



JACOBS ISLAND



# NTS | Volume I

## Non-Technical Summary

Environmental Impact Assessment Report



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## CHAPTER 1 INTRODUCTION

### 1.1 BACKGROUND

This Environmental Impact Assessment Report (EIAR) has been prepared on behalf of Hibernia Star Limited to assess the likely significant environmental effects of a proposed Strategic Housing Development [SHD] at Jacob's Island, Ballinure, Mahon, Co. Cork.

The EIAR has been completed in accordance with Directive 2011/92/EU (as amended by 2014/52/EU) and relevant Irish legislation as well as in conformity with guidance in the European Commission's 'Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report' (2017) and EPA's Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (2022).

The proposed development consists of the construction of 489 no. residential units, creche and office building to be constructed on lands of 3.95 hectares in area at Jacob's Island. A full description of the proposed development is provided in Chapter 2 of this EIAR.

The proposed development represents the second element of a proposed masterplan for the development of the area, an application for the first element of which, a proposed hotel & office scheme, is currently being determined by Cork City Council (Planning Ref. 22/40809 refers). A Strategic Housing Development scheme has also been permitted (Reg. Ref. ABP-301991-18, as amended by ABP-310378-21) for 437 no. residential units, retail space and childcare facility adjacent to the subject site. The site is located within the wider neighbourhood of Mahon, adjacent to the Mahon District Centre as illustrated in Figure 1.1 as shown.

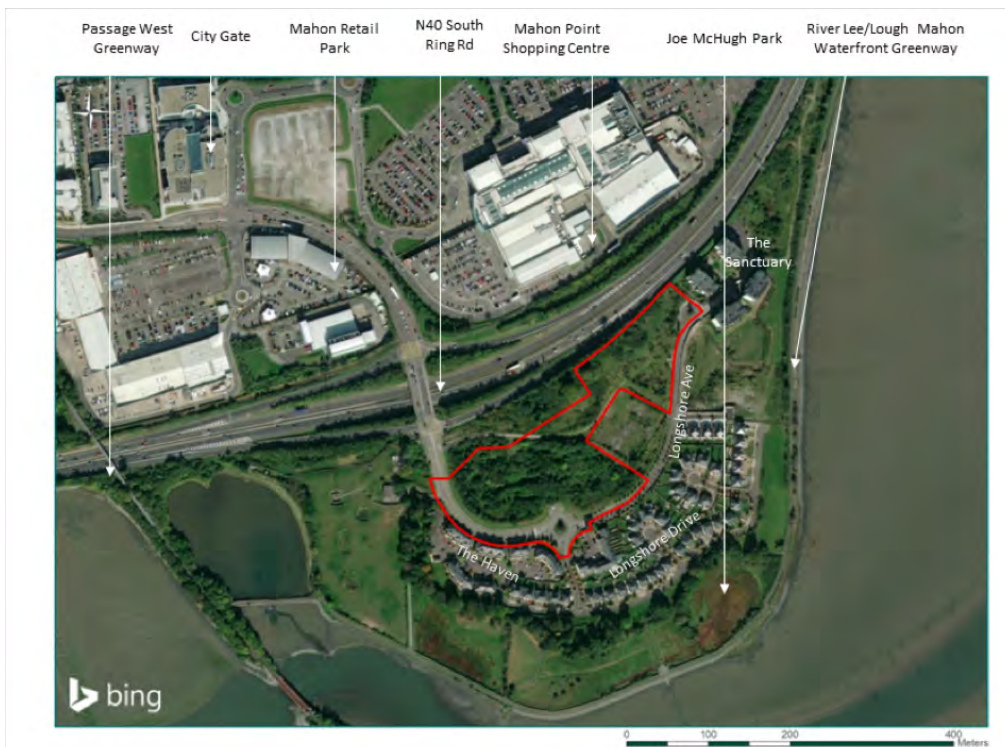


Figure 1.1 Site Location in context of Mahon District Centre

## 1.2 PURPOSE OF EIA

EIA requirements are now governed by Directive 2014/52/EU, which amends Directive 2011/92/EU (“the EIA Directive”). The primary function of the EIA Directive is to ensure that projects that are likely to have significant effects on the environment are subjected to an assessment of their likely impacts.

Ireland’s obligations under the EIA Directive have been transposed into Irish law and, in particular, the planning consent process through the provisions of Part X of the Planning and Development Act 2000, as amended, and the Planning and Development Regulations, 2001, as amended.

This EIAR has been prepared in accordance with the relevant provisions of the EIA Directive, the Planning and Development Acts and Planning and Development Regulations. In addition, the EIAR conforms to the guidance contained in the relevant EU and Irish guidance in respect of the preparation of an EIAR.

The objective of the EIA Directive is to ensure a high level of protection of the environment and human health, through the establishment of minimum requirements for EIA, prior to development consent being given, of developments that are likely to have significant effects on the environment.

## 1.3 EIA METHODOLOGY

Environmental Impact Assessment Reports | Guidelines

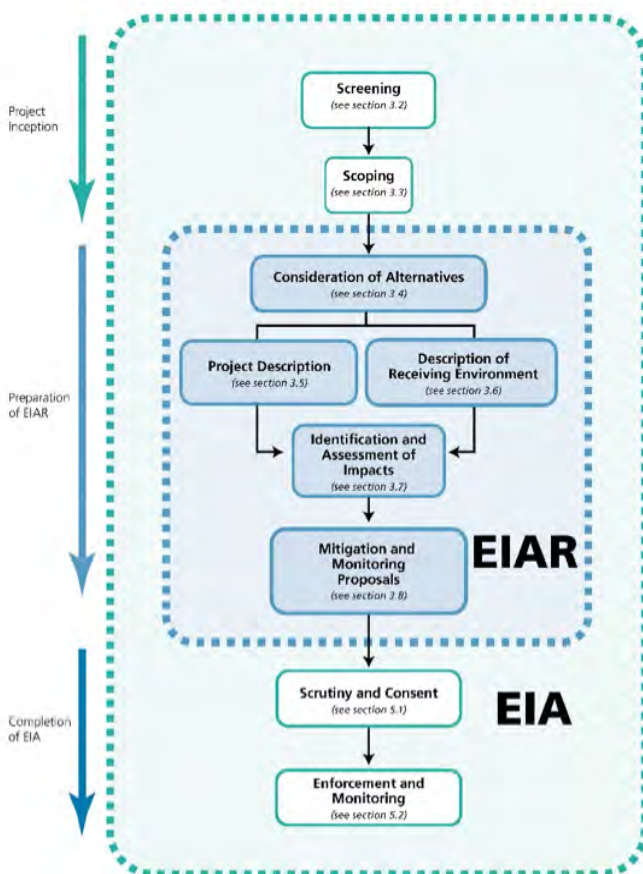


Figure 1.2 Extracted from EPA EIAR Guidelines 2022 (Table 2.1)

As per Article 5(1) of the 2014 Directive, an EIAR should provide the following information:

- Description of Project;
- Description of Baseline Scenario;
- Description of Likely Significant Effects;
- Description of Avoidance / Mitigation Measures;
- Description of Reasonable Alternatives (and rationale for chosen option); and
- A Non-Technical Summary.

Annex IV of the Directive sets out in more detail the information required in an EIAR. The subject EIAR has been prepared in full accordance with these stated requirements of Annex IV.

## 1.4 EIA SCREENING & SCOPING

Screening is the term used to describe the process for determining whether a proposed development requires an EIA by reference to mandatory legislative threshold requirements or by reference to the type and scale of the proposed development and the significance or the environmental sensitivity of the receiving baseline environment.

Article 93 of, and Schedule 5 to, the Planning and Development Regulations 2001 set out the classes of development for which a planning application must be accompanied by an EIAR.

Part 1 and Part 2 Schedule 5 of the Planning and Development Regulations, 2001 prescribes the categories of, and thresholds for, prescribed development requiring EIA.

The subject proposal does not come under any of the prescribed development contained in Part 1 of Schedule 5.

By way of example, paragraph 10(b) of Part 2 of Schedule 5, which refers to Infrastructure Projects includes, includes:

- (i) Construction of more than 500 dwellings
- (ii) Construction of a car-park providing more than 400 spaces, other than a car-park provided as part of, and incidental to the primary purpose of, a development.
- (iii) Construction of a shopping centre with a gross floor space exceeding 10,000 square metres.
- (iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.

(In this paragraph, “business district” means a district within a city or town in which the predominant land use is retail or commercial use.)”

The proposed development consists of a residential development of 489 no. residential units, a 380.6m<sup>2</sup> creche, 4,112.4 m<sup>2</sup> of office space and 321 car parking spaces on a site of 3.95 hectares in area. Accordingly, the proposed development is a “sub-threshold” development.

Notwithstanding the above, based on the provision of Schedule 7 (1)(B) the proposed development, in cumulation with other development on Jacob's Island including the permitted Strategic Housing Development scheme (Reg. Ref. ABP-301991-18, as amended by ABP-310378-21) for 437 no. residential units, retail space and childcare facility and proposed Hotel & Office scheme (currently at Request for Further Information stage) (Cork City Council Reg. Ref. 22/40809), an EIA is considered to be required.

In circumstances where, as in this case, a planning application for a sub-threshold development is accompanied by an EIAR and a request for a screening determination was not made, then the application must be dealt with as if the EIAR had been submitted in accordance with Section 172(1) of the Planning and Development Act 2000.

EIA Scoping is the process of determining the content and extent of the matters which should be considered in the environmental information contained in an EIAR.

In determining the extent and content of this EIAR, the authors have carefully considered the applicable EU and Irish legislative requirements, relevant EU and Irish guidance. The scope of the EIAR was also informed by a pre-planning consultation meeting held with Cork City Council in accordance with Section 247 of the Planning and Development Act 2000 in July 2021 and a Pre-Application Consultation meeting with Cork City Council and An Bord Pleanála in March 2022, held in accordance with Section 5 of the Planning and Development (Housing) and Residential Tenancies Act 2016. In addition, the following prescribed bodies were notified of the extent of the proposed development and of the fact that an EIAR was being prepared:

1. Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
2. The Heritage Council
3. An Taisce
4. Irish Water
5. Transport Infrastructure Ireland
6. National Transport Authority
7. Cork City Childcare Committee
8. Irish Aviation Authority
9. Operator of Cork Airport
10. National Parks and Wildlife Services
11. Department of Housing, Local Government, and Heritage
12. Inland Fisheries Ireland (Southwest Region)
13. Office of Public Works.

The particulars sent to the above bodies are contained in Appendix 1-1 with any responses received contained in Appendix 1-2 of this EIAR (Volume III).

## 1.5 PURPOSE & STRUCTURE OF THE EIAR

The primary purpose of this EIAR is to inform the EIA process, by identifying likely significant environmental impacts resulting from the proposed development, to describe the means and extent by which they can be reduced or mitigated, to interpret and communicate information about the likely impacts and provide an input into the decision-making planning process.

The fundamental principles to be followed when preparing an EIAR are:

- Anticipating, avoiding and reducing significant effects

- Assessing and mitigating effects
- Maintaining objectivity
- Ensuring clarity and quality
- Providing relevant information to decision makers
- Facilitating better consultation.

The EIA is divided into 3 volumes:

- The non-technical summary comprising a concise, but comprehensive description of the project, its environment, the effects of the project on the environment, the proposed mitigation measures, and the proposed monitoring arrangements;
- The main report consisting of 15 chapters as outlined in the table of contents;
- The Appendices numbered in accordance with the chapter they relate.

## 1.6 EIA TEAM & QUALIFICATIONS

HW Planning have coordinated the subject EIA. Environmental specialist consultants were also commissioned for the various technical chapters of the EIA document which are mandatorily required in accordance with the EIA Directive and Planning and Development Regulations 2018. Each environmental specialist was required to characterise the receiving baseline environment; evaluate its significance and sensitivity; predict how the receiving environment will interact with the proposed development and to work with the EIA project design team to devise measures to mitigate any adverse environmental impacts identified.

A full list of all consultants and the corresponding chapters that have been prepared is detailed below.

**Planning Consultants:** HW Planning

**Address:** 5 Joyce House, Barrack Square, Ballincollig, Co. Cork.

**Chapters Prepared:** Chapter 1 – Introduction, Chapter 2 - Project Description, Chapter 3 - Alternatives Considered, Chapter 13 - Population & Human Beings, Chapter 14 - Interaction of Impacts and Chapter 15 - Summary of Mitigation Measures

**Personnel:** Harry Walsh - BA HONS, Master of Regional and Urban Planning, MIPI.

**Landscape and Visual Impact Architects:** Aecom

**Address:** 1st Floor, Montrose House, Carrigaline Road, Douglas, Cork.

Chapters Prepared: Chapter 4 – Landscape & Visual Impact

**Personnel:** Katheryn Blade, Landscape Architects/LVIA, Joerg Schulze, Associate Director.

**Project Engineers/Traffic Consultants:** Sweco

**Address:** Glandore, 3rd Floor City Quarter, Lapps Quay, Cork.

**Chapters Prepared:** Chapter 5 - Material Assets – Traffic & Transportation and Chapter 8 – Water (Hydrology and Hydrogeology)

**Personnel:** Tara O’Leary, Technical Director, John Ryan (Technical Manager), Mary Creedon B.E. (Civil), Chartered Engineer MIEI MIHT.

**Project Structural and M & E Engineers:** MMOS Consulting, Civil & Structural Engineers

**Address:** MMOS, Lane Business Park, Monahan Road, Cork

**Chapters Prepared:** Chapter 6 - Material Assets – Services, Infrastructure & Utilities and Chapter 7 – Land & Soils

**Personnel:** Martin Murphy BSc Eng CEng FIEI, Director and Bianca Leonessa BEng (Hons) MIEI, Civil Structural Engineer

**Project Ecologist:** Atkins Ireland

**Address:** Unit 2B, 2200 Cork Airport Business Park, Cork, T12 R279

**Chapters Prepared:** Chapter 9 - Biodiversity

**Personnel:** Dr. Paul O’ Donoghue (BSc PhD CEnV MCIEEM), Associate Director, John Deasy, (BSc in Environmental and Earth Systems; an MSc in Marine Science and an MSc in Ecological Assessment Ecologist), Caroline Shiel (Ph.D), Ross Macklin PhD (candidate), B.Sc. (Hons) MCIEEM., MIFM, HDip GIS, PDip IPM

**Environmental Consultant:** AWN Consulting

**Address:** The Tecpro Building, Clonsaugh Business & Technology Park, Dublin 17

**Chapters Prepared:** Chapter 10 - Noise & Vibration, Chapter 12 – Air Quality & Climate

**Personnel:** Niamh Nolan, Environmental Consultant BSc MSc AMIAQM AMIEnvSc and Leo Williams Acoustic Consultant

**Built Heritage/Archaeology:** Lane Purcell

**Address:** Eithne Ville, 64 Father Mathew Road, Turners Cross, Cork

**Chapters Prepared:** Chapter 11 - Cultural Heritage

**Personnel:** Musetta O’Leary (BA Archaeology and Geography, NUI Cork, 1998. MA Archaeology, NUI Cork, 2000.)

**Project Architects:** O’Mahony Pike Architects

**Address:** One South Mall, Cork

**Chapters Prepared:** N/A

**Personnel:** Conor Kinsella, B.Sc.Arch.Sc., B.Arch., MRAI, (DIRECTOR).



## 1.7 CUMULATIVE IMPACTS

Each of the projects listed in table 1.1 have been assessed for potential cumulative impacts. These projects were identified by using Cork City and Cork County Councils Planning Enquiry Systems and An Bord Pleanála's website.

*Table 1.1 Cumulative Impacts – Projects Considered*

APPLICATION REFERENCE	APPLICANT(S)	DESCRIPTION	OUTCOME/ CURRENT STATUS
ABP REF.: TA28.313216	Estuary View Enterprises 2020 Limited	'The Meadows' Bessborough	Due 25th July 2022
ABP REF.: TA28.313206	Estuary View Enterprises 2020 Limited	'The Farm' Bessborough	Due 25th July 2022
CORK CITY COUNCIL REF.: 22/40809	Hibernia Star Limited	Construction of an office and hotel development at Jacob's Island, Ballinure, Mahon, Cork	Request for Further Information
ABP REF.: TR28.310378	Montip Horizon Limited	Amendments to previously permitted strategic housing development reference ABP-301991-18 to increase the number of units from 413 no. units to 437 no. units and amendments to Blocks 4, 7, 8, 9 and 10 at Jacob's Island, Ballinure, Mahon, Cork	Granted (11th February 2022)
CORK CITY COUNCIL REF.: 19/38875	O'Flynn Construction Co. Unlimited Company	Construction of 12,004 sq m of office floorspace at Blackrock Business Park, Bessboro Road, Mahon, Cork	Granted (11th March 2020)
CORK CITY COUNCIL REF.: 18/37820 AND ABP REF. PL. 302784	Bessboro Warehouse Holdings Limited	Demolition of the existing buildings and construction of 135 no. residential units at Bessboro Road, Mahon, Cork	Granted (28th February 2019)
ABP REF.: TA.301991.	Montip Horizon Limited	Construction of 413 no. apartments, neighbourhood centre, creche, road improvement works including upgrades to the Mahon Link Road (R852) to the North of the N40 interchange to incorporate a dedicated bus lane and all site development works at Jacob's Island, Ballinure, Mahon, Cork	Granted (3rd October 2018)

The potential impact on the environment of the Draft Cork City Development Plan 2022 – 2028 was assessed for cumulative impact and were considered in the preparation of this EIAR, having regard to the SEOs detailed in Table 5-1.

## 1.8 AVAILABILITY OF EIAR DOCUMENTATION

This EIAR will be available in printed form at the offices of Cork City Council (City Hall, Anglesea Street, Cork, T12 T997) and An Bord Pleanála (64 Marlborough St, Rotunda, Dublin 1, D01 V902).

The EIAR will also be available to view electronically at the following website: [www.jacobsislandshd.ie](http://www.jacobsislandshd.ie)

## 1.9 TYPOGRAPHICAL ERRORS

Every effort has been made to ensure that the content and findings of this EIAR is consistent and error free. However, it is acknowledged that some minor grammatical/spelling and typographical errors may occur. These typographical minor inconsistencies are unlikely to result in any material impacts on the overall findings and conclusions of the EIAR.



## CHAPTER 2 PROJECT DESCRIPTION

### 2.1 INTRODUCTION

The EIA Directive requires that an EIAR should provide an overview of:

- the location, site, design, size, etc.;
- the physical characteristics of Project (including any demolition or land-use requirements);
- the characteristics of the operational phase of the Project;
- any residues, emissions, or waste expected during either the construction or the operational phase.

### 2.2 DESCRIPTION OF THE PROJECT

The proposed development comprises the construction of a Strategic Housing Development of 489 no. apartments, creche and offices in 5 no. buildings ranging in height from part-1 to part-8 no. storeys over lower ground and semi-basement podium levels. The development will contain 1 no. studio, 161 no. 1 bedroom apartments and 327 no. 2 beds.

Blocks 12 and 13 will contain ancillary commercial areas including a creche (381 sq m) and offices (4,112.4 sq m). The development will also contain supporting internal resident amenity spaces (576 sq m) and external communal amenity spaces.

- Block 11 is part-3 to part-6 no. storeys over semi-basement podium and lower ground levels and will contain 101 no. apartments.
- Block 12 is part-1 to part-4 no. storeys over undercroft car parking and lower ground level office building (4,112.4 sq m) comprising 2,934 sq m of office floor area.
- Block 13 is part-2 to part-8 no. storeys over lower ground levels and will contain a crèche over 2 no. levels (381 sq m) and 39 no. apartments.
- Block 14 is part-3 to part-6 no. storeys over lower ground level and contains 130 no. apartments.
- Block 15 is part-3 to part-6 no. storeys over semi-basement, podium and lower ground level and contains 219 no. apartments and ancillary resident amenity spaces (576 sq m).

The proposed development also provides for hard and soft landscaping, boundary treatments, public realm works, car parking, bicycle parking, bin stores, signage, lighting, PV panels, sprinkler and water tank, substations, plant rooms and all ancillary site development works above and below ground. Access will be provided from the existing Jacob's Islands Spine Road/Longshore Avenue.

The subject lands are situated within the Cork City boundary and zoned for 'Mixed-use Development' in the Draft Cork City Development Plan 2022 - 2028 confirming their suitability for mixed-use development. Figure 2-1 below illustrates the proposed layout.



Figure 2.1 Proposed Development Layout

**Other Planned Development**

As indicated in Figure 2-1, the proposed development forms part of a masterplan area, and represents the second phase of development. The first phase to the north is currently the subject of a planning application for a hotel and offices (22/40809 refers), with the proposals for the subject site, complementing this with the inclusions of proposed residential, creche and office uses. In addition, an SHD has been permitted in adjacent lands (Reg. Ref. ABP-301991-18, as amended by ABP-310378-21) for 437 no. residential units, retail space and childcare facility.



Figure 2.2 Masterplan Area

## 2.3 DESCRIPTION OF CONSTRUCTION PHASE

### 2.3.1 CONSTRUCTION PROGRAMME AND PHASING

Construction access to the site will be provided via the Jacobs Island Spine Road. The proposed development will be constructed on a phased, block-by-block basis from North-East to South-West. The construction period of the various blocks, ranges from 18 – 36 months, and it is envisaged that there will be overlapping of phases. It is estimated that first occupation on the site will be 2025. Construction will involve the provision of temporary construction compounds. Construction staff parking area may be located off-site and away from the site compound, in which case appropriate pedestrian access measures will be put in place.

The proposed site compound, as depicted Figure 2.3, will contain:

- Site offices, canteen and toilet / changing facilities c/w temporary water supplies and wastewater treatment unit.
- Secure compound and containers for storage of materials and plant.
- Temporary vehicle parking areas.
- Contained area for machinery refuelling and construction chemical storage.
- Contained area for washing out of concrete and mortar trucks.
- An automatic wheel-washing unit shall be installed and maintained at the entrance to the site. This will be

available for use at all times. Maintenance will include for cleaning out of the equipment and disposal of any material gathered within. The required equipment for supplying water and power to the wheel washing facility shall be made available and maintained in good working order. At the end of the construction phase, the wheel washing facilities shall be removed from site.

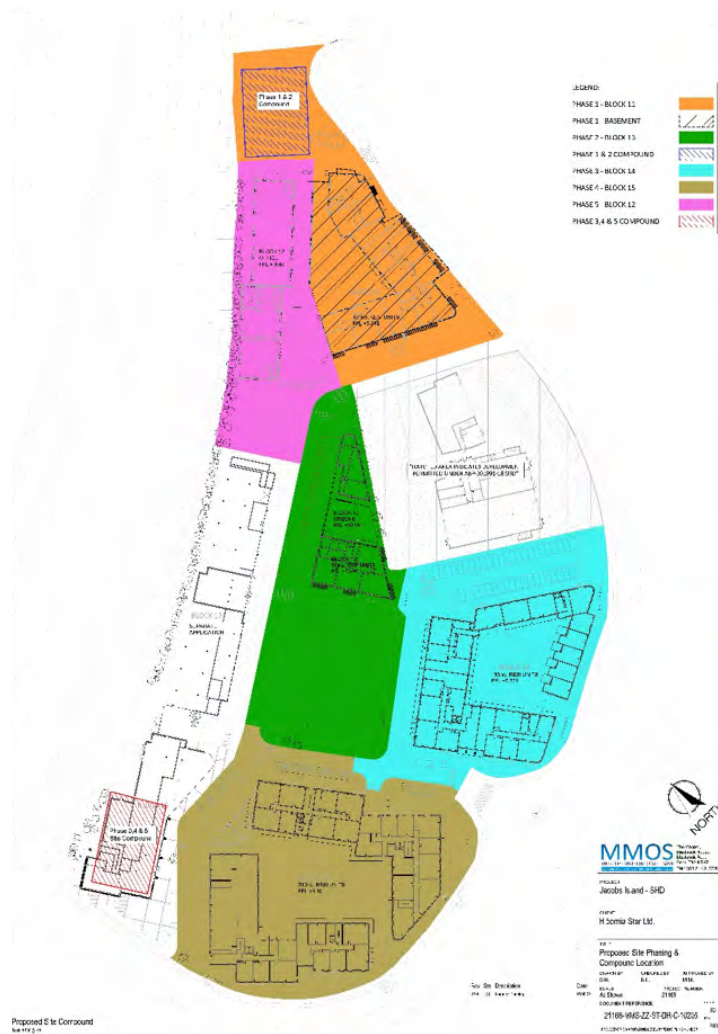


Figure 2.3 Phasing and Compound Plan

### 2.3.2 WORKING HOURS

Construction works will occur within the hours outlined below.

- 07.30am – 06.00pm\* (Monday – Friday inclusive)
- 07.30am – 4.00pm\* (Saturday)

\* Subject to the agreement of the Local Authority, exceptional out-of-hours working may be required for critical elements of work need to be advanced. Any such arrangements will be agreed in advance with the Local Authority.

Traffic generated by core construction personnel will be mainly during the off-peaks and will not have a significant adverse impact on the road network.

### 2.3.3 CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Chapter 5 and the CEMP note that heavy goods vehicle truck movements into and out of the site are expected to peak during the basement excavation works and large concrete pours. The excavated material will be relocated internal within the site and will not necessitate external vehicular movements. Large concrete pours will be concentrated to within an individual 24-hour period. People movements in and out of the site will range from c. 20 to c. 70 at the different stages of construction.

A Construction Traffic Management Plan (CTMP) will be prepared in advance of the works and will be submitted to the planning authority in advance of the works commencing on site. This will provide detail in relation to construction access, delivery routes and times of delivery in the plan.

## 2.4 DESCRIPTION OF OPERATIONAL PHASE

### 2.4.1 RESIDENTIAL DEVELOPMENT

An overview of the key statistics of the proposed residential development is provided in Table 2.1, with the proposed layout indicated in Figure 2.1.

*Table 2.1 Key Statistics of Proposed Residential Development*

KEY FIGURES OF PROPOSED SHD DEVELOPMENT	
NO. OF UNITS	489
SITE AREA	3.95 hectares
DEVELOPABLE SITE AREA	3.55 hectares
DENSITY	137.7 units/hectare (developable area)
PLOT RATIO	1:1.3
OPEN SPACE PROVISION	4,350m <sup>2</sup> (12.3%)
CRECHE DETAILS	380.6 m <sup>2</sup> (53 child places)
TOTAL RESIDENTIAL CAR PARKING SPACES	246 + 6 car club spaces
TOTAL RESIDENTIAL BICYCLE SPACES (INCLUDING CRECHE)	819 (residents), 245 (visitor), 4 (creche) - Total 1068
TOTAL CRECHE CAR PARKING SPACES	6
ACCESS	Access off the existing Jacob's Island Access Road

### 2.4.2 OFFICE DEVELOPMENT

The proposed development includes a 5 storey office development in Block 12, to the north of the site. The office development includes a gross internal floor area of 4,143.4m<sup>2</sup> office space, 37 no. surface car parking spaces and 32 no. undercroft parking spaces. An overview of the key statistics of the proposed residential development is provided in table 2.2 as shown.

*Table 2.2 Key Statistics of Proposed Office Development*

KEY FIGURES OF PROPOSED SHD DEVELOPMENT	
SITE AREA	3.95 hectares
DEVELOPABLE SITE AREA	3.55 hectares
OFFICE FLOOR AREA	4,112.4 sqm (net) 2,934 sqm (net)
NO. OF CAR PARKING SPACES	69 (32 undercroft, 37 surface)
NO. OF BICYCLE PARKING SPACES	80 no. spaces serving office building
ACCESS	Access off the existing Jacob's Island Access Road

### 2.4.3 PROPOSED CONNECTIVITY/ROAD WORKS

As referenced above, the proposed development utilises the existing Jacob's Island Spine Road to provide vehicular access for both the residential and office elements. The main vehicular access to Jacob's Island is via the grade separated Junction 10 of the N40 South Ring Road which allows access to the N40 in both directions as well as to Mahon along the R852 Mahon Link Road. Access to the proposed development will be via 4 no. entrances off the Spine Road, including one permitted under ABP-301991-18 (amended under ABP-310378-21).

The proposed pedestrian and cycle links at the site will not only provide direct and convenient access to the Mahon District Centre, but also satisfy existing informal desire lines that run through the site. Proposed new pedestrian and cycle paths and shared surface routes offer a number of options for navigating through the site and linking with the adjacent River Lee/Lough Mahon Waterfront Greenway to the east and the Passage West Greenway to the west and with existing pedestrian infrastructure to access Mahon District Centre (Figure 2.4 refers). The 215 and 215A bus service, which operate at a 15-minute combined frequency, can be accessed along the Jacobs Island access road, the high frequency 202/202A bus route can also be accessed from outside of the nearby Mahon Point Shopping Centre. The Cork Metropolitan Area Transport Strategy (CMATS) makes provision for new enhanced BusConnects routes, and longer term, provision of a high frequency Light Rail Transit (LRT) network, which will significantly improve the public transport service of the Mahon neighbourhood into the future.





Figure 2.4 Connectivity Map

#### 2.4.4 PROPOSED LAYOUT & LANDSCAPE STRATEGY

The masterplan for the subject site and the adjoining lands to the north (currently subject to a planning application for a hotel and office – planning ref 22/40809 ) was developed in response to existing context, the original 1997 Masterplan and the 2014 Mahon LAP, 2015 Cork City Development Plan and Draft Cork City Development Plan 2022-2028. The principles of the masterplan are as follows

- Local landmark building (tower) to mark the access into Jacob's Island and Mahon.
- Strong elevation to N40 South Ring to highlight Jacob's Island and Mahon's Commercial Hub.
- Buildings organised to facilitate permeability through the site, especially in regard to the existing pedestrian desire lines.
- Noise mitigation measures integrated into the masterplan: positioning of less-sensitive uses adjacent to the N40, to act as noise barrier for the rest of the site and enhance the residential amenity.
- Office and hotel uses considered suitable in this location: facades can be designed in efficient ways to protect internal spaces from noise.
- Varying levels across the site mitigated by central open space and level changes integrated into building designs.
- Strong frontages line to all streetscapes, defining character and ensuring overlooking and activity within the public realm.

The landscape design rationale for the proposed development is based on the following principles:

- Permeability, with connection to the surrounding built environment and to the wider Lee to Sea pathway and Joe McHugh Park,
- The development of a strong central open space which will develop as a focal point for residents
- A coherent design which physically and visually connects the open spaces,
- The provision of a strong visual landscape which provides year-round interest
- The development of communal amenity areas which can cater for passive and active recreation for all abilities and age groups.
- The creation of 'green streets' and strong landscape buffer areas between the public and private realm.

The proposed layout, pedestrian links, amenity areas/walks and landscaping treatments ensures that the proposed development will not only provide for the amenities of future residents of the scheme, but also serve as a local 'destination' in its own right, benefiting the existing residents of the Jacob's Island.

#### 2.4.5 SITE SERVICES & INFRASTRUCTURE

Chapters 5 and 6 of this EIAR and the Engineering Infrastructure Report prepared by MMOS Consulting Civil & Structural Engineers (Appendix 2-3) provide details on the following proposals:

- The internal estate roads have been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS), with separate active travel routes through the site segregated from traffic along the main routes running parallel to the liner park. Some of the more minor routes having a shared use function.
- The proposed surface water drainage system is in accordance with the Greater Dublin Strategic Drainage Study (GSDSDS), in that attenuation is not required where the point of outfall is into an estuary. It adheres to Sustainable Urban Drainage Systems (SUDS) principles through the provision of interception storage in green roofs, podium landscaping, hydrocarbon interceptors, non-return valves utilised in connections to the existing drainage network, tree pits, swales, soakaways, and another SUDs measure will be considered following an onsite infiltration tests.
- The foul drainage for the proposed development will be drained and gathered in stacks below basement floor level and directed to the proposed new foul network onsite, which is proposed to discharge to the existing foul sewer manholes. Irish Water has confirmed that there is sufficient capacity to adequately process the additional operational demand of the proposed development.
- The proposals for the water supply will involve taking a feed from the existing watermain located outside the site running along the access roads. Sluice valves will be provided at appropriate locations to facilitate isolation and purging of the system. Irish Water have confirmed the feasibility of this and require the provision of an onsite water storage tank to satisfy the 24-hour water demand storage requirement to cater for possible shut-downs in the system.

#### 2.4.6 FLOOD RISK

A Site-specific Flood Risk Assessment was undertaken by MMOS Consulting Civil & Structural Engineers which concluded that the subject lands can be defined as Flood Zone C category and the proposed uses are appropriate within this category.

## 2.5 IMPACT ASSESSMENT

### 2.5.1 DO-NOTHING SCENARIO

A 'do nothing scenario' will result in no predicted impacts at the subject lands, and the site would remain in its existing undeveloped brownfield state. The proposed public realm works including footpaths, cycles lanes and enhanced connectivity would not occur.

Over time, in the 'do nothing scenario' the subject lands would remain undeveloped. It is considered likely that the zoned lands to the north, (currently subject to application planning ref 22/40809) will be developed for hotel and office use, resulting in an increasingly urban setting in the area.

If the proposed development of 489 no. units does not proceed the population of Mahon and the wider city will continue to be adversely impacted due to housing shortages. It will result in the continuation of the recent trend of underperformance of the Study Area in terms of population growth. With a growth rate of 2.7% in the last intercensal period, this designated 'Strategic Growth' area experienced lower growth than the city as a whole, contrary to national and regional policies of co-locating employment, public transport and population growth.

Similarly, in the 'do nothing' scenario, the lands will remain inaccessible for public recreational use. The potential public health benefits and Greenhouse Gas reduction arising from the increased use of sustainable travel, due to the proposed enhanced pedestrian and cycling connectivity through the site, will not ensue. Nor will the proposed enhancement of public facilities and amenities in the form of public open space and a creche. Notwithstanding the above, in this scenario there will be no additional impacts on the receiving environment or on population and human health factors.

Over time it is considered the do-nothing scenario will result in an inefficient use of serviced lands, which will have convenient access to public transport opportunities and local amenities.

### 2.5.2 CONSTRUCTION PHASE

The construction phase will be short-term in nature and will be implemented in accordance with the requirements of the accompanying CEMP (Appendix 2.1 refers). Without the implementation of the proposed mitigation measures, the construction stage of the development could result in potential significant indirect, cumulative and residual effects on the surrounding environment such as impacts on the local road network, potential ground/water contamination, noise, vibration, dust, air quality, daylight and sunlight impacts, pollution and waste management.

### 2.5.3 OPERATIONAL PHASE

Once constructed, the proposed development will be permanent in nature. The proposed development will result in the construction of an additional 489 no. residential units, 4,112.4m<sup>2</sup> of office space and a 53 no. child place creche.

The 2016 Census confirms that the average household size of the Mahon neighbourhood is c. 2.82 no. persons per household which translates that the proposed development may provide for an uplift in population of approximately 1,379 no. persons consistent with adopted planning policy objectives of concentrating population growth around high frequency public transport links in existing settlements. Alongside this the proposed provision of adjacent employment and residential uses is in line with national and local policies about the co-location of these uses to encourage sustainable travel patterns. It will also enable the sustainable consolidation of the existing employment hub of the Mahon through clustered growth.

The proposed residential development will result in several positive effects in the local area by providing sustainable housing units which will serve under-catered for aspects of the current housing market and address the current housing shortage in the Metropolitan Cork Area. It should be noted that the average household size in the Mahon area at 2.8 persons per household is significantly above the city and state average and represents the dominance of the traditional, suburban house type in the area.

The development will support the continued operations of local public transport routes and justify future improvements and investment in local bus routes and proposed Light Rail Transit identified in CMATS.

The proposed increase in population has potential for significant effects on the demand for local services such as water, wastewater, roads, childcare/educational, and on recreation and amenity provision locally without appropriate mitigation measures. When assessed cumulatively with other developments taking place in the area (as detailed in Chapter 1 of this EIAR), the proposed development will result in the increase in housing stock and population in the areas and local employment opportunities. It will also have a positive impact to the local pedestrian and cyclist environment as well as enhancing access to childcare, open space amenity areas and public transport opportunities.



## CHAPTER 3 ALTERNATIVES CONSIDERED

### 3.1 INTRODUCTION

Article 5(1) of the Directive 2011/92/EU, as amended by Directive 2014/52/EU states that.

d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

Annex IV point 2 expands further.

2) A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

Article 94 and Schedule 6, paragraph 1(d) of the Planning and Development Regulations 2001, as amended, requires the following information to be furnished in relation to alternatives:

“(d) 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.”

The purpose of this Chapter is to describe the reasonable alternatives considered by the developer, including alternatives considered through the design and consultation phases of the project, taking into account and comparing environmental effects and illustrating the manner in which, and reasons for, choosing the proposed development.

Regarding ‘Reasonable Alternatives’, the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment’ (2018) states that:

“The Directive requires that information provided by the developer in an EIAR shall include a description of the reasonable alternatives studied by the developer. These are reasonable alternatives which are relevant to the project and its specific characteristics. The developer must also indicate the main reasons for the option chosen taking into account the effects of the project on the environment.

Reasonable alternatives may relate to matters such as project design, technology, location, size and scale. The type of alternatives will depend on the nature of the project proposed and the characteristics of the receiving environment. For example, some projects may be site specific so the consideration of alternative sites may not be relevant. It is generally sufficient for the developer to provide a broad description of each main alternative studied and the key environmental issues associated with each. A ‘mini- EIA’ is not required for each alternative studied.”

Further the 2022 Guidelines are also instructive in stating:

“Analysis of high-level or sectoral strategic alternatives should not be expected within a project level EIAR ... It should be borne in mind that the amended Directive refers to ‘reasonable alternatives... which are relevant to the proposed project and its specific characteristics’”.

This chapter provides an outline of the main alternatives examined throughout the design and consultation process to indicate the primary reasons for choosing the proposed development, considering and providing a comparison of the environmental effects.

## 3.2 ALTERNATIVE LOCATIONS

As stated above, regarding alternative locations, Section 3.4.1 of the 2022 EPA Guidelines, recognise that “in some instances some of the alternatives described below will not be applicable– e.g. there may be no relevant ‘alternative location’...”.

The subject lands are situated in Jacob’s Island, within the South Mahon suburb of Cork City. These lands in conjunction with the adjacent lands to the north, are the only zoned lands within the settlement in the ownership or control of Hibernia Star Limited. Planning application 22/40809 - for an office and hotel development is currently being determined by Cork City Council with regard to the adjacent lands to the north.

The Draft Cork City Development Plan 2022 - 2028, has been subject to Strategic Environmental Assessment which will have taken into account the environmental considerations associated, for example, with the cumulative impact of an area zoned for development on a sensitive landscape.

We note the 2022 EPA Guidelines, which state.

‘Analysis of high-level or sectoral strategic alternatives cannot reasonably be expected within a project level EIAR... It should be borne in mind that the amended Directive refers to ‘reasonable alternatives... which are relevant to the proposed project and its specific characteristics’.

## 3.3 DO-NOTHING ALTERNATIVE

In consideration of a ‘do nothing’ scenario on the site, the following would result:

- Serviced and zoned lands, within the rapidly growing, south-eastern suburb of the Cork City would remain undeveloped and in private ownership, in their current disused form.
- Opportunities to address the existing unsustainable commuter travel patterns in Mahon by co-locating residential and employment development would not be realised.
- The lack of passive surveillance which currently pertain along the existing internal access road would remain. Security issues relating to the underutilised current state of the lands would continue to pose risks.
- The ‘do nothing’ scenario would undermine the viability of proposed and planned upgrades to the adjacent greenways and public transport (and in the longer term the planned Light Rail Transit (LRT)). The critical mass required to support these infrastructure developments would be constrained by the continued under-utilisation of these accessible lands.
- The public realm and public open space provision associated with the proposed development would not be delivered, with an associated loss to the public amenity in the Mahon area.

- Enhanced pedestrian and cycling connectivity via the formalising of existing informal desire lines through the site of would not be delivered.

A “do-nothing” scenario is considered to represent an inappropriate unsustainable and inefficient use of these serviced lands in this highly sustainable location.

Over time, in the ‘do nothing scenario’, the subject lands would remain undeveloped, overgrown and neglected and predominantly inaccessible for public use. It is considered likely that the zoned lands to the north, (currently subject to application reference 22/40809) will be developed for hotel and office use, as will the permitted block 10 to the east of the site, with a crèche and a retail unit at ground floor level, resulting in an increasingly urban setting in the area. The ‘do-nothing scenario’ over time will also result in the population of Mahon and the wider city continuing to be adversely impacted due to housing shortages. It will result in the continuation of the recent trend of underperformance of the South Mahon area in terms of population growth.

A “do-nothing” scenario is considered to represent an inappropriate unsustainable and inefficient use of these serviced mixed-use zoned lands within the city boundary.

### 3.4 ALTERNATIVE USES

The subject lands are identified as being within an area of ‘ZO 05 Mixed Use’ zoning in South Mahon in the Draft Cork City Development Plan 2022-2028. The Draft Plan states that this zoning facilitates a dynamic mix of uses which will interact with each other creating vibrant urban areas with residential, employment and other uses.

In assessing the most suitable land uses at the subject site, the long planning history of Jacob’s Island was had regard to. Since 1997 two planning permissions have been granted on the site for mixed use development. Consideration was given to the site’s existing context, which includes residential development to the south and east, with lands to the north currently subject to a planning application for hotel and office use (CCC application reference 22/40809). The ground floor of the permitted block 10 to the east includes a crèche and a retail unit. Immediately beyond the N40 to the north is the Mahon District Centre and a number of employment hubs in close proximity.

The site currently benefits from excellent public transport provision which is earmarked for enhancements and is in close proximity to 2 no. greenways, rendering this a highly connected and accessible location.

It is not considered that land-uses such as large retail floor-area or industrial development would be appropriate, given the sites proximity to existing residential properties and Mahon District Centre and the permitted retail use in the adjacent block 10. It is also considered that an alternative consisting entirely of open space, recreation, community or education uses would not reflect the most efficient use of the lands, due to the sustainability of the site.

The provision of high-intensive employment, industrial or predominantly open-space development is also inconsistent with the planning policy objectives for this location as outlined in the Draft Plan. In this context, the proposed mixed-use residential and office development would contribute towards addressing Mahon’s existing and future residential needs, while allowing for the expansion of its role as a strategic employment area. In this context it comprises the most appropriate land-use alternative of the lands, and is in accordance with the proper planning and sustainable development of the area.

### 3.5 ALTERNATIVE LAYOUTS

This section explores the design evolution of the individual phases from early design stage to the alternatives explored in response to engagement with Cork City Council and An Bord Pleanála (refer Appendix 3.2), through to the final iteration as proposed as part of the current applications.

#### 3.5.1 ALTERNATIVE A – JULY 2021

A Section 247 pre-application consultation meeting took place on 29th July 2021 with Cork City Council (ref 172/21). The layout presented at the Section 247 meeting is illustrated in Figure 3.1 as shown.



Figure 3.1 Alternative A



While the Masterplan included proposals for the wider area, Alternative A for the subject site comprised the construction of 577 no. residential units with a mix of studio, 1 bedroom, 2 bedroom and 3 bedroom apartment units. In addition, 4,500m<sup>2</sup> of office space was proposed. An overview of the key statistics of Alternative A is summarised in Table 3.1 as shown.

*Table 3.1 Alternative A – Key Statistics*

<b>KEY DATA OF ALTERNATIVE A</b>	
TOTAL SITE AREA	3.6 hectares
NO. OF RESIDENTIAL UNITS	577 no. units
BUILDING FOOTPRINT	14993m <sup>2</sup>
SITE COVERAGE	41%
RESIDENTIAL DENSITY	159.4 no. residential units per hectare
HOUSING MIX	31 no. studio apartment units - (5.4%) 238 no. 1 bedroom apartment units - (41.2%) 266 no. 2 bedroom apartment units - (46.1%) 42 no. 3 bedroom duplex apartment units - (7.3%)
PUBLIC OPEN SPACE (RESIDENTIAL AREA)	3690 m <sup>2</sup> - 10.2% of site area
COMMUNAL OPEN SPACE	4900m <sup>2</sup>
CAR PARKING (RESIDENTIAL)	285 car spaces
CAR PARKING (OFFICES)	50 car spaces
OFFICE DEVELOPMENT	4500m <sup>2</sup>
TOTAL SITE AREA	3.6 hectares
NO. OF RESIDENTIAL UNITS	577 no. units
BUILDING FOOTPRINT	4993m <sup>2</sup>

At the Section 247 meeting Cork City Council were generally positive towards the proposal, raising the following items that they considered may require further development:

- Relationship of blocks' ground floor layout with street
- Relationship between private and communal open space
- Apartment duplex block frontage

- Apartment design layout, dual aspect and adequate light
- Visual interest from N40
- Noise from N40
- High number of surface car parking spaces
- Advised against formal playgrounds, in favour of informal areas
- Traffic impact

### 3.5.2 ALTERNATIVE B – MARCH 2022

A Tripartite meeting in accordance with Section 5 of the Planning and Development (Housing) and Residential Tenancies Act 2016 took place on 4th March 2022 with representatives of the developer, planning authority and An Bord Pleanála. The layout presented at the tripartite meeting is illustrated in Figure 3.2 as shown.



Figure 3.2 Alternative B

The design as presented had been revisited following the Planning Authority's observations made during the Section 247 pre-application consultation process, including:

- Noise modelling and initial assessments were received from AWN Consulting Limited subsequent to the S247 consultation and this resulted in alterations to the proposed Masterplan. In response to the noise assessment the proposed residential and commercial uses on the overall Masterplan lands were swapped. The revised Masterplan locates the less vulnerable hotel and offices uses adjacent to the N40 and the more noise sensitive residential uses within the site itself, where they can benefit from a naturally quieter environment;
- The location of commercial uses, along the N40, also provides a strong urban edge to the N40;
- The number of proposed residential units and associated density have been reduced and the office floor area has also been reduced;
- A creche has been included;
- The urban block layout has been modified to make provision for a series of public parks which support pedestrian linkages and reflect the pedestrian desire lines between the entrance to the island and Joe McHugh Park;
- Residential buildings and their associated communal spaces have been organised to provide strong frontage to streetscapes;
- Clear definition of public, communal and private spaces have been incorporated;
- The surface parking quantum has been revisited and reduced; and
- Building forms have been re-designed to relate to the existing and permitted development. A playful, staggered block arrangement to the very north of the proposal echoes the language of the permitted development under SHD ABP-301991-18, and blocks further to the south of the proposal introduce a new architectural language establishing a distinct sense of place for this phase of Jacob's Island, defining strong streetscapes and public spaces.

Alternative B, as detailed in the key statistics in Table 3.2, evolved as a result of these amendments and comprised a development of 498 no. residential units (reduced from 577), again with a mix of studio, 1 bedroom, 2 bedroom and 3 bedroom apartment units, however, the 2 bedroom units were now the predominant type. In addition, 4,073 m<sup>2</sup> of office space was proposed, reduced from 4500m<sup>2</sup>, with provision for a creche now included. These reductions are reflected in the overall density of the proposed development which was reduced from 159.4 units/hectare to 147.8 units/hectare. Similarly, the site coverage reduced from 41% to 31%. To address the Council's concerns the surface parking quantum was reduced from 165 no. spaces to 119 no. spaces. An overview of the key statistics of Alternative B is summarised in Table 3.2 as shown.

Table 3.2 Alternative B

KEY DATA OF ALTERNATIVE B	
TOTAL SITE AREA	3.95 hectares
NO. OF RESIDENTIAL UNITS	498 no. units
BUILDING FOOTPRINT	14993 - 10366m <sup>2</sup>
SITE COVERAGE	31%
RESIDENTIAL DENSITY	147.8 no. residential units per hectare
HOUSING MIX	3 no. studio apartment units - (0.6%) 161 no. 1 bedroom apartment units - (32.3%) 327 no. 2 bedroom apartment units - (65.7%) 7 no. 3 bedroom duplex apartment units - (1.4%)
PUBLIC OPEN SPACE (RESIDENTIAL AREA)	3616 m <sup>2</sup> - 11.6% of site area
COMMUNAL OPEN SPACE	3442m <sup>2</sup>
CAR PARKING (RESIDENTIAL)	259 car spaces
CAR PARKING (OFFICES)	74 car spaces
OFFICE DEVELOPMENT	4073m <sup>2</sup>
CRECHE DEVELOPMENT	381 sq m
TOTAL SITE AREA	3.95 hectares
NO. OF RESIDENTIAL UNITS	498 no. units

### 3.5.3 ALTERNATIVE C – JUNE 2022

Alternative C is the proposed development for which permission is sought pursuant to this application. The proposed layout is illustrated in Figure 3.3 as shown.



Figure 3.3 Alternative C

It represents a refinement of Alternative B based on the feedback from the Tripartite meeting with An Bord Pleanála ABP (ABP- 311818-21) and Cork City Council. The following are the considerations which influenced the final design.

- Further consideration required of the integration of the proposed design with those permitted and proposed developments in the immediate vicinity;
- Further consideration required of the architectural approach to Blocks 11- 15 and interaction of the ground floor layouts and the public realm, specifically the movement and flow of pedestrians/cyclists within the carparking strategy and open space design; and
- Further consideration required regarding the creation of a sense of place within the new development.

The layout has evolved through the various alternations and layout revisions culminating in the Alternative C. The number of residential units has been slightly reduced to 489 no. from the 498 no. that was presented at pre-consultation stage and the 3 bedroom duplex apartment units have been omitted. There is a consequent slight

decrease in the density of the scheme from 147.8 units/hectare to 137.7 units/hectare. However, the building footprint and net site coverage have increased, the latter from 31% to 42%. The public open space has been slightly increased and car parking is now predominantly under podium or undercroft (67%), with provision being made for car club spaces. The communal open space of Block 15 has been relocated to the north-west of the block to provide active frontage along the pedestrian desire line that runs through the site. Alongside this, the relocated amenity space, counterbalances and acts in conjunction with the proposed hotel plaza area (Cork City Council Planning Application 22/40809) to animate the main access point to the scheme. A series of character areas have been defined across the scheme, all linked by the central 'Park' area. These areas range in scale and function, from the 'N40 South Link Road' area to 'Local Streets' area, with a variety of public and communal open spaces uses to define their character.

*Table 3.3 Alternative C*

KEY DATA OF ALTERNATIVE C	
TOTAL SITE AREA	3.95 hectares
NO. OF RESIDENTIAL UNITS	489 no. units
BUILDING FOOTPRINT	14990 m <sup>2</sup>
SITE COVERAGE	42%
RESIDENTIAL DENSITY	137.7 no. residential units per hectare
HOUSING MIX	1 no. studio apartment units - (0.2%) 161 no. 1 bedroom apartment units - (32.9%) 327 no. 2 bedroom apartment units - (66.9%)
PUBLIC OPEN SPACE (RESIDENTIAL AREA)	4350 m <sup>2</sup> - 12.3% of site area
COMMUNAL OPEN SPACE	3470m <sup>2</sup>
CAR PARKING (RESIDENTIAL)	246 car spaces
CAR PARKING (OFFICES)	75 car spaces
OFFICE DEVELOPMENT	4112.4m <sup>2</sup>
CRECHE DEVELOPMENT	380m <sup>2</sup>

### 3.6 COMPARISON OF ENVIRONMENTAL IMPACTS – CONSTRUCTION PHASE

This section provides a summary of the comparison of environmental impacts during the construction phase between the various alternatives for development on the subject lands outlined above.

### 3.6.1 TOWNSCAPE & VISUAL

It is not considered that the townscape and visual considerations differ significantly between the various alternatives, which all require similar levels of bulk excavation and removal of existing vegetation. The reduction in unit numbers, from 577 to 489 no. units, between Alternative A to Alternative C may result in a slight reduction in the construction visual impacts, however, this is not considered to be significant in the wider context of the development.

### 3.6.2 TRAFFIC & TRANSPORTATION

Due to the smaller number of residential units in Alternative C compared to Alternative A, it is likely that Alternative C would generate less construction traffic than Alternative A and a modest reduction from Alternative B. The short-term removal of pedestrian desire lines though the site may impact on connectivity. However, this impact is consistent through all alternatives. The construction mitigation measures identified in the CEMPs (ref Appendix 2.1) will ensure that any impacts will be localised, not significant in nature and short-term in duration.

### 3.6.3 SERVICES, INFRASTRUCTURE & UTILITIES

It is not considered that services, infrastructure and utilities considerations differ significantly between the various alternatives described. The decrease in the number of residential units between Alternatives A-C, coupled with the smaller quantum of office floor space in the latter alternatives will result in a lower demand for connections to services and utilities. However, in the context of the wider development, this is not considered to be significant.

### 3.6.4 LAND, SOILS & GEOLOGY

Similarly, it is not considered that land, soils and geology considerations differ significantly between the various alternatives described. The site coverage in Alternative B is c. 10% less than the other alternatives, potentially, requiring slightly less excavation works and piling. While the percentage of public open space has increased from 10.2% to 12.3% as the design evolved, also potentially impacting the amount of piling and excavation required. However, in the context of the wider development, these variations are not considered to be significant.

### 3.6.5 WATER & HYDROLOGY

It is not considered that water (hydrology & hydrogeology) considerations differ significantly between the various alternatives described. The principles of the flood defence, surface/foul water strategies have remained relatively consistent across all alternatives proposed.

### 3.6.6 BIODIVERSITY

It is not considered that biodiversity considerations differ significantly between the various alternatives described. Detailed construction mitigation measures were developed as the project evolved and are detailed in the accompanying construction management reports.

### 3.6.7 NOISE & VIBRATION

In the absence of appropriate mitigation measures, noise and vibration levels during construction may decrease from Alternative A - C due to the proposed decrease in housing unit numbers and office floor area. Overall, in the context of the wider development, these differences are not considered to be significant. As detailed in the CEMP, noise and vibration limits will be rigorously monitored throughout construction and will not exceed the standards outlined in the CEMP. It is not considered that noise and vibration considerations differ significantly between the various alternatives described.



### 3.6.8 CULTURAL HERITAGE

It is not considered that cultural heritage considerations differ significantly between the various alternatives described. The design of all three alternatives has been informed by the presence of the cellar, originally associated with Lakeland House, at the north of the site. Its retention in situ with a 10m buffer zone has been a consistent feature of all three alternative designs.

### 3.6.9 AIR QUALITY & CLIMATE

The decrease in the proposed number of residential units and to some extent the reduction in the office floor area across the various alternatives, may result in some decrease in levels of dust emissions during construction. However, with the dust management plan and other mitigation measures enforced, it is considered that any positive impacts relevant to air quality and climate are not significant across all alternatives.

### 3.6.10 POPULATION & HUMAN BEINGS

The decrease in the number of residential units across the various project alternatives, may result in a slight reduction in impacts relating to population and human health. These may include a shorter construction period, lower construction traffic numbers less nuisances such as noise, vibrations and dust. The differential in the number of residential units between Alternatives A-C is 88 no. units.

Although there may still be some inconveniences to the local population resultant from Alternative C, it is considered that with the proposed mitigation measures in place, that these will be temporary/short term in nature and not significant.

Table 3.4 as shown provides an objective comparison analysis of the evolution of the proposed development in context of the categories outlines above.

*Table 3.4 Comparison of Construction Impacts*

CRITERIA	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LANDSCAPE & VISUAL	=	=	=
TRAFFIC & TRANSPORTATION	X	=	=
SERVICES, INFRASTRUCTURE & UTILITIES	X	=	=
LAND, SOILS & GEOLOGY	X	=	=
WATER & HYDROLOGY	=	=	=
BIODIVERSITY	=	=	=
NOISE & VIBRATION	X	=	=
CULTURAL HERITAGE	=	=	=
AIR QUALITY & CLIMATE	=	=	=
POPULATION & HUMAN BEINGS	X	=	=

- ✓ Where it has been considered that there has been an improvement from the previous alternative
- = Where the impact is considered similar for all options
- X Where a particular option is considered to have a more negative impact on a particular aspect of the environment than other alternatives.



## 3.7 COMPARISON OF ENVIRONMENTAL IMPACTS – OPERATIONAL PHASE

This section provides a summary of the comparison of environmental impacts during the operational phase between the various alternatives outlined above.

### 3.7.1 TOWNSCAPE & VISUAL

The evolution of the proposed development from Alternative A -C, results in an enhanced landscape and visual amenity context. The provision of a larger quantum of public amenity space within Alternative C and the re-organisation of the blocks to shelter the residential and amenity areas from N40 generated noise, will enhance the quality of the scheme's amenity areas in comparison to Alternative A. Similarly, the introduction of the 9 storey pavilion will improve the security and usability of the amenity area and the counter-posing of the Block 15 communal amenity area with the hotel plaza in Alternative C will produce a balanced, landscaped entry-point to the scheme. Overall, it is considered that Alternative C will most positively impact the townscape and visual context.

### 3.7.2 TRAFFIC & TRANSPORTATION

It is also considered that Alternative C results in an improvement in traffic and transportation matters, and specifically pedestrian and cyclist connectivity by way of improvements to the streetscape and ground floor active frontage.

The introduction of a creche in Alternative B and C, may result in increased pedestrian, cyclist and car-based trips into the scheme, however, in the context of the wider mixed use character of the proposed layout, this is not considered to be significant.

### 3.7.3 SERVICES, INFRASTRUCTURE & UTILITIES

The servicing proposals with the associated slight negative impact have remained relatively consistent throughout the design phase of the proposed development. While the impact on services, infrastructure and utilities may vary slightly across the three alternatives due to the differential of 88 no. residential units, it is considered that this variation is not significant in the context of the overall development.

### 3.7.4 LAND, SOILS & GEOLOGY

It is not considered that land and soil considerations differ significantly between the various alternatives described.

### 3.7.5 WATER & HYDROLOGY

As noted in Chapter 8 of this EIAR the proposed development is several meters above the CFRAMS flood levels in the adjacent estuary, rendering flood risk unlikely. The rationale of the surface water and wastewater strategies have remained consistent throughout the duration of the project.

### 3.7.6 BIODIVERSITY

As the design and layout of the scheme has evolved from Alternative A to Alternative C, the creation of the central park, with linked areas of open space, tree retention policies and robust replacement planting strategies will result in an enhanced biodiversity and ecological context for the scheme.

### 3.7.7 NOISE & VIBRATION

Noise and vibration considerations differ significantly between Alternative A and the subsequent alternatives. In Alternatives B and C the less vulnerable hotel and offices uses are adjacent to the N40 and the more noise sensitive residential and amenity uses are consequently sheltered and benefit from a naturally quieter environment.

### 3.7.8 CULTURAL HERITAGE

It is not considered that cultural heritage considerations differ significantly between the various alternatives described. An information board is proposed in Alternative C, indicating the presence of the cellar, originally associated with Lakeland House and outlining its history. It is considered that this would result in a slight positive impact in comparison to the previous alternatives.

### 3.7.9 AIR QUALITY & CLIMATE

It is not considered that air quality and climate and considerations differ significantly between the various alternatives described. The decrease in the number of residential units across the various project alternatives, may result in a slight reduction in impacts relating to population and human health.

### 3.7.10 POPULATION & HUMAN BEINGS

The evolution of the proposed layout has resulted in a continuous improvement in terms of human health and impacts on the local population. The proposed noise impact improvements, public realm upgrades, public open space enhancements, formalisation of pedestrian and cycling desire lines, in addition to the delivery of a creche have all evolved since the project inception stage. The provision of new housing and offices has been a key focus since Alternative A. The quantum of units has decreased during the evolution of the project, however, this is offset but associated design improvements. Overall, it is considered that Alternative C would result in a slight positive impact in comparison to the previous alternatives.

Table 3.5 as shown provides an objective comparison analysis of the evolution of the proposed development in context of the categories outlines above.

*Table 3.5 Comparison of Operational Impacts*

CRITERIA	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LANDSCAPE & VISUAL	X	✓	✓
TRAFFIC & TRANSPORTATION	=	=	✓
SERVICES, INFRASTRUCTURE & UTILITIES	=	✓	✓
LAND, SOILS & GEOLOGY	=	=	=
WATER & HYDROLOGY	=	=	=
BIODIVERSITY	=	=	✓
NOISE & VIBRATION	X	=	=
CULTURAL HERITAGE	=	=	✓
AIR QUALITY & CLIMATE	=	=	✓
POPULATION & HUMAN BEINGS	=	=	✓

- ✓ Where it has been considered that there has been an improvement from the previous alternative
- = Where the impact is considered similar for all options
- X Where a particular option is considered to have a more negative impact on a particular aspect of the environment than other alternatives.

### 3.8 MAIN REASONS FOR THE OPTION CHOSEN

When all construction and operational aspects are assessed, it is objectively considered that Alternative C, consisting of 489 no. residential units, an office building, creche and extensive public realm improvements is the most appropriate and efficient alternative layout assessed. The design of Alternative C has been strongly influenced by the opinions of Cork City Council and subsequently An Bord Pleanála arising out of the Section 247 and Tripartite discussions (refer Appendix 3.2), and represents a more efficient and technically resolved development than that previously proposed in Alternatives A and B.

- Alternative C provides for an appropriate density of residential development, reflective of the site’s location at a transition between low density suburban residential developments to the south and the Mahon District Centre to the north.
- The provision of a central amenity park, has evolved into the focal point of a series of open spaces, linked by the pedestrian/cycle route that traverses the site, connecting the Joe McHugh Park to the south with Mahon District Centre to the north. A pavilion building frames this space and ensures passive surveillance.
- Alternative C provides clearer delineation between public realm and residents’ amenities.
- The usability of these open spaces and the quality of the residential amenity has been enhanced by a decision taken in Alternative B to clustering the larger commercial spaces adjacent to the N40, to act as a sound baffle for the more vulnerable residential and amenity uses to the south.
- Enhancement to the streetscape and the provision of active street frontage, introduced in Alternative C, will ensure the safety and usability of the pedestrian/cycle route in the scheme.

## CHAPTER 4 TOWNSCAPE & VISUAL

### 4.1 INTRODUCTION

The landscape and visual impact assessment describes the potential effects on the landscape character and on views from public roads, other sub-urban developments and designated landscapes arising from the proposed Strategic Housing Development (SHD) at Jacobs Island, Cork

The methodology used for the assessment follows best practice industry guidelines. It also refers to the Draft Cork City Development Plan 2022-2028 and Cork City Development Plan 2015-2021 for existing descriptions of landscape character, designated landscapes and the location of scenic routes.

### 4.2 EXISTING ENVIRONMENT / BASELINE DESCRIPTION

Site surveys assessed the character of the landscape, the most sensitive features and the visual amenity.

The Proposed Development site is located at Jacob's Island, which is located in Mahon, a Cork City suburb. Jacob's Island is one of nine sub-zones within Mahon and is located in the southeast along the shores of Lough Mahon. Jacob's Island is bounded to the north, north-west by the South Ring Road (N40) and is a relatively flat and low-lying area. The subject site encloses the existing 'The Sanctuary' residential buildings to the north and south. The southern site boundary is adjacent to the 'Long Shore' residences.

Cork County Development Plan 2014 identifies a High Value Landscape Area on Jacob's Island and this forms part of the study area. Landscape character types which have a very high or high landscape value and high or very high landscape sensitivity and are of the county or national importance are designated as High-Value Landscapes (HVL). A portion of the site falls under this designation, which stretches along the southern and eastern shore of Jacobs Island. Areas of High Landscape Value comprise one or more landscape assets identified in the Cork Landscape Study 2008. Objective 10.4 states the following "To conserve and enhance the character and visual amenity of Areas of High Landscape Value (AHLV) through the appropriate management of development, in order to retain the existing characteristics of the landscape, and its primary landscape assets. Development will be considered only where it safeguards to the value and sensitivity of the particular landscape. There will be a presumption against development where it causes significant harm or injury to the intrinsic character of the Area of High Landscape Value and its primary landscape assets, the visual amenity of the landscape; protected views; breaks the existing ridge silhouette; the character and setting of buildings, structures and landmarks; and the ecological and habitat value of the landscape."

### 4.3 POTENTIAL LANDSCAPE AND VISUAL EFFECTS

Potential effects are separated into landscape and visual effects. Landscape effects are the result of physical changes to the character of the landscape resulting from new development. Visual effects relate closely to landscape effects but concern changes in views. Twelve photomontages have been produced as a tool to support the landscape and visual impact assessment.

## 4.4 EFFECTS AT CONSTRUCTION

Construction effects will be temporary, short-term effects which occur during the construction phase only. Areas experiencing visual effects during the construction stage will vary considerably, depending on the active construction phase.

Areas experiencing townscape and visual effects during the construction stage will be experienced locally from the adjacent road network and local residents. The sensitivity of the views is generally considered Low for road users and High for residential receptors. Areas experiencing the most prominent construction effects will be residents of Jacob's Island and the N40/R852 road users where open views of the site will be possible. Beyond the immediate roads, construction effects are most likely to be associated with the visibility of construction traffic and to the upper part of the development site where cranes and scaffolding will be visible. It is considered that there will be some long-distance views of construction activity from high ground.

## 4.5 LANDSCAPE EFFECTS

The prevailing landscape character at the location of the Proposed Development will intensify further, however, the development will be in keeping with the existing surrounding permitted developments. The scale and materiality of the proposed buildings, fronting the public realm on all sides is a considered response to the existing surrounding permitted development and the opportunities presented by the site's 'place-making' opportunity. The proposal will make a positive contribution to the envisaged local built environment.

In the context of the wider area, changes will occur at a local level on the surrounding road network, particularly along N40 Road, the R852 Road, and many others within a radius of approximately 200m from the site boundary. The Proposed Development will consolidate and define the character of the area as the intensification of built elements will develop a cohesive townscape character. At the city-scale context, the development will contribute to the intensification of land use and introduce a new urban scale to the area.

## 4.6 VISUAL EFFECTS

In all views, the development introduces buildings of high design and material quality to the townscape. The buildings (in combination) generate a new urban edge along sections of the N40.

Significant visual effects will be experienced in open and partial views ranging from 200-400m from the development boundary and in particular from Jacobs Island Spine Road and adjoining residences facing the Proposed Development site. Open views and partial views will also be experienced from the N40 and the R852 overbridge between Mahon and Jacobs Island. The proposal will add a new and prominent building quarter and entry point in the northern part of Jacob's Island. It will provide structure and introduce a new urban quality to a current brownfield site. Existing and proposed boundary screen planting will obscure views of the lower portions of the Proposed Development and over time the extent of screening will increase as vegetation matures.

Visual effects beyond approximately 400m and up to 1km will reduce quickly and visibility of the Proposed Development will concentrate on the upper sections of the buildings due to intervening screening vegetation and other existing built structures. The Proposed Development will still form a new focal point in available open views, particularly in views west from Hop Island, but it will be one component and several in these views.

Long-distance views beyond 1km will be available across Lough Mahon from sections of the R610 and adjoining areas and some vistas will be experienced by residents, pedestrians, cyclists, and vehicular drivers. Elevated locations along the slopes to the south of the Lough Mahon will also recognise the Proposed Development as a new element of the overall Jacob's Island development and as an urban quarter with panoramic views.

Table 4-1 Summary of visual effects from representative viewpoint locations

RECEPTOR/ LOCATION	RECEPTOR GROUP	SUSCEPTIBILITY OF VIEWER TO CHANGE	SENSITIVITY OF VIEWER	MAGNITUDE OF VISUAL EFFECTS (AT OPERATION)	SIGNIFICANCE/ QUALITY OF VISUAL EFFECTS	MAGNITUDE / SIGNIFICANCE/ QUALITY OF CUMULATIVE EFFECTS
PHOTOMONTAGE 1	Vehicular traffic on the N40	Low	Low	Medium	Moderate / Beneficial	Medium / Moderate / Beneficial
PHOTOMONTAGE 2	Pedestrians, along the amenity path	Medium	Medium/High	Medium/High	Moderate / Neutral	Low / Slight / Neutral
PHOTOMONTAGE 3	Pedestrians, along the amenity path	Medium	High	Low	Slight / Neutral	Low / Not Significant / Neutral
PHOTOMONTAGE 4	Pedestrians, local residents	High	High	Medium/High	Moderate / Beneficial	Low / Slight / Neutral
PHOTOMONTAGE 5	Pedestrians, local residents, vehicular traffic	Medium	Medium/High	Medium	Moderate / Neutral	Low / Slight / Beneficial
PHOTOMONTAGE 6	Pedestrians, local residents	Medium	Medium	Medium	Moderate / Beneficial	Medium / Moderate / Beneficial
PHOTOMONTAGE 7	Pedestrians, along the amenity path	Medium/High	Medium	Medium	Moderate / Beneficial	Low / Slight / Neutral
PHOTOMONTAGE 8	Pedestrians, along the amenity path	Medium	Low	High	Slight / Beneficial	Low / Moderate / Beneficial
PHOTOMONTAGE 9	Vehicular traffic	Low	Low	Low	Significant / Beneficial	Low / Slight / Neutral
PHOTOMONTAGE 10	Pedestrians	Low	Low	Medium/High	Moderate / Beneficial	Negligible / Imperceptible / Neutral
PHOTOMONTAGE 11	Pedestrians, vehicular traffic	Low	Medium	Medium/High	Moderate-Significant / Beneficial	Negligible / Imperceptible / Neutral
PHOTOMONTAGE 12	Pedestrians, vehicular traffic	Low	Medium	Medium	Moderate / Beneficial	Low / Slight / Beneficial

## 4.7 CUMULATIVE LANDSCAPE AND VISUAL EFFECTS

The Proposed Development will contribute to the diversity of the character in the new urban townscape. Cumulative effects will be significant in available open views as the Proposed Development will improve the legibility of the townscape character. It will tie together a number of permitted and future developments, allowing for the development of a cohesive townscape character.

Considering the Proposed Development with the permitted and indicative adjacent future developments, the proposal will integrate with these developments and create a significant new urban quarter at Jacob's Island. The visibility of these developments in combination completes the transformation of Jacob's Island into a new part of the city at the edge of the Douglas River and Lough Mahon.

## 4.8 MITIGATION MEASURES

The core principle of the landscape design is permeability in order to connect the Proposed Development to the surrounding built environment and to the wider Lee to Sea pathway and McHugh Park. The design and layout of the public realm is essential in the creation of a built environment for this scheme. The designed landscape amenity areas offer comfort, passive supervision, ease of access, a high amenity value and a safe space for all end users. Second to the core principle established as part of the landscape design approach was the development of a palette of materials for both hard and soft landscaping.

## 4.9 OVERVIEW OF SOFT LANDSCAPE

The plant material for the Proposed Development has been chosen based on their long-term suitability and aesthetic appeal including the following:

- Suitable for the Irish climate;
- Non-invasive;
- Collectively provide visual interest all year round;
- Enhancement of biodiversity and habitat creation; and
- Be disease resistant.

## 4.10 OVERVIEW OF HARD LANDSCAPE

A coherent palette of materials was selected to compliment the proposed building façade treatment and provide a favourable public realm environment with a designed visual consistency across the site. The landscape proposal integrates the Proposed Development to the wider area.

in doing so knitting the external landscape areas together to develop an address for the developed lands.

By approaching the overall landscape design of the scheme at both macro and micro levels, the scheme will provide a landscape of high-level amenity which is workable, aesthetically appealing, and robust to work within the surrounding environment.

## CHAPTER 5 MATERIAL ASSETS – TRAFFIC & TRANSPORTATION

### 5.1 TRAFFIC AND TRANSPORTATION ASSESSMENT

The Traffic Impact Assessment (TIA) has been prepared in accordance with the Transport Infrastructure Ireland's (TII) Traffic and Transport Assessment Guidelines (2014).

#### 5.1.1 MODELLING SCENARIOS

The methodology and technical parameters were discussed with the Cork City Council during scoping, the following scenarios have been agreed to be included within the modelling:

- Opening year – 2024;
- Opening year + 5 years – 2029; and
- Opening year +15 years – 2039.

The opening year 2024 and 2029 is tested with the SHD development. For the scenario year of 2039, this will be tested with the anticipated vehicular traffic associated with the full masterplan proposals. Any modelling is indicative as the full masterplan may be subject to change. The modelling results and assumptions for the estimated full masterplan are preliminary and final counts will be confirmed at the application stage.

#### 5.1.2 COMMITTED DEVELOPMENT

The base traffic flows include classified traffic surveys undertaken in June 2017 over a three hour morning period (07:00-10:00) and three hour evening period (16:00-19:00), by IDASO, at a number of junctions in the vicinity of the site. These were discussed with Cork City Council (CCC) during the scoping meeting in July 2021 and deemed to be acceptable for use in assessing the traffic impact for the proposed development. The assessed junctions are as follows:

- Mahon Interchange (southern junction);
- Mahon Interchange (northern junction);
- Mahon Point Shopping Centre/Mahon Link Road;
- St. Michael's Drive/ Mahon Link Road; and
- Mahon Link Road/ Skehard Road.

#### 5.1.3 COMMITTED DEVELOPMENT

As a result of scoping discussions with the Transportation Department of Cork City Council, a number of developments in the Mahon area that have planning permission in place (that has not yet expired) have been incorporated into the Transport Assessment undertaken in this EIAR as 'committed' developments. The committed development applications are outlined below.



- Former Motorola Site (TP 09/33673 – by O'Flynn Construction) 4 storey office building – Ref. 09/33673 not built according to google earth (expired 25/04/2019). Note CCC Ref. 19/38875 scheme which includes the 09/33673 site.
- Residential Development at Eden, Blackrock, Cork (TP 16/37233 & PL 28.249400 by Piers Developments) of 141 units.
- Residential Development at Bessboro, Mahon, Cork (TP 17/37349 by Murphy Transport Ltd.) 35 units – Outline permission granted will need a subsequent application before it can be constructed.
- Jacob's Island 413 apartments and neighbourhood centre (granted in Oct 2018), permitted under An Bord Pleanála Ref. ABP 301991-18 (by Montip Horizon Ltd), also note amendment (granted in Feb 2022) for an increase in apartments from 413 to 437 no. under An Bord Pleanála Ref. ABP 310378-21.
- Bessboro warehouse holdings – 135 residential units (granted Feb 2019) - (permitted under CCC Ref. 1837820, ABP Ref 302784-18).

#### 5.1.4 THRESHOLD ANALYSIS

A threshold analysis was undertaken on all junctions across the study area. This analysis compares the base + committed traffic flows against the base + proposed development traffic flows. It is normal practice that any junction with a predicted 5% increase due to a proposed development would be modelled and tested.

The threshold analysis results for the 2024 and 2039 scenarios highlight that only the North and South Mahon Interchange junctions and the Jacob's Island Access require to be included within the junction assessment.

## 5.2 IMPACT ASSESSMENT

### 5.2.1 DO NOTHING

The 'Do Nothing' scenario incorporates the impact of committed developments on the surrounding road network with no introduction of the proposed development. Therefore, the 'Do Nothing' scenario is considered the base + committed scenario throughout this traffic and transportation assessment.

The 'Do-Nothing' scenario would mean that the N40 Mahon Interchange and the surrounding infrastructure would remain in its current state and background traffic would grow over time. Given the location of the site and its close proximity to major commercial and industrial hubs such as Mahon Point Shopping Centre, Mahon Point Retail Park and City Gate. It is reasonable to assume that a development, potentially with an equal or more intensive requirement for vehicular trips, would be established on this site at some stage in the future.

Further discussions on the 'Do Nothing' scenario are presented in Section 5.2.3.

### 5.2.2 CONSTRUCTION PHASE

Heavy goods vehicle truck movements into and out of the site are estimated in approximately 30 no. trips daily on average across the construction programme. These trips expected to peak during the semi-basement and lower ground excavation works and large concrete pours, estimated as 50 no. HGV movements daily. Note that the excavated material will be relocated internal within the site and will not necessitate external vehicular movements. Large concrete pours will be concentrated to within an individual 24-hour period.

People movement (in and out) and associated car trips during each construction stage will be circa 20no. during basement excavation stage and rising to circa 50 no. during construction with an increase to 60no. as the frame is being progressed. The numbers on site will maintain at this level during the façade construction but will increase to between 60-70 during internal M&E installation.

Generally, the trips to and from the site will be by private car and vans accommodating 1-2 workers. Some sub-contractors will use minibus transport when in larger crews, such as concrete contractors, M&E, and facades. Public transportation will also be availed of by individual workers. Typically, construction workers will remain on site from between morning start to evening time as the hours of work will be from 7:30 am to 6 pm Monday to Friday, 7.30 am to 4 pm on Saturdays, or as directed by Cork City Council. It is proposed that hours of work outside of these times will be by agreement with the local authority.

The construction impact is 'likely' and will have a 'Negative' effect in the 'medium-term' as construction period will be approximately 10 years. This likely medium-term effect during the construction stage is predicted to be 'Not Significant' as appropriate mitigation measures will be put in place to minimise the impact of construction vehicles on the surrounding road network.

### 5.2.3 OPERATIONAL PHASE

The threshold analysis results highlight that only the North and South Mahon Interchange junctions present a percentage increase in traffic above 5% and require to be included within the junction assessment. Although the N40 Mahon Interchange operates with reserve capacity available in the 'Do Nothing' and 'Do Something' scenario. Predicted queuing does not impact the N40 itself and can be accommodated within the slip lane lengths available for both the eastbound and westbound off-slips.

There is a significant increase in queue length on the Mahon Link for all years in the evening peak, the most notable increases are of 11 PCU's in 2024, 23 PCU's in 2029 and 25 PCU's in 2039. No significant increase in queuing in the morning peak.



Figure 5.1 Mahon Interchange Model 2024



Figure 5.2 Mahon Interchange Model 2029

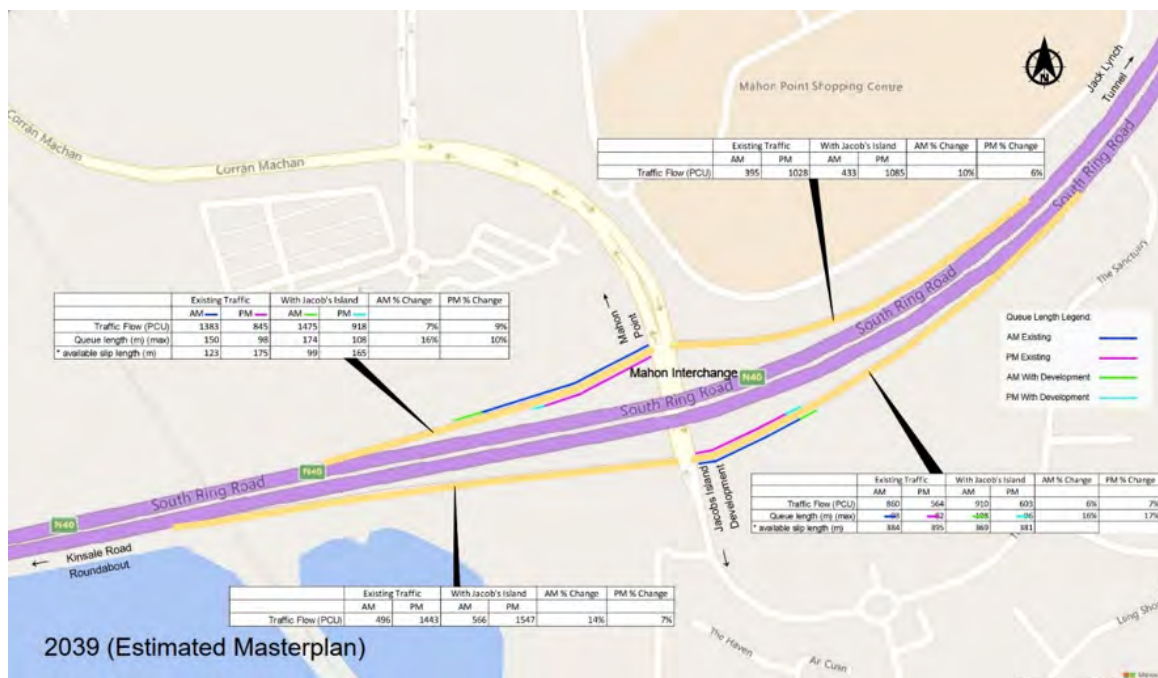


Figure 5.3 Mahon Interchange Model 2039

The detailed analysis reveals that the probability of the predicted impacts occurring during this timeframe can be described as 'likely', will have a 'Negative' effect and the impacts are predicted to be 'Permanent'. The impact of the predicted development traffic is recorded as, at worst, 'Very Significant' and 'Significant' during the evening peak in 2029 and 2039 at North and South Mahon Interchange, respectively.

#### 5.2.4 CUMULATIVE

The Jacob's Island 413 apartments and neighbourhood centre (granted in Oct 2018), permitted under An Bord Pleanála Ref. ABP 301991-18, including its amendment granted in Feb 2022 for an increase in apartments from 413 to 437 no. is a permitted development located in the immediate vicinity of the proposed development site. This and other developments (refer to Section 5.1.3) in the Mahon area that have planning permission in place have been incorporated into the analysis detailed above and are referred to as 'committed' developments. In addition, for the scenario year of 2039, the anticipated vehicular traffic associated with the full masterplan proposals have been incorporated to the traffic and transportation assessment.

Therefore, the cumulative impact of the proposed development (including the anticipated full masterplan) in addition to the committed developments have already been assessed in Sections 5.2.2 and 5.2.3.

The potential cumulative impact of the relevant plan for the area was assessed, which is considered to be the Draft Cork City Development Plan 2022 - 2028, which will come into effect in August 2022. The assessment of the potential impacts on the environment of the Draft Plan, was undertaken utilising the Strategic Housing Objectives (SEO), which are detailed in Table 5-1 of the supporting Strategic Environmental Assessment (SEA) Statement contained in Appendix 2(A) of the Draft Plan. The potential cumulative impacts of the Plan were assessed having regard to both these SEOs.

SEO Material Assets objectives as detailed in Table 5-1 and 7-1 of the Draft Plan are to:

- Make best use of the material assets of the county and promote the sustainable development of new infrastructure to provide for the current and future needs of the population.

Table 7-5 of the SEA indicates that Scenario 3, the 'Compact Liveable Growth Scenario', identified as the preferred scenario, is determined likely to improve the status of SEOs to a greater degree and have potential to conflict with the status of SEOs – likely to be mitigated to a lesser degree.

##### 5.2.4.1 CONSTRUCTION PHASE

The construction phase of these developments may coincide with the development of the proposed development, potential cumulative impacts are not expected once similar mitigation measures (Refer to Section 5.3) are implemented. The probability of the cumulative impacts on the construction phase occurring can be described as 'likely' and will have a 'Negative' effect in the 'medium-term', it is also predicted to be 'Not Significant' as appropriate mitigation measures will be put in place to minimise the impact of construction vehicles on the surrounding road network.

##### 5.2.4.2 OPERATIONAL PHASE

The probability of the cumulative impacts on the operational phase occurring can be described as 'likely' and the impacts are predicted to be 'permanent'. Any potential cumulative operational impacts will be 'Negative' and range from 'Slight' to 'Very Significant' in the scenario year of 2039.

## 5.3 MITIGATION MEASURES

### 5.3.1 CONSTRUCTION PHASE

To ensure satisfactory operation of the construction stage the following mitigation measures are proposed:

- Signage will be erected in advance to warn other pedestrian and road users of a construction site ahead. These signs will be checked and cleaned regularly so that they are maintained in a good condition;
- Inside the site boundary a clear pedestrian access will be provided to the areas of work and appropriate signage placed. Pedestrian boundary will be delineated with pedestrian barriers. Whether inside the site boundary or on the public road all plant will give way to pedestrians and will be carefully controlled by operatives and site banksman;
- Any works completed outside site boundary will be fully barriered with such work covered by a method statement and agreed in advance with the local authority. All plant driving on the public roads will be accompanied by a vehicle banksman. For works outside the boundary which may impede the traffic/pedestrians on the public road a separate traffic management plan will be completed;
- Provision of sufficient on-site parking during the construction phase to ensure no potential overflow onto the local network. The site construction compound will be able to accommodate employee and visitor parking throughout the construction period through the construction of temporary hardstanding areas;
- An automatic wheel-washing unit shall be installed and maintained at the entrance to the site. This will be available for use at all times. Maintenance will include for cleaning out of the equipment and disposal of any material gathered within. At the end of the construction phase, the wheel washing facilities shall be removed from site;
- The roads will be monitored throughout the works and a road sweeper will be employed when required for the duration should the roads become dirty;
- All deliveries must be notified to the site in advance so that the site will be organised, for the offloading and dictate which crane will be unloading. This is to ensure that delivery trucks, on entering the site, cannot block any of the public roads adjacent to the site. A banksman will be assigned to control all deliveries
- Construction traffic will be minimised during peak hours;
- Monitoring and control of construction traffic will be ongoing during construction works; and
- Any specific recommendations with regard to construction traffic management made by the Local Authority will be adhered to.

### 5.3.2 OPERATIONAL PHASE

With the objective of mitigating the potential impact of the proposed development during its operational stage, the following initiatives have been identified and subsequently form an integral part of the subject development proposals.

It is recommended to undertake discussions with the Council in advance of the full masterplan development to perform a review of the signal operations of the Mahon Interchange and Retail Park signalised junctions. It is likely that the increase in queue length on the Mahon Link highlighted in Section 5.2.3 could be reduced by linking the 2 signalised junctions, or by improving the stages or run time.

The design of the proposed development has sought to maximise the ability to provide attractive connections to the surrounding pedestrian and cycling network. Internally, dedicated pedestrian and cycling infrastructures will be provided and will connect with the existing / future pedestrian and cycling facilities in the local public road network thereby facilitating excellent pedestrian permeability.

Cycle parking has been provided at a higher rate to that proposed within the development management standards. Accordingly, this provision of cycle parking will help ensure cycling is a viable alternative mode of transport to private car travel thereby helping minimise private car trips generated by future residents.

A Mobility Management Plan (MMP) is to be compiled with the aim of guiding the delivery and management of coordinated initiatives by the scheme promotor. The MMP ultimately seeks to encourage sustainable travel practices for all journeys to and from the proposed development.

## 5.4 INTERACTIONS

Traffic and Transport has a number of interactions with other topics. The most significant interactions are between 'Climate and Climate Change' (Chapter 11) and 'Noise and Vibrations' (Chapter 10).

During the construction phase, the following aspects would interact with traffic and transport and in the absence of mitigation may give rise to likely significant effects.

- Noise and Vibration: Construction traffic may increase localised noise and vibration effects.
- Climate and Climate Change: Emissions from construction traffic may impact local air quality and climate with respect to increased emissions of greenhouse gases from vehicles.

During the operational phase the potential interactions are:

- Climate and Climate Change: Emissions from traffic associated with future occupants may affect local air quality and climate in regard to increased emissions of greenhouse gases from vehicles.

The potential significant impacts of material assets of traffic and transport have been considered within the relevant discipline and mitigation measures (Section 5.3) outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

## 5.5 RESIDUAL IMPACTS

### 5.5.1 CONSTRUCTION PHASE

Provided the above mitigation measures and management procedures are incorporated during the construction phase, the residual impact on the local existing environment will be 'medium-term' in nature and 'Negative' in terms of quality of effects. The potential residual impact of construction stage activities is predicted to be 'Slight' as there will be a small increase in HGV's on the surrounding road network due to excavation plant and dumper trucks involved in site development works and material delivery vehicles.

### 5.5.2 OPERATIONAL PHASE

The implementation of the mitigation measures outlined above, including the MMP, will ensure that the residual effect on the local existing environment is both managed and minimised. Accordingly, the potential residual impact can be described as 'Negative' but 'Slight' and will be 'Permanent'.

## 5.6 MONITORING

During the construction stage, the following monitoring exercises are proposed:

- Compliance with construction vehicle routing practices;
- Compliance with construction vehicle parking practices;
- Internal and External road conditions; and
- Timings of construction activities in terms of start / finish times.

During the operational stage occupancy surveys will be used to identify initiatives to maintain and further encourage sustainable travel characteristics.



## CHAPTER 6 SERVICES, INFRASTRUCTURE & UTILITIES

This chapter has been prepared by Martin Murphy and Bianca Leonessa of Murphy Matson O' Sullivan Consulting Civil and Structural Engineers Ltd. (MMOS) and Dalibor Bokic of EDC Engineers. It assesses the likely impacts of the proposed Jacobs Island Strategic Housing Development on the surrounding underground utilities (including watermains, foul and storm sewers, gas line, electricity, and telecommunication cables), and additionally identifies mitigation measures to minimise any impacts.

The scope of the investigation consists of a desk study and correspondence with utility providers, where applicable. Information was received from all relevant parties.

There are existing surface water and foul drainage sewers currently serving the Jacobs Island existing residential units. The surface water sewer outfalls directly into the Lough Mahon Estuary via a non-return valve. The existing foul sewer runs north of Jacobs Island and crosses the N40 towards the Mahon Pump Station. In 2013 a taking in charge process was undertaken in conjunction with Cork City Council and during this process the constructed sewage network was signed off by Cork City Council.

There is an existing watermain located along Longshore Avenue, which is currently supplying potable water to the existing buildings. The proposals for the water supply will involve taking a feed from this existing watermain. Sluice valves will be provided at appropriate locations to facilitate isolation and purging of the system. Firefighting supply hydrants and sprinkler systems within the site will be fully detailed in accordance with the requirements of the Fire Safety Certificate.

The drainage and watermain design for the proposed development follows the Irish Water Code of Practice, the Greater Dublin Strategic Drainage Study (GDSDS), and the Office of Public Works (OPW) The Planning System and Flood Risk Management Guidelines for Planning Authorities. The water services infrastructure is described in detail in the Hydrology Chapter of this EIAR.

The proposed developments' roof and hardstanding areas surface water runoff will discharge by gravity to the below ground gravity surface water sewer network. This piped surface water sewer system will outfall by gravity to the existing surface water sewer. As recognized in the GDSDS, attenuation is not required where the point of outfall is into an estuary, however, hydrocarbons interceptors are proposed for all discharge points.

The foul is to be collected beneath the ground floor slab and directed to the proposed new foul network onsite, which is proposed to discharge to the existing manholes in the Jacobs Island residential access road. It is noted that a portion of the foul sewer before a proposed foul connection is permitted under ABP-301991-18 SHD, and a wayleave will be agreed between landowner and Irish Water.

There is an ESB substation located in the middle of the proposed development and the existing underground network travels across the present site to serve existing residential units. The proposals for the electrical supply will require diversion works as the existing network travels across the site. These modifications to the existing network could be done alongside works required to allow for the new permanent infrastructure for the SHD.

There is an existing medium pressure distribution gas underground pipework around the site. It is noted that the proposed development will be mainly relying on renewable energy sources for heat energy, so the gas will most likely be used as a peak / backup energy source for the commercial buildings.



Without a coordinated engineering design approach, there is potential for a clash of below ground surface water, foul water and watermain networks as well as proposed mechanical and electrical underground services. Following good construction practice and the mitigation measures proposed in across Chapter 6 and the Construction and Environmental Management Plan, the potential impacts of the proposed development underground utilities can be considered as not significant on the existing underground utilities.

In the operational phase, the proposed development will increase foul and watermain demand to the surrounding networks. A Confirmation of Feasibility has been issued by Irish Water confirming the capacity of the existing sewers and watermains to provide the additional flow from the proposed development. Regarding the electricity, gas and telecoms supply, the distribution systems are static and, hence, no other mitigation methods are considered necessary.



## CHAPTER 7 LAND, SOILS & GEOLOGY

This chapter has been prepared by Martin Murphy and Bianca Leonessa of Murphy Matson O'Sullivan Consulting Civil and Structural Engineers Ltd. (MMOS). It describes the likely impact of the proposed Jacobs Island Strategic Housing Development on the existing site soil and local geology, and additionally identifies mitigation measures to minimise any impacts.

The methodology used for the assessment follows the EU Commission Guidance on the preparation of an EIAR, DHPLG EIA guidelines and the Draft EPA guidelines on the preparation of an EIAR, and the public consultation response provided by Geological Survey Ireland, along with the Institute of Geologists (IGI) guidance.

Site investigation results demonstrate that the site has a relatively consistent geological make up, which contains layers of made ground, alluvial deposits, glacial deposits, and reaching limestone bedrock at 8.8m below ground level or further. The site investigation report also provided information on the soil composition, concluding that all tested samples were noted as uncontaminated. However, further assessment using the most updated recommended model is advised to be undertaken prior to commencement of site works.

The predicted impacts of the proposed development in the local geology are divided between the impacts during the construction and operational phases. During the construction stage, excavation works and heavy traffic movement on site are noted as the main impacts.

In order to minimize the volumes of waste being disposed to licenced facilities, recycling and reuse of the excavated material on site will be considered for earthwork purposes where possible. During excavation works, the potential pollution from the site to the sub layers will be managed in accordance with the principals as set out in CIRIA guide C532 Control of Water Pollution from Construction Sites – Guidance for consultants and contractors. A Construction & Environmental Management Plan forms part of the planning application, and it covers the mitigation measures for the construction of the proposed extension.

It is not anticipated that there will be any operational impacts on the geology or the site users during the operational phase.



## CHAPTER 8 WATER & HYDROLOGY

This chapter of the EIAR comprises of assessment of the likely impact of the Strategic Housing Development (SHD) section of the Jacob's Island masterplan on the surrounding surface water and hydrological environments as well as identifying proposed mitigation measures to minimise any impacts.

### 8.1 EXISTING ENVIRONMENT

Assessment of the likely impact of the proposed development on the surrounding surface water and hydrological environments included:

- Review of the proposed SHD development layout and proposed drainage;
- Review of topographic survey information (available survey undertaken in 2004 and LiDAR data);
- Review of a site investigation undertaken in 1999;
- Review of information available on the Environmental Protection Agency (EPA) online mapping service;
- Review of information available on the Geological Survey of Ireland (GSI) online mapping service;
- Review of Environmentally Protected Areas proximate to the site in the National Park and Wildlife Service;
- Review of Office of Public Works (OPW) National Flood Hazard Mapping and Catchment Flood Risk Assessment and Management Studies (CFRAM) to identify potential for flood risk
- Review of Cork City Development Plan 2015-2021 and Draft Cork City Development Plan 2022-2028;
- Review of Planning Applications in the area using Cork City Council (CCC) Online Planning Applications Service; and
- Review of utility records at the site.

#### 8.1.1 EXISTING HYDROLOGICAL ENVIRONMENT

The site for the proposed SHD development is adjacent to Lough Mahon and is within Hydrometric Area 19 in the catchment of the Lee, Cork Harbour and Youghal Bay, which includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork. This site is also within the Water Framework Directive (WFD) Sub-catchment known as Glasheen (Corkcity)\_SC\_010. There are no watercourses running through the proposed site and the nearest water features are the Tramore River, located to the south, and Lough Mahon which is located to the east of the site.

#### 8.1.2 EXISTING SITE HYDROGEOLOGY AND GEOLOGY

GSI's Groundwater Data Viewer indicates that high vulnerability is located in the subject site. GSI also classifies the subsoil of the entire site as "Made ground". A site investigation undertaken in 1999 observed that the site is made up of made ground from unknown sources, but no evidence of contaminated ground from ground investigation.

### 8.1.3 EXISTING PROTECTED AREAS

A Proposed Natural Heritage Area (pNHA) and a Special Protection Area (SPA) meet the shoreline of the Loughmahon Peninsula, at approximately 200 m from the site at the nearest point, in the vicinity of the site. These Environmentally Protected Areas are considered to be sensitive aquatic receptors for any surface water drainage running off the site.

### 8.1.4 FLOOD RISK IDENTIFICATION

A site specific flood risk assessment has been undertaken by reviewing information from the OPW National Flood Hazard Mapping ([www.floodinfo.ie](http://www.floodinfo.ie)) and CFRAM Studies. OPW have produced indicative flood mapping to assist in flood risk identification, this information is available on their website. The mapping included on this website was produced from a number of sources and was used, in conjunction with the Planning System and Flood Risk Management: Guidelines for Planning Authorities (November 2009), to examine the risks.

The proposed site has been identified within a Flood Zone C, where the probability of flooding from rivers and the sea is low. In addition, no pluvial flood risk and groundwater flooding areas have been indicated for the site.

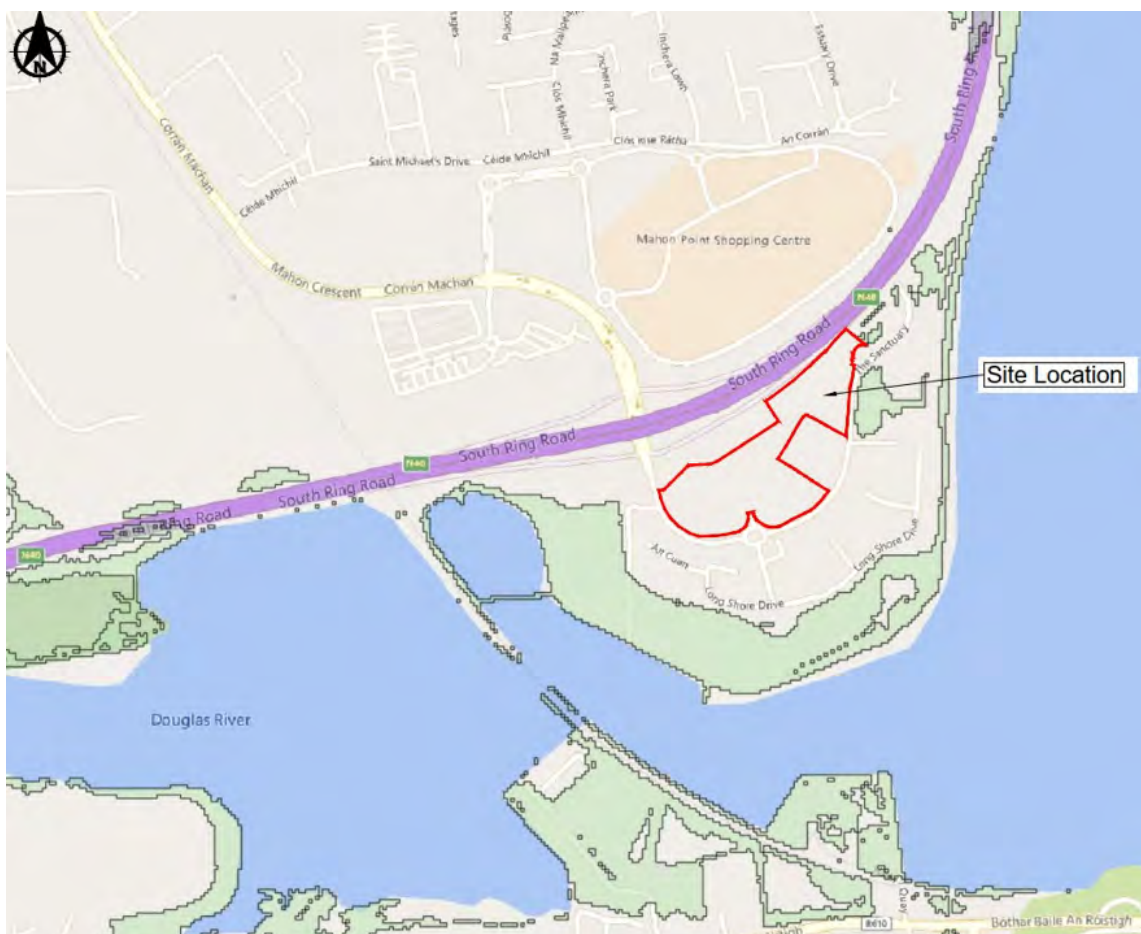


Figure 8.1 Predictive tidal flooding identified for 1 in 1000 year return period MRFS (Source [www.floodinfo.ie](http://www.floodinfo.ie))

The Irish Coastal Wave and Water Level Modelling Study (ICWWS) Phase 1 presents that the highest predicted tidal flood levels for the site is 5.31m. The levels presented in reviewed topographic surveys (ranging from 6m to 14m) are above the highest predicted tidal flood levels, except a very localised area of the order of 5.2m. As can be seen in the drawings accompanying the planning application, the proposed finished floor levels and the proposed levels

for the surrounding hard standing and green areas at the site for the Proposed SHD Development will be greater than 5.31m.

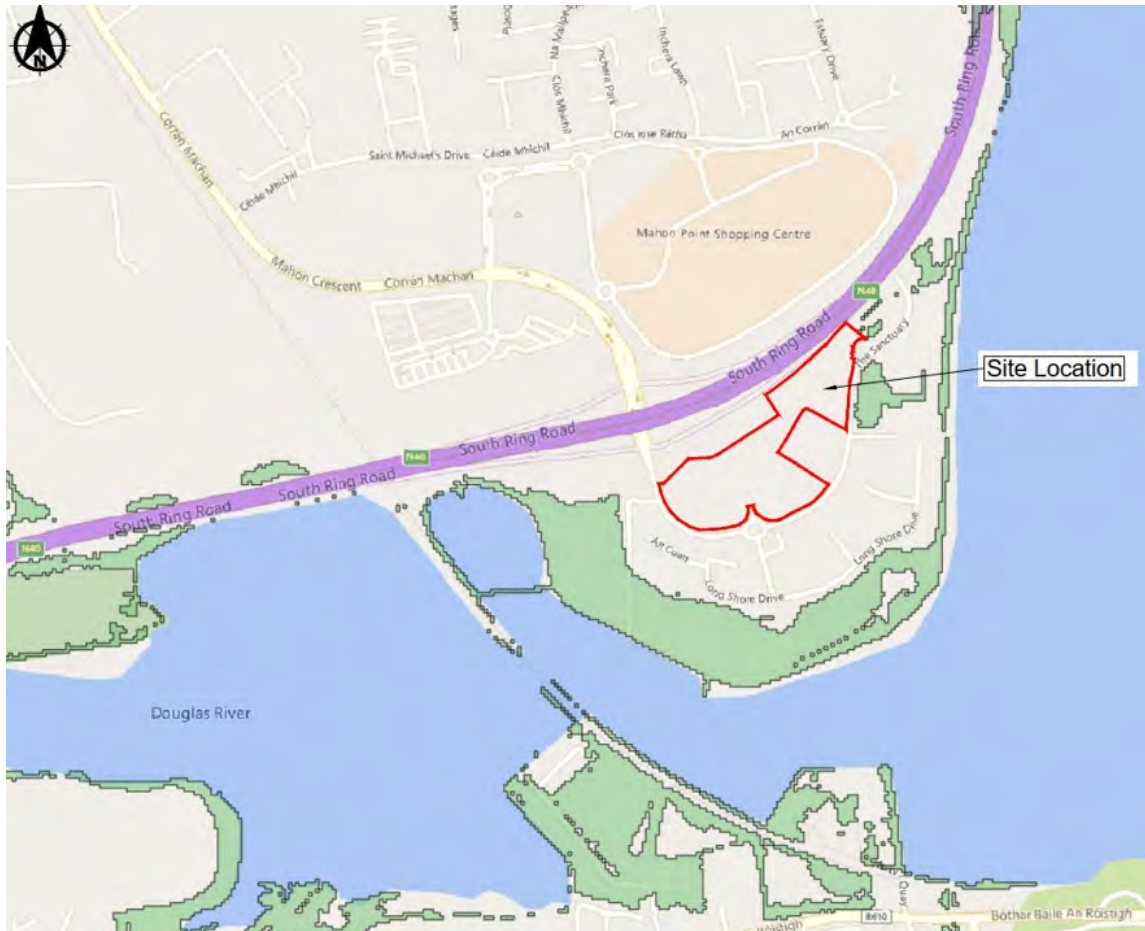


Figure 8.2 Predictive tidal flooding identified for 1 in 200 year return period MRFS (Source [www.floodinfo.ie](http://www.floodinfo.ie))

The existing circulatory road to the south of the Proposed SHD Development provides some natural defence to the mobilisation of sediments and other potentially polluting particles during a rainfall event running off the site. The N40 South Ring Road forms a natural barrier from overland flows running onto the south from the north.

From the flood risk identification, it can be concluded that flood risk to the Proposed SHD Development or flood risk from the Proposed SHD Development is considered to be low.

### 8.1.5 SURFACE WATER MANAGEMENT STRATEGY

The overall lands at this location were developed in the early 2000's with the drainage infrastructure being constructed in the mid 2000's as part of the development which was constructed at the time. The drainage infrastructure downstream was constructed to cater for the surface water run-off from the site for the Proposed SHD Development at the time and the design and future capacity of the existing sewers was subsequently reviewed and confirmed to be satisfactory. The network downstream therefore has sufficient capacity to drain the entire site by gravity sewers to the outfall in the Lough Mahon estuary. As recognised in the Greater Dublin Strategic Drainage Study (GSDSDS) attenuation is not required in such circumstance where the point of outfall is into an estuary. Internal drainage at the site will be designed to connect to the existing system. Hydrocarbon interceptors will be provided for all discharge points generated off the newly added carparking area and traffic routes.

### 8.1.6 FOUL WATER MANAGEMENT STRATEGY

As for the surface water system, the foul water system for the overall lands at this location was developed in the early 2000's with the infrastructure being constructed in the mid 2000's as part of the development which was constructed at the time and the design and future capacity of the existing sewers was subsequently reviewed. This wastewater sewer network is completely separated from the surface water network throughout the site. The existing foul sewer drains by gravity to the north of the development to an existing manhole and from this point the sewer continues west to the Cork City pumping station at Mahon Point.

The infrastructure downstream of the site was constructed to cater for the foul water flows from the site for the Proposed SHD Development at the time. The network downstream therefore has sufficient capacity to convey foul flows by gravity sewers to an existing foul sewer network that has already been taken in charge and inspected by Cork City Council (2013). Internal drainage at the site will be designed to connect to the existing system.

## 8.2 IMPACT ASSESSMENT

### 8.2.1 DO NOTHING SCENARIO

The existing site is currently overgrown with no particular negative or positive impacts for water and hydrology in its existing state. However, some evidence of minor mounds of flytipped material was found during a walkover survey in 1999. The 'Do Nothing Scenario' would be considered to have a neutral impact.

### 8.2.2 CONSTRUCTION PHASE

Potential impacts from the construction phase are rated as negative for water quality, with a slight significance if not mitigated against. Any impact would be considered to be of temporary duration.

### 8.2.3 OPERATIONAL AND MAINTENANCE PHASE

Potential impacts from operational and maintenance phase are rated as neutral for water quality, with imperceptible significance if not mitigated against. Any impact would be considered to be of brief duration.

### 8.2.4 POTENTIAL RISKS TO HUMAN HEALTH

The potential risks to human health in terms of water and hydrology are expected to be of low significance. Any potential risks outlined above during construction and operation relate to sea water quality and fish stocks and the significance is expected to be slight and of temporary duration.

### 8.2.5 CUMULATIVE IMPACTS

Where construction is proposed to occur at adjacent locations concurrent with the works for the Proposed SHD Development, cumulative risks of a release of suspended solids and spillages into public storm sewer systems resulting from trafficking on public roads from exposed sites could occur and compound the risk. Concurrent construction works cannot be anticipated at this stage.

In terms of the volume of expected run-off from the site together with adjacent sites, the existing drainage system has capacity to take the flows from the Proposed SHD Development and this will drain to a licenced foreshore discharge point, therefore no cumulative impact for surface water discharges is anticipated with adjacent properties.

## 8.3 MITIGATION MEASURES

### 8.3.1 CONSTRUCTION PHASE

In order to mitigate construction phase impacts the following is proposed:

- Drainage trenches will be constructed in short lengths and backfilled as the construction progresses to ensure that the drainage trenches do not become a conveyance route for silt laden run-off.
- Materials brought on site will be suitably covered where there is a risk of wind-blown sediments escaping from imported or exported material.
- Any fuels or oils stored on site will be bunded.
- Portaloo's or holding tanks will be used for foul drainage from the site facilities during construction. These will be emptied on a regular basis by a licenced contractor.
- De-watering of excavations will be undertaken into lined lagoons, where the water will be allowed to settle before controlled discharge from the site.
- All works areas will be surrounded with silt fencing and potential surface water pathways to low-lying areas banked up. The silt fencing will be monitored and replaced where this is found to be sagging or clogged with material.
- All construction materials such as concrete blocks will be stored on purpose built hardcore areas above the existing ground to avoid surface water run-off from rainfall mobilising the fine particles from these products into the ground.

With the above mitigation the potential impact during the construction phase for water and hydrology is reduced to neutral for quality, not significant and of brief duration.

### 8.3.2 OPERATIONAL PHASE

It is expected that the management of the site for the Proposed SHD Development will be managed by a dedicated management company and that the drainage may be taken in charge by Cork City Council. On that basis it is expected that the drainage system will be monitored for blockages, leakages and repaired in a timely fashion.

With the above mitigation the potential impact during the operational phase for water and hydrology is reduced to neutral for quality, with imperceptible significance and of momentary duration.

## 8.4 RESIDUAL IMPACTS

Although the site for the Proposed SHD Development is within 200 m at its nearest point of Environmentally Protected Areas downslope of the site, there is a considerable riparian zone in the form of Joe McHugh Park and adjacent green belt to the east and west of this on the shores of the Lough Mahon peninsula. This riparian zone protects the pNHA and SPA habitats from the built environment. The residual risk from the site would therefore be to the habitat in the riparian zone itself. The risk may occur from an accidental spillage of materials being imported or exported from the site. The spillage is expected to be managed locally adjacent to existing roads and unlikely to impact on the riparian zone downslope of this.

## 8.5 MONITORING

The water quality will be monitored for the duration of the construction of the site at pre-agreed locations on the shoreline with Cork City Council. Baseline samples will be taken in advance of the works on the site. It is expected that standard management company/Cork City Council (when drainage is taken in charge) monitoring for leaks in storm and foul sewers will be undertaken and repairs carried out in a timely manner.





## CHAPTER 9 BIODIVERSITY

### 9.1 BACKGROUND

This biodiversity chapter identifies, quantifies and evaluates potential effects of the proposed residential development project on protected sites, habitats, species and ecosystems. It considers impacts to ecological receptors and proposes mitigation and enhancement measures to offset or reduce the identified impacts. A Natura Impact Statement has also been prepared for the proposed project and accompanies this application.

### 9.2 RECEIVING ENVIRONMENT

A desk study was carried out to collate the available existing ecological information on the development site and surrounding areas. Field surveys included consideration of semi-natural habitats, terrestrial mammals, birds and bats. The proposed development site is not within a site designated as being of national or European Importance. It does, however, adjoin Cork Harbour SPA (004030), with Great Island Channel SAC (001058) located ca. 3.6km to the east in Lough Mahon. Potential impacts on European sites are addressed in the accompanying Natura Impact Statement.

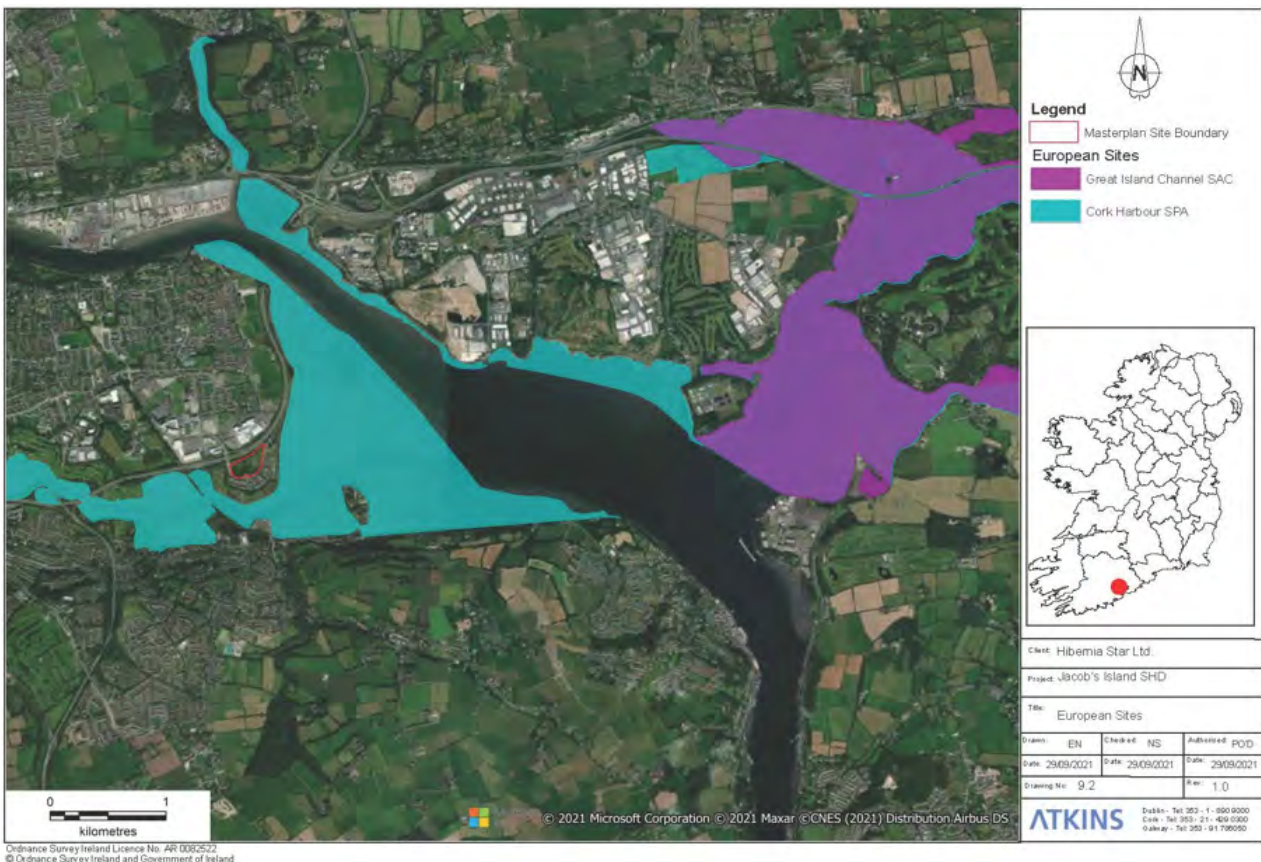


Figure 9.1 Lands in Context of European Site

There are no habitats within the development site of greater than local value. No ecological features of regional, national or European importance will be impacted by the proposed development. This site is dominated by scrub (WS1), built land (BL3), amenity grassland (GA2), areas of recolonizing bare ground (ED2/ED3), a small area of mixed woodland (WD1), as well as a mosaic of grassland (GS1n) / scrub (WS1) / recolonizing bare ground (ED3). There are no watercourses on site.



Figure 9.2 Habitat Map

Japanese knotweed (and Bohemian knotweed), which is listed on the 3rd Schedule of the Natural Habitats Regulations (S.I. 477 of 2011) has been recorded on site. The site also supports a range of other non-native plants, including potentially invasive species like butterfly bush, as well as a range of garden escapes. O'Donovan Agri Environmental commenced treatment of knotweed on site in 2021. Further treatment is programmed for 2022 and beyond.

The level of bat activity recorded on site at Jacob's Island is very low. During walking transects only one individual Common pipistrelle and one individual Soprano pipistrelle were recorded and observed on site. No badger setts were recorded on site. An extensive survey of otter was undertaken in the wider area; no otter signs were recorded within the proposed development site or adjoining it. Otter signs were found in the River Lee, Lough Mahon and Douglas Estuary at a distance from the proposed development. A mammal and bird community typical of the habitats on site and of local importance was noted.

### 9.3 PREDICTED IMPACTS

Potential impacts on the ecological receptors within the zone of influence of the proposed development during the construction and operation phases have been assessed. Due to the location, nature, extent and duration of the proposed works at the development site and with the inclusion of mitigation measures, the project will not have an impact on any European site / Natura 2000 site. Similarly, the proposed project will not affect any nationally designated conservation areas such as National Heritage Areas / proposed National Heritage Areas. The development will result in a permanent loss in semi-natural habitats ranging in value from negligible ecological value (e.g. amenity grassland) to local importance (higher value) (e.g. mixed woodland). However, this impact is mitigated by the proposed landscaping design and the abundance of similar habitat beyond the proposed site.

Indirect habitat loss/damage via e.g. proximity of construction works to habitats to be retained will be mitigated to an imperceptible level by measures as set out in the Biodiversity chapter and the accompanying Construction and Environmental Management Plan. Removal of vegetation will be carried out outside the breeding bird season from 1st March to 31st August inclusive. Biosecurity measures will be in place to reduce the likelihood of introduction of invasive plant species. The inclusion of detailed SuDS measures to manage surface water run-off within site as well as the design of landscaping measures, which include proposals for biodiversity gain are outlined. Appropriate lighting will be used within the proposed development and adjacent areas with sensitive lighting regimes deployed.

### 9.4 CONCLUSION

As noted, there are no habitats on site of greater than local value. No ecological features of regional, national or European importance will be directly impacted by the proposed development. Development of this site will not have any significant impact on the small numbers of bats using the site or on the terrestrial mammals or birds using the site. The effect of the habitat loss during the construction phase of the development will therefore be significant at Site level only.

Mitigation by avoidance is proposed for breeding birds; while strict adherence to on-site biosecurity measures would be implemented to prevent the spread of invasive species onto the site. As noted, control of Japanese knotweed is underway. No bat roosts were recorded on site. Detailed measures to protect vegetation to be retained are set out above. Measures to reduce the effects of loss of habitats are also proposed in the form of detailed landscaping proposals. Details of trees to be planted are presented and included in the accompanying Landscape Masterplan.

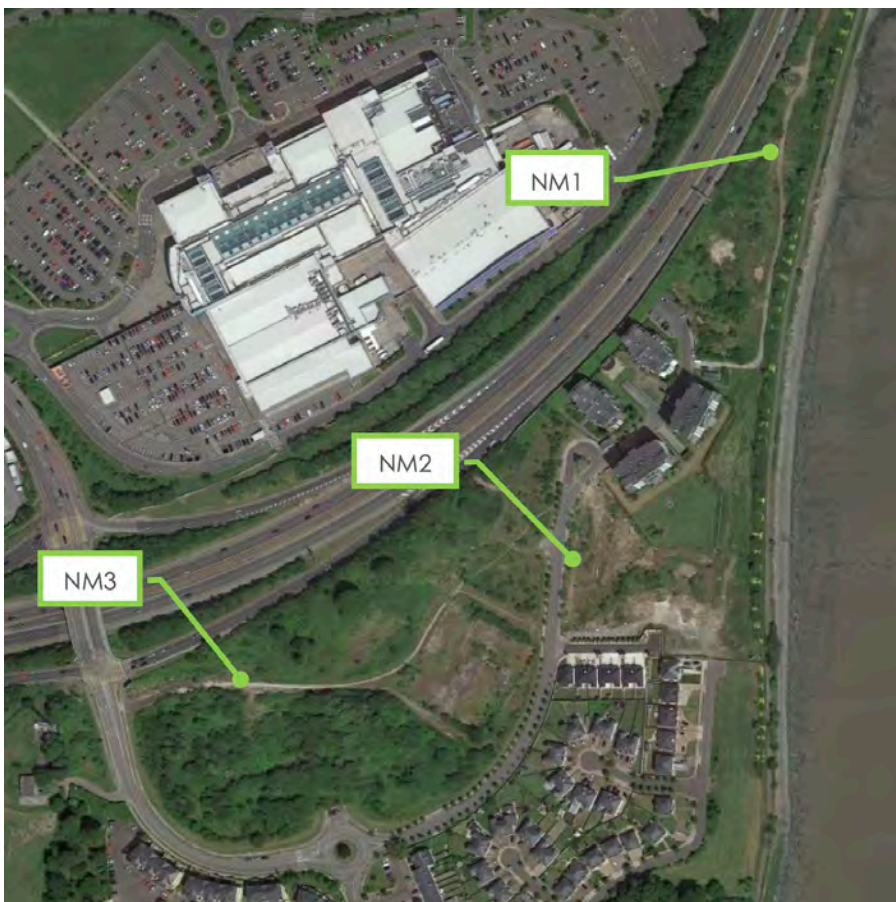
Enhancement proposals incorporated into the site landscape masterplan will improve the biodiversity value of the for groups such as bats, bird, and invertebrates and enhance the overall value of the site at a local level. Furthermore, bat boxes are to be provided on site in order to enhance bat roosting opportunities locally.

Overall, the residual impacts of the proposed development on ecology are likely to be slight negative impact at a site level and of short-term duration (i.e. Effects lasting one to seven years as per EPA, 2017). In the short to medium term (i.e. Medium term – seven to fifteen years) as vegetation on site mature the residual impact would increase to neutral to slight positive impact at a local level.

## CHAPTER 10 NOISE AND VIBRATION

AWN Consulting Limited has been commissioned to conduct an assessment of the likely noise and vibration effects associated with the proposed Jacobs Island residential development at the Mahon, Cork. The existing noise climate in the vicinity of the proposed development has been surveyed. Environmental Noise Survey.

Measurement locations are illustrated in the figure below.



*Figure 10.1 Noise Monitoring Locations (Image Source: Google Maps)*

Prevailing noise levels are primarily due to local road traffic.

The noise impact assessment has focused on the potential outward impacts associated with the construction and operational phases of the proposed development on its surrounding environment.

During the main construction phase involving site clearance, building construction works, and landscaping, the assessment has determined that during periods of construction in areas of the site closest to the boundary it is predicted that short term significant effects are likely. Mitigation measures are recommended during construction so that effects are reduced. For the most part, construction will take place at distances from noise sensitive locations such that the construction noise is predicted to be within the construction noise criteria.

During the operational phase, the outward noise effect to the surrounding environment will include any additional traffic on surrounding roads and plant noise from the residential and amenity buildings as part of the development. The assessment has concluded that additional traffic from the proposed development on local roads will have an insignificant effect on the surrounding noise environment. Mechanical plant items will be designed to ensure any noise and vibration effects during this phase will not exceed the recommended limit values. The resulting effect is of neutral, permanent, and imperceptible.

There are no sources of vibration associated with the operational phase of the proposed development.



## CHAPTER 11 AIR QUALITY AND CLIMATE NTS

AWN Consulting Ltd has assessed the likely air quality and climate impacts associated with the proposed development at Jacobs Island, Co. Cork.

In terms of the existing air quality environment, data available from similar environments indicates that levels of nitrogen dioxide (NO<sub>2</sub>), particulate matter less than 10 microns and particulate matter less than 2.5 microns (PM<sub>10</sub>/PM<sub>2.5</sub>) are, generally, well within the National and European Union (EU) ambient air quality standards.

The existing climate baseline can be determined by 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 estimate that Ireland had total GHG emissions of 57.70 Mt CO<sub>2</sub>eq in 2020 with 44.38 MtCO<sub>2</sub>eq of emissions associated with the ESD sectors for which compliance with the EU targets must be met. This is 6.73 Mt CO<sub>2</sub>eq higher than Ireland's annual target for emissions in 2020. Emissions are predicted to continue to exceed the targets in future years. However, the EPA predict that Ireland can comply with the GHG targets for 2021 – 2030 provided full implementation of the measures outlined within the Climate Action Plan and the use of the flexibilities available.

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

Any potential dust impacts can be mitigated through the use of best practice and minimisation measures which are outlined in Chapter 11. Therefore, dust impacts will be short-term and imperceptible at all nearby sensitive receptors. It is not predicted that significant impacts to climate will occur during the construction stage. 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 development in place. Using the assessment criteria outlined in Transport Infrastructure Ireland's guidance document 'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes' (2011) the impact of the development in terms of NO<sub>2</sub> is long-term, localised, negative and imperceptible.

Potential impacts to air quality and climate during the operational phase of the proposed development are as a result of a change in traffic flows and volumes on the local road network. The changes in traffic flows were assessed against the UK Design Manual for Roads and Bridges (DMRB) screening criteria for an air quality and climate assessment. The change in traffic on the surrounding roads as a result of the proposed development is below the threshold requiring a detailed air quality and climate modelling assessment. Therefore, the operational phase is considered long-term, neutral and imperceptible in relation to air quality and climate. In addition, the proposed development has been designed to reduce the impact to climate where possible during operation.

The best practice dust mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development is likely to be short-term, localised, negative and imperceptible with respect to human health.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants in the operational stage of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible, neutral and long term.

No significant impacts to either air quality or climate are predicted during the construction or operational phases of the proposed development.



## CHAPTER 12 CULTURAL HERITAGE

Chapter 12 comprises an assessment of the likely effects the proposed development, as detailed in Chapter 2 will have on the archaeological, architectural and cultural heritage environment.

There are no recorded archaeological sites listed in the Record of Monuments and Places (RMP) or Sites and Monuments Record (SMR) within the proposed development site. The closest RMP/SMR sites to the proposed development are the site of Lakeview House (C0075-022) and an excavated pit (C0075-083), 230m to the north in an area now occupied by Mahon Point Shopping Centre.

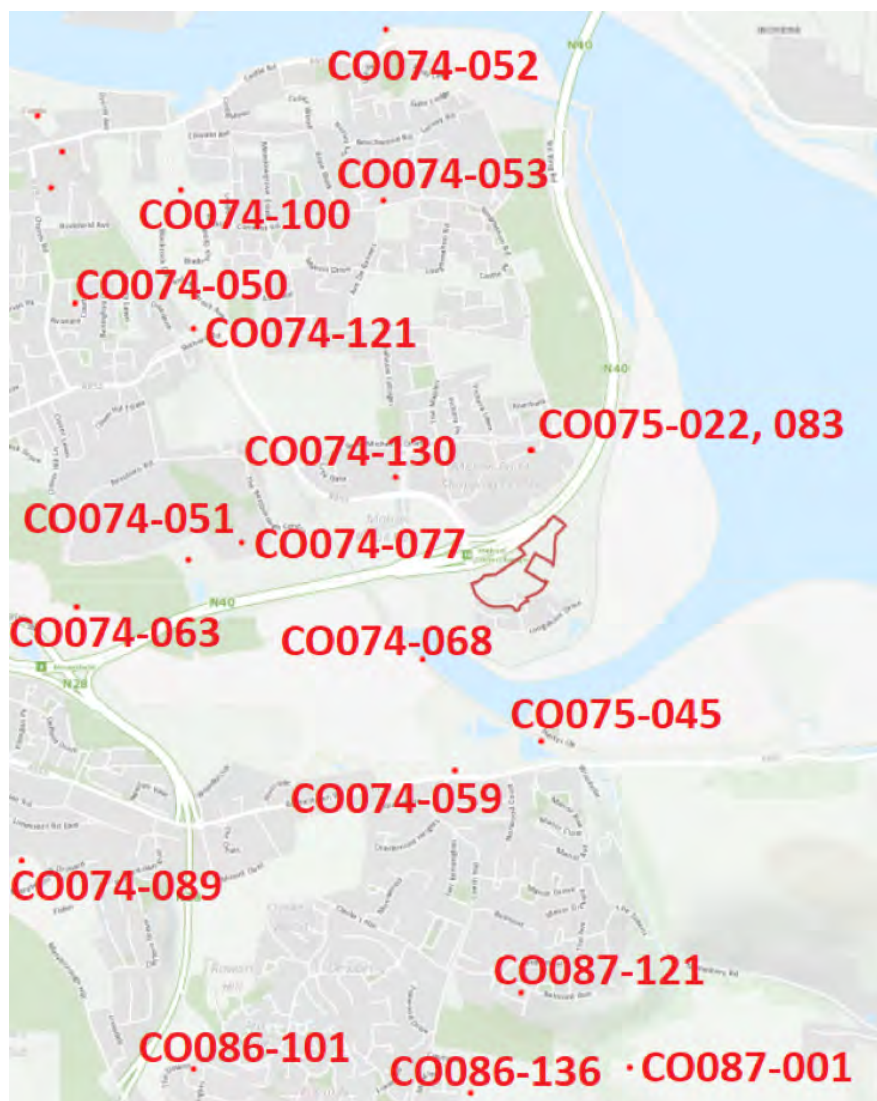


Figure 12.1 Proposed development site outlined on OS map with RMP detail within a 2km radius [www.archaeology.ie](http://www.archaeology.ie)

The proposed development site is situated in the townland of Ballinure, in the parish of St. Finbarrs and barony of Cork at the southern tip of the Mahon Peninsula, overlooking Lough Mahon to the east and the Douglas Estuary to the south. The proposed development site lies within the former demesne lands of Lakeland House which was demolished in c. 1920. There is one Cultural Heritage Site, a cellar, situated within the proposed development site



to the west of proposed Apartment Block 12. The subterranean structure (8.6m NE-SW x 6.6m NW-SE externally), associated with Lakeland House, was identified during the course of construction of the N40 South Ring Road in the 1990s (Hurley, 1994) and again in 2003 during archaeological test trenching of the proposed development site. A full written, photographic and drawn record of the cellar, undertaken in 2003, is available in Appendix 12.3.

There are no Protected Structures (PS) listed in the Cork County Development Plan (CCDP) and Draft CCDP (2022-2028) within the proposed development site. The closest PS to the proposed development site is Bessborough House (PS490), situated 850m to the northwest. The closest Architectural Conservation Area (ACA) to the proposed development site is that proposed for Blackrock Road in the Draft CCDP approximately 1.8km to the north and northwest.



Figure 12.2 OS map showing PS (red) and NIAH sites (blue) located within a 1.5km radius of the proposed development site outlined in red [www.archaeology.ie](http://www.archaeology.ie)

## 12.1 CONSTRUCTION PHASE EFFECTS

### 12.1.1 ARCHAEOLOGY AND CULTURAL HERITAGE

There will be no significant direct or indirect effect on any known recorded archaeological site.

The proposed development site has been subject to ground disturbance over an extended period of time from the mid-19th century construction of Lakeland and its demesne to disturbances related to the adjoining N40 South Ring Road (in the mid 1990's), its use as a temporary halting site (also in the 1990's), as a nursery and finally as a compound/dumping ground during construction of the residential developments to the south (in the 2000's). Given the extensive ground disturbance that has taken place, the likelihood of finding subsurface archaeological sites is therefore limited. No likely significant effects on potential subsurface intact archaeological remains are therefore foreseen.

There is one Cultural Heritage Site, a cellar, situated within the proposed development site to the west of proposed Apartment Block 12. The cellar is associated with Lakeland (demolished c. 1920). The cellar will not be impacted by the proposed development and will be preserved in situ within a 10m buffer zone within a proposed green open space. Following mitigation, there will be no significant direct or indirect effect on this cultural heritage site and the overall effect will be positive.

While no evidence for Lakeland House was found following archaeological testing in 2003, traces of cobbling and gravel surfaces and fragments of walls were identified. These features will be removed during construction of the proposed development. The proposed development will have a direct imperceptible effect on these fragmentary remains associated with Lakeland demesne and any other trace remains of contemporary activity which may exist beneath the surface in the northern portion of the site.

### 12.1.2 ARCHITECTURAL HERITAGE

The proposed development will not impact on any registered structures of architectural merit. There will be no significant direct or indirect effect on any registered architectural site.

## 12.2 MITIGATION

### 12.2.1 CULTURAL HERITAGE SITE - CELLAR ASSOCIATED WITH THE FORMER LAKELAND HOUSE

Discussions were held with the Cork City Council Archaeologist during the compilation of Chapter 12. It was agreed that the cellar will be preserved in situ within a 10m buffer zone within the proposed development.

A site inspection of the cellar location in November 2021 revealed it to be situated in an area of rough ground which is completely overgrown with impenetrable dense vegetation. The entrance to the subterranean structure was backfilled following archaeological testing in 2003 and the site is not accessible from the surface.

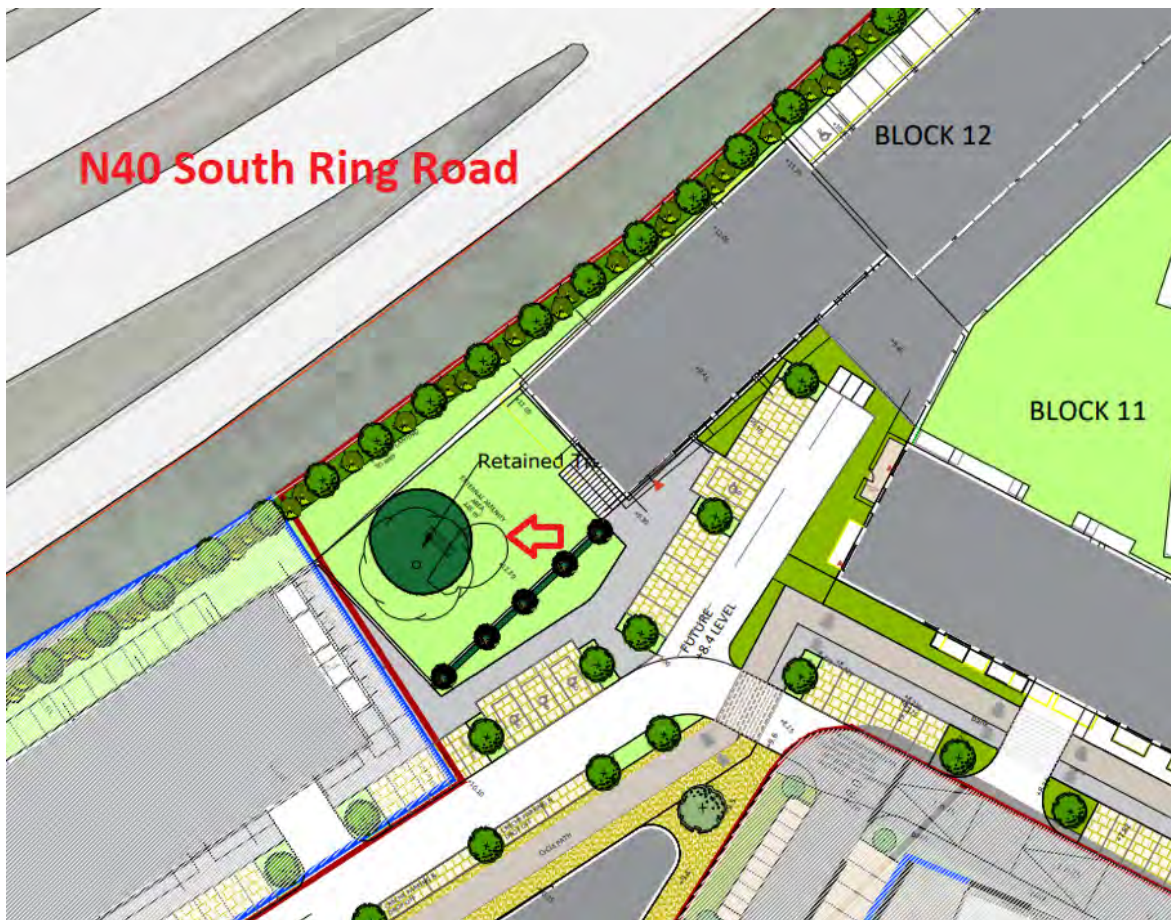
During construction, the following mitigation measures to be overseen by an archaeologist will apply;

- The site of the cellar will be cleared of vegetation and a buffer zone of 10m will be placed around the site;
- There will be no ground disturbance work within the area of the buffer zone which will be securely fenced during the construction process and will remain in place until all elements of construction are completed;

- The site of the cellar and a 10m buffer zone will be levelled/graded, re-topsoiled and reseeded with grass to form part of a green open space to the southwest of Apartment Block 12 at the north-western end of the development site. This work will be carried out under archaeological supervision.

Following construction, an information plaque/board will be erected at a suitable location with relevant information relating to the cellar and its association with the former Lakeland Demesne. The style, design and content of the plaque will be agreed in advance with Cork City Council.

The implementation of mitigation measures will preserve the cellar in situ and will provide information and acknowledge its presence in the landscape. The overall effect on the cellar, following mitigation, will be positive



*Figure 12.3 Section of proposed landscape plan showing cellar outline arrowed in red within a proposed amenity grass space (after Doyle & O’Troithigh Landscape Architecture)*

Archaeological monitoring of groundworks will be carried out elsewhere during construction. In the event of features associated with Lakeland demesne being identified, such features will be removed and a written and photographic record will be made. In the event of archaeological material being uncovered such material will be preserved in situ, where possible or preserved by record. Preservation in situ will require the relocation of the element of the development beyond the area of archaeological sensitivity. Preservation by record will require the excavation of the archaeological material and such material will be fully resolved to professional standards of archaeological practice (Policy Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht and the Islands). This work will be funded by the developer.

### 12.2.2 OPERATIONAL PHASE EFFECTS

Following construction, the cellar will remain in situ beneath an open green area to the west of Apartment Block 12. Access to the structure will not be maintained. No direct or indirect significant operational effects on archaeology, architecture and cultural heritage as a result of the operation of the proposed development are envisaged.

### 12.2.3 RESIDUAL EFFECTS

No residual impacts on the archaeological, architectural and cultural heritage environment are foreseen.



## CHAPTER 13 POPULATION AND HUMAN HEALTH

### 13.1 CHAPTER CONTEXT

The European Commission's 'Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report' 2017 specifies the following in relation to the assessment of population and human health.

“Human health a very broad factor that would be highly project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population.”

This chapter of the EIAR document has been prepared with reference to the Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA in 2022, as well as European Commission's 'Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report' 2017. A desktop study of the following published policy documents and data was undertaken to appraise the location and likely and significant potential impact upon population and human health receptors and to assess population trends in the subject site and in the wider hinterland:

- Central Statistics Office (CSO) Census 2011 & 2016 data;
- Cork City Development Plan 2015;
- Draft Cork City Development Plan 2022 - 2028;
- Mahon Local Area Plan 2014 (now lapsed).

This assessment is a study of the potential indirect and direct socio-economic impacts of the construction phase and the operational phases of the development. Effects on receptors were assessed in terms of magnitude, quality, significance and duration.

### 13.2 DESCRIPTION OF EXISTING BASELINE ENVIRONMENT

In assessing the demographic trends in the vicinity of the subject site a focused assessment of the relevant Central Statistics Office (CSO) boundaries has been conducted. This initially considered the subject site in relation to Electoral Divisions (EDs), with the area falling within the Mahon B ED, which is characterised by a mix of uses, incorporating a number of key strategic employment areas to the north, east and west, including the Mahon District Centre (Mahon Point Shopping Centre), Mahon Retail Park, and a number of technology and business parks (City Gate, Loughmahon Technology, Mahon Industrial Estate, Blackrock Business Park, Heritage Business Park and Riverview Business Park).

The ED also includes established residential areas to the south and north on Jacobs Island and Ballinure/Mahon which are supported by a range of amenities in the form of pedestrian and cycling facilities at the Joe McHugh Park which continues along the western edge of Lough Mahon via the River Lee/Lough Mahon Waterfront Greenway and

links the site with Blackrock and onto the City Centre. Similarly, the Passage West Greenway provides excellent linkage to Passage West, the Marina and the City Centre. Other local amenities include Mahon Golf Club, Ballinure and Saint Michael's Gaelic Football Clubs, Skehard Road Park and Lough Mahon Park.

The ED is relatively discrete, bounded and delineated by an inlet of Cork Harbour and the N40 to the south and east and by Skehard Road and Ringmahon Road to the north. However, the residential element of the area extends slightly northwards into the smaller, predominantly residential ED of Mahon A where the Mahon and Blackrock neighbourhoods meet. Therefore, five Census Small Areas (SAs), which encapsulate this area to the north were included in the study area. We note that the resulting study area corresponds to the Mahon Neighbourhood Area as defined in the Cork City Neighbourhood Profile prepared by AIRO to support the Cork City Draft Development Plan 2022 - 2028. The boundaries of these areas are illustrated in Figure 13.1 as shown



Figure 13.1 Immediate Study Area

### 13.3 COMMUNITY AND SOCIAL INFRASTRUCTURE

The existing community and social infrastructure assets in the local area has been identified in accordance with the categories outlined in the table 13.1 below.

Table 13.1 Community and Social Infrastructure Categories

CATEGORY	DESCRIPTION
AMENITY, OPEN SPACE AND SPORTS	Parks, Playgrounds, Amenity Walks/Greenways, Pitches, Green Areas, Golf Courses, Sports Pitches, Sports Centres, Swimming Pools, Gyms
CHILDCARE AND EDUCATION	Childcare, Primary Schools, Post Primary Schools, Special Schools, Third Level Universities, Other Educational Institutions
COMMUNITY FACILITIES	Community Centres, Religious Facilities, Post Offices, Libraries.
RETAIL SERVICES	Supermarkets, Convenient Shops, Specialty Services, Restaurants/Take-aways, ATM, Petrol Station
HEALTH	Hospitals, Health Centres, Clinics, Pharmacies, Addiction Services, GPs, Mental Health Services
EMERGENCY	Fire Station, Garda Station
PUBLIC TRANSPORT	Bus and Train Routes

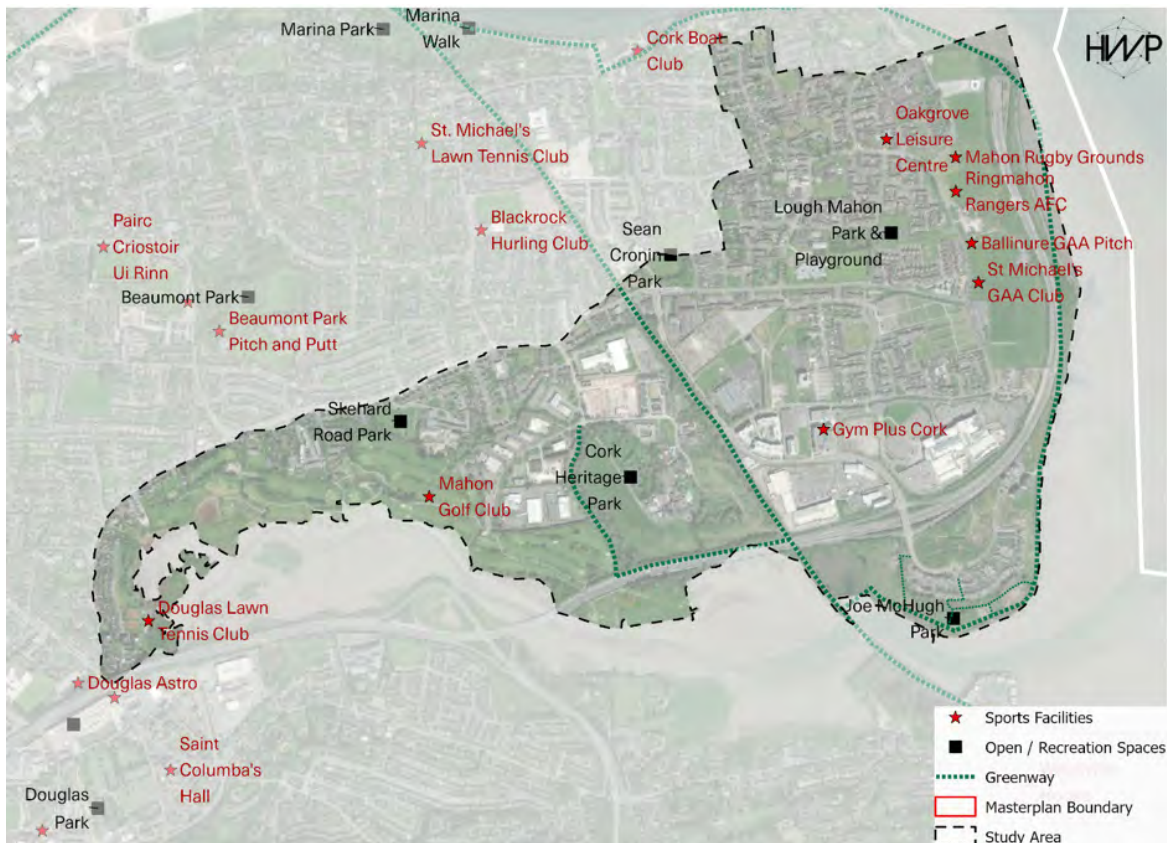


Figure 13.2 Existing Open Space & Amenities in Study Area

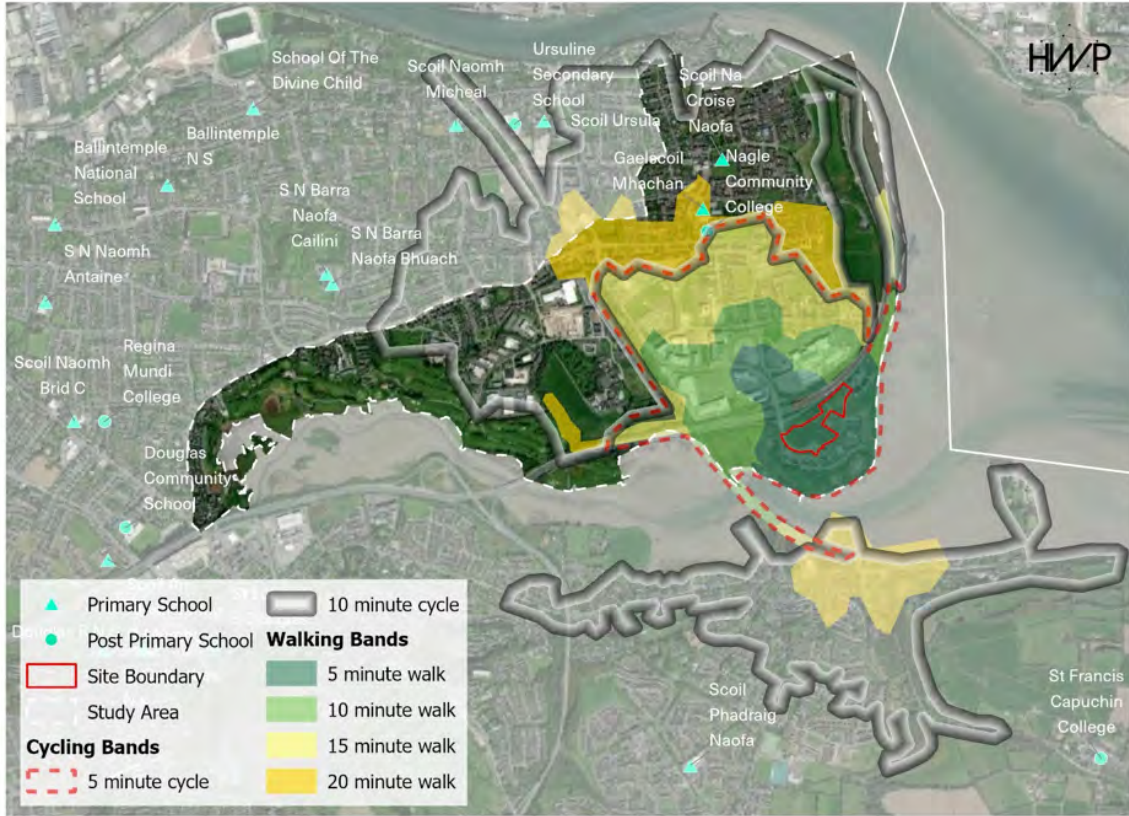


Figure 13.3 Existing Schools in Study Area

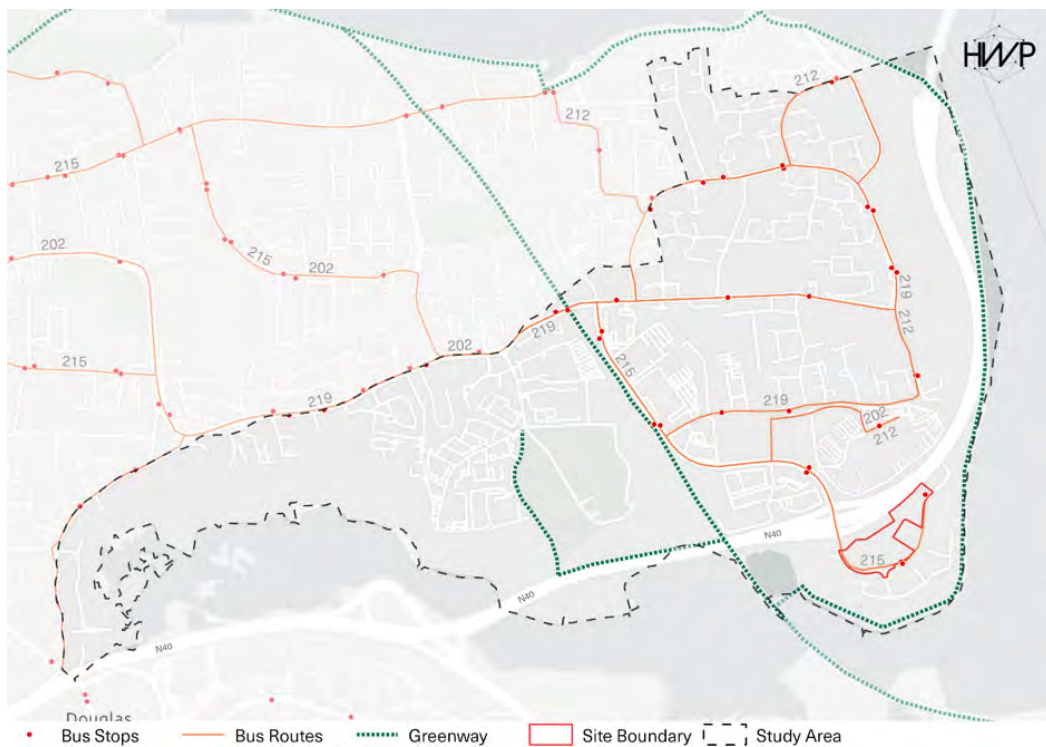


Figure 13.4 Existing Public Transport Provision in Study Area



## 13.4 IMPACT ASSESSMENT

### 13.4.1 DO-NOTHING SCENARIO

In the 'do nothing' scenario, the subject lands will remain undeveloped. If the proposed development of 489 no. apartment units does not proceed the population of Mahon and the wider city will continue to be adversely impacted due to housing shortages. It will result in the continuation of the recent trend of underperformance of the Study Area in terms of population growth. With a growth rate of 2.7% in the last intercensal period, this designated 'Strategic Growth' area experienced lower growth than the city as a whole, contrary to national and regional policies of co-locating employment, public transport and population growth. Alongside this, the proposed 4,143 m<sup>2</sup> of proposed office floor space will not be developed, and will not contribute towards the future, clustered expansion of the strategic employment hub of South Mahon, which would enhance its attractiveness as a place to work and live. The local community facilities will not be enhanced by the delivery of a 381m<sup>2</sup> creche, which could increase the childcare provision of the area by up to 53 no places.

Similarly, in the 'do nothing' scenario, the lands will remain inaccessible for public recreational use. The key urban design consideration of the masterplan for this area was to position the blocks around a central public open space providing key linkages throughout Jacob's Island which will encourage sustainable modes of travel. It is proposed to have further pockets of functional space dispersed throughout the application site to provide strong connections to the surrounding green infrastructure. In the 'do nothing' scenario this enhanced connectivity, with the knock-on impact on the sustainability of the travel patterns of the existing Jacob's Island residents will not be realised and the lands will remain publicly inaccessible and underutilised. Neither would the proposed development's aim to respond to the existing environment be realised, and proposes active street frontage along the internal access road where it currently lacks passive surveillance, would not be progressed.

The potential public health benefits, which would arise from the development delivering pedestrian/cyclist connections through the application site along anticipated desire lines, connecting future and existing residents with the Passage Greenway and the urban amenities of Mahon, who not ensue. The proposed enhancement of public facilities and amenities in the form of public open space would also not materialise. Notwithstanding the above, in this scenario there will be no additional impacts on population and human health factors.

### 13.4.2 IMPACTS ON EXISTING POPULATION AND HUMAN HEALTH

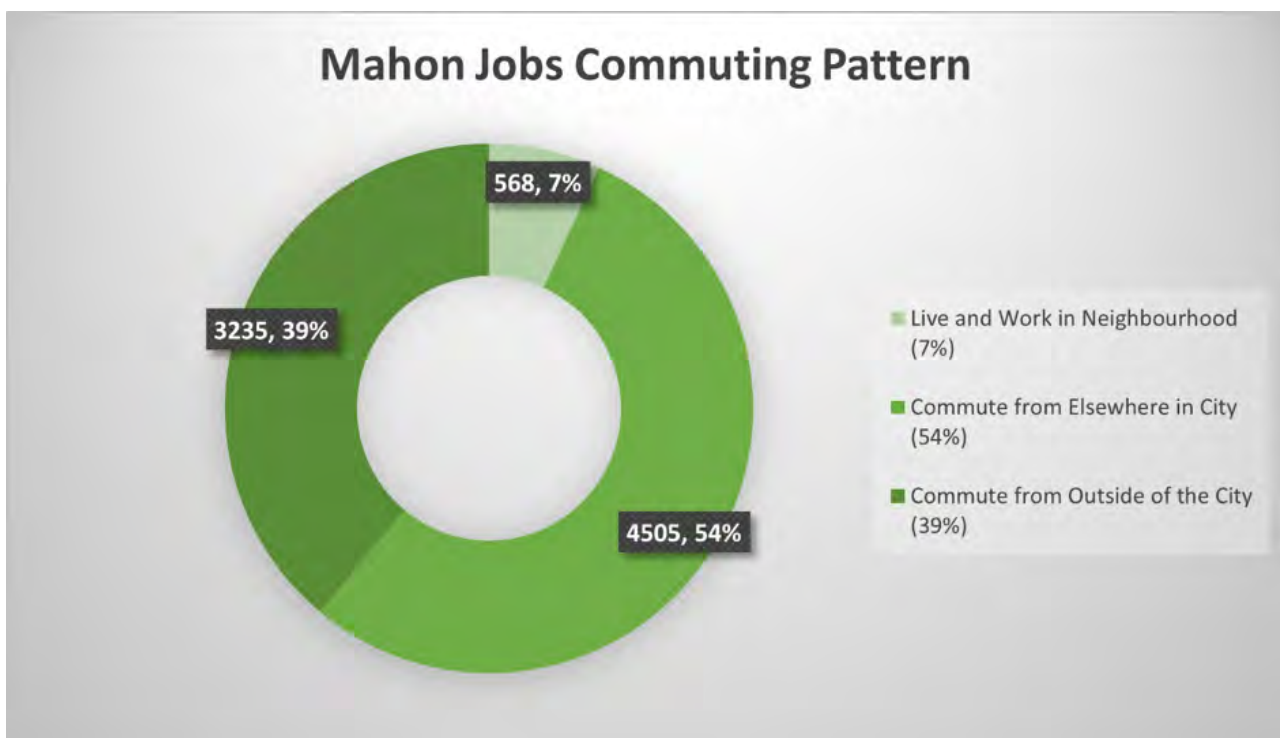
#### 13.4.2.1 CONSTRUCTION PHASE

The proposed development will be constructed on a phased, block-by-block basis from north-east to south-west. The construction period of the various blocks ranges from 18 – 36 months, and it is envisaged that there will be overlapping of phases. It is estimated that first occupation on the site will be 2025. The construction methods employed, and the hours of construction proposed will be designed to minimise potential impacts to nearby residents. Construction of the proposed development will be implemented in accordance with the Construction and Environmental Management Plan (CEMP) prepared by MMOS Consulting Civil & Structural Engineers, which is included in Appendix 2-1 of this EIAR. This document describes a suite of mitigation measures to be strictly implemented and monitored during the construction phase of the development.

#### 13.4.2.2 OPERATIONAL PHASE

Once constructed, the proposed development will be permanent and non-reversible. The proposed development will result in several significant long-term positive impacts for the local population including:

- the delivery of 489 no. residential units to assist in addressing the housing shortage in the Mahon area and the wider city and counter-act the recent slow-down in growth in this designated 'Strategic Growth Area'.
- the proposed mix-use development will contribute towards delivering the Core Strategy objective identifying Mahon as an area for growth consolidation and enhancement.
- the proposed development would contribute towards addressing the current imbalance between the location of jobs and housing in Mahon, with consequent positive impacts on the current unsustainable commuter in and out flows in the area (ref Figure 13.2)
- It will contribute towards the provision of improved local services and amenities in the form of public open space, a creche and 4,112.4m<sup>2</sup> of office space.
- It will contribute towards the achievement of the critical mass required to support the provision of enhanced public transport services, in particular the proposed Light Rail Transit.
- The arrangement of the blocks around a central public open space will facilitate pedestrian and cyclist connectivity through the site and enhance linkages between employment, residential, recreation and retail destinations throughout Jacob's Island. This will deliver associated public health and safety benefits.
- The non-residential development to the north of the site, will provide a noise buffer to the N40 and thereby improve the conditions of the wider Jacob's Island residential community.
- The proposed central open space with further pockets of functional space dispersed throughout subject site, will be accessible to all existing and future residents of the settlement. At present the subject lands are not accessible to the public.



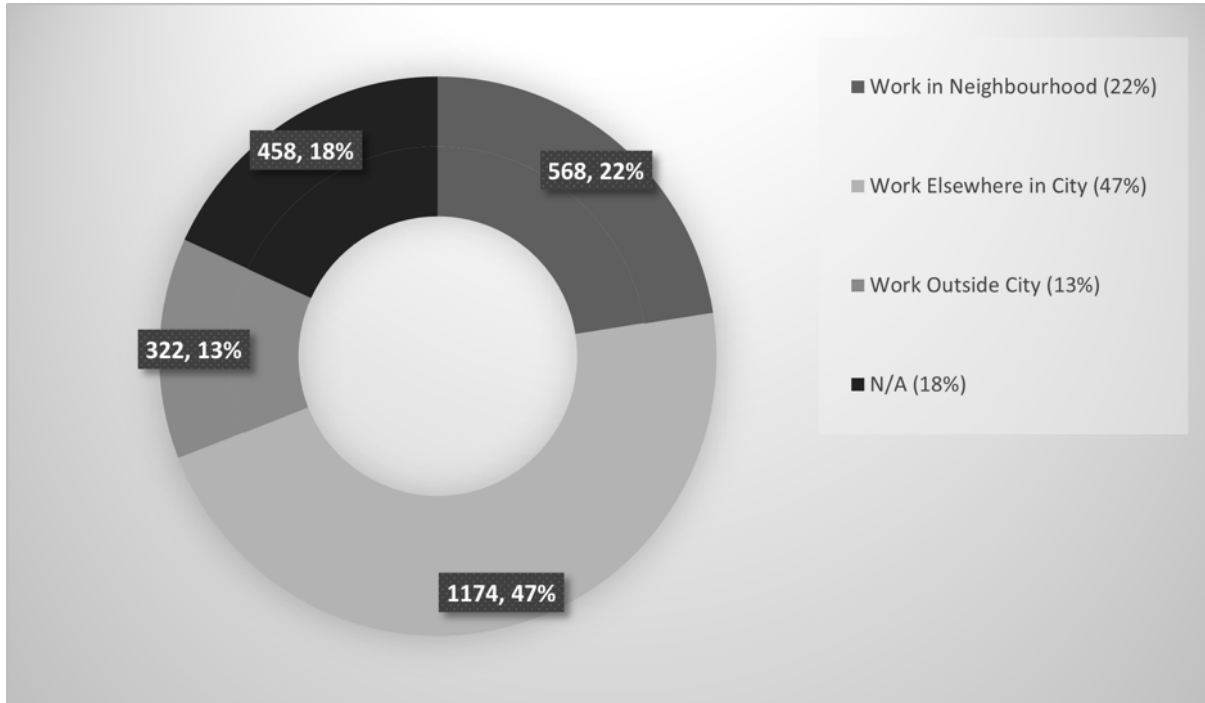


Figure 13.5 Mahon Commuting Patterns

### 13.4.3 IMPACTS ON LOCAL ECONOMY AND RETAIL

#### 13.4.3.1 CONSTRUCTION PHASE

The duration of the construction phase is likely to result in moderate temporary positive impacts for the local economy within the study area. Construction workers will likely avail of local retail outlets and restaurants in mornings and lunchtimes in particular. Supplies and materials for proposed construction works may also be supplied locally further resulting in positive impacts on the local economy. The construction phase will provide for construction related employment opportunities.

#### 13.4.3.2 OPERATIONAL PHASE

The proposed development will result in significant permanent positive impacts on the local economy. The 2016 Census confirms that the average household size the study area is approximately 2.82 no. persons per household, slightly higher than the state (2.75) and city average (2.45). The proposed development of 489 no. dwellings translates to an approximate uplift of 1,379 no. persons. The projected increase in population of the wider Mahon area is appropriate and will reverse the recent trend of slight underperformance of the Study Area in terms of population growth. The proposed development will contribute towards countering the massive inward commuter flow into Mahon, where currently 93.2% of the local jobs are held by people who commute into the area, 80% of whom use private transport. In addition, the delivery of office space will facilitate the clustered expansion of the adjacent Strategic Employment Hub. By creating more homes adjacent to the existing and future jobs that Mahon provides, a more sustainable balance will be achieved, with associated quality of life benefits for the residents and workers of the area.

It is also envisaged that the creation of new homes and more jobs at this location will create additional demand

for local retail and service provision, further increasing local employment opportunities. The proposed housing mix has been designed to serve under-catered for aspects of the current housing market and address the current housing shortage in the Metropolitan Cork Area. The development will support the recent and proposed expenditure in upgrading the bus infrastructure and will contribute towards the achievement of the critical mass necessary to realise the medium-term future proposals for an LRT in close proximity to the site.

### 13.4.4 IMPACTS ON AMENITY, OPEN SPACE AND SPORTS

#### 13.4.4.1 CONSTRUCTION PHASE

The subject site is predominantly overgrown, and in areas impenetrable, scrubland, with some evidence of historic dumping. It currently provides limited public amenity, however, a number of informal paths are being utilised by pedestrians as shortcuts through the study area. Chapter 4 – Townscape and Visual notes that the subject lands and their environs are designated as 'Urban Sylvan character' which enhances the green rural character of the city landscape.

Chapter 4 considers that there may be a short-term construction impact on the nearby residential receptors with the replacement of the existing site character with construction views. While trees and vegetation will be maintained where appropriate, to mitigate against the loss of scrub and a small area of woodland, the proposed layout makes provision for extensive planting of new trees, complemented by the introduction of large areas of usable public open space.

The temporary loss of the pedestrian shortcuts through the site during the construction phase is unavoidable. However, the CEMP notes that a Construction Stage Traffic Management Plan will be submitted to the Planning Authority in advance of the works. This will ensure that a safe alternative route is provided to accommodate continued pedestrian/cyclist connectivity in the area during the construction phase.

Therefore, the overall construction impact on the landscape is deemed to be of a short-term moderate significance. It is not anticipated that the construction phase of the proposed development will result in any impacts on other existing sports and recreational facilities in the area.

#### 13.4.4.2 OPERATIONAL PHASE

Once operational the projected uplift in resident and working population will result in some short-term slight negative impacts relating to an additional demand for the use of local amenities, open spaces and sports facilities. However, as described previously, Mahon, and the defined study area is already well equipped for such facilities to serve the existing population. Local sports clubs such as St. Michael's GAA Club, Ballinure GAA pitch, Mahon Rugby Grounds, and Ringmahon Rangers AFC will likely benefit from increased volunteer numbers and participation rates resulting in increased membership and financial/social benefits. Mahon's current location on the high frequency bus network and pedestrian and cyclist greenway to Cork City Centre, and its potential future position on the LRT network, will result in the future residents of the scheme being in a position to avail of amenity and sport facilities in adjacent neighbourhood of Blackrock and Cork City.

Once operational, the subject lands, which are largely currently inaccessible to the public, will be readily accessible and will provide convenient linkages between the Mahon District Centre and the Joe McHugh Park and the wider River Lee/Lough Mahon Waterfront Greenway which will encourage greater use of sustainable modes of travel.

In addition to new linkages, the proposed development provides for a range of public open spaces and amenity areas which in combination will positively contribute to the long-term public and amenity space provision in Mahon.

The most notable operational phase landscape/townscape impact of the proposed development will be experienced

in open and partial views within 200-400m from the development site. The presence of adjacent treelines will soften the vertical scale. Once the screen planting matures the visual setting of the development will improve incrementally over time. Longer distance views experienced by pedestrians and cyclists from the Passage West Greenway and the wider River Lee/Lough Mahon Waterfront Greenway will also recognize the proposed development as a new high quality design element acting as an entry point to the overall Jacob's Island development and as an urban quarter in panoramic views.

### 13.4.5 IMPACTS ON CHILDCARE AND EDUCATION

#### 13.4.5.1 CONSTRUCTION PHASE

It is considered that the proposed development will result in no significant impacts on childcare or education facilities/services in the area during the construction phase. In the absence of appropriate mitigation measures during construction some slight negative short-term impacts relating to noise, vibration, dust emissions and increased traffic levels may occur to the permitted creche (ABP 301991-18) should it be constructed and operational prior to the construction phase on the subject site. However, it is concluded that the impacts of proposed construction phase will be neutral and will not negatively impact the operations of any childcare/education facility, subject to the specified mitigation measures as described in the CEMP (Appendix 2-1) being implemented.

#### 13.4.5.2 OPERATIONAL PHASE

There are 7 no. existing childcare facilities within the study area, with an overall capacity of 462 no places and an estimated vacancy level of 163 child places based on the most recent Tusla reports. Three of these facilities are within 1.5km distance of the subject site. In addition, we note that a 392 m2 childcare facility has been permitted in the adjoining site (ABP-301991-18) and an additional 60 childcare places are included in 2 no. SHD applications, within the lands of the former Bessborough Demesne (application ref ABP-313206-22, ABP-313216-22) which are currently under consideration by An Bord Pleanála.

It is envisaged that the primary market for the proposed apartments in Jacob's Island will be individuals working in the Mahon District Centre and Cork City Centre. As there are no 3 no. bedroom units allocated within the scheme, we do not envisage that it will be attractive to larger families and as a result, it is not expected that the demand for childcare on Jacob's Island will be comparable to an average suburban residential development. In view of this it is considered that the proposed creche providing 53 no. place childcare places will meet the needs of future residents. This reduction in childcare spaces is considered to be appropriate given the decrease in the national birth rate between 2018 and 2020 of 8% . The quantum is also considered appropriate having regard to the fact that the subject site is within walking distance of three existing childcare facilities, a permitted creche and two further proposed facilities.

With regard to school provision, there is both a primary and a secondary school within a 20 minute walk of the subject site, and the wider network of existing schools in the area, with 4 no. primary schools and 2 no secondary schools within approximately a 10 minute cycle of the subject site. It is considered that there will be sufficient capacity locally to cater for future demand arising from the proposed development and that the development will result in neutral impacts on local schools and educational facilities. The site's pedestrian and cycle linkages to the River Lee/Lough Mahon Waterfront Greenway and the Passage West Greenway, provides safe, segregated access to a number of schools in the wider neighbourhood.

## 13.4.6 IMPACTS ON COMMUNITY FACILITIES, HEALTH FACILITIES AND EMERGENCY FACILITIES

### 13.4.6.1 CONSTRUCTION PHASE

Due to the distance between the subject site and the majority of the nearest community, health and emergency facilities it is expected that any impacts during construction phase will be imperceptible. However, due to its proximity some slight negative short-term impacts relating to noise, vibration, dust emissions and increased traffic levels may occur at the permitted adjacent creche (ABP 301991-18) should it be constructed and operational prior to the construction phase on the subject site. It is concluded that the impacts of proposed construction phase will be neutral and will not negatively impact the operations of any community facilities, subject to the specified mitigation measures as described in the CEMP (Appendix 2-1) being implemented.

### 13.4.6.2 OPERATIONAL PHASE

Once operational the proposed development will likely result in an increased demand for local community services such as the local post office, community centre, churches and banks and health and emergency services. However, given the wide variety of such services in the study area it is considered that the proposed development will result in imperceptible impacts on such services. In addition to the various public open spaces and play areas within the proposed development, provision is made for a creche and a range of communal residents' facilities.

## 13.4.7 IMPACTS ON PUBLIC TRANSPORT

### 13.4.7.1 CONSTRUCTION PHASE

Due to the proximity of the proposed developments to good public transport, the proposed development is likely to result in an uplift in the use of public transport services during the construction phases with an associated moderate short-term positive impact. The increased use of public transport will promote sustainable commuting patterns and positively support public transport services in the area

### 13.4.7.2 OPERATIONAL PHASE

Once operational it is anticipated that proposed developments will result in profound positive, permanent impacts in terms of public transport provision. The proposed development will support the continued viability of public transport services in the area, reduce car dependent inward commuter flows into Mahon by juxtaposing population and employment centres and promote sustainable modes of transport. In addition, increased population density at this location will support proposal for an LRT in proximity to the site, serving the City Centre. Future residents of the scheme will have convenient pedestrian/cyclist access to a high frequency public transport link.

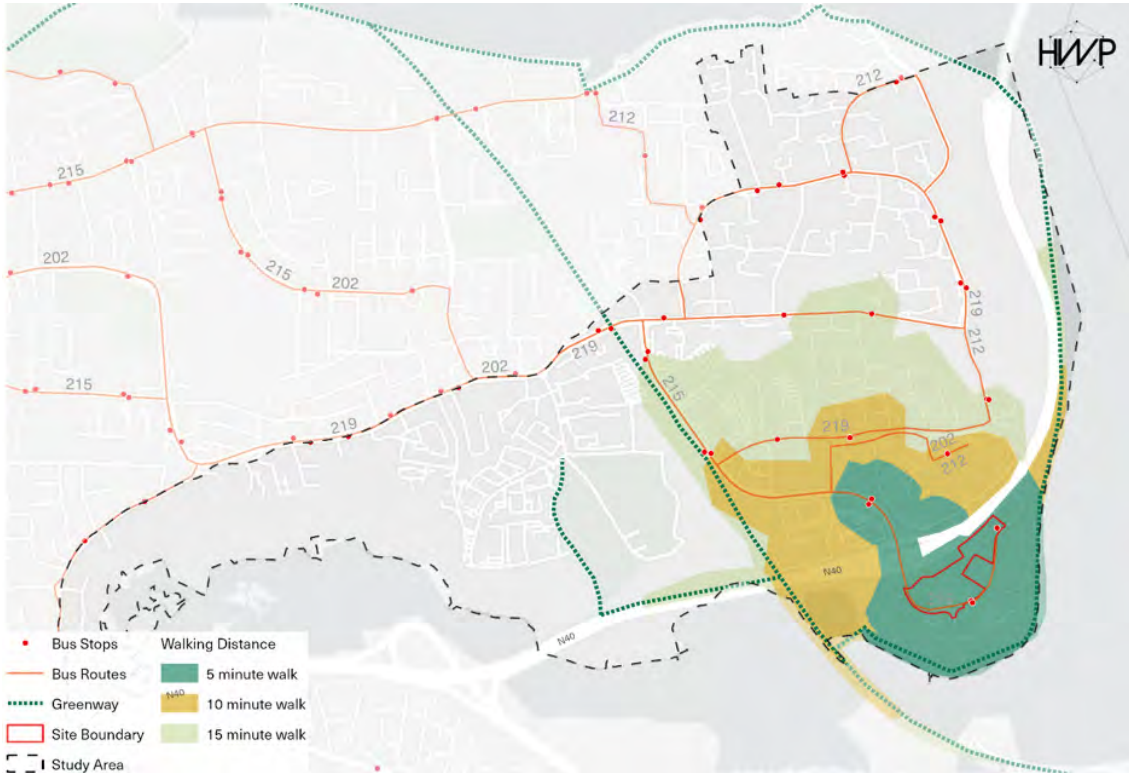


Figure 13.6 5-10 Minute Walking Times from Subject Lands

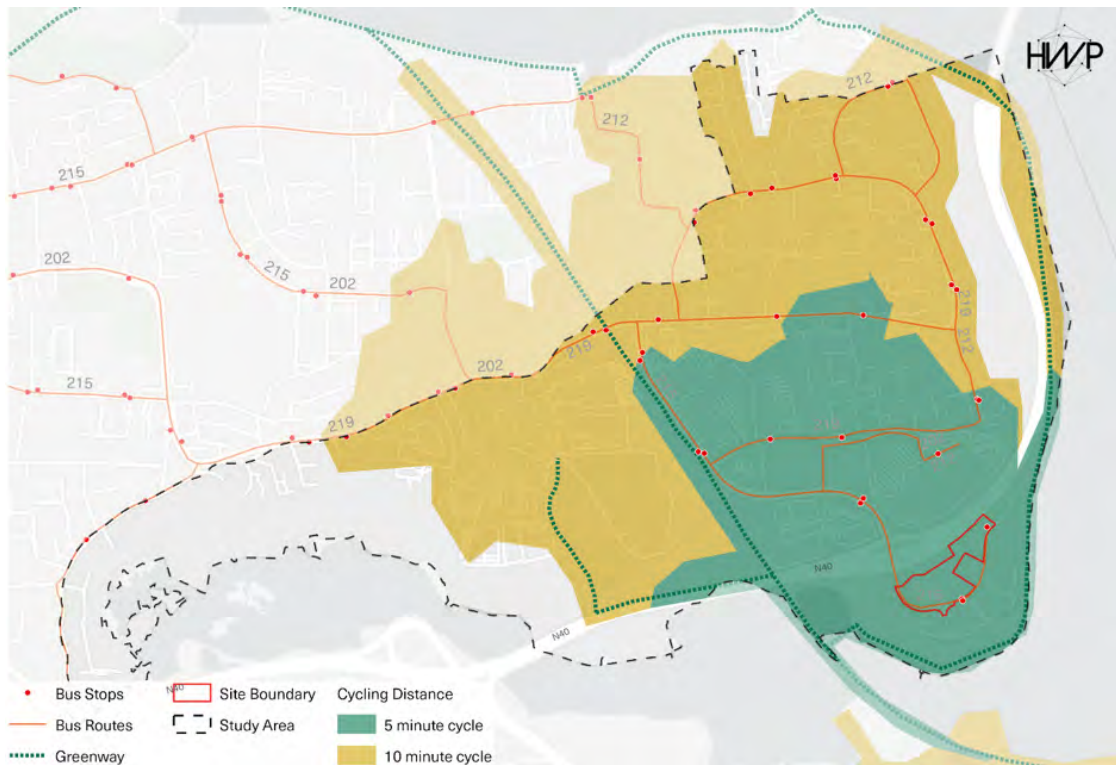


Figure 13.7 5-10 Minute Cycle Times from Subject Lands

## 13.5 RESIDUAL IMPACTS

Residual impacts refer to those impacts that remain following the implementation of mitigation measures. It is considered that subject to the mitigation measures outlined in the CEMP, and EIAR being implemented, the proposed development will result in many positive and permanent residual impacts including.

- The creation of a new community in Ballinure, orientated around a high frequency public transport link which can promote sustainable commuting patterns to nearby urban and employment centres.
- The delivery of a new formalised pedestrian/cyclist linkages between Jacob's Island and Mahon.
- The delivery of a new creche and public amenity areas which will positively contribute to the Mahon neighbourhood's childcare and community facilities.

It is acknowledged that a residual impact of the proposed development will be changes to the townscape character, in terms of intensifying the built-up nature of the townscape. However, Chapter 4 of this EIAR predicts this impact to be Very Significant / Beneficial and will not introduce elements that are uncharacteristic to the existing townscape character.

Similarly, the visual change arising from the proposed development are considered to range from beneficial to neutral in nature depending on the distance from the development. Chapter 4 considers the proposed scheme will add a strong urban edge along the N40 and act as a focal entry point from Mahon to Jacob's Island.

In relation to the impact of the proposed project on Population and Human Health it is considered that the monitoring measures outlined in regard to the other environmental topics such as water, air quality and climate and noise etc. sufficiently address monitoring requirements.

## 13.6 CUMULATIVE IMPACTS

### 13.6.1 CONSTRUCTION PHASE

Assessing the cumulative impacts of the construction phase of the proposed development, in conjunction with other proposed masterplan development (Planning Ref. 22/40809 – application being determined), is contingent on other permitted development in the area, which has yet to be constructed (ABP-301991-18) and other pending SHD development applications in the vicinity (ABP Ref.: TA28.313216 and ABP Ref.: TA28.313206 refers).

For the purposes of this assessment of impacts a 'worst case' scenario has been assessed based on the information contained in these planning applications and the other projects stated in Chapter 1. It is envisaged that subject to the implementation of mitigation measures proposed, that the proposed development will result in no significant impacts relating to air quality, noise, vibration or traffic.

### 13.6.2 OPERATIONAL PHASE

Once constructed, the proposed development will be permanent and non-reversible. It is considered that cumulative impacts relating to human health factors including traffic, road safety, air quality, water quality, noise and vibration will be not significant.

The proposed development will contribute to the diversity of character in the new urban townscape, improving its legibility as it ties together a number of existing, permitted and proposed developments. Chapter 4 consider this will allow the development of a cohesive townscape character and create a significant new urban quarter at Jacob's Island, where people can work and live.



In this respect it will also have a profound benefit in terms of the delivery of much needed residential development adjacent to this strategic employment hub, well served by public transport with access to 2 no. greenways and including a creche and public open space, it is considered that the development will result in significant benefits in terms of wider human health considerations.



## CHAPTER 14 INTERACTION OF IMPACTS

Article 3(1) of the EIA Directive states.

The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

- (a) population and human health;
- (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
- (c) land, soil, water, air and climate;
- (d) material assets, cultural heritage and the landscape;
- (e) the interaction between the factors referred to in points (a) to (d)."

Annex IV of the amended Directive states that a description of impacts should include:

"...the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project"

Table 14.1 as shown summarises the relevant interactions and interdependencies between specific environmental aspects.



*Table 14-1: Potential Interaction of Effects Matrix (Con = Construction, Op= Operational. If there is considered to be no potential for an effect, the box is left blank.)*

INTERACTION	LANDSCAPE & VISUAL	MATERIAL ASSETS - TRAFFIC & TRANSPORT	MATERIAL ASSETS - SERVICES, INFRASTRUCTURE & UTILITIES	LAND, SOILS & GEOLOGY	WATER (HYDROLOGY & HYDROGEOLOGY)	BIODIVERSITY	NOISE & VIBRATION	AIR QUALITY & CLIMATE	CULTURAL HERITAGE	POPULATION & HUMAN BEINGS
LANDSCAPE & VISUAL		Con & Op	Con & Op	Con & Op	-	Con & Op	-	-	Con & Op	Con & Op
MATERIAL ASSETS - TRAFFIC & TRANSPORT	Con & Op		Con & Op	Con	Con & Op	Con & Op	Con & Op	Con & Op	-	Con & Op
MATERIAL ASSETS - SERVICES, INFRASTRUCTURE & UTILITIES	Con & Op	Con & Op		Con	Con & Op	Con & Op	Con & Op	Con	-	Con & Op
LAND, SOILS & GEOLOGY	Con	Con	Con		Con & Op	Con	Con	Con	Con	Con
WATER (HYDROLOGY & HYDROGEOLOGY)	Op	Con	Con & Op	Con		Con & Op	-	-	-	Con & Op
BIODIVERSITY	Con & Op	Con & Op	Con & Op	Con	Con & Op		Con & Op	Con & Op	-	-
NOISE & VIBRATION		Con & Op	Con & Op	-	-	Con & Op		Con	-	Con & Op
AIR QUALITY AND CLIMATE	-	Con & Op	Con	Con	-	Con	Con		-	Con & Op
CULTURAL HERITAGE	Con & Op	-	-	Con	-	-	-	-		Op
POPULATION AND HUMAN BEINGS	Con & Op	Con & Op	Con & Op	Con & Op	Con & Op	-	Con & Op	Con & Op	Op	

## CHAPTER 15 SUMMARY OF MITIGATION MEASURES

The 2022 EPA Guidelines regarding information to be contained in EIAR's identifies the following strategies for the mitigation of effects.

**Mitigation by Avoidance:** Avoidance usually refers to strategic issues - such as site selection, site configuration or selection of process technology- is generally the fastest, cheapest and most effective form of effect mitigation. In many situations, mitigation by avoidance may be viewed as part of the 'consideration of alternatives.

**Mitigation by Prevention:** This usually refers to technical measures. Where a potential exists for unacceptable significant effects to occur (such as noise or emissions) then measures are put in place to limit the source of effects to a permissible and acceptable level.

**Mitigation by Reduction:** This is a very common strategy for dealing with effects which cannot be avoided. It tends to concentrate on the emissions and effects and seeks to limit the exposure of the receptor. It is generally regarded as the 'end of pipe' approach because it tends not to affect the source of the problems. As such this is regarded as a less sustainable, though still effective, approach.

**Offsetting:** This is a strategy used for dealing with significant adverse effects which cannot be avoided, prevented or reduced. It includes measures to compensate for adverse effects. Examples include restoration of buildings, walls or features to compensate for loss of similar features, planting of new vegetation elsewhere to replace unavoidable loss of similar vegetation, provision of a new amenity area to replace amenity lost as a result of a project.

For a comprehensive list of all proposed mitigation measures, refer to the individual chapters and corresponding appendices of this EIAR (Volumes II and III).

The accompanying CEMP (Appendix 2-1 of this EIAR), also provide details of all construction related mitigation and monitoring measures to be adopted during the construction phase of the project.



