 EIA Directive aims to provide a high level of protection to the environment and ensure that environmental considerations are taken into account in the preparation of a proposed Project, with the view to reducing environmental impacts.

The objective of the EIAR is to identify and predict the *likely environmental impacts* of a proposed Project. The EIAR describes the means and extent by which any environmental impacts can be avoided, reduced or improved; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

2.2 Requirement for an EIAR

The 2014 EIA Directive specifies the classes of project for which an EIA is required and the information which must be contained within the EIAR. In accordance with Article 4(1) of the 2014 EIA Directive. All classes of project listed in Annex I of the EIA Directive are considered as having significant effects on the environment and are subject to an EIA. For classes of project listed in Annex II, the national authority of the Member State may determine whether an EIA is needed, either on the basis of thresholds / criteria or on a case-by-case examination.

Projects for which an EIA is a statutory requirement are listed in Schedule 5 of the Planning and Development Regulations 2001 – 2017. Part 2 of Schedule 5 of the Planning & Development Regulations 2001 (as amended) sets mandatory thresholds for each project class. Sub-sections 10(b)(i) and 10(b)(iv) require that the following classes of project be subject to EIA:

> *"Class 10(b) (i). Construction of more than 500 dwelling units."*
>
> *"Class 10(b) (iv). Urban development which would involve an area greater than 2ha in the case of a business district, 10ha in the case of other parts of a built-up area and 20ha elsewhere."*

Since the proposed Project entails the construction of 1,221 residential units, an EIA is a statutory requirement and an EIAR (Volume 2) has been prepared and submitted to An Bord

Pleanála (the Competent Authority) with the SHD planning application for the proposed Project.

A number of other standalone reports / documents of relevance to the EIA have been submitted with this planning application under separate cover. These documents have been considered in the preparation of the EIAR, and are referred to, where relevant. They include the following:

- Appropriate Assessment (AA) Screening Report
- Natura Impact Statement
- Childcare & School Assessment
- Community & Social Infrastructure Audit
- Architectural Design Statement
- Engineering Services Report
- Road Infrastructure Design Report
- Site Specific Flood Risk Assessment
- Traffic Impact Assessment
- Residential Travel Plan
- Daylight & Sunlight Report
- Wind Microclimate Report
- Landscape Design Statement
- Verified Views / Photomontages
- Arborist's Report
- Outline Construction Management Plan
- Outline Construction Environmental Management Plan
- Energy & Sustainability Report
- Lighting Report

2.3 EIA Methodology

This assessment of environmental impacts has been completed in accordance with, but not limited to, the following legislation and current guidance:

- DHPLG (2018). Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.

- DHPLG (2017). Circular letter PL 1/2017 - Advice on Administrative Provisions in Advance of Transposition.
- Directive 2014/52/EC, amending Directive 2011/92/EU on the Assessment of the Effects of Certain Public and Private Projects on the Environment.
- EC (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.
- EC (2013). Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment.
- EC (2017a). Environmental Impact Assessment of Projects. Guidance on Scoping.
- EC (2017b). Environmental Impact Assessment of Projects. Guidance on the preparation of Environmental Impact Assessment Report.
- EPA (2015). Draft Advice Notes on Current Practice in the Preparation of Environmental Impact Statements.
- EPA (2017). Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- Planning and Development Act 2000, as amended.
- Planning and Development Regulations 2001, as amended.

In addition to these guidance documents, EU Directives and national legislation relating to the specialist environmental topics have been considered in the preparation of each Chapter, as detailed in the respective Chapters.

2.4 Appropriate Assessment (AA)

European sites, also known as the Natura 2000 network, includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). These are a network of sites designated for nature conservation under the EU Directive (92/43/EEC) of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and Directive (2009/147/EC) of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the Birds Directive), respectively.

The requirements for Appropriate Assessment (AA) are set out under Article 6 of the Habitats Directive, transposed into Irish law by the European Union (Birds and Natural Habitats)

Regulations 2011-2015[1] (the Birds and Natural Habitats Regulations) and the Planning and Development Act, 2000-2021 (the Planning Acts).

An AA Screening Report has been prepared in respect of the proposed Project. The screening identified potential for impact on European sites and therefore, an AA of the proposed Project is required. The findings of the AA are presented in the Natura Impact Statement (NIS) which accompanies the planning application under separate cover.

[1] S.I. No. 477 of 2011; S.I. No. 290 of 2013; S.I. No. 499 of 2013; and S.I. No. 355 of 2015.

3 Planning & Development Context

3.1 Introduction

This Chapter presents a review of the planning and development policy context at a national, regional and local level. The following policy documents of relevance have been discussed in relation to the proposed Project in the main text of the EIAR (Volume 2):

Multilateral and European Policy Context

- United Nations Sustainable Development Goals

National Policy Context

- Sustainable Urban Housing – Design Standards for New Apartments (2020)
- Climate Action Plan (2019)
- Project Ireland 2040 – National Planning Framework (2018 – 2040)
- Urban Development and Building Heights – Guidelines for Planning Authorities (2018)
- Rebuilding Ireland – Action Plan for Housing and Homelessness (2016)
- Design Manual for Urban Roads and Streets (2013)
- Smarter Travel – A Sustainable Transport Future (2009 – 2020)
- Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009)
- Urban Design Manual – A Best Practice Guide (2009)
- The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)
- Delivering Homes, Sustaining Communities (2007)
- Childcare Facilities – Guidelines for Planning Authorities (2001)

Regional Policy Context

- Eastern and Midland Regional Assembly – Regional Spatial and Economic Strategy (2019 – 2031)
- Transport Strategy for the Greater Dublin Area (2016 – 2035)

Local Policy Context

- Fingal Development Plan (2017 – 2023)
- Baldoyle-Stapolin Local Area Plan (2013) (as extended)

Of these, the key policy documents are discussed below.

3.2 National Level

Project Ireland 2040 is the Government's overarching planning and development policy for the country to 2040. It constitutes a *"strategy to make Ireland a better country for all of its people"* by setting public investment policy at a high level. It is comprised of two documents: the National Planning Framework (NPF), which details the strategy for development to 2040; and the National Development Plan (NDP), which outlines the public expenditure required to implement this strategy and identifies priority future projects.

In order to meet the needs of Ireland's growing population, the NPF requires delivery of a baseline of 25,000 homes annually to 2020, followed by a likely level of 30 – 35,000 annually up to 2027. The NPF aims to promote a departure from previous patterns of sprawl, instead delivering 'compact growth', with 40% of future housing to be delivered within and close to the existing footprint of built-up areas.

With regards to Dublin, the NPF identifies that Dublin City needs to *"accommodate a greater proportion of the growth it generates within its metropolitan boundaries and to offer improved housing choice"*.

The NPF requires homes to be located in places that can support sustainable development, i.e. those that are accessible to a range of local services, can encourage the use of public transport, walking and cycling, and help to tackle climate change.

The proposed Project is well aligned with the NPFs policies, in that it will provide a large number of additional well-designed, high quality and liveable residential units within the Dublin Metropolitan Area and at a Site well served by existing and future proposed public transport services.

3.3 Regional Level

Under national policy, Regional Assemblies are tasked with drafting Regional Spatial and Economic Strategies (RSESs), which effectively set the agenda for implementing the national level development policy – the NPF – at the regional level. The proposed Project is situated in the Eastern and Midland Region, which takes in Counties Longford, Westmeath, Offaly, Laois, Louth, Meath, Kildare, Wicklow and Dublin. The Region is the smallest in terms of land area but

the largest in population size and is identified as the *"economic engine of the state"* as it contains the capital city (p. 14).

The Eastern and Midland RSES sets out an overarching vision for the Region: *"To create a sustainable and competitive Region that supports the health and wellbeing of our people and places, from urban to rural, with access to quality housing, travel and employment opportunities for all"* (p. 23).

In accordance with the requirements of the NPF, the RSES also contains a Metropolitan Area Strategic Plan (MASP) for the Dublin Metropolitan Area, the vision statement for which is to *"build on our strengths to become a smart, climate resilient and global city region, expanding access to social and economic opportunities and improved housing choice, travel options and quality of life for people who live, work, study in or visit the metropolitan area"* (p. 100).

The RSES identifies that *"the Region is home to over 800,000 households, with 4 out of 5 living in conventional housing while apartments account for around 18% or our housing stock. One of the challenges facing the region is the continued growth rates of household formation coupled with a severe slowdown in the development of new housing stock during the economic recession, resulting in housing supply and affordability pressures in both sale and rental markets, particularly in Dublin and urban areas but affecting all of the region"* (p. 17).

The Dublin MASP seeks to focus development on a number of large scale strategic sites, based on key corridors that will deliver significant development in an integrated and sustainable fashion. The RSES identifies the Clongriffin – Belmayne and Baldoyle – Stapolin areas as being part of the 'North Fringe' of Dublin City, offering large-scale urban expansion opportunities along the North – South (DART) Strategic Development Corridor. The RSES identifies the North – South Corridor (DART expansion) as a key infrastructure project to be delivered by 2027, which will increase capacity on the northern commuter line and support ongoing large-scale urban expansion of the North Fringe lands.

The proposed Project is consistent with the objectives of the RSES. It will contribute to the provision of additional high-quality and high-density residential units on the 'North Fringe' of the DMA, in an area well served by existing and future proposed public transport services.

3.4 Local Level

3.4.1 Fingal Development Plan (2017 – 2023)

The Site is located within the administrative area of Fingal County Council (FCC) and subject to the Fingal Development Plan (2017 – 2023) ('the Development Plan') (including subsequent variations).

The Core Strategy of the Development Plan identifies the quantum, location and phasing of development (including residential development) that is consistent with the regionally defined population targets and settlement hierarchy. It zones the lands within its administrative area, indicating what types of development will be promoted (or not) for those lands.

In the Development Plan, Baldoyle is considered a 'Consolidation Area within the Gateway'. The policy approach in these areas is *"to gain maximum benefit from existing transport, social, and community infrastructure through the continued consolidation of the city and its suburbs. Future development will happen in a planned and efficient manner utilising opportunities to achieve increased densities where appropriate*" (p. 45).

A number of specific objectives are set out for Baldoyle, including 'BALDOYLE 3', to *"Prepare and / or implement a Local Area Plan for lands at Baldoyle / Stapolin to provide for the strategic development of the area as a planned sustainable mixed use residential development subject to the delivery of the necessary infrastructure"* (p. 116) (refer to Map Sheet No. 10, LAP 10.A). The corresponding *Baldoyle-Stapolin Local Area Plan* (2013 – 2019) is discussed below.

Under the Development Plan, the majority of the Site is zoned 'RA – Residential Area'. The objective of RA zoned lands is to "*provide for new residential communities subject to the provision of the necessary social and physical infrastructure"* (p. 390). The vision for RA lands is to *"Ensure the provision of high quality new residential environments with good layout and design, with adequate public transport and cycle links and within walking distance of community facilities. Provide an appropriate mix of house sizes, types and tenures in order to meet household needs and to promote balanced communities"* (ibid.). The proposed Project is consistent with these zoning objectives.

A relatively small portion of the northern margin of the Site is zoned 'HA', High Amenity, for which the objective is to *"Protect and enhance high amenity areas"* (p. 376). The stated vision for these lands is to *"Protect these highly sensitive and scenic locations from inappropriate*

development and reinforce their character, distinctiveness and sense of place. In recognition of the amenity potential of these areas, opportunities to increase public access will be explored" (ibid.). The proposed Project is consistent with these zoning objectives.

As detailed in the Material Contravention Statement (submitted under separate cover as part of the planning application), the proposed Project will contravene the Development Plan, in that it will results in an exceedance of the stipulated residential unit capacity for the Baldoyle / Sutton area. This exceedance is considered acceptable, considering the broader national and regional policy context and the capacity of community infrastructure in the surrounding area. For more information, please refer to the Material Contravention Statement.

Notwithstanding the above-stated contravention, it is considered that the proposed Project is consistent with the objectives and zoning of the Development Plan.

3.4.2 Baldoyle-Stapolin Local Area Plan (2013 – 2019) (Extended)

The Baldoyle-Stapolin Local Area Plan (2013 – 2019) (LAP) was adopted in May 2013 by FCC. In 2018, the Council Members approved the extension of the life of the LAP for a further period of five years, to May 2023. It sets out a detailed strategy for the development of the Baldoyle-Stapolin area, in accordance with the objectives of the Development Plan.

The stated vision for the area is *"to create a place to live that is appealing, distinctive and sustainable, with minimal impact on the surrounding environment and the coast. It is envisaged that Baldoyle-Stapolin will develop as a sustainable community comprised of new homes, community, leisure and educational facilities based around an identifiable and accessible new village centre which will form the heart of the area"* (p. 11).

As stated above, the Site is zoned 'RA' in the Development Plan, which has the stated objective to *"Provide for new residential communities in accordance with approved local area plans and subject to the provision of the necessary social and physical infrastructure"* (p. 3), with a central area in the lands earmarked *"LC – to provide for a local centre"*. This zoning is reflected in the LAP, where this central area is designated as a 'Village Centre'.

In terms of housing mix, the LAP requires that *"a suitable variety and mix of dwelling types and sizes are provided in developments to meet different needs, having regard to demographics, social changes and the human life cycle patterns"*, and aims to ensure that *"one bedroom dwellings are kept to a minimum within the development and are provided only to facilitate*

choice for the homebuyer" (p. 36). It is stated that *"… no more than 5% of units in any application or over the whole development, shall be one bedroom units"* (p. 36).

The proposed Project contravenes the LAP in relation to residential unit density, building heights and unit mix. It is considered that these contraventions are appropriate in the context of the receiving environment and national and regional-level policy. For further information in relation to these contraventions, please refer to the Material Contravention Statement, submitted under separate cover as part of the planning application.

To facilitate the proper phasing of the development of the subject lands, the LAP identifies three growth areas: Growth Areas (GA) 1, 2 and 3. The proposed Project relates to the GA3 lands. The LAP sets out a suite of specific development phasing requirements in relation to the delivery of roads, open space, and the village centre (among others) across the Growth Areas, in order to ensure that the development of the lands is orderly and meets the needs of future residents.

The proposed Project, in combination with the proposed development at GA1, meets the requirements for infrastructure on the LAP lands. The village centre is proposed for delivery within the GA1 application (subject of a separate application). The proposed Project overlaps with the area which is the subject of the GA1 application in the proposed delivery of the bus / vehicular access route to Clongriffin Station, to the north of the village centre. Therefore, the proposed Project will continue development northwards of the village centre.

It is considered that, with the exception of the above-stated contraventions, the proposed Project is consistent with the objectives of the LAP.

3.5 Planning History of the Site

As part of the development strategy for the wider lands, there have been two applications on the lands. Most significantly, an application was lodged on the 4th of June 2021 (ABP case ref. TA06F.310418) for alterations of a previously permitted development on lands under the control of the Applicant at GA1 (previously permitted under FCC Reg. Ref. F16A/0412 (ABP Ref. PL06F.248970). In addition, we note one previously permitted application to the east of the subject lands at GA2 under Reg. Ref. F11A/0290.

Table 3.1: Key Planning Applications & Permissions on the Development Lands

Development	Description
SHD at GA1: ■ ABP: TA06F.310418 ■ FCC: F16A/0412 ■ ABP: PL06F.248970 ■ FCC: F20A/0258	The extant permission on the subject lands (granted on appeal on July 7th 2017 with a 10 year duration) comprises approx. 546 no. residential units (385 no. apartments and 161 no. houses) and a village centre including shops, a café and crèche. This permission (granted on September 3rd 2020), entailed minor alterations to the previously permitted development. An application was lodged on the June 4th 2021 (ABP case ref. TA06F.310418) for alterations of the previously permitted development, as amended. The proposed altered development would consist of 882 no. new residential dwellings (747 apartments, 135 houses), residential tenant amenity, retail, crèche, and public realm.
Residential Development at GA2: ■ FCC: F11A/0290(/E1) ■ ABP: PL06F.239732	Regents Park Development Ltd. were granted permission on appeal on April 11th 2013 and given a further extension of duration of permission in 2018 (FCC Reg. Ref. F11A/0290/E1) on lands at GA2. The development entailed 400 dwelling units, three retail units, a crèche, surface and basement level car parking, landscaping and all associated works on a site adjacent to the wider landholding

The wider Clongriffin area has had a significant amount of planning activity. Notably this includes two recently permitted large-scale SHDs to the west of the proposed Project, within the administrative area of Dublin City Council.

4 Consideration of Alternatives

In accordance with Part 1(d) of Schedule 6 of the Planning and Development Regulations 2001, this Chapter provides a "*A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment*". As per the EPA (2017) Draft EIAR Guidelines, the alternatives are discussed under headings as follows:

1. 'Do-Nothing' Alternative
2. Alternative Locations
3. Alternative Layouts
4. Alternative Designs
5. Alternative Processes

4.1 'Do-Nothing' Alternative

The 'Do-Nothing' alternative considers the likely scenario that would arise, assuming the proposed Project were not progressed, i.e. if nothing were done. In this case, the Do-Nothing scenario might entail:

a) A continuation of the existing status of the lands, i.e. privately owned greenfield site with some limited infrastructure in place, closed to the public. Considering the ongoing housing crisis in Dublin, this scenario is regarded as socially suboptimal. The opportunity cost, in this scenario, would include the 1,221 proposed residential units.
b) Development (likely residential) under the scope of a separate application / proposal, at some point in the future. This scenario is also possible, considering the zoning of the lands for residential development under the Baldoyle-Stapolin LAP and the wider context in terms of housing policy and significant demand for housing in the Dublin Metropolitan Area.

4.2 Alternative Locations

As detailed above, the Site of the proposed Project is predominantly zoned 'RA – Residential Area', while a small portion of the northern margin of the Site is zoned 'HA – High Amenity'. The proposed Project is in accordance with the zoning objectives for these lands. Therefore, it is considered that the Site is entirely suitable for the proposed nature of the Project.

As stated in the EPA 2017 Draft EIAR Guidelines:

> *"Some locations have more inherent environmental sensitivities than others. Depending on the type of project and the range of alternatives which the developer can realistically consider, it may be possible to avoid such sites in favour of sites which have fewer constraints and more capacity to sustainably assimilate the project. It can be useful to ensure that a range of options, that may reasonably be available, are included in the evaluation."* (Section 3, p. 36)

It is also stated that *"Clearly in some instances some of the alternatives described below will not be applicable – e.g. there may be no relevant 'alternative location'…"* (Section 3, p. 34). In this case, considering that the lands in question are zoned for the proposed use, and the fact that the environmental sensitivities of the Site are not such as to preclude development *per se*, this category of alternative is not considered relevant.

4.3 Alternative Layouts & Designs

During the design process for the proposed Project a range of design iterations of the proposed Project were considered, as detailed in the main text of the EIAR (Volume 2):

- Design Alternative 1
- Design Alternative 2
- Design Alternative 3

The design and layout of the proposed Project has evolved over time from the initial conceptual design, on the basis of project team reviews and consultations with FCC. Some key considerations / aims that have influenced the evolution of the proposal are as follows:

- Creation of a distinct neighbourhood in the wider Masterplan and provide a varied character to the blocks, while maintaining a coherent relationship with the wider Masterplan lands.
- Provision of a large community park at the heart of the proposed Project and a 'green artery' running through the Site via Longfield Road.
- Creation of a gateway between the Masterplan lands and the Racecourse Park to the north.
- Proximity to and relationship with the Site boundaries, particularly the railway line to the west and Racecourse Park to the north.

- Positioning of the blocks, and height / massing.
- Provision of sufficient daylight and sunlight.
- Creation of visual and physical permeability across the Site.
- Promotion of activity and a sense of community through active ground floors with own-door units and amenity spaces.

4.4 Alternative Processes

Having regard to the nature of the proposed Project as a SHD, for which the planning application is being submitted to An Bord Pleanála, this is not considered a relevant class of alternatives in this case.

5 Description of the Proposed Project

This Chapter provides a general description of the Site and its surrounds, sets out the need for the proposed Project, and describes the proposed Project – its design, construction methodology and envisaged operation. In accordance with Article 5(1)(a) of the 2011 EIA Directive, as amended by Directive 2014/52/EU, the description of a proposed Project should comprise *"…information on the site, design, size and other relevant features".*

5.1 Site of the Proposed Project

The Site of the proposed Project ('the Site' hereafter) is located in Baldoyle, Dublin 13, c. 10 km north-east of Dublin City Centre. It is an undeveloped greenfield site that is currently vacant, bounded by hoarding (i.e. closed to the public) and containing basic site infrastructure: a simple network of access roads and utilities infrastructure.

The Site lies within a larger landholding, which is the subject of the Baldoyle-Stapolin LAP. It is situated directly to the south of the future Racecourse Park; east of the Dublin-Belfast / DART railway line and Clongriffin rail station; north of Growth Area 1 (GA1) and west of Growth Area 2 (GA2), as designated in the LAP. The Site of the proposed Project incorporates the entire area known as Growth Area 3 (GA3), as designated in the LAP.

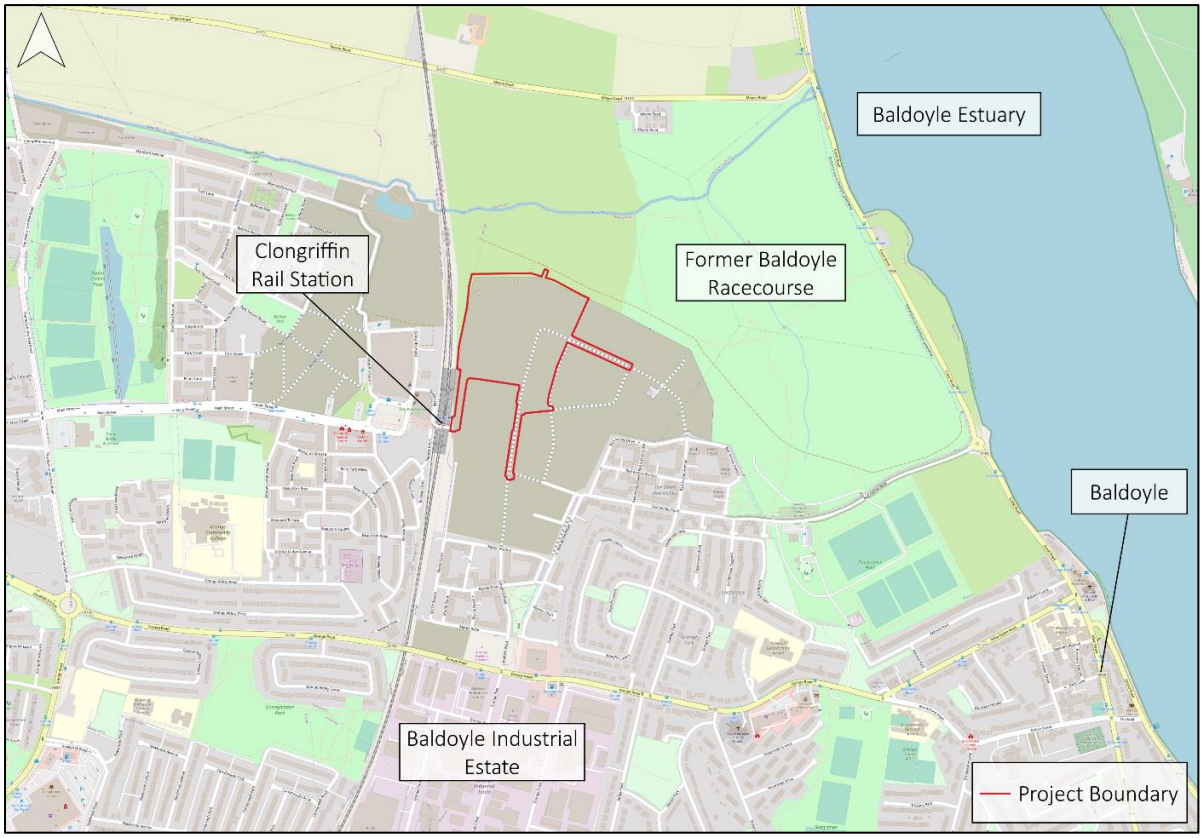
The Site is on the edge of the urban extent of Dublin City. It is within the administrative area of Fingal County Council (FCC), and adjacent to the Dublin City Council administrative boundary, at Clongriffin to the west. Surrounding land uses to the west, south and east are predominately residential in nature.

To the north and north-east is an area designated as 'high amenity', comprised of agricultural fields and land associated with the Baldoyle Estuary and former Baldoyle Racecourse. FCC intends to deliver 'Racecourse Park' as a major regional amenity on these lands under separate consent.

Baldoyle Estuary to the north-east supports an important complex of terrestrial and aquatic habitats. It is designated as a Special Protection Area (SPA) and a Special Area of Conservation (SAC) under the Birds and Natural Habitats Directives, respectively. The associated wetlands are of international importance, and have been designated as a Ramsar site (Baldoyle Bay). Baldoyle Estuary is also designated as a Nature Reserve.

Figure 5.1: Location of the Proposed Project – Distal (© OpenStreetMap 2021)

Figure 5.2: Location of the Proposed Project – Proximate (© OpenStreetMap 2021)



The Site is located in an area well served by public transport services. It is within a few minutes' walk of Clongriffin rail station on the Dublin-Belfast / DART Line. Rail services operating from this station connect the proposed Project directly to Howth and Malahide (and beyond to north county Dublin) to the north, and to Dublin City centre in the south, before continuing on to Bray and Greystones.

Bus stops on Grange Road and Clongriffin Main Street are within a 5-minute walk of the Site, and are served by two bus routes (29A and 15) operated by Dublin Bus. It is also planned that Clongriffin will be served by a number of new routes associated with the planned BusConnects project.

The Site is within short walking distance of the Baldoyle Industrial Estate, providing a large amount of employment and commercial activity, and is also within convenient commuting distance of Dublin City Centre. Commercial centres in the vicinity include Baldoyle (c. 2 km) and Donaghmede (c. 2 km).

5.2 Main Features of the Proposed Project

The proposed Project Site is located at Baldoyle-Stapolin, Dublin 13. It is a Site of c. 6.89 hectares (ha), and comprises lands referred to as Growth Area 3 (GA3) within the Baldoyle-Stapolin Local Area Plan (2013) (LAP). The lands are bound by the Dublin-Belfast / DART railway line to the west, existing and proposed residential areas to the south and east, and future Racecourse Park to the north.

The proposed Project will consist of the development of 1,221 no. residential apartment / duplex dwellings in 11 no. blocks, ranging in height from 2 to 15 storeys and including for residential tenant amenity, restaurant / cafe, crèche, car and bicycle parking and public realm. Residential tenant amenity facilities will be located in Blocks E3, E4, G3, G4 and G5, and external communal amenity space will be provided at ground, podium and terrace levels throughout the proposed Project.

Car parking will be provided in a mix of undercroft for Blocks E1 - E2, F1 and F2, and at basement level for Blocks G1 - G3 and G4 - G5. Cycle parking spaces will be provided for residents, visitors and commercial uses, in secure locations and within the public realm throughout the proposed Project.

A new central public space between Blocks E1 - E2, E3 and E4, and a new linear space between Blocks G2 - G3 and G4 - G5, will provide pedestrian and cycle connectivity from Longfield Road to the proposed future Racecourse Park to the north. A proposed new bus, cycle, pedestrian and taxi ramp to the south of the Site and north of Stapolin Square will provide access from Longfield Road to Clongriffin Train Station.

Figure 5.3: Layout of the Proposed Project

5.3 Construction of the Proposed Project

It is anticipated that the proposed Project will be constructed in five phases, as illustrated in Figure 5.4, the details of which will be agreed with FCC. Construction phases shall run in the numerical order given, although it is anticipated that phases may overlap. Phase 1 shall include the construction of the principal road infrastructure to be delivered as part of the proposed Project. Construction site access / egress will be via an existing haulage route running in a north-south direction from an entrance at Moyne Road via a road bridge over the River Mayne.

The construction phase is expected to last for c. 54 months (4.5 years), commencing in Q1 2024 and ending in Q3 2028. The proposed construction works / activities are summarised in Table 5.1, below.

Figure 5.4: Indicative Construction Site Phasing, Access and Compound

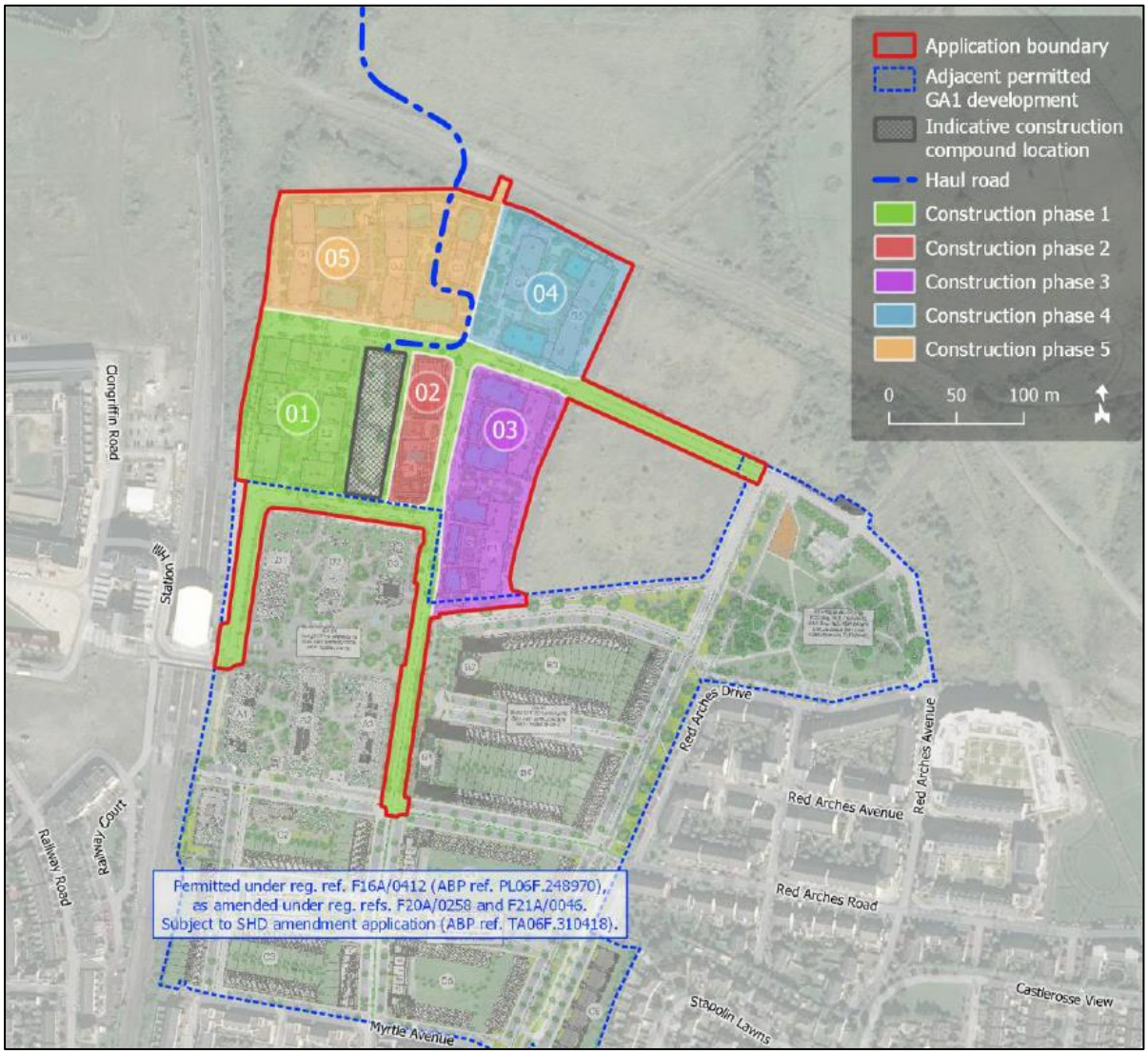


Table 5.1: Overview of Construction Phase Activities

Activity	Description of Activity
Site Setup	At this stage, the construction site is set-up. The site compound, boundary and other necessary facilities are established. All required enabling works and site investigations (including GI) are carried out.
Earthworks	At this stage, earthworks will be completed, using cut-and-fill to bring the Site levels to formation level. It will also be necessary at this stage to remove pyrite stone from below existing roads. Excess material which cannot be re-used on-Site will be disposed off-Site at a suitably licensed facility in accordance with the Construction and Demolition Waste Management Plan (C&D WMP) (Appendix 18.1).
Structures	This stage involves the construction of the foundations and buildings. To create foundations and basements, piling will be carried out, using a combination (as appropriate) of secant, continuous flight auger (CFA) and driven piles. Buildings will be of reinforced concrete and steel framing, with structural steel framing infill, and brick / render / glass façade. Bolt-on balconies will be attached.
Services	New electricity and telecommunications services infrastructure will be put in place to serve the various buildings. This will be carried out in accordance with the requirements of the various service providers / authorities, working around the existing live gas infrastructure on the Site.
Enclosures	As the proposed Project will be completed in phases, it will be necessary to separate completed and occupied blocks from areas where construction is ongoing using phased hoarding.
Landscaping	Hard and soft landscaping and reinstatement works will be carried out.

It is anticipated that the construction of the adjacent (and slightly overlapping) GA1 development will proceed in tandem with that of the proposed Project, and the site establishment and access arrangement for the two will be carried out so as to allow efficient and streamlined operation of both sites.

A suite of construction phase plans will be implemented during the proposed works, including the following:

- Construction Management Plan (CMP)
- Construction Environmental Management Plan (CEMP)
- Arboricultural Report
- Dust Management Plan
- Construction Traffic Management Plan (CTMP)
- Construction & Demolition Waste Management Plan (C&D WMP)

6 Consultation

Section 4(1) of the Planning and Development Act 2016 provides that a planning application for a SHD shall be made directly to An Bord Pleanála (ABP) and not to a Local Authority, as was the case previously. The SHD process comprises three mandatory stages, outlined in Table 6.1.

Table 6.1: Strategic Housing Development (SHD) Consultation Stages[2]

Stage	Description
Stage 1	**Consultation** with the Planning Authority (under *Section 247 of the Planning & Development Act, 2000, as amended*).
Stage 2	**Pre-Application Consultation** with ABP (under *Section 6 of the Planning & Development (Housing) and Residential Tenancies Act, 2016*).
Stage 3	**Planning Application** to be submitted directly to ABP.

Informal scoping of potential environmental issues and identification of design considerations was carried out in consultation with representatives of Fingal County Council's Planning, Transport, Parks and Water Departments, through a series of pre-application meetings between the December 2019 and September 2020, as detailed in the main text of the EIAR (Volume 2).

A Pre-Application Consultation meeting was held with ABP and, in March 2020, an Opinion was received from the Board, stating that *"An Bord Pleanála has considered the issues raised in the pre-application consultation process and, having regard to the consultation meeting and the submissions of the planning authority, is of the opinion that the documents submitted with the request to enter into consultations constitute a reasonable basis for an application for [SHD]".*

With SHDs such as this; direct, formal public participation in the EIA process is facilitated as part of the statutory planning application process. This planning application has been submitted to ABP, and this stage will provide for further consultation. The application and all accompanying documents will be available for review by the public and interested parties. This proposed Project has a dedicated website, as set out in the planning notices.

Submissions on any aspect of the proposed Project may be made to ABP, and will be taken into account in the determination of the application by the Board.

[2] An Bord Pleanála (2017).

7 Population & Human Health

This Chapter assesses the impacts of the construction and operational phases of the proposed Project on population and human health. It has been prepared in accordance with the relevant guidelines, including those from the EPA and the Institute of Environmental Management and Assessment (IEMA). It has been informed by extensive desk research.

The Site is located in Baldoyle, Dublin 13, a coastal suburban area on the northern fringe of the Dublin Metropolitan Area. The Baldoyle-Stapolin area is one of Dublin's larger new development areas, and subject to the development objectives of the Baldoyle-Stapolin LAP (2013), which seeks to transform the area into *"a sustainable community comprised of new homes, community, leisure and educational facilities"* (p. 11). The Site is strategically located in terms of transport infrastructure, by virtue of its position immediately adjacent to the Dublin-Belfast / DART railway line – and Clongriffin rail station.

The Site itself is largely an undeveloped greenfield site with basic infrastructure (roads and services) in place, bounded by hoarding and not accessible to the public. Land uses in the surrounding areas are predominantly residential, with scattered commercial / amenity uses, and significant commercial / industrial activity at Baldoyle Industrial Estate, c. 300 m to the south. There is also a significant amount of recreational parkland in the immediate environs, with the site of the former Baldoyle Racecourse immediately to the north. The area is well served by existing community amenities and services, including commercial, educational, recreational and healthcare facilities, and public transport services.

The duration of the construction phase is anticipated to be somewhere in region of 54 months (4.5 years). During this time, there will be no severance of land, loss of rights of way or amenities as a result of the proposed Project. As discussed in Chapter 18 (Material Assets – Services), all works related to utilities infrastructure and services will be carried out in accordance with the relevant service provider / authority, such that negative impacts are not expected to arise.

In the absence of mitigation, predicted impacts on population and human health as a result of the construction phase of the proposed Project may be summarised as follows:

- Nuisance due to dust generating activities – ***imperceptible, negative, short-term*** impact.

- Nuisance and disturbance due to noisy activities – ***slight to moderate, negative, short-term*** impact.
- Negative impacts on journey characteristics due to construction traffic – impacts will be ***localised to haulage route, short-term, reversible*** and ***not significant***.
- Negative visual impacts due to presence of construction site – ***significant, negative, short-term*** impact on landscape character and visual amenity;
- Positive direct and indirect economic impacts due to construction employment and increased demand for local businesses, suppliers and other supporting services – overall impact will be ***local to regional in extent, slight to significant,*** and ***short-term***.
- Negative impacts on Site personnel and local community due to improper construction site waste management – impact will be ***localised, significant, negative*** and ***short-term***.

In the absence of mitigation, predicted impacts on population and human health as a result of the operational phase of the proposed Project may be summarised as follows:

- Nuisance and disturbance of residents due to noisy building services plant and vehicular deliveries / collections within the Site, and due to operation of nearby railway line and Dublin Airport in wider area – ***significant negative impacts not predicted***.
- Negative impacts on journey characteristics due to additional operational phase traffic generated by the proposed Project – ***localised, moderate, long-term*** and ***reversible*** to a certain degree.
- Positive impacts on pedestrians and cyclists due to enhanced permeability and provision of public realm which prioritises these users – ***localised, slight, positive*** and ***long-term***.
- Nuisance and disturbance due to increased traffic volumes arising from operation of proposed Project – ***neutral, imperceptible*** and ***long-term*** on all roads considered, with the exception of one (Link A), where an ***imperceptible to slight, negative, long-term*** impact is predicted;
- Visual impacts due to completion of proposed Project, establishing significant new residential development – overall ***neutral to positive*** and ***long-term***.
- Direct and indirect positive socioeconomic impacts due to employment opportunities and increased demand for goods and services from local businesses – ***moderate*** and ***long-term***.

- Positive socioeconomic impacts due to provision of significant additional housing – ***positive, moderate to significant*** and ***short-term*** (in that the units are likely to be filled in the short-term) at the ***regional*** (Dublin Metropolitan Area) level.
- Negative impacts on residents and local community due to improper waste management – ***localised, significant, short-term***.

Overall, the proposed Project is expected to result in a net positive impact on population and human health once operational, principally in that it will deliver a high volume of high-quality rented housing in the context of an ongoing housing crisis, in a manner that is broadly consistent with national and regional-level policy.

Notwithstanding the proposal's positive impacts, in the absence of mitigation, a number of negative impacts are predicted, as outlined above, and corresponding mitigation measures have been prescribed throughout the Environmental Impact Assessment Report. These include measures in relation to dust management (refer to Chapter 11), noise abatement (refer to Chapter 12), good housekeeping (refer to Chapter 13), traffic management and community liaison (refer to Chapter 17) and waste management (refer to Chapter 18), among others. Additionally, a Construction Management Plan (CMP) will be implemented during the construction phase, which will contain a range of measures to avoid / minimise adverse impacts on the local community.

Assuming the implementation of the mitigation measures set out in the Environmental Impact Assessment Report, significant negative residual impacts on population and human health will be largely avoided, with the exception of the following:

- Even with all reasonable mitigation measures in place, construction activities will most likely result in ***significant, negative*** impacts on visual amenity in the immediate vicinity (at neighbouring buildings, streets and open spaces). These impacts will be ***short-term, reversible*** and typical of projects of this nature and scale.
- While the majority of operational phase visual impacts will be positive or neutral, a ***significant, negative, residual*** impact is predicted on one viewpoint (16: from the footpath on the R106 at Portmarnock). However, it is noted that *"extensive future development is anticipated in the middle-ground that will fundamentally change this view"* and *"In this context, visual impacts from the proposed Project are likely to be negligible or none"*.

8 Biodiversity (Flora and Fauna)

8.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) was prepared by Bryan Deegan, Managing Director of Altemar Ltd. This chapter assesses the biodiversity value and potential impacts of the proposed Strategic Housing Development (SHD) (referred to as "*the proposed Project*"), located at Baldoyle, (formerly known as The Coast), Baldoyle, Dublin 13, on the ecology of the surrounding area within the potential zone of influence (ZOI).

Desk studies were carried out to obtain relevant existing biodiversity information within the zone of influence. The assessment extends beyond the immediate development area to include those species and habitats that are likely to be impacted upon by the proposed Project.

8.2 Methodology

A pre-survey data search was carried out. This included examining records and data from the National Parks and Wildlife Service (NPWS), National Biological Data Centre (NBDC), the Environmental Protection Agency (EPA), in addition to aerial, 6-inch maps and satellite imagery. Field surveys were carried out within optimal survey periods and consisted of flora / habitat, wintering bird, bat and mammal assessments.

8.3 Existing Environment

Designated Conservation Sites - It should be noted that the Site is not within a designated conservation site. The closest Natura 2000 site is Baldoyle Bay SAC, which is 235m from the proposed Project. The nearest SPA to the Site is the Baldoyle Bay SPA which is located 615m from the Site. There are no designated Natural Heritage Areas (NHA) within a 15km radius, however the nearest Proposed NHA (Baldoyle Bay) is 235m from the Site. There is a direct pathway from the proposed Project to the Baldoyle Bay SAC, SPA & pNHA via the existing attenuation pond and the Mayne River.

Biodiversity Records - There are no recorded sightings of species of conservation importance within the Site itself, however the Common Frog (*Rana temporaria*) were noted 180m and 270m to the south-west. No other species of conservation importance were noted at high resolution within 1km^2 based on NPWS records.

Evaluation of Species and Habitats on-site:

Evaluation of Habitats - The Site consists of recently cleared land (2009) that is recolonising. Approximately one third of the Site consists of an existing construction compound and access roads. The Site is relatively poor in biodiversity value. No rare or protected habitats were noted.

Evaluation of Species - No rare or threatened plant species were recorded in the vicinity of the Site. No signs of mammals of conservation importance were noted on-site. The common frog (*Rana temporaria*) or newts (*Triturus vulgaris*) were not observed on-site. Given the presence of a small seasonal areas of water retention on-site it is possible that frogs may be present. However, the overall site would be considered poor foraging habitat. There are no buildings or trees of bat roosting potential on-site. There was no bat foraging activity on-site. There are no records of bats utilising the Site. As seen in the Wintering Bird Assessment, snipe (*Gallinago gallinago*) has amber conservation status and has been noted within GA1. This species is not a qualifying interest of Baldoyle Bay SPA.

8.4 Potential Impact of the Proposed Project

Construction Phase - The proposed Project is not within a designated conservation site. However, Baldoyle Bay SAC, pNHA and SPA are proximate to the Site and there is a direct pathway from the proposed Project to the designated sites via the existing attenuation pond and Mayne River. Noise from the construction would be localised to the vicinity of the works and would not impact on the qualifying interests of the Baldoyle Bay SPA. Ensuring water quality and compliance with the Water Pollution Acts, as set out in the outline Construction Environmental Management Plan (CEMP), would be seen as the primary method of ensuring no significant impact on watercourses and designated sites.

Operational Impacts - No significant impacts on designated sites are likely during operation. The presence of additional residents in the vicinity of Baldoyle Bay may result in an increase of disturbance of biodiversity within the Baldoyle SPA and SAC. By the very nature of the estuarine and saltmarsh environment within Baldoyle Bay it would be expected that the increase in human disturbance would not be within the estuarine environment of Baldoyle Bay itself, but on the surrounding roads and on Portmarnock Beach. As a result the impact in relation to increased activity in the area would be seen as minor adverse but not significant.

8.5 Mitigation Measures

Mitigation measures will be incorporated into the proposed Project to minimise the potential negative impacts on the ecology and downstream conservation sites. These measures are outlined in the EIAR and in the outline Construction Environmental Management Plan (CEMP). Mitigation measures are primarily relating to storm water and waste management including silt control, compliance with noise and air quality regulations and having ecological supervision on site.

8.6 Residual Impacts

The successful implementation of the CEMP and additional measures outlined in this chapter of the EIAR would be seen as important elements to the successful mitigation of the loss of biodiversity on-site in addition to ensuring that works do not impact on the downstream aquatic ecology and designated sites.

9 Land, Soils, Geology and Hydrogeology

This Chapter assesses the potential impacts of the proposed Project on the geological and hydrogeological environment. It has been carried out in accordance with the relevant guidelines, including those from the EPA, Transport Infrastructure Ireland (TII) (formerly National Roads Authority (NRA)), Construction Industry Research and Information Association (CIRIA) and Institute of Geologists of Ireland (IGI). It has been informed by extensive desk research and the results of on-Site ground investigations.

The subsoil type present across the Site is Carboniferous limestone till. Results from ground investigations indicate that the limestone bedrock is >8 m below ground level (mbgl). Made ground deposits were encountered to a variable depth of between 0.5 – 1 mbgl.

The groundwater body (GWB) underlying the Site is the Dublin GWB. Its status was previously assessed as being 'good' (2013 – 2018 Water Framework Directive cycle) and is currently classed as being 'under review'. The limestone underlying the Site is classified by the Geological Survey of Ireland as being a locally important bedrock aquifer, which is moderately productive only in local zones.

Laboratory analyses of soil collected during the site investigations found all samples to be inert (as per Council Decision annex 2003/33/EC). However, it has been identified that some fill material at one location sampled (TP-65) exceeded the 'Suitable 4 Use Levels' (S4ULs) for residential use. Additionally, imported hardcore containing pyrite is known to be present under the existing access roads on the Site, which poses a structural risk due to the potential for 'pyrite-heave'.

Based on the NRA and IGI criteria, the features at the Site have been rated as being of medium importance. The bedrock aquifer is well protected by thick overburden, and is regarded as being of low vulnerability.

The potential impacts of the construction and operational phases have been assessed in the absence of mitigation. Potential impacts relate to the excavation, storage and use of soil and stone; and accidental pollutant emissions.

Construction works will require excavations to a maximum depth of 3.5 mbgl. It is estimated that approximately 31,966.6 m^3 of soils will be excavated, while a total volume of 64,117.6 m^3 of clean fill material being imported to the Site to facilitate the build.

At the outset of the proposed works, it will be necessary to excavate the pyrite-containing hardcore. It is envisaged that this material will be re-used during the works (e.g. for temporary construction roads), before being removed off-Site for appropriate disposal. The localised material exceeding S4ULs will be excavated and removed from the Site during Site preparation. Suitable excavated material will be reused on-Site insofar as possible, e.g. for site levelling, roads, car parking areas, berms and other landscaping purposes.

Temporary storage of soil will be carefully managed to prevent any potential negative impacts on the receiving environment, particularly the aquatic environment. Excavated material will be stored away from the surface water drainage network. Movement of material will be minimised in order to reduce degradation of soil structure and generation of dust.

During the operational phase of the proposed Project, there will be no direct discharges to the ground or abstractions from the aquifer. There will be an increase in hardstanding on the Site, which will provide protection to the underlying aquifer but also reduce local recharge. As the aquifer is large, this reduction will have no significant impact on the hydrogeological regime. Overall, it is considered that the operational phase of the proposed Project will have a ***long-term, imperceptible*** and ***neutral*** effect on land, soils, geology and hydrogeology.

Mitigation measures proposed have been prescribed in order to avoid / minimise impacts during the construction phase under the following headings:

- Control of soil excavation and export from Site;
- Sources of fill and aggregates for the proposed Project;
- Fuel and chemical handling, transport and storage; and
- Control of water during the construction phase.

Additionally, the finalised Construction Management Plan (CMP) will also include emergency response procedures to be implemented in the event of an accidental spillage or leak of pollutant substance(s), fire or other incident with the potential to result in environmental impacts.

Following implementation of the mitigation measures detailed in this Chapter, the predicted residual impact on land, soils, geology and hydrogeology during the construction phase of the proposed Project will be ***short-term***, ***imperceptible*** and ***neutral***.

10 Hydrology

This Chapter assesses the potential impacts of the proposed Project on the surrounding hydrological environment. It has been prepared in accordance with the relevant guidelines, including those from the EPA and TII (formerly NRA). It has been informed by an extensive desk study, and a Site Specific Flood Risk Assessment completed in respect of the proposed Project by JBA Consulting (submitted under separate cover).

The Site of the proposed Project is located within the previously defined Eastern River Basin District (ERBD), now the Ireland River Basin District, in Hydrometric Area No. 09 of the Irish River Network. It is within the River Liffey catchment and Mayne sub-catchment. There are no surface water bodies on the Site. The Snugborough Stream lies 650 m to the east, and the River Mayne 550 m to the north.

According to the EPA's Water Framework Directive (WFD) data, the River Mayne is 'at risk of not achieving good status', and was previously assessed as being 'poor' (2013 – 2018 WFD cycle). The WFD status of the transitional waterbodies of the Mayne Estuary and North Bull Island are currently 'under review'. The Irish Sea Dublin and the Dublin Bay Coastal waterbodies to the east and south-east of the Site are of 'good' status and regarded as being 'not at risk'.

As detailed in the main text of the EIAR (Volume 2), there are a number of Designated Sites in the vicinity of the proposed Project, associated with Baldoyle Bay; including an SAC (400 m), SPA (700 m), and pNHA (400 m). Currently, stormwater is discharged from the Site via existing services that discharge into the River Mayne, which itself ultimately discharges to Baldoyle Bay.

The SSFRA has found that all of the proposed residential properties will be located in Flood Zone C and, therefore, protected from inundation up to the 0.1% annual exceedance probability (AEP) high-end future scenario (HEFS) tidal event. In the absence of mitigation, the proposed Project is not expected to have a negative impact on flood levels downstream.

Based on the NRA, the hydrological features at this Site are rated as being of high importance.

The potential impacts of the construction and operational phases have been assessed in the absence of mitigation. Potential impacts during the construction phase include increased run-off and sediment loading, and contamination of surface water drainage. In the absence of mitigation, there is the risk of accidental pollution, e.g. due to spillage or leakage of fuels, cementitious materials or other pollutant substances. As there is no open watercourse within

or close to the Site, there is no potential for a direct water quality impact via overland flow. However, there is a potential for indirect impacts via the existing on-site storm water drainage network. There is also the possibility of blockage of storm water drainage infrastructure, if run-off is not properly managed.

During the operational phase, there is the potential for hydrological impacts due to the presence and operation of the proposed Project, which will feature surface water drainage, wastewater drainage and water supply infrastructure to serve the needs of the future residents and commercial tenants.

As detailed in the main text of the EIAR (Volume 2), these new systems will be designed and constructed in accordance with the relevant legislation, standards and codes of practice. Additionally, a range of sustainable drainage systems (SUDs) measures are proposed; including green roofs, swales and bio-retention areas; as well as hydrocarbon interceptors. The proposed surface water drainage network will connect to a previously permitted constructed wetland (FCC Reg. Ref. F16A/0412), which has been designed to provide for the wider Baldoyle-Stapolin development lands.

A Pre-Connection Enquiry in relation to the proposed Project was submitted to Irish Water, and a favourable response was received on the 25th of November 2020. Irish Water have confirmed that connection to its network can be facilitated, subject to a connection agreement.

For the construction phase, mitigation measures has been set out in relation to the control of surface water run-off, pollution prevention, and soil removal and compaction. Additionally, the finalised Construction Management Plan (CMP) will include measures to protect the hydrological environment, informed by best practice guidelines including those from CIRIA and the UK Environment Agency.

The implementation of mitigation measures detailed in this Chapter will ensure that the residual hydrological impact of the proposed Project will be ***short-term, imperceptible and neutral*** during the construction phase, and ***long-term, imperceptible and neutral*** during the operational phase.

11 Air Quality and Climate

This Chapter assesses the likely impacts on air quality and climate associated with the construction and operation of the proposed Project. It has been prepared in accordance with the relevant guidelines, including those from the EPA; Transport Infrastructure Ireland (TII); the UK Highways Agency; UK Department of Environment, Food and Rural Affairs; and European Commission. It has been informed by extensive desk research and air quality modelling.

In terms of the existing air quality environment, data available from similar environments indicate that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns and particulate matter less than 2.5 microns (PM_{10}/$PM_{2.5}$) are generally well within the national and European Union (EU) ambient air quality standards.

The existing climate baseline has been determined with reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision 'EU 2020 Strategy' (Decision 406/2009/EC). The EPA estimates that Ireland had total GHG emissions of 59.90 Mt CO_2eq in 2019 with 45.71 MtCO_2eq of emissions associated with the ESD sectors, for which compliance with the EU targets must be met. This is 6.98 Mt CO_2eq higher than Ireland's annual target for emissions in 2019. Emissions are predicted to continue to exceed the targets in future years.

Impacts to air quality and climate can occur during both the construction and operational phases of the proposed Project. With regard to the construction stage, the greatest potential for air quality impacts is from fugitive dust emissions impacting nearby sensitive receptors.

Any potential dust impacts can be mitigated through the use of best practice and minimisation measures, as outlined in this Chapter. Assuming the implementation of the mitigation measures set out (including the Dust Management Plan included in Appendix 11.3), dust impacts will be ***short-term and imperceptible*** at all nearby sensitive receptors.

Impacts to climate can occur as a result of vehicular and machinery emissions. In terms of the operational stage, air quality and climate impacts will predominantly occur as a result of the change in traffic flows on the local roads associated with the proposed Project. Construction stage impacts to climate are predicted to be ***short-term, neutral and imperceptible***.

The local air quality modelling assessment of operational phase traffic concluded that levels of traffic-derived air pollutants resulting from the development will not exceed the ambient air

quality standards either with or without the proposed Project in place. The impact of the proposed Project in terms of NO_2 is predicted to be ***long-term, localised, negative and imperceptible***.

The proposed Project is not predicted to significantly impact climate during the operational phase. Increases in traffic derived levels of CO_2 have been assessed against Ireland's EU 2030 target. Changes in CO_2 emissions are marginal in the context of the EU target and, therefore, the climatic impact in the operational stage is considered ***long-term, negative and imperceptible***. In addition, the proposed Project has been designed to minimise the impact to climate, where possible, during operation, e.g. through the use of efficient plant and promotion of low / zero carbon personal mobility.

The best practice dust mitigation measures that will be put in place during construction phase of the proposed Project will ensure that it complies with all EU ambient air quality legislative limit values, which are based on the protection of human health. Therefore, the impact of the construction phase is likely to be ***short-term, localised, negative and imperceptible*** with respect to human health. Operational phase predicted pollutant concentrations are also significantly below EU standards, and the impact to human health is predicted to be ***imperceptible, negative and long term*** for this phase.

In short, no significant impacts to either air quality or climate are predicted to occur during the construction or operational phases of the proposed Project.

12 Noise and Vibration

This Chapter assesses the likely noise and vibration impacts associated with the construction and operational phases of the proposed Project. It has been prepared in accordance with the relevant guidelines, including those from the EPA, Association of Noise Consultants, Institute of Acoustics and Chartered Institute of Environmental Health. It has been informed by extensive desk research, baseline noise surveys and noise modelling.

The baseline noise surveys have found that the prevailing noise levels at the Site of the proposed Project are primarily due to local road and rail traffic, with contributions from aircraft movements to and from Dublin Airport. The nearest noise sensitive locations have been identified as follows:

- *NSL1:* Apartments at Station Street, some 105 m west of Site.
- *NSL2:* Houses at Red Arches Drive some 180 m east of Site.
- *NSL3:* Halting Site on Moyne Road, some 370 m north of Site.

During the construction phase, elevated noise levels will be generated by construction activities, but the assessment has determined that construction noise criteria can be complied with at the nearest sensitive properties. In order to avoid / minimise noise insofar as practicable, mitigation measures have been set out for the construction phase in relation to selection of quiet plant, noise control at source, piling, screening and community liaison.

During the operational phase, the outward noise impact to the surrounding environment will include any additional traffic on surrounding roads and plant noise from the residential and commercial buildings as part of the proposed Project. Mechanical plant items will be designed to ensure any noise and vibration impacts during the operational phase will not exceed the recommended limit values.

The impact of external noise on the proposed Project itself has been assessed. Traffic noise along the adjacent rail line is the primary noise source, with additional contribution from aircraft noise. Mitigation measures have been recommended for façades overlooking the local rail network such that appropriate internal noise levels will be achieved within the residential units of the proposed Project.

Assuming the implementation of the mitigation measures set out in this Chapter, the residual impact of the construction phase of the proposed Project is predicted to be ***short-term,***

negative, and slight to moderate in relation to noise, and ***short-term, neutral and imperceptible*** in relation to vibration. The residual impact of the operational phase is predicted to be ***permanent, neutral and imperceptible*** in relation to mechanical plant and services noise; and ***permanent, neutral or negative and imperceptible to slight*** in relation to traffic (depending on the road link in question).

In short, no significant negative impacts are predicted to occur in relation to noise or vibration as a result of the construction or operation of the proposed Project.

13 Landscape and Visual

This Chapter assesses the likely landscape and visual impacts associated with the construction and operational phases of the proposed Project. It has been prepared in accordance with the relevant guidelines, including those from the EPA, Landscape Institute and IEMA. It has been informed by extensive desk research, site visit and visual appraisal based on verified views / photomontages.

The Site is comprised of flat disturbed ground surrounded by existing development to the west and south. There are no trees or landscape features worthy of retention and the Site makes no positive contribution to local green space or visual amenity for the surrounding neighbourhoods. The Site lies at the interface of mixed urban areas broadly south and west of the Site, and more open green space / countryside broadly north and east, including the former Baldoyle Racecourse and Portmarnock coastal area. The area is undergoing rapid change in character / urbanisation.

In the 'Do-Nothing' scenario (i.e. if the proposed Project were not to be built), the Site would remain (in the short-term at least) as disturbed ground with succession of vegetation occurring. In the context of ongoing residential development in the environs, the undeveloped Site would appear as an incongruous, unkempt, and inaccessible 'gap' in the new urban edge. This would likely result in a moderately or highly adverse visual impact on neighbouring receptors and on the otherwise positive character of this emerging neighbourhood. It is noted that, considering the zoning and development objectives for the lands, it is also likely that a different development proposal would be progressed for the Site, should the proposed Project not be delivered.

During the construction phase of the proposed Project, ***significant, negative, temporary to short-term*** impacts on landscape character and visual amenity are likely to arise as a result of the presence of a substantive construction Site and associated elements; e.g. hoarding, cranes, scaffolding, plant, partially constructed buildings, construction traffic, temporary lighting and signage, etc. As there are no significant existing landscape features to be removed, there will be no permanent construction phase impacts.

In order to minimise / avoid landscape and visual impacts, where possible, a suite of mitigation measures has been set out addressing matters including construction Site management, good housekeeping, use of perimeter hoarding, and construction traffic management.

It is considered that, even with all reasonable mitigation measures in place, construction activities will most likely have ***significant, negative, short-term*** effects on visual amenity in the immediate vicinity (i.e. at adjoining buildings, streets and open spaces), with ***slight to moderate, negative, short-term*** effects further afield.

Once the proposed Project is completed (i.e. during the operational phase), landscape and visual impacts will be mixed; with potentially ***negative*** impacts arising from the increased scale, height and massing of proposed Project, and potentially ***positive*** impacts arise from a visually rich design response to the establishment of this new urban area and its carefully-considered relationship to neighbouring areas.

Taller buildings (generally seven to 10 storeys) are located along the northern and western margins of the site, defining strong edges fronting onto Racecourse Park and the railway line. This provides a consistent edge to the railway line, echoing that proposed for the western edge of GA1 to the south. Along the northern margin, the taller blocks are interspersed with much lower blocks (six to seven storeys) and openings into the communal amenity spaces to provide a dynamic urban edge with a strong sense of permeability. A single block stands at 15 storeys, providing a focal element on this edge and highlighting the adjoining north-south green artery where it emerges into the planned Racecourse Park.

Lower blocks of mainly four to six storeys, with occasional two storey elements, characterise the central, eastern and southern parts of the Site, where they complement adjacent proposed developments at GA1 and GA2. Two distinct pavilion buildings provide a focus at the centre of the Site, surrounded by a community park and major green routes through the Site.

The proposed Project minimises or avoids potential adverse landscape and visual impacts by virtue of the following design considerations:

- Being part of a much wider and carefully-considered consolidation of the urban edges fronting the Baldoyle-Portmarnock estuarine area, complementing other permitted and proposed developments nearby.

- Consolidating an emerging new urban neighbourhood centred around Clongriffin train station and the district centre.
- Providing a clear separation between built-up areas and the more sensitive natural / scenic estuarine area, and seeking a strong positive interface between the two.
- Being set back from the nearby estuary, leaving the intervening High Amenity parkland as a landscape buffer to the estuary.
- Using high quality architecture and good placemaking to frame and complement the nearby High Amenity area.
- Clustering taller buildings with variable heights towards the station, resulting in a modulated roofscape that provides visual interest and avoids monotony. The vertical emphasis of the buildings is contrasting and complementary to the nearby flat coastal plain.
- Restraining building height throughout much of the Site by being responsive to neighbouring developments, providing a satisfactory transition of scale and height towards taller buildings.
- Maximising visual permeability and connectivity between streets, open spaces and the Racecourse Park to the north.
- Incorporating richly detailed hard and soft landscaping to open spaces and streets, adding further visual interest, diversity, legibility and providing continuity with the civic space at Clongriffin train station and Station Square.

A residential development of this nature, by definition, will bring about permanent change to the landscape by way of its transformation from open unbuilt land to a new high density residential neighbourhood. Overall, residual landscape impacts upon the Site itself are predicted to be ***moderate to significant*** and ***positive***, transforming a neglected urban infill Site into an attractive contemporary urban neighbourhood, connecting with Growth Area GA1, Clongriffin train station and existing residential developments to the south, south-east and west. A ***significant, positive*** impact is predicted in terms of placemaking and the landscape character of the local street / open space network. A ***positive*** impact is also predicted for neighbouring residential areas during the operational phase.

In the wider landscape, the proposed Project consolidates planned development under the scope of the Baldoyle-Stapolin LAP, which acknowledges the higher landscape sensitivities of

adjoining lands, including the High Amenity land to the north and east and the wider estuarine / coastal landscape. This relieves potential housing pressure for more sporadic development throughout the wider area which might (as a whole) be more harmful to these landscapes. The proposed Project will form part of a new urban backdrop to the High Amenity area, framing it with a more clearly defined edge, making a ***significant, positive*** contribution to the character of this emerging urban area. The magnitude of change to the estuarine landscape itself will be low and the resulting impact upon its landscape character will be ***moderate*** and ***neutral***.

The visual impacts of the proposed Project upon a representative range of viewpoints in the surrounding area are illustrated in the booklet of Verified Photomontages by Modelworks, submitted under separate cover as part of the planning application. These impacts may be summarised as follows:

- Existing residential areas lie nearby to the south / southeast and at relatively close quarters to the west / northwest. The magnitude of change has the potential to be significant where streets adjoin or link directly to the Site to the south or southeast, where visual impacts are typically ***slight positive*** or ***neutral / none*** on account of being largely screened from view by intervening buildings / vegetation, or by removing a vacant development site from view and replacing it with a complementary range of residential buildings and a richly landscaped streetscape. Views from the northern end of Longfield Road, the western site of Red Arches and the rear of Station Way / Railway Road are examples of this.
- Further west of the railway line, there are occasional vistas along streets towards the proposed Project. Where there is a partial view of the proposed Project, visual impacts are typically ***neutral***. In other cases, the proposed Project is typically screened by intervening buildings, with ***no impact*** as a result. Views such as the vistas along Station Way at Beau Park Square, at its junction with Railway Road, and the vista along Belltree Avenue provide such examples.
- Clongriffin Station and Main Street lie at the heart of the neighbouring Clongriffin-Belmayne LAP development lands. The station directly adjoins the proposed Project, while Main Street affords vistas towards the proposed Project from varying distances to the west. The magnitude of change at the station forecourt is ***insignificant / none*** as the proposed Project lies north of the main visual axis, and views occur only when

passing behind the station. There is likely to be few views of the proposed Project moving west along Main Street, as the viewer moves westwards and visual impacts are likely to be ***neutral / none*** as a result.

- There are glimpses of the proposed Project from the local road network in the wider landscape. From the south, an elevated section of Grange Road affords views along the railway line and across the intervening rooftops. The proposed Project subtly punctuates an otherwise monotonous roofscape with a cluster of taller buildings with colours and grain that contrast with the houses, giving rise to a ***slight, positive*** impact.
- From the R123 Moyne Road to the north, the proposed Project extends and reinforces the contemporary urban landscape that has begun to emerge west of the railway line, where a distinct and cohesive clustering of taller buildings delivers a robust and coherent urban edge as a backdrop to the High Amenity land in the foreground, with a high magnitude of change resulting in a ***significant, positive*** visual impact. A similar but moderate magnitude of change to the landscape occurs in views from the R106 Coast Road to the east, resulting in a ***slight, positive*** visual impact. Views of the proposed Project quickly disappear upon entering Baldoyle and Sutton to the south, where intervening buildings screen it from view.
- Wider views from the east and northeast across the High Amenity estuary / coastal landscape emphasise the flat nature of this landscape and the indistinct edge to the existing urban area. The proposed Project typically results in a slight to moderate magnitude of change by establishing a more undulating skyline and dynamic roofscape as part of a cohesive urban backdrop that contrasts with and frames the natural landscape in the foreground; the resulting in visual impacts ranging from ***neutral*** to ***moderately positive***, except from the northern end of the Balydoyle Estuary where the tower element of Block D3 is visible in relative isolation and appears to have a ***moderately negative*** visual impact as a result.

The cumulative visual impacts of the proposed Project in combination with existing, permitted and proposed development in the surrounding areas have been assessed. Development at Clongriffin (SHD Reg. Ref. 305316-19) interrupts or obscures views from the west, while providing additional urban context to views from other directions. Similarly, development at GA1 (as permitted and proposed) partially obscures parts of the proposed Project or features

more strongly, such as in views from the south. From elsewhere, however, GA1 (as permitted and proposed) tends to be screened by the proposed Project and other permitted or existing developments, while the development permitted under SHD Reg. Ref 305316-19 provides mainly background context.

Landscape and visual impacts resulting from the proposed Project are important in establishing a coherent urban landscape for existing and proposed residential areas that adjoin GA3 to the south and east. The proposed Project will provide continuity and connectivity between these areas and the central location of Clongriffin train station, as well as key public open spaces and an attractive outlook from neighbouring streets. It will also provide continuity to the new urban edge being established by the northern edge of the Clongriffin-Belmayne LAP development lands.

14 Cultural Heritage, Archaeology and Architectural Heritage

This Chapter assesses the archaeological, architectural, cultural and industrial heritage potential of the proposed development Site, and the potential for the proposed Project to result in impacts thereupon. It has been informed by a desk-study, with a detailed documentary and cartographical review; and the findings of a series of invasive and non-invasive archaeological investigations, including a systematic finds retrieval walkover in 2002, geophysical survey in 2003, and limited archaeological testing in 2004.

The proposed Project is located in an area which, until the end of the 20th century, had consisted of open green fields set within a coastal and riverine context; these are all environments that have an inherent archaeological potential. This potential is borne out in the wider landscape to the north and west of the proposed Project, where there are previously known recorded archaeological sites, in addition to more recently discovered sites identified through geophysical survey and archaeological testing.

However, while this suggests that the area was a focus for both prehistoric and historic activity, the archaeological investigations within the proposed Project Site have, as yet, revealed nothing of archaeological significance. It should be noted, however, that a geophysical survey undertaken at the site of an enclosure in Drumnigh townland to the north – which was visible on aerial photography – did not yield significant responses, though subsequent testing did confirm the presence of a large enclosure there. This may indicate that geophysical survey results within this landscape may not represent the full extent of the archaeology in this area, as a result of unresponsive soils.

The proposed Project Site has been subject to a number of disturbances related to the development of earlier phases of the Baldoyle-Stapolin development lands, with access roads and drainage infrastructure already constructed within the Site. Nonetheless, there is the potential that archaeologically enriched soils, features and deposits may survive subsurface.

Throughout the construction phase, monitoring of topsoil-stripping within the entire Project Site, under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland, will be undertaken as an archaeological exercise, to determine whether there are any archaeological features or deposits present.

Should any subsurface archaeological stratigraphy be encountered, an appropriate ameliorative strategy will be implemented, such that no residual impacts on such subsurface features or deposits will occur.

In short, assuming the implementation of the mitigation measures set out in this Chapter, no significant negative impacts are predicted to occur in relation to cultural, archaeological, architectural or industrial heritage as a result of the proposed Project.

15 Microclimate – Daylight / Sunlight

This Chapter assesses the likely impacts of the proposed Project in term of access to daylight and sunlight within the proposed Project and in adjacent buildings / areas. It has been prepared in accordance with the relevant guidelines, including those from the EPA and the Buildings Research Establishment (BRE). It has been informed by 3D daylight / sunlight modelling.

15.1 Daylight

The analysis has confirmed that excellent levels of internal daylight will be achieved across the proposed Project. Of the 3,241 rooms that comprise the proposed Project, only 70 are expected to fall slightly under the requirements of the BRE and British Standard BS 8206. Therefore, a 97.8% compliance ratio will be achieved. The remaining 2.2% of rooms are expected to experience a ***not significant, neutral, long-term*** impact.

In terms of impacts to adjacent buildings, the proposed Project is expected to result in a ***not significant*** impact on the north block of sensitive receptor Ref. 2 (development at GA2), with an ***imperceptible*** impact on other adjacent properties, in accordance with BRE guidelines.

No mitigation measures are considered to be required in respect of access to daylight.

15.2 Sunlight

The analysis has confirmed that excellent levels of sunlight will be achieved across the proposed Project. The proposed Project is expected to comply with the BRE requirement of at least two (2) hours of sunlight on March 21st on more than 50% of the provided amenity spaces and private gardens. The annual probable sunlight hours (APSH) assessment has shown that acceptable levels of sunlight will be achieved across the windows within the proposed Project.

In relation to overshadowing, the majority of sensitive receptors will experience an ***imperceptible*** impact, with sensitive receptor ref. 2 (development at GA2) experiencing a ***not significant*** impact. The APSH analysis has also found that there will be an ***imperceptible*** impact on sensitive receptor ref. 2 (development at GA2).

No mitigation measures are considered to be required in respect of access to sunlight.

16 Microclimate – Wind

This Chapter presents the computational fluid dynamics (CFD) modelling assumptions and results of wind and microclimate impact assessment in respect of the proposed Project located at Baldoyle-Stapolin Growth Area No. 3 (GA03), Baldoyle, Dublin 13.

The results of this modelling have been utilized by the Applicant and design team to configure the optimal layout for the proposed Project with the aim of achieving a high-quality environment for the scope of use intended for each area / building (i.e. comfortable and pleasant for potential pedestrian use), and not introducing any critical wind impact on the surrounding areas / buildings (in accordance with the Lawson Acceptance Criteria).

The desktop study of the existing receiving environment (in terms of wind) may be summarised as follows:

- The wind profile was built using the annual average of meteorological data collected at Dublin Airport Weather Station. In particular, the local wind climate was determined from historical meteorological data recorded 10 m above ground level at Dublin Airport. Eighteen (18 no.) different scenarios were selected in order to take into consideration all the different relevant wind directions. In particular, a total of 18 no. compass directions on the wind rose have been selected. For each direction, the reference wind speed has been set to the 5% exceedance wind speed for that direction, i.e. the wind speed that is exceeded for over 5% of the time whenever that wind direction occurs.
- The wind profile built using the data from Dublin Airport has been compared with the data collected on-Site. With few exceptions, both the wind speed daily mean and the wind gust daily mean recorded on-Site follow the same patterns as those recorded at Dublin Airport. The speed levels registered on-Site are in a few cases slightly lower. This is due to the fact that, despite its vicinity to the coast, the Site is located close to the urban environment and, thus, much more shielded when compared with Dublin Airport. This confirms the fact that using wind data from Dublin Airport ensures a conservative analysis of the wind impact on the proposed Project.
- The prevailing wind directions for the Site are identified as west, west south-west and south-east, with magnitude of approximately 6 m/s.

A microclimate model assessment of the proposed Project and its environment was performed utilizing a CFD methodology. Three worst case wind scenarios were selected for presentation in the assessment, as these scenarios and directions are indicative of the most relevant wind speeds.

The simulation results may be summarised as follows:

- The proposed Project will produce a quality environment that is attractive and comfortable for pedestrians at ground floor, both when assessed in the context of existing and permitted environment, and in the context of the proposed amendments to the GA03 development being granted. In the cumulative scenario, in particular, the area on the south of the Site is further shielded, providing some extra protection from those wind directions.
- Areas around the proposed Project where velocities can be higher have been identified near the corners of the blocks, and on the main road across the proposed Project. However, these were mitigated using tree landscaping, with particulate attention to the corner areas.
- Funnelling effects will be experienced on some of the main roads around the proposed Project, and on the roads in-between some of the blocks. Again, these have been mitigated using tree landscaping. It should be noted that the roads are not used as sitting areas and, therefore, higher flow velocities can be accepted. These effects can be seen as being further reduced during the cumulative assessment.
- Courtyards, parks and squares seem to be well shielded. However, some recirculation effects have been found for certain wind directions. The implementation of tree landscaping in these areas will mitigate these effects.
- The mitigation measures incorporated into the design of the proposed Project significantly reduce the velocities around the Site. The recirculation and funnelling effects highlighted in the previous sections have been successfully reduced or eliminated. Some slightly higher velocities are still found for some wind directions around some of the corners of the buildings and on the west side of the proposed Project. However, these velocities are below critical values and significant effects are not likely.

- The pedestrian comfort assessment, performed at ground floor level according to the Lawson criteria, identified the areas that are suitable for the different pedestrian activities in order to guarantee pedestrian comfort. The areas all around the proposed Project would appear to be suitable for every activity, including long-term sitting. Also, the courtyards, parks and squares are always suitable for long-term sitting, short-term sitting, standing, walking and strolling activities. Moreover, in terms of distress, no critical conditions were found in relation to frail persons or cyclists or general public in the proposed Project.

17 Traffic and Transportation

This Chapter evaluates the proposed Project's likely effects on the operation of the surrounding road network, as well as identifying proposed mitigation measures to avoid / minimise such impacts.

The methodology employed for the assessment of these impacts comprised:

- An appraisal of the receiving environment;
- A traffic survey conducted at 9 no. junction locations on the surrounding road network;
- The calculation of predicted future traffic flows based on background growth factors and the trip generation of the proposed Project, as well as traffic to be generated by known nearby committed and potential developments; and
- The modelling of 3 no. key existing junctions on the surrounding road network using industry-standard TRANSYT and ARCADY software.

Each of the three existing junctions assessed (on Grange Road and on Coast Road) currently operates within its effective capacity on all junction approaches during both the AM and PM peak periods. Existing vehicle queues and delays during peak hour periods generally range from minimal to moderate.

The proposed Project shall generate regular vehicular trips on the surrounding road network, during both construction and operation, with the potential to increase traffic flows at nearby existing and proposed junctions. Should the resultant total traffic flows at these junctions become too high, the junctions may cease to function efficiently. The impact of construction traffic on the operation of the surrounding road network shall be less significant than the impact of operational traffic.

A suite of corresponding mitigation measures has been set out for the construction phase, including the following:

- Preparation of a site-specific Construction Management Plan (CMP), including a plan for the scheduling and management of construction traffic;
- Appointment of a Designated Community Liaison Officer (CLO), who will coordinate with other active construction sites and facilitate liaison with members of the public; and

- Routing all construction traffic via a haulage road to / from the north, bypassing sensitive junctions on Grange Road and Coast Road.

Design elements and management strategies to mitigate the proposed Project's operational phase traffic-related effects include:

- Reduced car parking provision, which shall discourage higher vehicle ownership rates and excessive vehicular trips to the Site;
- A high provision of secure bicycle parking, which shall encourage bicycle journeys by both occupants and visitors; and
- The appointment of a Residential Travel Plan Coordinator, with the remit to implement and oversee an ongoing Residential Travel Plan, promoting more environmentally sustainable personal mobility among occupants and visitors.

Assuming the implementation of the mitigation measures set out in this Chapter, during its operational phase, the proposed Project is predicted to result in an overall ***long-term, moderate, adverse*** impact on the operation of junctions on the surrounding road network. This impact should be considered ***reversible*** to a degree, as any future measures that reduce local vehicular traffic volumes (e.g. improvements in public transport or cycling infrastructure, junction redesign, or changes in general traffic flow restrictions) have the potential to improve local traffic flows generally, as well as to reduce vehicle trips to / from the proposed Project.

18 Material Assets – Waste

This Chapter assesses the potential impacts associated with waste management during the construction and operational phases of the proposed Project. The receiving environment is largely defined by Fingal County Council (FCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

During the construction phase, typical construction and demolition (C&D) waste materials will be generated, which will be source-segregated on-Site into appropriate skips / containers, where practical, and removed from Site by suitably permitted waste contractors to authorised waste facilities. Where possible, materials will be reused on-Site to minimise resource consumption. Source-segregation of waste materials will improve the re-use opportunities of recyclable materials off-Site.

Construction of the new foundations and the installation of underground services will require the excavation of c. 31,966.6 m^3 of material. It is estimated that c. 21,870.0 m^3 of excavated material will need to be removed off-Site, while c. 10,096.0 m^3 of this material will be reused on-Site. Excavated material which is to be taken off-Site will be taken for reuse, recovery, recycling and / or disposal, as appropriate.

During the construction phase, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete, tiles, bricks, etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials may also be generated. The appointed Contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

A carefully planned approach to waste management and adherence to the site-specific Construction and Demolition Waste Management Plan (Appendix 18.1) and the mitigation measures set out in this Chapter during the construction phase will ensure that the residual effect on the environment will be ***short-term, neutral and imperceptible***.

During the operation phase, waste will be generated from the residents and commercial tenants of the proposed Project. Dedicated waste storage areas have been allocated throughout the Site for the various uses and waste types. The waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation

a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and / or disposal, as appropriate.

An Operational Waste Management Plan (Appendix 18.2) will be finalised prior to commencement of operations. The plan will seek to ensure the facility contributes to the achievement of the targets outlined in the Eastern Midlands Waste Management Plan 2015 – 2021.

Provided the mitigation measures outlined in this Chapter and in the Operational Waste Management Plan are implemented, and a high rate of reuse, recycling and recovery is achieved, the predicted residual effect of the operational phase of the proposed Project in relation to waste will be ***long-term, neutral and imperceptible***.

19 Material Assets – Services

This Chapter assessed the impacts of the construction and operational phases of the proposed Project on ownership and access, and utilities infrastructure and services. It has been prepared in accordance with the relevant guidelines, including those from the EPA and TII (formerly NRA), and informed by extensive desk research.

The Site of the proposed Project is under the ownership of the Applicant. It is expected to remain as such during the construction and operational phases. There will be no acquisition of land by Compulsory Purchase Order to facilitate the build. It follows that ***no significant impacts*** are predicted in relation to land ownership.

There is currently no public access to the Site, which is bound by hoarding. There are a number of private access points. During the construction phase, it is envisaged that the Site will be accessed via an existing entrance to the north at Moyne Road. Use of this haulage route (coupled with the implementation of traffic management measures under the scope of a Construction Traffic Management Plan) will minimise the impacts of construction traffic accessing and leaving the Site. ***No significant impacts*** are predicted in relation to access during the construction phase.

During the operational phase, the Site will feature an internal road network that ties in with the existing road network at four locations to the south and west, with provision made for an additional future connection immediately to the east. The completion of the proposed Project is expected to significantly improve permeability across the Site and wider area, providing a gateway between the Baldoyle-Stapolin development lands and the planned Racecourse Park to the north, as well as Clongriffin to the west. A ***moderate, positive, localised, long-term*** impact is predicted in terms of access during the operational phase.

The following classes of utilities infrastructure are present on the Site:

- Water supply
- Storm water drainage
- Foul water drainage
- Electricity supply
- Gas supply

There is currently no telecommunications or broadband infrastructure serving the Site itself, although both are present in the immediate vicinity.

In order to facilitate the operation of the proposed Project, works to utilities infrastructure will be needed at the Site, as summarised below:

- The existing water supply infrastructure will be removed and replaced.
- The existing stormwater drainage network will be removed and replaced.
- The existing foul water drainage network will be removed and replaced.
- New electricity supply, telecommunications and broadband infrastructure will be put in place.
- The proposed Project will not require any gas connections. Site works will be carried out around the existing on-Site live gas main.

All utilities works will be carried out in accordance with the relevant requirements of the respective service providers / authorities (i.e. Irish Water, ESB, GNI, Eir, Virgin Media and any others of relevance). These works will be carried out in a manner that is safe, and which avoids or minimises interruptions to service that might affect local residents, businesses, and adjacent development. As such, ***no significant impacts*** are predicted to occur in relation to services / utilities infrastructure as a result of the proposed Project.

During the operational phase, maintenance of utilities infrastructure on the Site will be carried out in accordance with the relevant requirements of the various utilities providers / authorities. The capacity of the proposed on-Site utilities infrastructure will be sufficient to provide for its operation. As such, ***no significant impacts*** on services or utilities themselves are predicted to occur during the operational phase.

While no significant impacts have been predicted, in order to avoid / minimise impacts insofar as practicable, a suite of best practice mitigation measures have been set out in relation to utilities infrastructure and services, as detailed in the main text of the EIAR (Volume 2).

20 Interactions

This Chapter deals with the potential interactions and inter-relationships between effects predicted as a result of the proposed Project. As a requirement of the Planning Regulations and the EPA (2017) Draft EIAR Guidelines, not only are the individual significant impacts required to be considered when assessing the impact of a development / project on the environment, but so too must the inter-relationships between these factors be identified and assessed.

A matrix of interactions is provided in Table 20.1, below, summarising where effects / impacts in relation to one EIAR topic (the source) have been found to directly or indirectly result in effects / impacts in relation to another EIAR topic (the receptor).

The primary interactions addressed in this EIAR are as follows:

- Population and human health (receptor) with (i) air quality and climate, (ii) noise and vibration, (iii) landscape and visual, (iv) traffic and transportation, and (v) material assets – waste (sources).
- Biodiversity (receptor) with (i) air quality and climate and (ii) noise and vibration (sources).
- Land, soils, geology and hydrogeology (source / receptor) with hydrology (source / receptor). This interaction goes in both directions, in that both are affected by the other.
- Air Quality and climate (receptor) with (i) land, soils, geology and hydrogeology and (ii) traffic and transportation (sources).
- Noise and vibration (receptor) with traffic and transportation (source).
- Traffic and transportation (receptor) with material assets – waste (source).
- Material assets – waste (receptor) with land, soils, geology and hydrogeology (source).

The relevant consultants have liaised with each other and members of the design team, where necessary, to address potential impacts arising as result of interactions between one or more environmental topics or media. Where necessary, corresponding mitigation measures have been prescribed.

Table 20.1: Interactions Matrix

Source \ Receptor	Population & Human Health	Biodiversity	Land, Soils, Geology & Hydrogeology	Hydrology	Air Quality & Climate	Noise & Vibration	Landscape & Visual	Cultural Heritage, Archaeology & Architectural Heritage	Microclimate –Daylight / Sunlight	Microclimate – Wind	Traffic & Transportation	Material Assets – Waste	Material Assets – Services
Population & Human Health													
Biodiversity													
Land, Soils, Geology & Hydrogeology				✓	✓							✓	
Hydrology			✓										
Air Quality & Climate	✓	✓											
Noise & Vibration	✓	✓											
Landscape & Visual	✓												
Cultural Heritage, Archaeology & Architectural													
Microclimate – Daylight / Sunlight													
Microclimate – Wind													
Traffic & Transportation	✓				✓	✓							
Material Assets – Waste	✓										✓		
Material Assets – Services													

21 Cumulative Impacts

The EU *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions* (1999) define cumulative impacts as *"Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project"* (p. iii). The EPA Draft EIAR Guidelines (2017; Section 3, p. 54) state that:

> *"While a single activity may itself result in a minor impact, it may, when combined with other impacts (minor or significant), result in a cumulative impact that is collectively significant. For example, effects on traffic due to an individual industrial project may be acceptable however it may be necessary to assess the cumulative impacts taking account of traffic generated by other permitted or planned projects. It can also be prudent to also have regard to the likely future environmental loadings arising from the development of zoned lands in the immediate environs of the proposed project."*

The potential for cumulative impacts to occur as a result of the proposed Project in combination with other proposed plans and Projects in the area has been assessed in the various specialist Chapters of this EIAR. This Chapter provides an account of the plans and projects that have been scoped in to the cumulative impact assessment.

Considering the nature and scale of the proposed Project, and its likely impacts as assessed in this EIAR, a search for plans and projects that may have the potential to result in cumulative impacts was carried out, with the following principal sources consulted:

- Dublin City Council (DCC) Planning Department;
- *Dublin City Development Plan (2016 – 2022)*;
- Fingal County Council (FCC) Planning Department;
- *Fingal Development Plan (2017 – 2023)*;
- *Baldoyle-Stapolin Local Area Plan (LAP) (2013)* as extended;
- *Clongriffin-Belmayne Local Area Plan (2012 – 2018)*;
- *Portmarnock South Local Area Plan (2013)*; and
- An Bord Pleanála (ABP) website.

Following a review of the above sources, the following key plans and projects in the area surrounding the proposed Project were identified:

- Baldoyle-Stapolin LAP 2013

- Primary School, Myrtle, Grange Road, Baldoyle (FCC Ref. F19A/0461)
- Baldoyle-Stapolin LAP Growth Area 1 (GA1) (ABP Ref. TA06F.310418; FCC Ref. 16A/0412; ABP Ref. ABP-248970; SHD Ref. 307288-20)
- Baldoyle-Stapolin LAP Growth Area 2 (GA2) (FCC Ref. F11A/0290 (/E1); ABP Ref. PL06F.239732)
- Clongriffin-Belmayne LAP (2012 – 2018)
- Portmarnock South LAP (2013)
- St. Marnock's Bay, Station Road, Portmarnock South (ABP Ref. 305619)
- Drumnigh (FCC Ref. F14A/0132; ABP Ref. PL06F.244401; as amended by FCC Ref. F17A/0412 (minor))
- Greater Dublin Drainage Project (ABP Ref. 301908)

The EIAR specialists have considered the potential for the above-listed plans and projects to give rise to cumulative impacts in combination with the proposed Project.

All of the proposed residential developments listed above are located on lands zoned for residential use in the Dublin City and Fingal Development Plans, and, in the case of developments at Clongriffin, Baldoyle-Stapolin and Portmarnock South, in areas subject to the preparation of detailed Local Area Plans. Each of these Development Plans and Local Area Plans have been subject to Strategic Environmental Assessment (SEA) and Appropriate Assessments (AA), which have provided for the inclusion of specific measures to avoid and mitigate potential adverse impacts on the environment.

Developments at Portmarnock South (St. Marnock's Bay) and Drumnigh are located approximately 1 km north and north-west of the Site of the proposed Project and as such, in an urban context, are at a significant separation. While only separated by the Dublin-Belfast railway line, development at Clongriffin, as with the proposed Project, is located within the urban edge of existing and planned city development.

Development at Portmarnock South provides for independent and separate wastewater and surface water infrastructure, with the latter discharging directly to Baldoyle Bay via a project-specific constructed wetland on the Portmarnock South lands. All projects are also required to secure capacity and connection approval from Irish Water for provision of potable and wastewater services.

Potential cumulative impacts primarily arise through the ongoing planned urbanisation of the city's hinterland, as provided for by land use zoning and policy. In this context, the construction of multiple sites at the one time may result in cumulative impacts in terms of noise and vibration, air quality (dust), construction traffic and visual impact for human beings. However, such impacts would be ***temporary*** or ***short-term***, and corresponding mitigation measures have been prescribed herein – including coordination with the adjacent GA1 development – in order to ensure that significant cumulative impacts do not arise in relation to these aspects of the proposed works.

During operation, these residential and related developments will come to define the planned edge of city development in this area. These developments will expand existing and introduce new residential communities, which will increase population and population pressures in the area. In this regard, the local area plans for Clongriffin, Portmarnock South and Baldoyle – Stapolin also provide for delivery of significant areas of amenity, recreation and parklands, as well as for ecological and landscape buffer areas for the protection of sensitive habitats and environments in the surrounding area.

In delivering on planned and much needed residential development within an attractive amenity and public realm setting, the cumulative impact of the overall development on human beings and landscape (townscape) is expected to be ***positive***.

As stated above, each of the specialist environmental chapters of this EIAR have considered the potential for cumulative impacts to arise as a result of the proposed Project in combination with one or more of the above-listed plans and projects, as appropriate. Please refer to the various specialist chapters (in the main text of the EIAR – Volume 2) for a topic-specific discussion of potential cumulative impacts.

In short, ***no significant negative cumulative impacts*** are expected to arise during the construction or operation of the proposed Project.

22 Schedule of Environmental Commitments

This Chapter provides a list of all of the environmental commitments / mitigation measures identified in the specialist chapters of the EIAR. These mitigation measures are considered necessary to protect the environment prior to the commencement of works and during the construction and / or operational phases of the proposed Project.

The appointed Contractor (or other relevant responsible entity identified) will be required to follow and implement these mitigation measures, to ensure the protection of the environment and to ensure sustainable development.

The Schedule for Environmental Commitments is provided in Table 22.1 of the main text of the EIAR (Volume 2).

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