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## **Greater Dublin Drainage Project**

Irish Water

**Environmental Impact Assessment Report: Volume 3 Part A of 6**

**Chapter 6 Population and Human Health: Population**

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## 6. Population and Human Health: Population

This Chapter assesses the potential impacts of the Greater Dublin Drainage Project (hereafter referred to as the Proposed Project) on the human environment and quality of life in the general vicinity of the Proposed Project. The assessment considers attributes and characteristics associated with population, community and residential settlement, economic activities and employment, community infrastructure, and tourism and recreation.

In the long term, the Proposed Project will have a positive impact by enabling the future development and expansion of population and residential housing to take place in Fingal and the Greater Dublin Area. There will also be positive impacts on social and commercial activity, for example in the creation of new employment opportunities, the increase in demands for materials and services and the economic benefits that will consequently arise – both at the Construction Phase and Operational Phase. There is potential for disruption to social and commercial activity arising from the Construction Phase of the Proposed Project, primarily because of temporary disturbance to the local minor roads. There will also be temporary disruption to some sporting and recreational facilities during the Construction Phase including the National Sports Campus, the ALSAA Sports Centre and to the recreational amenity of Velvet Strand Beach. However, with the implementation of appropriate mitigation measures, no significant residual impacts are anticipated to occur.

Furthermore, a series of mitigation measures have been proposed to minimise adverse impacts on residents and businesses, including the appointment of a Community Liaison Officer, and a Fisheries Liaison Officer to minimise potential impacts on commercial and recreational fishing. Other mitigation measures include advance notifications to the owners of all residential/commercial/community properties; a dedicated Construction Phase Traffic Control and Management Plan to mitigate against potential traffic delays; alternative access arrangements; alternative and replacement sporting and leisure facilities and rehabilitation work at affected sites.

### 6.1 Introduction

This Chapter assesses the impact of the Greater Dublin Drainage Project (hereafter referred to as the Proposed Project), both during the Construction Phase and Operational Phase, on the human environment and quality of life in the general area of the subject site(s) for the Proposed Project.

The Proposed Project will form a significant component of a wider strategy to meet future wastewater treatment requirements within the Greater Dublin Area (GDA) as identified in a number of national, regional and local planning policy documents. The plant, equipment, buildings and systems associated with the Proposed Project will be designed, equipped, operated and maintained in such a manner to ensure a high level of energy performance and energy efficiency.

The table below includes a summary of the Proposed Project elements. A full description of the Proposed Project is detailed within Volume 2 Part A, Chapter 4 Description of the Proposed Project, of this Environmental Impact Assessment Report (EIAR).

Proposed Project Element	Outline Description of Proposed Project Element
Proposed Wastewater Treatment Plant (WwTP)	<ul style="list-style-type: none"> <li>• WwTP to be located on a 29.8 hectare (ha) site in the townland of Clonshagh (Clonshaugh) in Fingal.</li> <li>• 500,000 population equivalent wastewater treatment capacity.</li> <li>• Maximum building height of 18m.</li> <li>• Sludge Hub Centre (SHC) to be co-located on the same site as the WwTP with a sludge handling and treatment capacity of 18,500 tonnes of dry solids per annum.</li> <li>• SHC will provide sustainable treatment of municipal wastewater sludge and domestic septic tank sludges generated in Fingal to produce a biosolid end-product.</li> <li>• Biogas produced during the sludge treatment process will be utilised as an energy source.</li> <li>• Access road from the R139 Road, approximately 400m to the southern boundary of the site.</li> <li>• Egress road, approximately 230m from the western boundary of the site, to Clonshaugh Road.</li> <li>• A proposed temporary construction compound to be located within the site boundary.</li> </ul>
Proposed Abbotstown pumping station	<ul style="list-style-type: none"> <li>• Abbotstown pumping station to be located on a 0.4ha site in the grounds of the National Sports Campus at Abbotstown.</li> <li>• Abbotstown pumping station will consist of a single 2-storey building with a ground level floor area of 305m<sup>2</sup> and maximum height of 10m and a below ground basement 17m in depth with floor area of 524m<sup>2</sup> incorporating the wet/dry wells.</li> <li>• The plan area of the above ground structure will be 305m<sup>2</sup> and this will have a maximum height of 10m.</li> <li>• A proposed temporary construction compound to be located adjacent to the Abbotstown pumping station site.</li> </ul>
Proposed orbital sewer route	<ul style="list-style-type: none"> <li>• The orbital sewer route will intercept an existing sewer at Blanchardstown and will divert it from this point to the WwTP at Clonshagh.</li> <li>• Constructed within the boundary of a temporary construction corridor.</li> <li>• 13.7km in length; 5.2km of a 1.4m diameter rising main and 8.5km of a 1.8m diameter gravity sewer.</li> <li>• Manholes/service shafts/vents along the route.</li> <li>• Odour Control Unit at the rising main/gravity sewer interface.</li> <li>• Proposed temporary construction compounds at Abbotstown, Cappoge, east of Silloge, Dardistown and west of Collinstown Cross to be located within the proposed construction corridor.</li> </ul>
Proposed North Fringe Sewer (NFS) diversion sewer	<ul style="list-style-type: none"> <li>• The NFS will be intercepted in the vicinity of the junction of the access road to the WwTP with the R139 Road in lands within the administrative area of Dublin City Council.</li> <li>• NFS diversion sewer will divert flows in the NFS upstream of the point of interception to the WwTP.</li> <li>• 600m in length and 1.5m in diameter.</li> <li>• Operate as a gravity sewer between the point of interception and the WwTP site.</li> </ul>
Proposed outfall pipeline route (land based section)	<ul style="list-style-type: none"> <li>• Outfall pipeline route (land based section) will commence from the northern boundary of the WwTP and will run to the R106 Coast Road.</li> <li>• 5.4km in length and 1.8m in diameter.</li> <li>• Pressurised gravity sewer.</li> <li>• Manholes/service shafts/vents along the route.</li> <li>• Proposed temporary construction compounds (east of R107 Malahide Road and east of Saintdoolaghs) located within the proposed construction corridor.</li> </ul>
Proposed outfall pipeline route (marine section)	<ul style="list-style-type: none"> <li>• Outfall pipeline route (marine section) will commence at the R106 Coast Road and will terminate at a discharge location approximately 1km north-east of Ireland's Eye.</li> <li>• 5.9km in length and 2m in diameter.</li> <li>• Pressurised gravity tunnel/subsea (dredged) pipeline.</li> <li>• Multiport marine diffuser to be located on the final section.</li> <li>• Proposed temporary construction compounds (west and east of Baldoyle Bay) to be located within the proposed construction corridor.</li> </ul>
Proposed Regional Biosolids Storage Facility	<ul style="list-style-type: none"> <li>• Located on an 11ha site at Newtown, Dublin 11.</li> <li>• Maximum building height of 15m.</li> <li>• Further details and full impact assessment are provided in Volume 4 Part A of this EIAR.</li> </ul>

The total Construction Phase will be approximately 48 months, including a 12 month commissioning period to the final Operational Phase. The Proposed Project will serve the projected wastewater treatment requirements of existing and future drainage catchments in the north and north-west of the Dublin agglomeration, up to the Proposed Project's 2050 design horizon.

'Population', in this Chapter, refers to people who live, work or visit the study area. Actual and perceived impacts of the Proposed Project on population may arise from a number of elements. These impacts are dealt with throughout the EIAR, particularly in the following Chapters in Volume 3 Part A:

- Chapter 12 Landscape and Visual;

- Chapter 13 Traffic and Transport;
- Chapter 14 Air Quality, Odour and Climate;
- Chapter 15 Noise and Vibration;
- Chapter 19 Agronomy; and
- Chapter 21 Material Assets.

Aspects of the Proposed Project that are relevant to consider from the perspective of human health are dealt with specifically in Chapter 7 Population and Human Health: Human Health in Volume 3 Part A of this EIAR.

Please note that the population impact assessment of the proposed RBSF aspect of the Proposed Project is addressed in Chapter 3 Population and Human Health in Volume 4 Part A of this EIAR.

## 6.2 Methodology

### 6.2.1 Overview

The methodology is based on established best practice with cognisance given to all relevant guidelines and legislation and, in particular, the draft *Guidelines on Information to be Contained in Environmental Impact Assessment Reports* (EPA 2017) published by the Environmental Protection Agency (EPA). The *Guidelines on the Treatment of Tourism in an Environmental Impact Statement* (Fáilte Ireland 2011) by Fáilte Ireland were also referred to.

The assessment of population near the Proposed Project is primarily based on a desk-based assessment. The desk-based assessment determines the existing background environment (in terms of population), including the existing population, future population projections, existing and future economic activity in the area, employment, community infrastructure, tourism and recreation amenities in the subject areas. Site visits covering the full extent of the study area (as described in Section 6.2.4) were undertaken at various dates in 2012, 2014, 2016 and most recently in August 2017. The purpose of the site visits was to review and record the land use and property types located within the study area in order to inform the baseline assessment and to determine the location of potentially sensitive receptors (residential properties/developments, businesses, community infrastructure, tourism and recreational amenities). GeoDirectory, a complete database of all buildings in the Republic of Ireland and their geolocation, was also used to inform and validate the baseline assessment. Geographic Information System mapping has been used to visually record information relevant to the assessment which was gathered from the desktop and field surveys.

The assessment considers attributes and characteristics associated with population, community and residential settlement, economic activities and employment, community infrastructure and tourism and recreation.

It should be noted that conformity of the Proposed Project with recognised national and international standards has been addressed within this EIAR under relevant environmental topics such as noise and vibration; landscape and visual; traffic and transport; and air quality, odour and climate. Details from these assessments, the Proposed Project description (Chapter 4 Description of the Proposed Project) and, where relevant, the population impact assessment, has been used to inform the assessment of impacts.

### 6.2.2 Desktop Research – Principal Data Sources

The assessment involved desk-based research and analysis of existing documentation to build up profiles of the communities that would likely be affected by the Proposed Project. This desk-based assessment has been undertaken based on information from the following principal data sources:

- Central Statistics Office (CSO) Census of Population, including Census 2016;

- Pobal Maps;
- GeoDirectory (Q1 2016 data);
- Map viewer of the Valuation Office of Ireland;
- Ordnance Survey of Ireland aerial photography;
- Planning search of recently submitted and granted planning applications for development in the area;
- Fingal County Council (FCC) (data retrieved from Dublinked (Smart Dublin 2018));
- Department of Education and Skills;
- Fáilte Ireland; and
- Property Services Regulatory Authority.

A range of strategic planning guidance documents and technical reports were reviewed as part of the assessment process. The following presents a list of the key documents reviewed as part of this study:

- *Project Ireland 2040 – National Planning Framework* (Government of Ireland 2017);
- *Regional Planning Guidelines for the Greater Dublin Area 2010-2022* (Dublin Regional Authority and Mid East Regional Authority 2010);
- *Water Services Strategic Plan* (Irish Water 2015);
- *Greater Dublin Strategic Drainage Study* (Dublin Drainage Consultancy 2005);
- *Greater Dublin Drainage, Alternative Sites Assessment and Route Selection (Phase 4): Final Preferred Site and Routes* (Jacobs Tobin 2013);
- *Strategic Environmental Assessment (SEA) on the Greater Dublin Strategic Drainage Study* (FCC 2008);
- *Fingal County Council Sludge Management Plan* (FCC 2013d);
- *Fingal Development Plan 2011-2017* (FCC 2011);
- *Fingal Development Plan 2017-2023* (FCC 2017);
- *Dublin City Development Plan 2011-2017* (DCC 2010);
- *Dublin City Development Plan 2016-2022* (DCC 2016);
- *Clongriffin-Belmayne Local Area Plan (LAP)* (DCC 2012);
- *Dardistown LAP* (FCC 2013a)<sup>1</sup>;
- *Portmarnock South LAP* (FCC 2013c)<sup>2</sup>;
- *Baldoyle-Stapolin LAP* (FCC 2013b)<sup>3</sup>; and
- *Fingal Tourism Strategy 2015-2018* (FCC 2015).

Furthermore, observational information obtained as part of site visits, as referred to in Section 6.2.1, was instrumental to the establishment of baseline conditions and to the assessment of impacts.

### 6.2.3 Consultation

Responses to issues raised during consultation which are of relevance from a human being and socio-economic perspective are addressed in this Chapter.

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<sup>1</sup> Refer to Appendix A6.2 in Volume 3 Part B of this EIA to view detailed review of LAP

<sup>2</sup> Refer to Appendix A6.2 in Volume 3 Part B of this EIA to view detailed review of LAP

<sup>3</sup> Refer to Appendix A6.2 in Volume 3 Part B of this EIA to view detailed review of LAP

Community and socio-economic issues raised in submissions largely related to:

- Concerns about the potential overburdening of the area and the potential impact on industry and business in the area;
- Potential impact of adverse odours, wastewater discharge and the potential impact of the release of contaminants from emissions on human health; and
- Views were expressed that there must be some form of appreciable community gain for the area if the Proposed Project goes ahead.

The submissions, observations, views and concerns of landowners which were made to the Proposed Project Team have been reviewed as part of the assessment.

In terms of human impacts of the Proposed Project, the main comments from landowners related to:

- The potential negative impact of the Proposed Project on their livelihoods and the local economy, mostly in relation to agriculture;
- Concerns were expressed on the ability to attract foreign direct investment to the area which lies on the city's fringe, following the construction of the Proposed Project;
- Concerns that the community as a whole would be adversely affected as a result of the Proposed Project; and
- Other concerns included negative impacts on tourism and leisure in the area, visual impacts upon the landscape and local amenities, increased traffic, lower the reputation of the area, and potential impacts on population distribution.

Future Analytics Consulting met with representatives of the fisheries sector in relation to the potential impact of the Proposed Project on commercial fisheries. Meetings were held with representatives from the following organisations:

- Fisheries Liaison Officer (FLO) (date of meeting 2 September 2015);
- Sea Fisheries Protection Authority (SFPA) (date of meeting 31 March 2015 – subsequent phone/email conversations at various dates in 2016 and 2017); and
- Bord Iascaigh Mhara (BIM) (date of meeting 16 May 2011).

The purpose of these meetings was to ascertain the level of commercial fishing taking place and to obtain the advice of the fisheries authorities in relation to appropriate mitigation measures.

In addition, it should also be noted that direct consultation has been undertaken by the wider Proposed Project Team with affected parties including daa, the operator of the ALSAA Sports, Fitness and Social Association Grounds, the operator of the NSC, Craobh Chiaráin Gaelic Athletic Association (GAA) Club and affected other landowners. Where relevant, the outcome of this consultation process, including agreement on appropriate mitigation measures, has been integrated into this assessment on population impacts.

#### **6.2.4 Definition of Study Area**

For the purposes of the assessment, a study area has been selected extending 1km from the boundary of the proposed WwTP. This study area encompasses the access and egress roads and proposed NFS diversion sewer relevant to the proposed WwTP. A study area extending 500m either side of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route has been selected. The assessment incorporates the marine environment in terms of the potential for economic impact on fisheries from the proposed outfall pipeline route.



No formal national guidance is available on the appropriate study area to focus the assessment of population and human health: population impacts arising from WwTPs and associated pipeline infrastructure. As such, professional judgement was applied in determining the appropriate study areas. A 1km study area around the proposed WwTP was selected as it was felt that land use activities located at a distance further than 1km from the boundary of the proposed WwTP site would be unlikely to experience significant impacts as a result of the construction or operation of the proposed WwTP. Similarly, it was determined that a 500m zone either side of the proposed Abbotstown pumping station and proposed pipeline routes (proposed orbital sewer route and outfall pipeline route (land based section and marine section) and associated physical structures) represented a reasonable distance in which to assess potential significant impacts associated with the Construction Phase or Operational Phase of the Proposed Project.

Regard was also had to the minimum distance of 100m for a buffer zone around all WwTPs, as set out in Objective WT11 on page 272 of the *Fingal Development Plan 2017 – 2023* (FCC 2017):

*‘Establish a buffer zone around all wastewater treatment plants suitable to the size and operation of each plant. The buffer zone should not be less than 100m from the odour producing units.’*

It should be noted that, for the assessment of impacts on the population carried out as part of other chapters (i.e. landscape and visual; water quality; air quality, odour and climate; noise and vibration; and traffic and transport), different study area distances may have been used in each individual technical assessment. Please refer to Figure 6.1 Study Area for the Proposed Wastewater Treatment Plant and Figure 6.2 Study Area for the Proposed Orbital Sewer Route, Outfall Pipeline Route and Abbotstown Pumping Station.

### **6.2.5 Impact Assessment Criteria**

The assessment of the population and human health impacts of the Proposed Project was carried out in accordance with the Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive). Additionally, the assessment also satisfies the requirements of the Guidance on Impact Assessment as set out in Section 3.7 of the draft EPA *Guidelines on Information to be Contained in Environmental Impact Assessment Reports* (EPA 2017) which addresses Directive 2014/52/EU which is due to be transposed into Irish Law. These draft Guidelines will be reviewed when the new regulations transposing Directive 2014/52/EU into Irish law are available.

As such, the EIAR describes the likely significant direct effects of the Proposed Project. Potential indirect/secondary, cumulative, do-nothing, worst case, indeterminable, irreversible, residual, and synergistic effects of the Proposed Project are also described, where relevant. The extent, context and frequency of effects has also been considered in the assessment process. The relevant terms listed in Table 6.1 below can be used to describe specific effects. All categories of terms do not need to be used for every effect.

**Table 6.1: Description of Effects**

Quality of Effects	Description of Effects
Positive	A change which improves the quality of the environment.
Neutral	No effects, or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative	A change which reduces the quality of the environment.
Significance of Effects	Description of Significance of Effects
Imperceptible	An effect capable of measurement but without significant consequences.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.
Duration of Effects	Description of Duration of Effects
Momentary Effects	Effects lasting from seconds to minutes.
Brief Effects	Effects lasting less than a day.
Temporary	Effects lasting less than a year.
Short-term	Effects lasting one to seven years.
Medium-term	Effects lasting seven to 15 years.
Long-term	Effects lasting 15 to 60 years.
Permanent	Effects lasting over 60 years.
Reversible	Effects than can be undone, for example through remediation or restoration

## 6.3 Baseline Environment

### 6.3.1 Location

The Proposed Project will provide additional wastewater treatment capacity in the GDA. The proposed WwTP and SHC (hereafter referred to as the proposed WwTP) would be situated on the northern periphery of the built-up area of Dublin City and suburbs. To the north there are largely agricultural areas separating the city from the suburbs of Malahide and Swords and the growing hinterland in Fingal. It is estimated that in its first year of operation, over 40% of the load to the proposed WwTP will be generated in Fingal and the remainder will come from the northern fringes of Dublin City, south-east Meath and north-east Kildare. The proposed WwTP lies in the Electoral Division (ED) of Balgriffin, with the EDs of Priorswood A (approximately 500m), Priorswood B (approximately 550m) and Priorswood C (approximately 900m) situated to the south of the site. The most southern boundary of Kinsaley ED is situated approximately 900m north of the proposed WwTP. The closest

residential development schemes to the site are Cara Park, approximately 850m to the south, and Baskin Cottages, approximately 900m north of the proposed WwTP site boundary.

The proposed orbital sewer route, Abbotstown pumping station, and the proposed outfall pipeline route ((land based section and marine section) which are hereafter collectively referred to as the proposed outfall pipeline route) pass through a total of seven EDs (refer to Table 6.2), with small sections of the proposed orbital sewer route and outfall pipeline route (or the 500m buffer either side) extending onto 11 additional EDs.

### 6.3.2 Population

The CSO Census results (Census 2016) indicates that over 1.9 million people, or just over 40% of the population of Ireland, now live in the GDA. By 2031, the population of the GDA is projected to reach 2.2 million. The GDA (comprising counties Fingal, Dublin City, South Dublin and Dún Laoghaire–Rathdown) experienced a 13.4% increase in population in the decade from 2006 to 2016. Census 2016 informs that the GDA also recorded the largest inward migration nationally, with +7,981 persons. In the decade 2006 to 2016, Fingal’s population increased by 23.3%, significantly above the regional growth rate for the same period. Census 2016 data show a growth rate of 8% in the five-year intercensal period since 2011, while all four administrative areas of Dublin were amongst the fastest growing counties nationally.

A population profile of the ED areas situated near the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route determines that, while variations exist across the study area, there has been a 33% increase in the overall population in the decade from 2006 to 2016 (refer to Table 6.2), from 68,795 people in 2006 to 91,329 in 2016. Balgriffin ED experienced the greatest population growth of 242% (to 3,131 persons) while Kinsaley experienced an increase of 74% (to 9,621 persons).

The population changes in the Priorswood A and Priorswood E EDs have been less significant, with 2% and 4% growth respectively. Priorswood B ED experienced a decline in population of 5% over the same period. Five EDs along the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route have recorded a decline in population, most notably Blanchardstown-Corduff (19% decrease). The population trends associated with each ED between 2006 and 2016 are set out in Table 6.2. The EDs highlighted in grey in Table 6.2 represent those which intersect directly with the Proposed Project (proposed WwTP and/or orbital sewer route, Abbotstown pumping station and outfall pipeline route), while the remaining EDs represent those within the study area.

**Table 6.2: Population Change between 2006 and 2016 (Census 2016)**

Electoral Division	2006	2011	2016	Percentage Change 2006–2016
Blanchardstown-Abbotstown	4,122	4,870	6,195	50%
The Ward	5,181	8,241	9,602	85%
Dubber	3,747	6,359	7,372	97%
Airport	1,611	4,032	5,018	211%
Balgriffin	911	1,966	3,131	244%
Baldoyle	5,942	7,050	7,524	27%
Portmarnock South	3,522	3,465	3,621	3%
Blanchardstown-Coolmine	10,774	10,819	11,320	5%
Blanchardstown-Roselawn	1,831	1,682	1,688	-8%

Electoral Division	2006	2011	2016	Percentage Change 2006–2016
Blanchardstown-Corduff	4,806	3,788	3,871	-19%
Finglas North A	3,472	3,227	3,319	-4%
Turnapin	1,723	1,683	1,700	-1%
Priorswood A	1,581	1,562	1,618	2%
Priorswood B	2,882	2,673	2,728	-5%
Priorswood C	3,557	4,491	4,854	36%
Priorswood E	2,731	2,821	2,839	4%
Grange B	2,870	4,565	5,326	86%
Kinsaley	5,526	8,475	9,621	74%
<b>Total</b>	<b>66,789</b>	<b>81,769</b>	<b>91,347</b>	<b>33%</b>

The *Regional Planning Guidelines for the Greater Dublin Area 2010-2022* (Regional Planning Guidelines Office 2010) project a population target for the GDA of 1,464,200 by 2022 and a target population for Fingal<sup>4</sup> of 309,285 persons by 2022. It is likely that this population will be exceeded, considering the RPGs' projection for Fingal for 2016 has already been exceeded by over 8,600 persons<sup>5</sup> based on Census 2016 results. The increasing population of Fingal and the wider GDA will place significant developmental pressures on the GDA and will consequently require critical infrastructure, including wastewater treatment infrastructure, to support the future population and its socio-economic requirements.

### 6.3.3 Household Formation

A review of household formation over the period 2011 to 2016 determined that Fingal experienced the largest increase in household formation in the GDA, with the number of households increasing by 4.4% (Census 2016).

### 6.3.4 Community and Residential Settlement

Existing and proposed settlements situated within study area of the proposed WwTP site and within 500m of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route have been identified. This involved site visits, a review of aerial photography and a review of the *Dublin City Development Plan 2011-2017* (DCC 2010), *Dublin City Development Plan 2016-2022* (DCC 2016), *Fingal Development Plan 2011-2017* (FCC 2011) and *Fingal Development Plan 2017-2023* (FCC 2017) and the GeoDirectory.

#### Existing Residential Development

Using the GeoDirectory database, it has been established that there are 3,775 residential buildings (this refers to buildings and not to units within buildings, e.g. one apartment block but not the number of individual units within that apartment block) located within the study area for the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route. The locations of these buildings are displayed in Figure 6.3 Residential Buildings within the Proposed Project Study Area, and a more detailed description of residential settlements is provided in Appendix A6.1 in Volume 3 Part B of this EIAR.

The lands surrounding the proposed WwTP site are primarily agricultural in nature. However, a number of private dwellings and residential developments are situated within the study area. The GeoDirectory database

<sup>4</sup> Fingal County Council functional area

<sup>5</sup> RPG projection for 2016 is 287,547 (Regional Planning Office 2010)

indicates that there are 2,446 residential buildings within the study area of the proposed WwTP. The residential areas of Belcamp and Darndale are located approximately 0.8km to the south of the proposed WwTP site.

### Residential Zoned Land

The main land use zonings, as designated in the *Fingal Development Plan 2017-2023* (FCC 2017), pertaining to the study area for the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route are as follows:

- General Employment – Provide opportunities for general enterprise and employment; and
- Open Space – Preserve and provide for open space and recreational amenities.

Other land use zones include high amenity, heavy industry, high technology, residential and residential areas, warehousing and distribution (refer to Figure 6.4 Land Use Zonings within the Proposed Project Study Area). Figure 6.5 Residential Zones Lands within the Proposed Project Study Area shows residential zoned land.

It is also relevant to note that the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route pass through or in close proximity to the lands designated as part of LAPs, which include residential elements, as follows:

- *Dardistown Local Area Plan* (FCC 2013a) – The Dardistown LAP lands have been identified as an important strategic development land bank located to the south of Dublin Airport. The LAP lands include the future Dardistown Metro Stop on the Metro North line which will be the first southbound stop from Dublin Airport.
- It is also relevant to note that the *Fingal Development Plan 2017-2023* (FCC 2017) refers to the inclusion of a Light Rail Corridor (formerly known as Metro West) in the Government's Capital Programme 2016-2021 (Irish Government 2016). The indicative proposed route will operate from Tallaght through to Blanchardstown, linking with the proposed new Metro North at Dardistown;
- *Baldoyle-Stapolin Local Area Plan* (FCC 2013b) – The Baldoyle-Stapolin LAP lands are located directly south of the Portmarnock South LAP lands; and
- *Portmarnock South Local Area Plan* (FCC 2013c) – The Portmarnock LAP sets a framework for a new residential community south of Portmarnock village.

Appendix A6.2 in Volume 3 Part B of this EIAR sets out a more detailed description of the nature and contents of these LAPs.

There are three land use zonings pertaining to the proposed WwTP. The majority of the site is designated as a Greenbelt area – *'protect and provide for a Greenbelt'*. A section of the proposed WwTP site to the south is designated as a High Technology area – *'office, research and development and high technology/high technology manufacturing type employment'*. This land forms part of a wider land parcel south of the site and fronting onto R139 Road (Northern Cross Link) that falls within the Masterplan lands for Clonsaugh East (MP 11.D lands as outlined on Map Sheet 11 of the *Fingal Development Plan 2017-2023* (FCC 2017)). Objective ED90 of the *Fingal Development Plan 2017-2023* (FCC 2017) pertains to the MP 11.D lands when it states to – *'Prepare and/or implement the following Masterplans during the lifetime of this Plan.'*

A small portion of the lands to the south-east of the proposed WwTP site are zoned as Open Space– *'Preserve and provide for open space and recreational amenities'*. An area of land situated to the south-east of the site is designated as Residential – *'Provide for residential development and protect and improve residential amenity'*. These lands fall within the LAP 9B lands, as outlined in Map Sheet 9 of the *Fingal Development Plan 2017-2023* (FCC 2017). These lands provide for Objective Balgriffin/Belcamp 6 of the *Fingal Development Plan 2017-2023* (FCC 2017) which aims to *'Prepare a Local Area Plan for lands at Belcamp (Map Sheet 9, LAP 9B) to*

*provide for a sustainable mixed use urban district including residential, community and recreational facilities subject to the delivery of the necessary infrastructure and rehabilitation and restoration of Belcamp House’.*

### **6.3.5 Education**

Within the overall study area for the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route, 27% of the population aged 15 and over (15,317 persons) were recorded as possessing a tertiary-level of education (Bachelor’s degree or higher), compared to the Fingal rate of 33.9%. An additional 19% (10,758 persons) possess a technical or vocational qualification or an advanced or higher certificate or have completed an apprenticeship, compared to a rate of 20% for Fingal<sup>6</sup>.

### **6.3.6 Economic Activity**

The GDA is the key economic driver of the country as it is the only city-region in the country of international scale, providing for over 30% of the State’s workforce. CSO data inform that Fingal has the highest labour force participation rate of the four Local Authority areas in County Dublin with a rate of 68.4% (Census 2016). The following section presents the baseline conditions in relation to economic status, unemployment and existing economic activity in the study area of the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route.

#### Economic Status

A breakdown of socio-economic groups within the study area of the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route is provided in Table 6.3. The EDs highlighted in grey are those which intersect directly with the Proposed Project, while the remaining EDs represent those within the study area.

Census 2016 data show that a higher proportion of employers and professionals are situated in Balgriffin and Portmarnock South. The EDs with the highest proportion of unskilled workers are Finglas North A, Priorswood A and Priorswood B.

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<sup>6</sup> Census 2016 Small Area Population statistics by Electoral Division – Theme 1 Population aged 15 years and over by sex and highest level of education completed.

**Table 6.3: Persons Aged 15 Years and Over by Socio-Economic Group (CSO 2016)**

	Employers & Managers	Higher Professional	Lower Professional	Non-manual	Manual Skilled	Semi-skilled	Unskilled	Own Account Workers	Farmers	Agricultural Workers	Other	Total
Blanchardstown-Abbotstown	746	533	1,070	1,071	342	517	122	199	7	5	1,091	5,703
The Ward	1,423	590	1,292	1,751	882	848	296	489	51	8	1,876	9,506
Dubber	863	227	974	1,635	594	772	271	329	30	11	1,471	7,177
Airport	476	236	552	877	220	268	98	79	4	4	867	3,681
Balgriffin	809	268	326	360	118	64	51	150	48	2	297	2,493
Baldoyle	1,540	560	994	1,694	702	571	249	426	11	8	756	7,511
Portmarnock South	1,026	438	576	643	265	134	63	179	0	2	302	3,628
Blanchardstown-Coolmine	1,394	660	1,122	2,477	967	1,033	652	487	12	25	2,400	11,229
Blanchardstown-Roselawn	377	142	264	332	139	108	70	78	0	4	181	1,695
Blanchardstown-Corduff	342	77	262	878	473	413	252	215	0	6	1,011	3,929
Finglas North A	206	29	162	709	406	435	277	142	0	4	962	3,332
Turnapin	268	106	202	376	193	146	65	101	0	0	247	1,704
Priorswood A	160	53	79	433	238	234	63	101	0	0	230	1,591
Priorswood B	107	16	105	488	235	322	218	80	6	0	1,203	2,780
Priorswood C	301	81	261	1,191	413	609	389	117	0	5	1,379	4,746
Priorswood E	347	42	184	665	384	415	175	188	0	4	455	2,859
Grange B	708	328	682	1,468	508	501	183	231	3	0	763	5,375
Kinsaley	2,034	761	1,248	2,174	676	581	243	484	36	23	1,029	9,289
<b>Total</b>	<b>13,127</b>	<b>5,147</b>	<b>10,355</b>	<b>19,222</b>	<b>7,755</b>	<b>7971</b>	<b>3737</b>	<b>4075</b>	<b>208</b>	<b>111</b>	<b>16520</b>	<b>88,228</b>

### Unemployment

Live register figures from social welfare offices located in or close to the study area were also reviewed for an up-to-date overview of employment trends. The live register figures show that unemployment has been decreasing in the north Dublin communities across the study area, particularly in the Blanchardstown area

where the number of people drawing social welfare had decreased by 16% in 2017 on 2016 levels (from 6,908 persons in September 2016 to 5,794 in September 2017).

Existing Economic Activity

A review of the sectoral base and locations of business within the study area of the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route was undertaken using the GeoDirectory database. Table 6.4 presents the number of buildings in commercial use within selected locations of the study area, and based on this, Figure 6.6 Economic Activity within the Proposed Project Study Area presents an indicator of economic activity within the study area.

**Table 6.4: Locations of Commercial Buildings within the Selected Locations of the Study Area (January 2016)**

Location	Number of Commercial Buildings
Businesses in the Coolmine Road area	151
Businesses located in the North Finglas area (south of the M50 Motorway)	90
Businesses located in Blanchardstown (to the west of the N2 National Road)	157
Businesses located on the R132 Swords Road in the Collinstown Cross/Dardistown area.	73
Businesses located in the Clonshagh, Belcamp and Darndale area	71
Business located on the R107 Malahide Road and Kinsealy area	30

Confirmation on the nature of commercial activity within the study area was provided on analysis of the GeoDirectory database, which lists commercial activity and sectoral base/provisions of services in any given location at a specific point in time (Q1 2016) (refer to Table 6.5).

**Table 6.5: Sectoral Base for the Study Areas (Source: GeoDirectory Q1 2016)**

European Industry Activity Classification	Total	%
Agriculture, Forestry And Fishing	24	3%
Manufacturing	45	6%
Water Supply; Sewerage, Waste Management And Remediation Activities	1	0%
Construction	18	2%
Wholesale And Retail Trade; Repair Of Motor Vehicles And Motorcycles	162	22%
Transportation And Storage	54	7%
Accommodation And Communication	48	6%
Information And Communication	27	4%
Financial And Insurance Activities	17	2%
Real Estate Activities	18	2%
Professional, Scientific And Technical Activities	69	9%
Administrative And Support Service Activities	65	9%
Public Administration And Defence; Compulsory Social Security	14	2%
Education	26	3%



European Industry Activity Classification	Total	%
Human Health And Social Work Activities	57	8%
Arts, Entertainment And Recreation	31	4%
Other Service Activities	70	9%
Total	746	100%

A spatial review of business activity indicates a number of commercial clusters within the study area for the proposed WwTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route as presented in Figure 6.7 Commercial Clusters within the Proposed Project Study Area.

#### Economic Activity – Proposed Wastewater Treatment Plant Study Area

Economic activity within the study area of the proposed WwTP is focused primarily in the Belcamp/Darndale area, specifically the lands between the R139 Road (Northern Cross Link) and Priorswood Road. This part of the study area is dominated by residential uses, with economic activity in the area largely comprising supporting retail and neighbourhood services. Some commercial and industrial uses are also located on the Clonshaugh Road (including the Clayton Hotel, Topaz Service Station, agricultural and horticultural land uses and industrial premises located in Clonshaugh Business and Technology Park). The study area also encompasses much of Baskin Lane, located to the north of the proposed WwTP site at Clonshagh. Economic activity in this area is primarily agricultural and horticultural based.

#### Economic Activity – Proposed Orbital Sewer Route Study Area and Abbotstown Pumping Station

Lands through which the proposed orbital sewer route passes that are in agricultural use are described in Chapter 19 Agronomy.

The wider review of the business activity in the study area of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route reveals a sectoral base that ranges from agricultural/horticultural land uses to industrial uses (e.g. light and heavy manufacturing, warehousing) to fishing, quarrying, healthcare (Connolly Hospital and St. Francis' Hospice in Blanchardstown), transportation, retail, education, professional and other service related activity uses.

A description of uses occurring within the study area for the proposed orbital sewer route and Abbotstown pumping station by principal economic sector is provided below.

#### *Industrial and Commercial Activity*

Several business parks, from which a range of commercial and industrial organisations operate from, are located within the study area. It should be noted that the proposed orbital sewer route does not pass through any of these sites:

- Rosemount, Stadium and Keypoint Business Parks;
- Premier Business Park;
- Dublin Airport Logistics Park;
- Williamsville and Grove Industrial Estate;
- Horizons Logistics Park;
- The Collinstown Cross area; and
- Collinstown Business Park.

There are also a number of vehicle repair and car sales businesses also within the study area. Other industrial uses include the Roadstone Huntstown Quarry at Cappagh Road, a National Car Test (NCT) Centre at Silloge Green and waste facilities near Coolmine Road and at Ballycoolin.

Although the M50 Motorway forms a strong physical barrier between many of the most densely populated business areas and the proposed orbital sewer route, the study area does encompass lands located to the south of the M50 Motorway. Blanchardstown Shopping Centre and adjacent commercial activity is situated south of the N3 National Road, just outside the study area. Businesses located south of the M50 Motorway but that fall within the study area include commercial and industrial premises at North Park and North City Business Park.

#### *Transport and Critical Infrastructural*

Dublin Airport is situated in close proximity to the proposed orbital sewer route as it passes the Collinstown Cross area of the R132 Swords Road, but lies out of the study area. While Dublin Airport itself is outside of the study area, some lands including commercial car parking are located in close proximity to the proposed orbital sewer route.

#### *Retail, Hospitality and Service Industry*

- Businesses falling under this category include a Bank of Ireland, furniture showrooms, a car dealership and the Carlton Hotel near Collinstown Cross. There is a garden centre located close to the proposed orbital sewer route near the R135 Finglas Road. The Clayton Hotel is situated on Clonshaugh Road alongside the Topaz Service Station; and
- The M50 Motorway separates Charlestown Shopping Centre from the proposed orbital sewer route after it crosses the N2 National Road.

#### Economic Activity – Proposed Outfall Pipeline Route (Land Based Section)

A description of uses occurring within 500m of the proposed outfall pipeline route (land based section) is provided below. This has been informed by discussions with the SFPA and the appointed FLO (representing fishermen active in the area):

- Business activity located in Kinsealy and the R107 Malahide Road area includes Kinsealy Equine Centre on Baskin Lane, retail/office units at the St. Olave's neighbourhood centre, Kinsealy Garden Centre, Kinsealy Fruit and Veg, Dublin Meat Company, the Teagasc Kinsealy Research Centre, Kinsealy Pet Store and an Applegreen Service Station. Other business activity nearby includes a crèche and pre-school, KC Commercials and a Bed and Breakfast on Posie Row;
- The Clongriffin area to the south of the study area as the proposed outfall pipeline route (land based section) approaches the sea accommodates a range of economic activities primarily of a retail and service based nature; and
- The majority of the land through which the proposed outfall pipeline route passes is open land which is currently in agricultural use. Further details of the character of this land is set out in Chapter 19 Agronomy.

#### Economic Activity – Proposed Outfall Pipeline Route (Marine Section)

As the outfall pipeline route (marine section) reaches the coast at Portmarnock, the marine economic environment is encountered:

- Marine based economic activity includes commercial fishing and marine recreational activities such as sailing/yachting;
- Commercial fishing activity at the proposed outfall pipeline route (marine section), primarily relates to razor clams but also includes vessels potting for crab, lobster and whelk, particularly in and around Howth Head,

Ireland's Eye and Lambay Island. According to *The Stock Book 2015* (Marine Institute 2015), Rockabill Island, Ireland's Eye and Lambay Island are also considered as important breeding grounds for Irish Cod;

- The intertidal and subtidal area, particularly around Velvet Strand, is a nursery area for flat fish such as turbot and plaice during the summer/autumn months. Additionally, the area to the south of the proposed outfall pipeline route (marine section) (Baldoyle Creek) is a common area for sea trout. Wild mussel seed beds are located around Malahide Estuary and immediately to the west of Ireland's Eye;
- According to the SFPA, there is currently no limit on the number of vessels that can operate within a given area as both stock levels and market demand for shellfish fluctuate, and this will dictate the fishing pressure within an area. The classified shellfish area of Malahide is generally protected from the weather compared to the more exposed areas further along the coast. The proximity of the Dublin Export Market, Howth Harbour and sheltered waters can result in increased vessel activity over the winter months and when market demand is high (there has been no reduction in market demand since 2008). Activity in the Malahide area is anticipated to increase into 2018 as water quality conditions to the north have deteriorated and market demand remains strong with the Asian market in particular;
- There has also been an increase in the number of shellfish exporters which has fuelled demand and therefore increased fishing presence in the area. As a result of all the above, vessels are now regularly travelling from as far north as Dundalk Port and Courtown in the south to fish the general area for shellfish;
- According to the SFPA, an estimate of fishing activity in the Malahide area may include 26 razor vessels and 11 potting vessels on any given day. The razor vessels normally fish up to 18 hours per day and potting vessels normally fish a 10- to 14-hour day. The number of razor vessels licenced to fish along the coast now exceeds 95; and
- There are no aquaculture areas in the vicinity of the proposed outfall pipeline route (marine section).

### **6.3.7 Tourism, Public Amenities and Community Infrastructure**

There are no Fáilte Ireland-registered tourism facilities or attractions located within the study area of the proposed WwTP.

A review of tourism related sites and recreation activities in the vicinity of the proposed orbital sewer route, Abbotstown pumping station, outfall pipeline route and associated physical structures did not identify any specific land based focused tourism or Fáilte Ireland-registered attractions within the 500m study area. However, the coastline within the study area has a number of recreational features including coastal walks, beaches, bathing locations and Portmarnock Hotel and Golf Links which are popular attractions with locals and tourists.

#### Beaches and Associated Water Based Activities

Velvet Strand Beach at Portmarnock is a Blue Flag Beach and, as a result, is a popular bathing area. The Burrow Beach, Sutton, is situated to the south of the study area. These beaches are popular for water based recreational activities such as swimming, sailing and other water related activities.

Sea angling and fishing are also popular activities along the Fingal coastline, with angling and fishing carried out from beaches, harbours, piers and boats close to the shore and offshore.

Sailing is a popular activity in the locality. A popular sailing area for members of Howth Yacht Club and other sailing enthusiasts is the area between Ireland's Eye and Lambay Island. Local regattas, national sailing championships and other international sailing events take place in this area.

### Healthcare Facilities

- St. Michael's House at Belcamp (Riverside Day Centre, Leisure Centre), a community based service for people with intellectual disabilities, is situated approximately 500m from the southern boundary of the proposed WWTP and approximately 200m from the proposed access road;
- Both Connolly Hospital and St. Francis' Hospice located in Blanchardstown are situated in close proximity to the start of the proposed orbital sewer route and within 450m and 250m respectively of the proposed Abbotstown pumping station site; and
- Cappagh National Orthopaedic Hospital is situated south of the M50 Motorway on Cappagh Road, approximately 400m from the proposed orbital sewer route.

Refer to Figure 6.8 Healthcare Facilities within the Proposed Project Study Area to view locations of healthcare facilities situated within the relevant study area of the proposed WWTP, orbital sewer route, Abbotstown pumping station and outfall pipeline route.

### Educational Facilities

There are a number of primary and secondary level schools situated within the study area.

#### *Schools within the Study Area of the Proposed Wastewater Treatment Plant*

- St. Francis Senior and Junior Schools on Clonshaugh Drive; and
- Our Lady Immaculate Senior and Junior National School, Darndale.

#### *Schools within the Study Area of the Proposed Orbital Sewer Route, Abbotstown Pumping Station and Outfall Pipeline Route*

- Malahide/Portmarnock Educate Together National School, R107 Malahide Road, Kinsealy;
- Saint Nicolas Myra National School, R107 Malahide Road, Kinsealy;
- Scoil Bhríde B National School, Church Avenue, Blanchardstown;
- Scoil Bhríde C National School, Church Avenue, Blanchardstown;
- St. Francis of Assisi National School, Belmayne, Balgriffin; and
- Belmayne Educate Together National School, Belmayne, Balgriffin.

The locations of the above schools are presented in Figure 6.9 Primary and Secondary Level Schools within the Proposed Project study area.

### Other Community Infrastructure

Other community infrastructure located within the study area of the Proposed Project includes Dardistown Cemetery and Balgriffin Cemetery on the R107 Malahide Road which falls just outside the study area of the proposed WwTP.

### Heritage Sites

Belcamp Hutchinson, a late 18th century Georgian Country House and protected structure, is situated approximately 1km to the south-east of the proposed WwTP site. Emsworth House at Bohammer on the R107 Malahide Road, a protected structure, is a late 18th century five-bay two-storey house designed by the renowned architect James Gandon. The outfall pipeline route (land based section) will run through the lands attached to the house.

Abbotstown House situated within the grounds of the NSC at Abbotstown is an important heritage site and a protected structure. This is located within the study area of the proposed orbital sewer route. Other heritage sites, parks and other attractions, which may be of interest to tourists and are situated in close proximity but fall outside the study area, are Abbeyville Estate, St. Doulagh's Church, Howth Castle and Malahide Castle.

### Sports and Recreation

There are a large number of sport and recreation related amenities within the study area of the proposed WwTP including:

- GAA (Craobh Chiaráin GAA Club grounds at Belcamp and Cumann Peil Innisfail GAA club at Carr's Lane); and
- Public parks (Darndale and Belcamp Parks).

The NSC is located on lands located between the R843 Snugborough Road to the north, the M50 Motorway to the south and bounded to the west by Ballycoolin Road. The proposed Abbotstown pumping station is located on the NSC lands. The NSC hosts the National Aquatic Centre, the National Diving Centre, GAA pitches, lands reserved for the Irish Rugby Federation Union, the headquarters of the Football Association of Ireland, the Irish Institute of Sport Performance Training Centre, the headquarters of Special Olympics Ireland, the National Horse Sport Arena, the National Cross-Country Track and the National Indoor Arena. Much of the site is reserved for future development.

Sport and recreation related amenities located within the wider study area of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route include:

- Sport and fitness (ALSAA Sports, fitness and social association);
- GAA (Na Fianna GAA, Ballymun Kickhams GAA, Whitehall Colmcille GAA, Trinity Gaels GAA);
- Soccer (Whitehall Rangers AFC);
- Royal College of Surgeons in Ireland (RCSI) Sports Grounds;
- Golf (Elmgreen Golf Club, Silloge Park Golf Club, Portmarnock Golf Club and Portmarnock Golf Links course);
- Motorsport (Kart City); and
- Public parks (Belcamp Park, Fr. Collins Park).

The coastal environment at Portmarnock is a popular amenity area for local residents, residents of the wider Dublin area and tourists. As described in the earlier section of the tourism offering of the coast, Velvet Strand Beach is particularly popular for walking and bathing. Other marine-based recreational activities such as angling, sailing and diving are popular in the wider coastal area between Howth Head and Lambay Island.

Please refer to Figure 6.10 Tourism, Public Amenities, Sporting and Community Infrastructure for a spatial overview of tourism, public amenities, sporting and community infrastructure.

## **6.4 Impact of the Proposed Project**

Impacts can be expected during both the Construction Phase and Operational Phase of the Proposed Project, and these impacts may result in positive or negative impacts of varying significance and duration. This Section details the likely impacts arising from the Proposed Project works during both the Construction Phase and Operational Phase.

#### 6.4.1 Construction Phase

There is potential for disruption to social and commercial activity arising from the Construction Phase of the Proposed Project, primarily from the disturbance to the local road network near the works during the Construction Phase. The Construction Phase is also likely to have positive impacts on social and commercial activity, for example in the creation of new employment opportunities, the increase in demands for materials and services and the economic benefits that will consequently arise. Impacts likely to arise and relevant to the socio-economic environment during the Construction Phase of the Proposed Project are summarised below:

- Impacts on agriculture and the activity of farmers and other landowners (considered in Chapter 19 Agronomy);
- Disturbance from noise and dust generated from construction machinery and vehicular movements (considered in Chapter 14 Air Quality, Odour and Climate and Chapter 15 Noise and Vibration);
- Road works resulting in the full or partial closure of roads or road diversions (considered in this Chapter);
- Construction work related traffic congestion or journey delay (considered in this Chapter);
- Severance of land and closure of rights of way to facilitate the construction works (considered in this Chapter);
- Temporary adverse visual impacts arising from the construction works (considered in Chapter 12 Landscape and Visual);
- Temporary closure and relocation/realignment of some facilities at NSC and ALSAA sports grounds (considered in this Chapter);
- Disturbance to fishing activities during the pipe laying works for the proposed outfall pipeline route (marine section) (considered in Chapter 8 Marine Water Quality and Chapter 9 Biodiversity (Marine));
- Disturbance to beach goers during pipe laying works for the proposed outfall pipeline route (marine section) (considered in this Chapter);
- Temporary loss of parking bays on Velvet Strand Beach during construction works related to pipe laying works for the proposed outfall pipeline route (marine section) (considered in this Chapter);
- Temporary construction employment may be generated locally (considered in this Chapter);
- Indirect new employment opportunities arising from associated supply of materials and services (considered in this Chapter); and
- Construction staff expenditure may provide a new source of temporary customers for local business, in particular local services and convenience shopping (considered in this Chapter).

#### 6.4.2 Operational Phase

Impacts likely to affect the socio-economic environment during the Operational Phase of the Proposed Project are summarised below:

- New permanent employment opportunities in the operation of the Proposed Project (considered in this Chapter);
- Increased expenditure in the local area due to an increased labour force in the locality (considered in this Chapter);
- Indirect new employment opportunities arising from associated supply of materials and services (considered in this Chapter);
- Enable the future development and expansion of population and residential housing to take place in the GDA, and Fingal in particular, in a sustainable manner (considered in this Chapter);
- Treatment of wastewater over a wide catchment of existing homes in the GDA (considered in this Chapter);

- Enable the expansion of services to support the growing population, e.g. community, retail and employment services and amenities (considered in this Chapter);
- Assist in maintaining the Dublin Region's economic competitiveness nationally and internationally in attracting new enterprise opportunities (considered in this Chapter); and
- The new proposed WwTP will have a positive impact on water quality and this will have a positive impact on water based amenities, including bathing and fishing (considered in Chapter 8 Marine Water Quality).

## **6.5 Proposed Wastewater Treatment Plant: Construction Phase and Operational Phase Impacts**

### **6.5.1 Population**

#### Construction Phase

Due to the construction works, there will be an increase in the daily number of persons working in the study area. Some construction workers may move in to the area to be closer to their place of work. The impact of this will be a Neutral and Imperceptible on population growth arising from the Construction Phase of the proposed WwTP.

#### Operational Phase

The proposed WwTP at Clonshagh will provide a critical infrastructural service to the GDA and will enable sustainable future population growth. Supporting future population growth, the Proposed Project will have a Significant Positive Long-term Impact on the populations of the GDA, and Fingal in particular. It will also enable future population growth within the GDA that may otherwise be restricted owing to a deficit in the infrastructural wastewater treatment capacity. The Proposed Project will facilitate the delivery of development on lands zoned for such purposes in the statutory development plans for the study area, namely the *Fingal Development Plan 2017-2023* (FCC 2017) and the *Dublin City Development Plan 2016-2022* (DCC 2016). It will also enable the expansion of services to support the growing population, e.g. community, retail and employment services and amenities.

### **6.5.2 Community and Residential Settlement**

Impacts on community and residential settlements are generally amenity related and are interrelated with other environmental topics. The extent and significance of impacts other than pure population impacts arising as a result has been considered within individual Chapters as referred to below.

#### Construction Phase

The construction works for the proposed WwTP will not necessitate the closure of local roads. As such, there will be a Neutral and Imperceptible Impact on the local community in terms of accessibility.

Communities in the study area may experience some other temporary impacts as a result of the Construction Phase:

- Impacts relating to landscape and visual are addressed in Chapter 12 Landscape and Visual;
- Impacts relating to traffic and roads are addressed in Chapter 13 Traffic and Transport;
- Impacts relating to air quality are addressed in Chapter 14 Air Quality, Odour and Climate;
- Impacts relating to noise and vibration are addressed in Chapter 15 Noise and Vibration; and

- Impacts on the agricultural community and agronomy in the study area are addressed in Chapter 19 Agronomy.

There will be no additional significant impacts on the community as a result of the Construction Phase. In general, the residual impacts identified in these chapters on population are considered as Slight and Not Significant following the implementation of the robust mitigation measures proposed.

#### Operational Phase

Communities in the study area may experience some impacts as a result of the Operational Phase;

- The impacts on communities as a result of the operation of the proposed WwTP relating to Landscape and Visual are addressed in Chapter 12 Landscape and Visual.
- Impacts relating to Air Quality are addressed in Chapter 14 Air Quality, Odour and Climate;
- Impacts relating to Noise and Vibration are addressed in Chapter 15 Noise and Vibration; and
- Impacts on the agricultural community and Agronomy in the study area are addressed in Chapter 19 Agronomy.

There will be no additional significant impacts on the community during the Operational Phase. In general, the residual impacts identified in these chapters on population are considered as Slight and Not Significant following the implementation of the robust mitigation measures proposed.

### **6.5.3 Economic Activity**

#### Employment

##### *Construction Phase*

It is estimated that up to 300 people will be employed during the three-year Construction Phase of the Proposed Project (inclusive of all aspects of the Proposed Project). The provision of direct employment (full- and part-time employment) within the construction and related sectors over the course of the Construction Phase will have a direct Slight Positive Short-term Impact on the local economy. There may also be an indirect Slight Positive Short-term Impact from increased use of local services and retail outlets (located at Topaz Service Station) during the Construction Phase.

The impacts anticipated for agricultural and horticultural businesses in the vicinity of the proposed WwTP are set out in Chapter 19 Agronomy.

Non-agricultural or non-horticultural businesses in the immediate vicinity of the proposed WwTP, including the Clayton Hotel, agricultural and horticultural uses and industrial premises located in Clonshaugh Business and Technology Park, are likely to incur a Slight Negative Temporary Impact as a result of the Construction Phase, due to potential traffic restrictions and the temporary reduction in amenity.

##### *Operational Phase*

Following the completion of works and operation of the Proposed Project, between 30 and 40 full-time equivalent staff will be employed at the facility. This will have a direct Slight Positive Long-term Impact on the local economy.

The proposed construction of the proposed WwTP represents a large capital investment to the area over the lifetime of the Proposed Project. In terms of economic impacts, the operation of the Proposed Project will play



an important role in facilitating economic growth and development in the GDA. In providing a critical infrastructure service to the catchment areas it serves in the Fingal, north City Dublin, south-east Meath and north-east Kildare areas, it will support economic development and the capacity of these areas to attract new investment. As such, a Significant Positive Long-term Impact on the wider economy is likely as a result of the operation of the proposed WwTP.

#### **6.5.4 Tourism, Public Amenities and Community Infrastructure**

##### Construction Phase

As no tourism amenities/facilities of note were identified within the study area of the proposed WwTP, it is not anticipated to give rise to adverse impacts on tourism attractions. Dublin Airport is the primary international access point nationally and to the region. As construction will not have a noticeable impact on access to and from Dublin Airport, there will be a Neutral and Imperceptible Impact on the accessibility of the region or the local tourism base.

The construction works will not impact on accessibility, and so the impact on St. Michael's House at Belcamp is anticipated to be Neutral and Imperceptible.

Neither St. Francis Senior and Junior Schools on Clonshaugh Drive nor Our Lady Immaculate Senior and Junior National School are located on the main transport routes to the proposed WwTP site, and there is no likely impact on journey time as a result of the Proposed Project. Owing to the distance of these schools from the proposed WwTP, the impact of the Construction Phase is anticipated to be Neutral and Imperceptible.

The residential amenity of the occupants of Emsworth House may be affected as a result of the construction works taking place on the grounds and the presence of proposed temporary construction compound no. 7 on the lands immediately adjacent to the northern boundary of the house. A Moderate Negative Temporary Impact on residential amenity is anticipated as a result. The extent and significance of other potential impacts on Emsworth House are referred to in the following chapters:

- Impacts relating to Landscape and Visual are addressed in Chapter 12 Landscape and Visual;
- Impacts relating to Air Quality are addressed in Chapter 14 Air Quality, Odour and Climate; and
- Impacts relating to Noise and Vibration are addressed in Chapter 15 Noise and Vibration.

Belcamp Hutchinson, situated approximately 1km to the south-east of the proposed WwTP, is not likely to experience adverse impacts as a result of the Construction Phase. The impact on this heritage site is therefore assessed as Neutral and Imperceptible. Consideration of the potential impacts of the Proposed Project on Cultural Heritage is set out in full detail in Chapter 16 Archaeological, Architectural and Cultural Heritage.

Sports grounds for Craobh Chiaráin GAA club are located 300m from the southern boundary of the proposed WwTP site. In the absence of an appropriate mitigation measure, a Significant Negative Temporary Impact would result. However, the construction works will provide for a permanent re-routing of the access road to ensure access to the club grounds remains undisrupted during the works. As such, a Neutral and Imperceptible Impact is anticipated in terms of accessibility. Both the NFS diversion sewer and the proposed access road to the proposed WwTP site from the R139 Road (Northern Cross Link) run along the western boundary of the playing grounds. The potential impact of noise generated by the Construction Phase for the proposed WwTP, NFS diversion sewer and access road are discussed in full detail in Chapter 15 Noise and Vibration.

Darndale and Belcamp Parks are located 800m to the south-west and south-east respectively. Any impacts associated with the construction of the proposed WwTP on the amenity offered by these parks will be dissipated

to a Neutral and Imperceptible level by reason of distance from the site and the main construction vehicles routes, and from the mitigation measures to be put in place to minimise the impact of noise.

Patrons of the Cumann Peil Innisfail GAA club at Carr's Lane situated approximately 900m from the south-east corner of the proposed WwTP are not likely to experience adverse impacts in terms of accessibility or other potential disruption as a result of the Construction Phase. As such, the impact is anticipated to be Neutral and Imperceptible.

Impacts associated with the Construction Phase of the proposed access road and egress road and their use as a transfer route for construction materials are considered in Chapter 13 Traffic and Transport. Other impacts such as noise generated as a result of the construction works in this area are discussed in Chapter 15 Noise and Vibration.

### Operational Phase

The proposed WwTP is not likely to have a significant impact on the cultural heritage, recreation or tourism facilities within the study area.

The St. Francis Senior and Junior Schools on Clonshaugh Drive are located at a distance of almost 1km from the proposed WwTP site. Our Lady Immaculate Senior and Junior National School is also situated a distance of almost 1km from the proposed access road. The operation of the Proposed Project is not likely to give rise to any adverse impact on these schools. The impact is therefore considered to be Neutral and Imperceptible.

## **6.6 Proposed Orbital Sewer Route, Abbotstown Pumping Station and Outfall Pipeline Routes: Construction Phase and Operational Phase Impacts**

This Section considers the impacts of the Construction Phase and Operational Phase of the proposed orbital sewer route and outfall pipeline route and all associated infrastructure, including the proposed Abbotstown Pumping Station and access roads.

### **6.6.1 Population**

#### Construction Phase

Due to the construction works, there will be an increase in the daily number of persons working in the study area. Some construction workers may move in to the area to be closer to their place of work. There will be no adverse impact on population arising from the Construction Phase of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route. As such, the impact will be Neutral and Imperceptible.

#### Operational Phase

The growing population of the subject area and the projected population growth as stated in the *Regional Planning Guidelines for the Greater Dublin Area 2010–2022* (Regional Planning Guidelines Office 2010) highlights the need for additional critical infrastructure such as this proposed WwTP to support the future growth and development of the region. The proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route are critical elements of the Proposed Project. Supporting future population growth, the Proposed Project will have a Significant Positive Long-term Impact on the population of the GDA. It will also enable future population growth within the GDA that may otherwise not be possible owing to a deficit in the infrastructural wastewater treatment capacity. The Proposed Project will facilitate the delivery of development on lands zoned for such purposes in the statutory development plans for the study area, namely the *Fingal Development Plan 2017-2023* (FCC 2017) and the *Dublin City Development Plan 2016-2022* (DCC 2016). It will also enable the

expansion of services to support the growing population, e.g. community, retail and employment services and amenities.

## 6.6.2 Community and Residential Settlement

### Construction Phase

Communities in the study area may experience some temporary impacts as a result of the Construction Phase.

Spanning a total distance of 13.7km from Abbotstown in Blanchardstown to the proposed WwTP site (for the proposed orbital sewer route) and 5.4km for the proposed outfall pipeline route (land based section), access to a number of local, secondary and primary roads will be affected as the works take place on the proposed orbital sewer route. Temporary road closures may have an impact by inducing longer journey times to local amenities and services for motorists, cyclists and pedestrians. This will be particularly important in relation to community infrastructure such as schools or medical facilities.

For the vast majority of public roads through which the proposed orbital sewer route and outfall pipeline route passes, trenchless techniques such as pipe jacking and microtunnelling methods will be used. This will ensure that through-access is maintained for the duration of the works and disruption to local residents is minimised. There are three local roads at which the construction method will involve open cut techniques, meaning that temporary diversions or a stop-go traffic system will be in place to ensure access is maintained. These are:

- Local road to Coolbrook Cottages from Ballycoolin Road: Access to Coolbrook Cottages will be restricted for a short period of time (anticipated to be 2-3 days) as the proposed pipeline route passes the access lane leading from Ballycoolin Road. This would result in a Significant Negative Temporary Impact. However, as a temporary diversion will be constructed to allow access to the cottages, the impact to residents is reduced to a Slight Negative Brief Impact;
- Local road at Silloge Green: Accessibility along Silloge Green will also be affected for a short period of time (anticipated to be 2-3 days) as the works pass across this rural route on which there are three dwellings and farmyard buildings. This would result in a Significant Negative Temporary Impact. However, as a temporary diversion will be constructed to allow access to these properties, the impact to residents is reduced to a Slight Negative Brief Impact; and
- Local road at Dubber Cottages: Accessibility to a dwelling situated at the end of the local cul-de-sac road will be affected for a short period of time (anticipated to be 2-3 days) as the open cut works cross the road. This would result in a Significant Negative Temporary Impact. However, as a temporary bypass will be constructed to allow access to these properties, the impact to residents is reduced to a Slight Negative Brief Impact.

Proposed temporary construction compound no. 9 is proposed to be located west of the R106 Coast Road at Portmarnock, to the rear of a cluster of residential properties. A Moderate Negative Temporary Impact on residential amenity is anticipated as a result.

- The impacts relating to Landscape and Visual are addressed in Chapter 12 Landscape and Visual;
- Impacts relating to Traffic and Roads are addressed in Chapter 13 Traffic and Transport;
- Impacts relating to Air Quality and addressed in Chapter 14 Air Quality, Odour and Climate; and
- Impacts relating to Noise and Vibration are addressed in Chapter 15 Noise and Vibration.

### Operational Phase

- The impacts on the communities as a result of the operation of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route relating to Landscape and Visual are addressed in Chapter 12 Landscape and Visual;

- Impacts relating to Traffic and Roads are addressed in Chapter 13 Traffic and Transport;
- Impacts relating to Air Quality and addressed in Chapter 14 Air Quality, Odour and Climate; and
- Impacts relating to Noise and Vibration are addressed in Chapter 15 Noise and Vibration.

In general, the residual impacts identified in these chapters are considered to be Slight and Not Significant with the implementation of the mitigation measures.

There will be no additional significant impacts on the community during the Operational Phase.

### **6.6.3 Economic Activity**

#### Construction Phase

Employment and economic activity in the study area may experience some temporary impacts as a result of the Construction Phase.

- The impacts relating to Landscape and Visual are addressed in Chapter 12 Landscape and Visual;
- Impacts relating to Traffic and Roads are addressed in Chapter 13 Traffic and Transport;
- Impacts relating to Air Quality are addressed in Chapter 14 Air Quality, Odour and Climate;
- Impacts related to Noise and Vibration are addressed in Chapter 15 Noise and Vibration, and
- Impacts on Agronomy are addressed in Chapter 19 Agronomy.

The Construction Phase of approximately 25km of proposed pipeline routes (comprising 13.7km of the proposed orbital sewer route, 5.4km of the proposed outfall pipeline route (land based section) and 5.9km of the proposed outfall pipeline route (marine section)) will result in the provision of direct employment (part-time and full-time employment) of up to 300 personnel (this figure is inclusive of the construction of all proposed pipeline routes and the proposed WwTP) within the construction and related sectors over the course of the Proposed Project. This figure includes approximately 34 to 40 specialist personnel hired for the installation of the proposed outfall pipeline route (marine section). The increase of employment as a result of the Proposed Project will have a Slight Positive Medium-term Impact on the economy of the study area.

Businesses located in close proximity to the construction works have the greatest potential for adverse impacts from the Construction Phase, particularly in terms of noise and dust emissions. These businesses include those located at Premier Business Park on the Coolmine Road, and along local roads as the proposed orbital sewer route progresses to the proposed WwTP site at Clonshagh and then onwards to the coast at Portmarnock. The assessment of impacts on these businesses is dealt with in the relevant chapters of this EIAR, which also includes mitigation measures to reduce or eliminate any adverse impacts.

The open cut construction method will be used to cross the local access road to Premier Business Park. However, the crossing point is proposed to be located to the south of the left turn leading to the Business Park ensuring accessibility is maintained to the park. Access to a waste recycling facility will be disrupted for a short time (1-2 days) to allow the crossing works to take place. This would result in a Significant Negative Temporary Impact. However, a temporary diversion or a stop-go traffic system will be in place to allow traffic to enter/exit the site. As such, the impact is assessed as Slight Negative and Brief. Proposed temporary construction compound no. 2, situated at Cappoge, is not anticipated to give rise to significant effects owing to its distance from residential or business communities. As such, the impact of this proposed temporary construction compound is assessed as Neutral and Imperceptible.

Accessibility to the NCT Centre at Silloge Green will not be adversely affected in terms of accessibility due to the trenchless construction method that will be used to cross the access road to the centre on the R108 Road. As such, the impact is assessed as Neutral and Imperceptible. The presence of proposed temporary construction compound no. 3 adjacent to the NCT Centre may give rise to some adverse impacts as a result of increased traffic generation, transfer of construction materials and the presence of construction works. The impact of this is assessed as Slight Negative and Temporary. A permanent access will be maintained on the road to the NCT Centre and motor business at Silloge Green (off the R108 Road). Given the industrial/commercial nature of the businesses, the impact of this is Not Significant.

The trenchless construction method ensuring that all national, regional and distributor roads are kept open during the Construction Phase will prevent severance of business from its markets or employees. The impact will be Neutral and Imperceptible on the economy of local businesses in relation to accessibility. This includes access to the commercial car park for Dublin Airport located on R132 Swords Road.

The proposed outfall pipeline route (land based section) crosses through the lands of the Kinsealy Equine Centre situated to the north-east of the proposed WwTP site. The impact on the Equine Centre is assessed as a Significant Negative Temporary Impact.

Businesses located in Kinsealy and the R107 Malahide Road area will not be adversely affected in terms of accessibility as the trenchless construction method will be used to cross the road resulting in a Neutral and Imperceptible Impact. The presence of proposed temporary construction compound no. 7 on the R107 Malahide Road at a site adjacent to the southern boundary of a retail centre accommodating uses including a garden centre, fruit and vegetable shop, café and a craft butchers is likely to give rise to a Slight Negative and Temporary Impact arising from construction related traffic and transfer and/or storage of construction materials.

In respect of fisheries, the dredging for the proposed outfall pipeline route (marine section) installation will take place over the period March to October (though it is likely that the appointed contractor(s) will mobilise between June and September). A safety advisory zone of 250m either side of the centreline will be maintained during the Construction Phase for health and safety purposes. The construction works will be on a phased basis to ensure that a large commercial fishing channel area will remain open at all times. While the offshore works are temporary in nature, there will be a Slight Negative Temporary Impact on the commercial fisheries sector in the locality as a result of the temporary loss of some trawling ground during the Construction Phase.

### Operational Phase

Once fully operational, the proposed orbital sewer route, outfall pipeline route and Abbotstown pumping station (as part of the overall Proposed Project) will support economic growth and development, particularly in the catchment areas of Fingal, north Dublin, south-east Meath and north-east Kildare, as the infrastructural capacity to cater for new economic developments in these areas is greatly increased. As such, the operation of the proposed orbital sewer route and outfall pipeline route is considered to have a Significant Positive Long-term Impact on both the local economy of the catchment area it serves, and the economy of the wider Dublin area and the GDA.

The proposed outfall pipeline route (marine section) is to discharge treated wastewater approximately 1km north-east of Ireland's Eye. The proposed discharge is designed to comply with Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC (Bathing Water Directive) and Council Directive 91/271/EEC concerning urban waste water treatment (Urban Wastewater Treatment Directive) and this is addressed in Chapter 8 Marine Water Quality and Chapter 9 Biodiversity (Marine) in full.

The impact on commercial fisheries is anticipated to be Neutral and Imperceptible once the proposed outfall pipeline route (marine section) is operational.

#### **6.6.4 Tourism, Public Amenities and Community Infrastructure**

##### Construction Phase

There may be some temporary impacts as a result of the Construction Phase:

- The impacts relating to Landscape and Visual are addressed in Chapter 12 Landscape and Visual;
- Impacts relating to Traffic and Roads are addressed in Chapter 13 Traffic and Transport;
- Impacts relating to Air Quality are addressed in Chapter 14 Air Quality, Odour and Climate; and
- Impacts relating to Noise and Vibration are addressed in Chapter 15 Noise and Vibration.

##### *National Sports Campus*

The construction works will cross into the grounds of the NSC in Abbotstown. The proposed orbital sewer route borders the national cross-country track, the proposed badminton centre, the national velodrome and lands reserved for future expansion of the campus. Permanent access to the proposed Abbotstown pumping station will be via the R843 Snugborough Road and the existing internal road network of the NSC. Part of the national cross-country track lies within the proposed orbital sewer route construction corridor and will be temporarily unavailable as the construction works take place. In the absence of any mitigation measure to address this, a Significant Negative Temporary Impact would result. However, a temporary replacement route will be provided and the existing route will be reinstated following completion, as described in the mitigation measures set out.

During construction, a Moderate Negative Temporary Impact is likely for users of the parts of the campus in proximity to the works. Furthermore, proposed temporary construction compound no. 1 is identified in the vicinity of the proposed Abbotstown pumping station. Adverse impacts associated with additional traffic movements arising as a result of the presence of this proposed temporary construction compound are anticipated to have a Moderate Negative Temporary Impact on the general amenity of the campus.

The impact of construction traffic passing on the cultural heritage amenity of Abbotstown House is discussed in detail in Chapter 16 Archaeological, Architectural and Cultural Heritage.

##### *Silloge Park Golf Club*

The proposed orbital sewer route crosses directly through Silloge Park Golf Club. However, tunnelling is proposed for the Golf Club lands, and it is planned that this will be a full trenchless crossing which will not affect the operation of the facility. Should an intermediate drive/jacking shaft be located in the Golf Club grounds, this will represent a Temporary Moderate Negative Impact on the club's operation, requiring the local reorganisation of the course's layout, as may be necessary.

##### *Sports Clubs and Recreational Amenities*

There will be no impact to vehicular access to Ballymun Kickhams GAA Club, Na Fianna GAA Club and Whitehall Rangers AFC, as the proposed orbital sewer route will be tunnelled under the R108 Road avoiding the need for any temporary closure or diversion. There will be no significant impact on accessibility and connectivity to Whitehall Colmcille Club grounds.

The ALSAA sports grounds will be directly affected by the construction works. This will require the temporary closure of three soccer pitches, one rugby pitch and a softball field for the duration of the works on the grounds.

While the reorientation of the remaining area could facilitate the continued use of two pitches, the loss of the grounds and in particular the loss of the softball field will be a Significant Negative Temporary Impact for the sports club, noting the period that the grounds will be unavailable for will extend beyond the Construction Phase until the reinstated pitches can be reused.

Accessibility to Kart City will not be affected as a result of the trenchless construction works on the R132 Swords Road. The impact is anticipated to be Neutral and Imperceptible.

On the proposed outfall pipeline route (land based section), patrons of the Trinity Gael football ground are likely to be affected as the proposed outfall pipeline route (land based section) passes the west and southern boundary. Proposed temporary construction compound no. 8 is also proposed to be situated on lands to the immediate south of the access road to the grounds and car park. Impacts arising from construction work and the presence of proposed temporary construction compound no. 8 in the vicinity of Trinity Gaels football grounds on the R124 Drimnagh Road are anticipated to have a Moderate Negative Temporary Impact on the amenity of the grounds. In terms of accessibility, a trenchless construction method will be used to cross the R124 Drimnagh Road. As such, the impact is assessed as Neutral and Imperceptible.

There will be no significant impact on accessibility and connectivity to sportsgrounds in the area, such as the RCSI sports grounds, due to the trenchless/tunnel method that is proposed for the R132 Swords Road. However, there may be a Slight Negative Temporary Impact for cyclists and pedestrians wishing to access these sport grounds in terms of the disturbance created by construction works.

Two further golf courses lie along the proposed outfall pipeline route (marine section) at Portmarnock. The route in this area falls just outside the northern end of Portmarnock Golf Club and to the southern boundary of Portmarnock Golf Links course, which is part of the Portmarnock Hotel and Golf Links complex. Impacts in terms of noise, dust and visual impact are described in the relevant technical chapters of this EIAR. No restrictions to access to either golf course is proposed due to road closures (as microtunnelling will take place in this area). The impacts on Hydrology are set out in Chapter 17 Hydrology and Hydrogeology.

Proposed temporary construction compound no. 10 will encompass part of the public car park lands on the Golf Links Road. A section of the Velvet Strand Beach car parking area which is currently used by the public will be unavailable to the public for the duration of the marine related works – this area is located in the unpaved section of the carpark (a green area in which there are no formally marked out car parking spaces but on which an informal extension of the car park has occurred over time). It is estimated that approximately 12 spaces for cars in this area would be unavailable during the Construction Phase. However, the public pedestrian pathway will be unaffected and access to the beach will be maintained at all times. This will have a Moderate Negative Temporary Impact in terms of accessibility and amenity to the access to Velvet Strand Beach. Impacts due to Traffic are considered in Chapter 13 Traffic and Transport.

The window for works will be March to October, but the appointed contractor(s) will most likely only mobilise between June and September. Measures will be implemented to minimise noise, dust, visual and other work-related nuisances as set out in the relevant technical chapters of this EIAR.

As described earlier, the coast is also popular for recreational sailing and organised events, including regattas. These events typically occur during the summer months when the proposed works on the proposed outfall pipeline route (marine section) are planned to take place. Mitigation measures proposed for the Construction Phase of the marine works seek to reduce, as far as practicable, any adverse impacts on the local sailing community. However, it is likely that Slight Negative Temporary Impacts on marine recreation will arise in this section of the shoreline and sea.

### *Dardistown Cemetery*

Visitors to Dardistown Cemetery may experience some disturbance, most likely as a result of noise generated by works on the proposed orbital sewer route to be carried out to the north of its property boundary and the presence of proposed temporary construction compound no. 4 for a period of one to 12 months. Given the sensitivity of the environment, the impact is assessed as Significant Negative and Temporary. The potential impact of noise is discussed in Chapter 15 Noise and Vibration.

Fr. Collins Park is situated at a distance of approximately 500m from the boundary of the study area, and so the impact on access to the parks or the quality of the amenity offered is anticipated to be Neutral and Imperceptible.

### Operational Phase

The operation of the proposed Abbotstown pumping station, orbital sewer route and outfall pipeline route will not have any significant adverse impacts on any heritage sites in the vicinity.

Once operational, the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route will not impact on public amenities and community infrastructure. The proposal discharge is designed to comply with the Bathing Water and Urban Wastewater Treatment Directives, and associated national legislation requirements, to ensure no adverse impact on the bathing waters (refer to Chapter 8 Marine Water Quality).

## **6.6.5 Community Infrastructure**

### Construction Phase

The construction method proposed has had regard to sensitive receptors, including St. Francis' Hospice, and more details on noise, dust and visual impact are discussed and evaluated in detail in the following chapters:

- Chapter 7 Population and Human Health: Human Health;
- Chapter 12 Landscape and Visual;
- Chapter 13 Traffic and Transport;
- Chapter 14 Air Quality, Odour and Climate; and
- Chapter 15 Noise and Vibration.

The Construction Phase is likely to have a Slight Negative Temporary Impact on the amenity of St. Francis' Hospice, due to proximity and its sensitive nature.

The access route to the proposed Abbotstown pumping station will be from a local road leading from the R843 Snugborough Road. The opening of this access point, which avoids the main access to the hospital and hospice, reduces the impact of traffic disruption arising from the construction works.

The trenchless/tunnel methods proposed for the Cappagh Road, located south of the M50 Motorway, will avoid the requirement for road closures that could otherwise impact on access to Cappagh Hospital from the north. The impact of the proposed construction works on Cappagh Hospital will be Imperceptible.

There are several schools located within the study area of the proposed orbital sewer route, Abbotstown pumping station and outfall pipeline route as presented in Table 6.6. The location of each school and a description of the nature and significance of the impacts from the Construction Phase are also included in the below table.



**Table 6.6: List of Schools within the Study Area of the Proposed Orbital Sewer Route, Abbotstown Pumping Station and Outfall Pipeline Route**

School	Location	Description of Impact	Significance Rating
Scoil Bhríde Boys N.S. Scoil Bhríde Girls N.S.	<ul style="list-style-type: none"> <li>The Scoil Bhríde boys and girls national schools are both situated at Church Avenue in Blanchardstown;</li> <li>They are located within the 500m study area of the proposed orbital sewer route.</li> <li>Both schools are located on the opposite side of the N3 National Road to the site of the proposed works.</li> </ul>	<ul style="list-style-type: none"> <li>The physical barrier presented by the N3 National Road greatly reduces the impact of the proposed construction works on the schools.</li> <li>There may be a Slight Temporary increase in vehicular traffic in the surroundings roads transporting materials to and from the construction site, but this is not anticipated to impact directly on these schools.</li> </ul>	<ul style="list-style-type: none"> <li>Neutral and Imperceptible Impact</li> </ul>
Malahide/Portmarnock Educate Together N.S. St. Nicholas of Myra N.S.	<ul style="list-style-type: none"> <li>Both national schools are located on the R107 Malahide Road.</li> <li>The route passes through lands located between Malahide/Portmarnock Educate Together N.S. and St. Nicholas of Myra N.S.</li> <li>The proposed outfall pipeline route (land based section) runs close to the southern boundary of Educate Together school ground.</li> <li>The Links Childcare crèche at St. Olave's also occupies the site to the rear of the Educate Together School.</li> </ul>	<ul style="list-style-type: none"> <li>The R107 Malahide Road will remain open for the duration of the construction phase.</li> <li>The cycling and pedestrian environment are likely to be negatively affected.</li> <li>Mitigation measures will be implemented to reduce and eliminate nuisances, resulting from pipeline installation works in this area (refer to Chapter 13 Traffic and Transport, Chapter 14 Air Quality, Odour and Climate and Chapter 15 Noise and Vibration of this EIAR for mitigation measures).</li> </ul>	<ul style="list-style-type: none"> <li>Slight Negative Temporary Impact for pedestrians and cyclists for the duration of the construction at R107 Malahide Road</li> <li>Moderate Negative Temporary Impact for the school during works adjacent to the boundary.</li> </ul>
St. Francis of Assisi N.S. Belmayne Educate Together N.S.	<ul style="list-style-type: none"> <li>Both national schools are located in Belmayne, Balgriffin</li> <li>These schools are situated alongside each other on Belmayne Avenue, a distance of approximately 480m south of the proposed pipeline route (land based section).</li> </ul>	<ul style="list-style-type: none"> <li>The works proposed are not anticipated to have any impact on these two schools.</li> </ul>	<ul style="list-style-type: none"> <li>Neutral and Imperceptible Impact</li> </ul>

### Operational Phase

The operation of the proposed orbital sewer route and Abbotstown pumping station will not impact adversely on the existing healthcare facilities in the locality, notably Connolly Hospital and St. Francis' Hospice in Blanchardstown. The impact is assessed as Neutral and Imperceptible.

The operation of the proposed Abbotstown pumping station, orbital sewer route and outfall pipeline route will not have any adverse impact on the day to day running of schools or to staff, students and parents attending the schools. The impact will therefore be Neutral and Imperceptible.

### **6.6.6 Important Planning Schemes and Forthcoming Developments**

#### Construction Phase

The routing of the proposed orbital sewer route through the Dardistown LAP lands, particularly as the route turns north and passes through the centre of the lands, follows the indicative road network through the site between the Airport Commercial and Logistics Park and the Eastern Corridor. The proposed orbital sewer route will not impact on any of the character areas set out in the LAP, and so the impact on the LAP is assessed as Neutral and Imperceptible. The Dardistown LAP lands also contain the proposed Dardistown Metro Stop on the new Metro North line. The proposed orbital sewer route passes the route of the indicative proposed new Metro North line at a point along the southernmost boundary. The scheduling of works in this area will avoid any adverse impacts on the construction of the proposed new Metro North line. While the timeframes for construction works on both schemes are unknown, it is highly unlikely that these will be concurrent given the short-term and temporary nature of the construction works for the proposed orbital sewer route within this location. As such, the impact is assessed as Neutral and Imperceptible.

The proposed outfall pipeline route (land based section) is directed approximately 400m to the north of the proposed LAP 9.B lands at Balgriffin/Belcamp, as outlined in Map Sheet 9 of the *Fingal Development Plan 2017-2023* (FCC 2017). Therefore, the proposed outfall pipeline route (land based section) will have no impact on development plans for these lands.

A collaborative and coordinated approach will be adopted as the Masterplan for the High Technology zone reserved for the Clonsaugh East lands (M11.D) is prepared. It is anticipated that the construction works will have a Neutral and Imperceptible Impact on the development potential of these lands.

The proposed outfall pipeline route (land based section) passes through lands designated for OS and parkland in the Portmarnock South LAP lands. Construction work in this area will not impact on development land reservations in the LAP, and so with appropriate mitigation measures, the impact on the LAP is considered as Neutral and Imperceptible.

Further south of the Portmarnock South LAP lands is the Baldoyle-Stapolin lands. The proposed outfall pipeline route (land based section) does not pass directly through the LAP area, and so impacts on the northern portion of the lands, which are currently undeveloped, are not anticipated as a result of the construction works in this area.

### Operational Phase

The operation of the Proposed Project will have a Significant Positive Long-term Impact in terms of facilitating future developments proposed within the Clonsaugh East Masterplan (M11.D) lands and LAP lands of Balgriffin/Belcamp, Clongriffin - Belmayne, Dardistown, Portmarnock South and Baldoyle-Stapolin through the

provision of essential wastewater drainage and treatment services. Future developments in the GDA, particularly Dublin 15 (Blanchardstown/Mulhuddart/Ballycoolin areas), Leixlip and the north-east Kildare and south-east Meath areas will also benefit from a greatly enhanced wastewater treatment capacity.

## 6.7 'Do Nothing' Impact

The Proposed Project responds to a critical need to increase the wastewater treatment capacity currently available to the GDA. With no increase in capacity for wastewater treatment, restrictions could be placed on residential, commercial and industrial development within the GDA. The failure to provide sufficient critical infrastructure services will undermine the capacity of the GDA to grow its population in a sustainable manner, and will compromise the ability of the GDA to attract new development and investment. This will have a broader Significant Negative Impact for the economy and society on a regional and national scale.

As the population of the GDA continues to grow, and as efforts to address the current shortfall in housing supply intensify, further pressure will be placed on vital infrastructural support services such as wastewater collection and treatment. Development proposals aiming to address the critical demand for housing will not be allowed, if sufficient infrastructural services are not available to serve new development.

In light of the importance of the above issues, significant negative societal and economic impacts are anticipated should the Proposed Project not proceed.

## 6.8 Mitigation Measures

There are a number of specific mitigation measures proposed in relation to socio-economic impacts during the Construction Phase. The majority of specific mitigation measures in relation to other impacts on the population, such as noise and vibration, air quality and odour, landscape and visual, traffic and material assets are dealt with in their respective chapters within this EIAR.

### 6.8.1 Construction Phase

- All construction areas, including the proposed temporary construction compounds, will be suitably fenced and screened, and access to the sites will be limited to authorised personnel in the interest of public health and safety;
- Safe working practices, in accordance with the relevant legislation, will be in place during the Construction Phase to protect the workers and visitors to the construction sites;
- Details of the general construction process/phasing will be publicised prior to implementation to ensure local residents and businesses are fully informed on the nature and duration of construction works taking place in the vicinity;
- Residents and businesses situated in close proximity to proposed temporary construction compounds will receive notification in advance of their establishment. An open dialogue and positive engagement approach will be adopted by construction management teams in ensuring that the concerns of residents and business owners are considered and that ad hoc mitigation measures are undertaken, as necessary. This will be in addition to the implementation of measures set out in Chapter 12 Landscape and Visual, Chapter 13 Traffic and Transport, Chapter 14 Air Quality, Odour and Climate and Chapter 15 Noise and Vibration;
- Alternative access arrangements (or diversions) will be put in place at the locations where open cut techniques are required for the proposed orbital sewer route (namely, local road to Coolbrook Cottages from Ballycoolin Road, local road at Silloge Green, local road at Dubber Cottages, local road to waste recycling facility off Coolmine Road);

- Appropriate temporary signage will be put in place on local roads (as referred to above) that will be temporarily affected by the construction works. This signage will guide local residents, commercial activities and visitors to the temporary access arrangements in place that will allow continuous access to homes and businesses;
- Advance notice will be given to the owners of all residential/commercial/community properties before construction starts and in advance of any major planned disruptions of services. In particular, residents and businesses affected by temporary construction works crossing the local roads referred to above and those located in close proximity to the construction works would be noted, including the following:
  - St. Francis' Hospice, the NSC, Premier Business Park on the Coolmine Road, Silloge Park Golf Club, ALSAA sports grounds, Trinity Gael Football Club, Dardistown Cemetery, RCSI sports grounds, Malahide/Portmarnock Educate Together and St. Nicholas of Myra National Schools, and other homes and businesses located at Silloge Green, R132 Swords Road, R107 Malahide Road and Clonshaugh Road;
- A Construction Phase Traffic Control and Management Plan will be produced to mitigate against potential traffic delays and to facilitate the movements of 'through' traffic;
- To minimise any hindrance to local businesses during the Construction Phase, particularly with regard to access, local businesses will be given advance warning of any traffic management arrangements;
- Temporary adjustments will be made to the layout of affected pitches at ALSAA during the works and rehabilitation of its pitches will be carried out following the Construction Phase;
- A temporary replacement route will be provided for the national cross-country facility at NSC Ireland while works are undertaken near the existing facility. The existing route will be reinstated following completion of Construction Phase works at this site;
- A permanent re-routing of the access road to Chraobh Chiaráin GAA Club grounds will be developed to ensure that access remains fully open and undisrupted during the works;
- Localised controls on works in close proximity of Kinsealy Equine Centre will restrict the use of large machines, flashing beacons and reversing alarms on machines. Works will be restricted during peak times (i.e. school holidays, after 3pm, Saturdays etc.). Close boarded fencing, and careful bunding of soil will be used to provide visual screening and reduce noise levels.
- A FLO will be appointed to ensure all fishermen receive timely notifications of any restrictions/exclusion zones in place during the Construction Phase of the proposed outfall pipeline route (marine section);
- Furthermore, notifications of the timing and duration of offshore works, and any safety advisory zones in place, will be publicised in popular marine and fisheries publications such as the Marine Times and the Irish Skipper;
- A Community Liaison Officer (CLO) shall be employed during the Construction Phase of the Proposed Project:
  - The role of the CLO will be to maintain an open, transparent and positive relationship with members of the public, groups and organisations affected by the works;
  - The CLO will work closely with Irish Water and the appointed contractor(s) to ensure that all efforts to address public concerns are made, and to ensure that information on the nature and duration of all works is provided; and
  - The CLO will also act as a contact point for sporting clubs and community facilities in the area;
- Advance notice will be given to the public in advance of the marine offshore works commencing and in advance of any major planned disruptions of walkways or car parks;
- Timelines and positioning of marine offshore working structures will avoid potential impacts on the scheduling of regattas and race events organised by Howth Yacht Club and the Irish Sailing Association (ISA). Howth Yacht Club and the ISA will be consulted as part of the scheduling/timing of proposed offshore works to

minimise all inconvenience. The CLO will act as the contact point between these groups, Irish Water and the appointed contractor(s); and

- Appropriate engagement will be undertaken with FCC and relevant parties on the preparation of the Masterplan for the High Technology zone reserved for the Clonshaugh East lands (M11.D) situated directly south of the proposed WwTP.

### **6.8.2 Operational Phase**

Specific mitigation measures in relation to other impacts on the population, such as noise, air quality and odour, landscape and visual, traffic and material assets are dealt with in their respective chapters of this EIAR. Mitigation measures relating to Human Health are detailed in Chapter 7 Population and Human Health: Human Health. There are a number of specific mitigation measures proposed in relation to socio-economic impacts during operation, including:

- A Traffic Control and Management Plan will be implemented and communicated to all staff to ensure plant related traffic does not give rise to adverse impacts in the local area. Refer to Chapter 13 Traffic and Transport for mitigation measures;
- A CLO will be maintained at the facility to liaise with members of the public in the event of an issue being raised relating to the operation of the proposed WwTP;
- Notifications of the timing and duration of any maintenance works required to be carried out on the proposed outfall pipeline route (marine section) during the Operational Phase will be publicised in popular marine and fisheries publications such as the Marine Times and the Irish Skipper; and
- Furthermore, advance notification of the timing and duration of any maintenance works required to be carried out on the proposed outfall pipeline route (marine section) during the Operational Phase will be provided to sailing and recreational clubs operating in the area, including, for example, Howth Yacht Club and the ISA.

### **6.9 Residual Impacts**

Residual impacts are the final or intended impacts which occur after the proposed mitigation measures have been implemented. They refer to the degree of change that will occur after the proposed mitigation measures have taken effect. The following impacts are considered to be positively affected and reduced by the mitigation measures proposed to the level of residual impact as set out in Table 6.7 below. It should be noted that the assessment of all other impacts identified in Sections 6.4, 6.5 and 6.6 remain unchanged.

**Table 6.7: Impact Pre-Mitigation, Mitigation and Resulting Residual Impact**

Impact	Mitigation Measure	Residual Impact
Restrictions on accessibility to Coolbrook Cottages, properties at Silloge Green and Dubber Cottages – Significant Negative Temporary	Temporary diversions will be constructed to allow access to the properties at all times.	Slight Negative Brief
Access to Craobh Chiaráin GAA club – Significant Negative Temporary	A permanent re-routing of the access road to ensure access to the club grounds remains undisrupted during the works	Neutral and Imperceptible
Access to a waste recycling facility on Coolmine Road – Significant Negative Temporary	A temporary diversion or a stop-go traffic system will be in place to allow traffic to enter/exit the site	Slight Negative Brief
Part of the national cross-country track lies within the pipeline wayleave and will be temporarily unavailable – Significant Negative Temporary	A temporary replacement route will be provided for the national cross-country facility at NSC Ireland while works are undertaken near the existing facility. The existing route will be reinstated following completion.	Moderate Negative Temporary
Impact to Kinsealy Equine Centre as a result of pipeline construction – Significant Negative Temporary	The works will be managed so as to restrict in close proximity to the centre, the use of large machines, flashing beacons and reversing alarms on machines. Work restrictions during centre's peak use times. Close boarded fencing and bunding of soil will provide visual screening and reduce noise.	Moderate Negative Temporary

No additional residual negative impacts are anticipated on the population from the Proposed Project from the factors considered in this Chapter, following the incorporation of the mitigation measures into the design of the Proposed Project and implementation on an ongoing basis throughout the lifetime of the facility.

The socio-economic assessment undertaken as part of this chapter concludes that significant positive impacts arising from the Proposed Project are likely. Without increased capacity of the GDAs wastewater treatment provision, development of the GDA, and in particular Fingal, south-east Meath and Leixlip (north-east Kildare) is likely to be constrained. The development of the Proposed Project will support and facilitate future residential and commercial development to proceed in the region in a sustainable manner.

## 6.10 Difficulties Encountered in Compiling Required Information

No significant difficulties were encountered in compiling the information contained in this Chapter.

## 6.11 References

Central Statistics Office (2016). Census 2016.

Dublin City Council (2011). Dublin City Development Plan 2011-2017.

Dublin City Council (2012). Clongriffin-Belmayne Local Area Plan (LAP).

Dublin City Council (2016). Dublin City Development Plan 2016-2022.

Dublin Drainage Consultancy (2005). Greater Dublin Strategic Drainage Study.

Dublin Regional Authority and Mid East Regional Authority (2010). Regional Planning Guidelines for the Greater Dublin Area (GDA) 2010-2022.

Smart Dublin. 2018. Smart Dublin. [ONLINE] Available at: <http://smartdublin.ie/>. [Accessed 2018]

EPA (2017). Guidelines on Information to be Contained in Environmental Impact Assessment Reports.

Fáilte Ireland (2011). Guidelines on the Treatment of Tourism in an Environmental Impact Statement.

Fingal County Council (2008). Strategic Environmental Assessment on the Greater Dublin Strategic Drainage Study.

Fingal County Council (2011). Fingal Development Plan 2011-2017.

Fingal County Council (2013a). Dardistown Local Area Plan (LAP). January 2013.

Fingal County Council (2013b). Baldoyle-Stapolin Local Area Plan (LAP). May 2013.

Fingal County Council (2013c). Portmarnock South Local Area Plan (LAP). June 2013.

Fingal County Council (2013d). Fingal County Sludge Management Plan.

Fingal County Council (2015). Fingal Tourism Strategy 2015-2018.

Fingal County Council (2017). Fingal Development Plan 2017-2023.

Government of Ireland (2017). Project Ireland 2040 – National Planning Framework.

Government of Ireland (2016). Capital Programme 2016-2021.

Irish Water (2015). Water Services Strategic Plan.

Jacobs Tobin (2013). Alternative Sites Assessment and Route Selection (Phase 4): Final Preferred Site and Routes.

Marine Institute (2015). The Stock Book 2015: Annual Review of Fish Stocks in 2015 with Management Advice for 2016.

Regional Planning Guidelines Office (2010). Regional Planning Guidelines for the Greater Dublin Area 2010-2022.

#### Directives and Legislation

European Union (1991). Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment [1991].

European Union (2006). Directive 2006/7/EC of 15 February 2006 concerning the management of bathing water quality [2006].

European Union (2011). Directive 2011/92/EU of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment [2011].

European Union (2014). Directive 2014/52/EU of 16 April 2014 on the assessment of the effects of certain public and private projects on the environment [2014].