



An  
Bord  
Pleanála

## Inspector's Report ABP301908-18 / ABP302039-18.

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<b>Development</b>	Greater Dublin Drainage Project incorporating a Regional Biosolids Storage Facility.
<b>Location</b>	Dublin City and Dublin County.
<b>Applicant</b>	Irish Water
<b>Planning Authorities</b>	Fingal County Council and Dublin City Council.
<b>Prescribed Bodies</b>	10 prescribed bodies - Listed in Appendix
<b>Observers to Planning Application</b>	152 observations - Listed in Appendix
<b>Objectors to CPO</b>	14 objectors - Listed in Appendix
<b>Types of Applications</b>	Application under the provisions of S37 of the Planning and Development Act and Compulsory Purchase of Lands under the Housing Act 1966..

**Dates of Site Inspections**

8<sup>th</sup> August 2018, 3<sup>rd</sup> September 2018,  
7<sup>th</sup> September 2018, 6<sup>th</sup> March 2019,  
9<sup>th</sup> March 2019, 15<sup>th</sup> March 2019, 24<sup>th</sup>  
March 2019 .

**Inspector**

Mairead Kenny.

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## 1.0 Introduction

This report considers the planning application and compulsory purchase application related to the application for consent to develop the Greater Dublin Drainage (GDD) Project and Regional Biosolids Storage Facility (RBSF) comprising:

- A 500,000 PE wastewater treatment plant (WwTP) and Sludge Hub Centre (SHC)
- A 13.7km orbital sewer from Blanchardstown to the WwTP
- An Odour Control Unit (OCU) at the interface between the rising main and the gravity sewer elements at Dubber
- A North Fringe Sewer (NFS) diversion to the proposed WwTP
- Abbotstown pumping station (APS) in grounds of National Sports Campus (NSC)
- A 11.3km outfall sewer including land and marine sections terminating at point 1km north-east of Ireland's Eye
- Ancillary infrastructure including access roads and landscaping
- A Regional Biosolids Storage Facility at an 11.4 hectare site at Newtown, Dublin 11.
- A proposal for UV treatment introduced at the oral hearing.

Apart from the RBSF the project is generally described as the GDD project. Drawing 32102902-2000 provides an overview.

The majority of the development falls under the jurisdiction of Fingal County Council. The site access road to the WwTP site and the NFS fall within the area of jurisdiction of Dublin City Council.

An application for expansion and upgrade of the Ringsend Wastewater Treatment Plant recently permitted is described under the Planning History section of this report. It also includes the Regional Biosolids Storage Facility (RBSF).

References in submissions to attenuation tanks generally refer to the Blanchardstown Regional Drainage Scheme, which was permitted by FCC and to be located at Waterville Park. It is the point of connection to the GDD orbital sewer.

## **Application submissions**

The application was submitted to An Bord Pleanála on 20<sup>th</sup> June 2018. The application is accompanied by an Environmental Impact Assessment Report and a Natura Impact Statement.

In relation to the planning application 142 observations were received and 13 objections to the compulsory purchase application.

Subsequently the Board was notified by the applicant that documents had been omitted. Copies of further public notices were received by the Board on 13<sup>th</sup> September 2018. A further 29 observations were received in relation to the planning application and a further 9 objections to the compulsory purchase application.

The applicant on invitation responded to observations. The written response was received on 14 January 2019.

## **Oral hearing**

An oral hearing was held between 20<sup>th</sup> March 2019 and 2<sup>nd</sup> April 2019, a total of 6.5 days in all. Six days were devoted to planning application 301098-18 and the remaining half day concerned the compulsory purchase order application 301039-18.

All documentation presented at the hearing is on file. The oral hearing recording is the formal record of the proceedings and is on file. I refer in this report to significant matters which emerged and discussions which took place at the hearing. Within the oral hearing summary which is in an appendix, I present information relating to speakers and briefly describe points of particular relevance. Further discussion details are contained within the assessment section of this report.

## **Other statutory consents**

The primary separate statutory consents required are:

- A wastewater discharge licence to be granted by the EPA
- A foreshore licence to be granted by the Minister for Agriculture, Food and the Marine or Minister for Housing, Planning and Local Government
- A certificate of registration for the RBSF from the local authority
- Fire safety certificate under building control legislation.

## Abbreviations Table

The table below summarises the main abbreviations used in this report.

Full title	Abbreviation
Wastewater treatment plant	WwTP
Sludge Hub Centre	SHC
Odour Control Unit	OCU
North Fringe Sewer	NFS
Abbotstown Pumping Station	APS
Regional Biosolids Storage Facility	RBSF
Fibre optic cable crossing	FOCC
Tunnel / subsea pipeline interface	The interface

## 2.0 Site Location and Description

The site of the proposed development straddles an extensive area between Blanchardstown to the west and Ireland's Eye to the east. The various elements of the development sit between Connolly Hospital Blanchardstown and a point 1km to the north-east of Ireland's Eye with the M50 to the south and the most northerly point being the site of the RBSF at Newtown close to the N2.

In this section I broadly describe the landscape character and land uses moving from west to east, dividing the area into three sections. I separately identify significant features of the coastline, of major infrastructure and significant land uses.

Descriptions of access roads, cultural heritage sites, landscapes, residential locations and other development is provided throughout the report as relevant.

### **Blanchardstown to N2 Finglas Road and north to Newtown**

This overall area would encompass a significant length of **outfall pipeline route, Abbotstown pumping station and the proposed RBSF.**

In terms of existing land this area is noteworthy for Connolly Hospital, St Francis Hospice, Abbotstown National Sports Centre and the National Aquatic Centre (NAC) and for a range of industrial facilities notably Huntstown quarry and Huntstown power



station (Seveso site) close to the RBSF site and a major substation at the junction of the M50 and the M2. The western side is largely designated as demesne landscapes including at the NSC. St Caoimhin's Church and graveyard, which may have medieval components is adjacent the site of Abbotstown pumping station, St Francis Hospice and Abbotstown House are nearby.

The eastern side of this sector is of different character. It contains some industrial estates/ business parks, generally characterised by small units and mixed uses. At the northern end, close to the N2 and visible from that elevated road is the site of the RBSF, an 11.4 hectare plot. To the south of the RBSF site is a small recently completed housing scheme and further south are more houses, the access to Huntstown, to Kildonan House and a major substation. The RBSF site itself is vacant and in slightly overgrown condition and contains some derelict structures and a partly built access road network.

## **N2 Finglas Road to M1**

This area would contain **Dubber Odour Control Unit** and part of the **outfall pipeline**.

This area is largely located to the south of Dublin airport and north of the M50. It is emerging largely as a business park / industrial development area. At Baleskin is a residential 'reception centre' for migrants. The nearest residential development to the proposed OCU at Dubber is Dubber Cottages. To the north are the Coldwinters ponds. Other noteworthy developments in this area are Dubber House and Dubber Castle and further east is Sillogue golf course, south of which is the Northpoint business park / NCT centre. At this location also to the north of the business centre development is an area of ecological interest / potential, Sillogue Nature Development Area. There are long stay car parks at Ballystruan near the Old Swords Road at the opposite side of which is Dardistown Cemetery and the sports grounds of ALSAA.

## **M1 to Ireland's Eye**

This area contains the site of the proposed **wastewater treatment plant and sludge hub centre**. The **outfall pipeline (marine section)** would pass under Baldoyle Bay SAC and re-emerge within the foreshore at the low water tide point and

continue along the sea bed. To the west the M1 and agricultural lands dominate. The character and land uses to the east are coastal and recreational.

The **WwTP/SHC site** is in the middle of agricultural lands in a block defined by Baskin Lane to the north, the R139 (former N32) Malahide Rd to the south, the R107 to the east and Clonshaugh Road / Stockhole Lane to the west. The site abuts existing roads at the R139 close and Clonshaugh Road only and does not have an extensive frontage.

Within the block and to the south of the site is a large recently constructed substation and Craobh Chiarain GAA club. Between the GAA / substation and the site a major new road east west distributor road is proposed. That would define the southern end of the site. The WwTP / SHC site itself and the lands to the north comprise farmland. The hedgerows are generally thin and many have been removed to create the large fields. The lands were under tillage and vegetables at the time of inspection. The Cuckoo stream defines the northern site boundary beyond which is a derelict farmhouse where there are mature trees. The Mayne River is traversed by the route of the north-south access road into the main WwTP site from the R139.

Broadly south and east of the block containing the site are residential areas and high density urban development and commercial development. Two-storey housing and associated parks at Darndale are the dominant land uses south of the R139. There is a **large Traveller community resident** in the general area and a particular settlement is Cara Park, close to the location of the proposed entrance and NFS diversion. **Gannon properties lands at Belcamp** are a few hundred metres to the east of the site. These lands include the site of Belcamp House which has connections with George Washington. The main cluster of commercial development is located at the south-east of the block containing the WwTP site. That area is known as '**Northern Cross**' and the nearby **Clare Hall Shopping Centre** is to the south.

To the west of the site is **Clonshaugh Road / Stockhole Lane** where there is a small group of houses. Nearby the west is an area which is described as an emerging hotel zone and which contains the **Clayton Hotel Dublin Airport**, partly in full time residential use and Topaz filling station.

Apart from some significant business enterprises, including Bewleys' head office, Butlers chocolate factory and other manufacturing and office there are a number of small enterprises including Kinsealy Riding Centre, a garden centre, motor sales and others. Balgriffin Cemetery is to the east of the R107.

This is also an area with a strong demesne element, notably Springhill House, a protected structure to the north of the WwTP site and other demesne houses to the east. At Malahide Road there are schools and medium density residential development.

The coastal area is further described below.

### **Coastal features**

The coastline of north Dublin contains three prominent estuaries one of which is Baldoyle Bay. The **Sluice and Mayne rivers** flow into the inner estuary and areas of salt marsh occur. Large **areas of intertidal flats** are exposed at low tide. The habitats are of international importance in themselves and for birdlife. The area through which the outfall pipeline (marine section) would pass is not a designated shellfish area but is important as a **fisheries area for the export market of razor clams** in particular and as a **high intensity codling nursery**.

The estuary, the surrounding roads and beach are popular for walking. Other recreational uses include kayaking, long distance swimming events and diving. There are two golf courses and hotels.

**Velvet Strand / Portmarnock Strand** is a Blue Flag beach containing two bathing areas, only the northern one being an officially designated bathing water. The southern beach close to a small car park also has lifeguards and is understood to be popular with local people on busy days. These resources are highly valued and heavily utilised including on a daily basis by sea swimmers and throughout the year by walkers.

The hinterland of the beach is laid out in **golf courses**. These rely on **irrigation wells** for watering of greens. There remain **extensive dune areas** including near Baldoyle Bay.

**Ireland's Eye** is 24 ha in area above the high tide mark and contains near vertical cliffs. It is of international importance for birds and habitats. The island is visited by

day trippers when conditions permit. More often the boats circle the island and the trip provides good views of the 69m high cliffs, the Stack and the small island Thulla.

Off the east coast is a **series of sand banks**. The main sand banks moving southwards from the site area towards the coast off county Wicklow are the Bennet bank, Burford bank and Kish Bank. An area close to Burford Bank is an approved location for dumping at sea for Dublin port dredging works.

From Portmarnock the **seabed slopes gently** out to depths of 10m to 15 m below chart datum before rising again towards Lambay Island. Directly east of Howth Head the depth increases to 35 m below chart datum before rising again to 15 m below chart datum.

### **Land ownership and major infrastructure**

The information presented in the EIAR is that **39 land holdings will potentially be affected by the construction** of the proposed development of which 26 land holdings are in agricultural use.

The site of the proposed development contains **crossings of ten national and regional roads**. **Other major infrastructure in the area** which will be traversed includes the electricity lines, the Belfast railway line, Connolly Hospital, watercourses, Sillogue golf club, a fuel pipeline, a subsea fibre-optic cable (FOC) and the routes of Metrolink and Metro West.

I attach photographs which were taken during inspection. I refer to the EIAR in particular for images of the Clonshaugh site and to the various appendices and reports which supplement the EIAR and which provide an excellent visual record of features of interest.

## **3.0 Proposed Development**

### **3.1. Overview**

The proposed development may be described in more detail as:

- Regional WwTP of 500,000 PE on 29.8 ha site in Clonshaugh to be constructed in a single phase.
- SHC to be co-located on the site and to serve Fingal County.

- 13.7 km length orbital sewer from Blanchardstown to the WwTP.
- 600 m connecting sewer from NFS to the WwTP at site access road. Access road from existing R139 (left-in) and new egress point (left-out) onto Clonshaugh Road
- Abbotstown pumping station in National Sports Campus grounds.
- Provision for future connections to developing areas.
- 11.3 km length outfall pipe from WwTP to outfall point approximately 1 km north-east of Ireland Eye (5.4 km land-based, 5.9 km marine section)
- RBSF at 11 ha site at Newtown in Fingal to store biosolids from Clonshaugh WwTP and from Ringsend WwTP.
- All associated construction compounds and ancillary work areas.
- Overview drawing of project is drawing ref: 32102902 – 2000.
- A proposal for UV treatment was presented at the oral hearing.

The development is further described below commencing with the RBSF then moving to the point of the proposed connection to the 9C sewer at Blanchardstown and traversing the county of Fingal to the location of the marine diffuser almost 6km off the coast. Further details of project elements are presented in Chapter 4 Volume 2A of the EIAR with respect to GDD and in Volume 4 of the EIAR for RBSF. Matters related to construction detail are described in the engineering reports and the Outline Construction and Environmental Management Plan (CEMP).

### 3.2. Regional Biosolids Storage Facility

The RBSF site is isolated from the remainder of the project area being positioned 1.6 km to the north of the M50 / N2 (Finglas) junction and to the west of the N2 itself off the R135. The facility will be for storage of treated biosolids from the GDD and Ringsend plants to cater for the period up to 2040 and to gradually replace use of a facility in Carlow.

Biosolids are biologically stable with pathogens reduced so that it is safe for use in agriculture and suitable for transport and storage without further health protection measures. The main forms of biosolids are biocake and biofert (which differ in terms

of moisture content). Storage amount of 34,600m<sup>3</sup> per annum. Also provides for storage of 6,000 tonnes per annum of struvite, a biosolid by-product of the Ringsend plant. Ultimately struvite will be delivered directly to the fertiliser industry.

The RBSF will comprise two storage buildings to be positioned at the northern side of the 11 hectare site. The layout utilises partly constructed infrastructure which was built as part of an incomplete waste recover facility. That includes enabling works including drainage, fencing, weighbridge, electricity and buildings. The southwestern corner is traversed by a 100kV line and the boundaries contain Huntstown Stream to which the site drains.

The site would be accessed from the R135 and from there to the N2 / M50. There is a turning lane along the regional road.

The development involves construction in the northern part of the site and the southern side is 'reserved for future development'. The 110kV line is avoided. Traffic circulation would be a one-way system. Storage buildings would be 105m long, 50m wide and 15.2m above ground level, incorporate curved roof profiles and cladding of grey and silver.

The proposal includes water supply for fire-fighting purposes and a firewater holding tank. Solar panels will contribute about 40% of annual energy demand. Wheel cleaning to prevent spread of biosolids and discharge of wash down material to foul drainage is proposed along with SuDS and pollution prevention measures. An odour control system involving vertical stacks 3m above building heights is proposed.

Construction of the facility would be in two phases of 12 months and 9 months. Demolition of 400m of road is proposed but there is no requirement for deep excavation.

In the operational phase the transport of biosolids from the WwTPs to the site will be a year round activity but export of material will be seasonal. The existing arrangements for land spreading of biosolids in Leinster and south Munster will continue. HGVs will be covered until inside the facility, where loading and unloading will occur.

### 3.3. **Orbital pipeline route - Blanchardstown to N2 (Ch 0,000-CH 5,500)**

This section contains 5,500m of the orbital pipeline route, the Abbotstown pumping station and compounds 1 and 2. In general the working corridor for the open cut sections of the orbital pipeline (and land based section of outfall pipeline) will be 40m wide. Work will be undertaken in short lengths and durations. Trenchless techniques will be used for the crossing of existing infrastructure and watercourses.

The orbital pipeline commencement point Ch 0,000 in the grounds of Waterville Park is to the west of the Edmund Burke College and west of Connolly Hospital campus. This is the location of the permitted Blanchardstown Regional Drainage Scheme. At this location the proposed orbital sewer is a 1,800mm diameter gravity sewer. It is stated to pass under the roots of the mature trees and will thus also pass under an old stone estate boundary wall. The route takes a south-easterly direction between the school and the Tolka River, crossing under Mill Road, skirting the south-western boundary of the hospital grounds and passing a further 450m before intersecting the roundabout at the hospital entrance. The route next follows a more easterly direction again broadly parallel to the Tolka and passing just over 110m south of St Francis hospice. Trenchless techniques are to be used in Connolly hospital grounds and for the construction of 1km of pipeline between Waterville Park and Abbotstown pumping station.

Between Ch 1,000 and Ch 1,200 is the site of compound 1 which is aligned parallel to the M50 and situated about 80m north of the carriageway. This is a very large construction zone. The north-eastern edge of compound is adjacent Caoimhin's church and graveyard, a protected structure. There are a number of mature trees in the vicinity and to the east is a large planting of less mature trees and some estate boundary walls. The sewer at this location is a 1,400mm rising main from Abbotstown pumping station. Cross country running events pass through this area.

The route continues in a north-easterly direction in parallel with the M50 for a distance of 550m to cross a private road at Ch 1,750. The orbital pipeline route continues to pass in parallel to the M50 through the NSC grounds and taking a north-easterly route through agricultural lands to avoid cottages and a small Traveller community site at Ch 2,200. The route continues on in parallel with the M50 passing to the north of a waste facility at CH 2,800 and through the Premier Business Park

south of existing units and north of planned units. The route crosses under the Cappagh Road at Ch 2,400 near Cappogue cottages and Compound 2 is at the other side of Cappagh Road. Huntstown quarry is to the north at this location.

The route continues in parallel through Kildonan south of Kildonan House until taking a small diversion at Ch 4,600 to avoid the major electricity substation at the junction of the M50 and the N2 and then going under the N2 at Ch 5,500.

### **3.4. Orbital Pipeline Route - N2 to M1 (Ch 5,500 to 12,600)**

Following crossing of the N2 and avoiding the Baleskin migrant reception centre the outfall pipeline route hugs the boundary of lands in the ownership of Bovale Developments and continues south of the Coldwinters ponds. This is a disturbed gravel landscape and one of the ponds close to the roadside is permanent. The ponds are a habitat for protected newt. A further change in direction towards the east occurs at Ch 6,000 when the route takes an easterly direction heading north of Dubber Cottages. At Ch 6,250 is the site of the proposed Dubber Odour Control Unit (OCU). This marks the change to a 1,800 diameter gravity sewer to the WwTP. The OCU would be 250m north of Baleskin Reception Centre and at its closest point to the long rear gardens at Meakstown / Dubber Cottages the separation distance would be 350m.

Next passing parallel and to the south of the airport runway through an area of mixed land uses including agricultural lands, business park and golf course, the route direction alters at Ch 8,400 in Sillogue townland to turn to the south-east and pass through North Point Business Park. The M50/R108 interchange is at Ch 9,100 in Ballymun. Construction compound 3 is adjacent the entrance to the business park which houses the NCT centre and where there is also a small Traveller community site and to the north Sillogue NDA. Between Ch 9,100 and Ch 10,200 the orbital pipeline would pass close to the M50 taking a northerly route at Ch10,200 and passing through the west side of a long stay car park. The route takes an easterly direction at Ch 11,000 and passes south of the old airport road – the DAA lands are at the other side of the road and airport landing lights are located just beside the orbital route. Construction compound 4 is at Ch 11,400 and compound 5 at the other side of the Old Swords Road at Collinstown Cross, which is tunnelled under. The alignment continues to the east through the southern end of the ALSSA sports



grounds and north of Dardistown cemetery, which is separated from the works site by a hedge.

### 3.5. **Orbital / Outfall pipelines - M1 to Marine Diffuser (Ch 12,700 / Ch 5,935)**

The orbital pipeline route passes under the M1 at Ch 12,700 and then takes a path north of the Carlton hotel and other commercial development. The route crosses the narrow and busy Clonshaugh Road (Stockhole Lane) at Ch 13,400 close to residential dwellinghouses. At this location is the proposed egress road from the Clonshaugh site.

The outfall pipeline (land section) takes off from the north-east corner of the WwTP site in the townland of Springhill travelling first in a northerly direction and turning at Ch 0,700 due east to the Malahide Road crossing it at compound 7, passing then through agricultural lands before following the west and southern boundaries of Trinity Gaels GAA. Compound 8 is at this location with access from the south. The outfall pipeline route continues towards the main line railway which is crossed at Ch 1,600. Residential development is under construction nearby.

The outfall pipeline route (marine based section) commences immediately west of the R106 and 90m north of Moyne Road R123. It will be tunnelled in bedrock under a stiff boulder clay. Routed in a north-easterly direction for 1 km under Baldoyle estuary, across the Golf links Road it comes through a grassed area beside the beach car park from where it would follow in an easterly direction for 5 km out to sea terminating 1 km north-east of Ireland's Eye. The pipeline route follows a falling profile from 9 m OD at the R106 to 2.8 m OD in the green space and -22.84 m OD at the discharge point. The proposed outfall pipeline route (marine section) will operate as a pressurised gravity sewer.

Associated with the trenchless crossing of the estuary are compounds 9 to the west and 10 to the east of Baldoyle Bay estuary. An area of 150m X 100m will be required at each with requirements for bentonite and fuel storage as well as an office and a crane. Access to the beach car park at this location, which is to the south of the golf club is to be maintained for the duration.

The outfall pipeline (marine section) will have an internal diameter of 2m and be at depths between 15m and 20m below ground level. Pipe sections will be installed as

the micro tunnelling machine progresses. Tunnelling will take 12 months on a 24 hour seven day basis. The outfall pipeline route (marine section) would emerge approximately 600m offshore terminating below the low tide water mark. This point is the tunnel / subsea pipeline interface ('the interface').

The outfall pipeline route (marine based section) between Ch 2,000m and Ch 5,940m would be constructed through subsea pipe laying (dredging) techniques whereby a trench is dug in the bed and the pipe position into it. A backhoe dredger would be used in shallower areas – dredged material would be placed in a barge and redeposited and stockpiled parallel to the outfall trench within a 250m wide construction corridor. In deeper areas a trailer suction hopper dredger (TSHD) is required – this will involve depositing and stockpile excavated material parallel to the proposed trench within the 250 m construction corridor. This material would be used to refill the trench once the pipe is installed.

In the dredged section long length large diameter polyethylene pipe would be installed. This will be constructed at the factory to the required diameter in continuously extruded strings up to 650 m long. Potential assembly areas are Dublin port lands and adjacent the pipeline trench. The assembled pipeline strings will be towed to the outfall location, surface positioned over the trench and installed in a continuous operation. When the pipe is in place at the trench previously excavated material will be replaced around and over the pipe. Diffuser valves will be installed (bolted) on the vertical risers using marine divers. These valves are integral to the final section of the outfall pipeline route (marine section).

There are a number of options presented for the connection of the pipe strings. There are also a number of alternatives to the use of concrete ballast. The interface between the tunnel and subsea pipeline sections will be constructed over a six month period as described on page 21 of Chapter 4 of the EIAR.

### **3.6. Abbotstown Pumping Station**

The closest point of the site of APS to the nearest building St Francis Hospice is 150m. The invert level of the inlet sewer is 17m below ground level. There is rock at 2.5 m below ground level. The aboveground component will be a small single storey

building of vernacular design (rendered concrete building with copper sheeted roof). There will be stacks which will extend to a maximum of 10m above roof level.

### 3.7. **Wastewater Treatment Plant and Sludge Hub Centre**

The final design of the WwTP and SHC will be determined under a Design, Build and Operate (DBO) process. The finalised design will be subject to the requirement to achieve emission limit values (ELVs) which will be set by licence from the EPA. For the purposes of assessment of environmental impacts of the project an indicative design has been undertaken and the maximum impact has been assessed. The maximum height of buildings will not be exceeded and any additional technology (including the UV treatment which was proposed during the oral hearing) will be accommodated within the buildings described in the application. The stack heights also represent the maximum height.

The indicative layout of the site and the main features are:

- Preliminary treatment zone 1 at the Western side of the site
- Biological treatment, final settlement and testing zone 2 in the centre
- Sludge treatment facilities zone 3 in the eastern zone.
- Maximum building height of 18 m above ground level. Stack heights of 24m are proposed.
- Three-year construction period.
- Typical works sequence described in OCEMP.
- Significant planting and large berms and buffer zones throughout the site. Naturalistic landscaping approach close to rural areas. Formal planting at southern boundary to integrate with future business park.
- Colour scheme and building form envisaged fully described. Low site coverage proposed and buildings to read as small individual units.
- Provision for expansion of treatment capacity subject to consent.

Other significant elements of the proposed development including its envisaged construction methodology, which are shown on the application drawings or described in the application include:

- Piling works at the microtunnelling compounds 9 and 10 and at the fibre optic cable crossing and the interface of the tunnelled and dredged sections of the marine outfall.
- Measures contained in the outline Surface Water Management Plan (SWMP).
- Groundwater monitoring at Portmarnock and Sillogue Golf Courses.
- Use of trenchless techniques for the construction of proposed NFS.
- Energy efficiency measures.

## 4.0 Written Submissions

### 4.1. Local Authorities

#### 4.1.1. Fingal County Council.

##### **Chief Executive Report**

The report presents reports from internal departments and an ecological advisor Ms Aebhín Cawley and provides an assessment of the planning issues, the EIAR and matters related to appropriate assessment. In all 19 number conditions are recommended as well as an additional 15 number, which pertain particularly to the RBSF. The most significant points of the report are presented below in summary. The overall view is that the development is of positive benefit.

##### **Development plan policy:**

- Principle of the development is established. Complies with the zoning policy.

##### **Landscape and visual impact and cultural heritage:**

- Visual impact of WwTP is reduced by design, layout and landscaping. Visual impact of WwTP is significant but does not impact on residential amenity.
- Landscaping is required at RBSF site and APS in particular. Tree surveys and protection measures are required at a number of locations including NSC near compound 1, near demesne houses and at hedgerows which are townland boundaries. Adjustments to compound 1 desirable.

- Remaining Abbotstown designed landscape is not high quality and the location of development and its impact are acceptable subject to amendments to boundary treatment and lighting. Comments on other demesnes.

#### **Roads and traffic:**

- A special contribution is required in the amount of €202,950 euro towards upgrade of the R132 and M2 northbound slip priority junction to a signalised junction. Cost to be shared between RBSF and other developments.
- Transport section indicates that a future determination should be made regarding the access to be two-way, with access from the R139 being reserved for emergency vehicles. A condition should be attached.
- The operational phase traffic will be substantial and would add a limited amount of time to predicted long delays by 2040 at a nearby junction.

#### **Noise, vibration, air and odour:**

- High sensitivity receptors are close to every major element of the project.
- APS, OCU and WwTP will not result in generation of air pollution or odour sufficient to be a significant nuisance on sensitive receptors outside the boundaries of the WwTP or in proximity to APS or Dubber OCU.
- Significant impact on hospital and hospice as a result of noise, vibration and dust. Aspergillus fungal emissions addressed by adherence to guidance.
- Noise impacts on the hospital and hospice are described in detail and restriction of works to daytime period is considered most reasonable approach. Overall noise impacts would be temporary.

#### **Marine water quality and ecology:**

- Clarification needed in relation to the maintenance of excellent bathing water quality. Not possible to fully determine effect on shellfish.
- Regarding the NIS a number of matters are raised. The applicant is requested to consolidate mitigation measures within the NIS, to further justify screening out of Ireland's Eye SAC, to confirm use of appropriate guidance in relation to marine mammals, to further consider in combination effects from other dredging / dumping at sea projects.

- Competent authority should consider whether the available documentation adequately addresses the matters raised by prescribed bodies and others in the consultation phase, summarised in Appendix A2.1 and A2.2 of the EIAR.

### **Elected Representatives.**

The record of the formal meeting shows that the issues raised related to:

- Inadequate proposals for water quality and need for tertiary treatment. Level of public opposition noted.
- Option of smaller localised plants promoted.
- Objection to location on edge of two authority's functional areas.
- Potential impacts from Dubber OCU.
- Major disturbance to hospital and hospice and other areas including related to 6 attenuation tanks.
- Construction phase traffic impacts including impacts on residents and recreation assets. Operational impacts on junction near N2 due to RBSF and cost to Council. Need for special contribution.
- Concern about ecological impacts.
- Opposition to use of greenbelt lands.
- Need for project. In its absence can zoned lands be developed?
- Marine outfall needs to be longer.
- Need for most up to date technology and minimal environmental impacts.
- Vote to call on ABP to refuse permission was taken and was lost.

#### **4.1.2. Dublin City Council**

##### **Chief Executive Report**

The development includes a 600m 1.5m diameter pipeline and access road partly within the DCC administrative area to which the report is stated to refer.

The following points were made:

- Policies S11, S12, SI1, SI2 and SI3 support the project. It is also supported in the LAP including sections 14.0, 14.3, which describe the NFS and the GDD.
- Objective IS08 is to ensure no negative impact on DCC neighbourhoods as a result of GDD including on implementation of the LAP.
- Transportation Department conditions relate to standard of works, SuDS, mitigation as outlined in SWMP.
- Report of Roads and Traffic Planning Division enclosed refers to CMP, HGV management strategy, abnormal load permit, minimise impact on local communities related to construction and operation traffic.
- The NIS is generally satisfactory.
- GDD is acknowledged as critical infrastructure. Satisfied with the works to be undertaken in administrative area.

### **Elected Representatives**

The following was adopted as a resolution:

- Sewage treatment plant will be seriously injurious to amenity of the City Council area, the scale and size are not in keeping with the proper planning and development of the area and will undermine housing and employment creation and retention, will be injurious to farmland, sports and ecological resources. Serious concerns regarding overflows and impact on biosphere.

Other comments recorded at the meeting referred to the unsuitable location, large scale, lack of trust that there will be no odours, concerns about traffic, employment would be welcome, need for ABP to engage experts, need to provide infrastructure in different areas other than Ringsend, smaller plants preferred, concern about sewage outflow and statements that the infrastructure is needed.

## **4.2. Prescribed bodies**

### **4.2.1. Environmental Protection Agency**

The proposed development may require a licence under the Waste Water Discharge (Authorisation) Regulations 2007, as amended. The agency has not received a licence application. Should a licence be received all matters to do with emissions to

the environment from the activities proposed, the application documentation and the EIAR will be considered and assessed.

#### 4.2.2. **Meath County Council**

The Chief Executive's report sets out the policy context and need for the development. The infrastructure is critical to facilitate future sustainable economic, social and residential growth of South Meath settlements.

Section 7.12 of the development plan supports the wastewater treatment plant – policies WS POL 10, WS POL 13, WS POL 14.

The adopted economic development strategy for County Meath 2014 – 2022 will require wastewater infrastructure that is resilient, secure and reliable.

#### 4.2.3. **Failte Ireland**

Significant visual impacts are envisaged due to the proposed WwTP in the ten years pending maturation of trees. Impacts on airport and demesne houses area also predicted in that period. The area to the east of the WwTP will be most significantly impacted. The airport and M1 are less sensitive.

The coastal zone includes areas of exceptional landscape quality and valued amenities. Portmarnock area could be bypassed during construction due to traffic. Amenities will be affected and views impacted.

Failte Ireland appreciates the need for the project. Construction phase will have most significant impact on tourist amenities. Operational phase will result in some temporary impacts initially but are unlikely to be significant in the long term. Imperative that mitigation fully implemented.

#### 4.2.4. **Irish Rail**

Works which may affect the safe operation of railway should be undertaken in consultation with Iarnrod Eireann and in accordance with requirements. Particular care is required where proposed outfall crosses under the Dublin – Belfast railway line and any observations or issues by Iarnrod Eireann should be addressed

If permission is granted then further consultation with IE recommended.



#### 4.2.5. **Transport Infrastructure Ireland (TII)**

The following matters were raised:

- Crossings of the existing motorway network require approval.
- Methods or techniques employed in traversing the national road network should be subject to agreement of TII or the County Council or the PPP.
- Metrolink and future Metro/Luas/BRT lines are a matter for the NTA.

#### 4.2.6. **Health Service Executive**

Comments of Environmental Health Service include:

- EIAR addresses air, water, traffic and waste impacts adequately.
- The predicted noise impacts should be tested by monitoring and mitigation implemented in the event of exceedances. CMP should address responsibility for noise and vibration monitoring.
- Dust minimization and Aspergillus prevention plan will ensure no significant impacts at the façade of buildings.
- Concentrations of NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and CO will comply with standards.
- Groundwater through which pipeline passes must be protected and well owners advised of risk.

#### 4.2.7. **Department of Arts, Heritage and the Gaeltacht (DAHG)**

Potential for discovery of hitherto unrecorded **archaeological remains** should be addressed by condition, as set out.

Unlikely to have a permanent negative interaction with Natura 2000 sites, due to the nature of the works.

Detailed comments provided in relation to the quiet zone designated for birds under the Portmarnock South LAP where compound 9 is proposed. In carrying out an appropriate assessment An Bord Pleanála must **assess whether the temporary loss of these lands will negatively impact on wintering birds** when considered cumulatively with the construction activities in the LAP lands. It will need to be determined what other quiet areas will be available in the absence of this area.

Proposed restoration of compound 10 habitat should include dune habitat.

Licences for newt relocation and works to badger setts should precede planning.

New ponds should be considered as a newt mitigation measure.

To protect bats felling of trees during August to October is preferred and to protect nesting birds September to October.

All **mitigation set out should be included as a condition** of any permission especially relating to Ecological Clerk of Works, estuarine and marine birds, water quality, bats, badgers, newts, tree and hedgerow replacement and restoration of wetland habitat.

Outline construction management plans to allow for implementation of all mitigation measures, including possible bentonite spill should be ensured.

#### 4.2.8. **Dublin Airport Authority**

In the context of the company's remit the following is highlighted:

- Future wastewater demands generated by increased growth in Dublin airport should be including in future capacity projections. Assumptions are unclear.
- Objective DA13 relevant to inappropriate forms of development and in this regard any changes to surface water management would require consultation.
- Objective DA14 of development plan refers to the compounds located on DAA lands and in the outer public safety zone. Further agreement will be needed.
- A condition should be attached to ensure future road access that may cross the wayleave can be developed to enable possible future development of airport lands – particularly to the east of the R132.
- A condition should be attached to any grant of permission requiring the developer to agree proposals for cranes with DAA and IAA.

#### 4.2.9. **Inland Fisheries Ireland**

All discharges must comply with the Environmental Quality Objectives European Communities Environmental Objectives SI 272/2009, Quality of Bathing Water

Regulations SI 179/2008, and the Quality of Shellfish Water Regulations SI 268/2006.

Any permission should be subject of the mitigation measures detailed in section 9.7, 11.14.1 and 17.7.1 of the EIAR.

#### **4.3. Observers' Written Submissions**

There is considerable overlap between the written observations made. I have chosen to present a summary of the issues on a topic basis rather than summarise each of the individual observations. That summary is contained in an appendix at the rear of this report. It highlights common themes and significant points made in observations.

The overview below sets out the main issues which I consider are most relevant. All written observations have been read and taken into account in the preparation of this report. The submissions are on file for consideration by the Board.

##### **Policy**

The development is considered to be contrary to the national and development plan policies including in respect of zoning and the protection of the environment.

##### **Project need**

A number of observations acknowledge the need to improve wastewater infrastructure.

##### **Project scale**

There is a very high level of opposition to the largescale nature of the project.

A network of smaller facilities is considered the appropriate form of development to minimise impacts, risk and costs.

##### **Project location**

The history of the site selection is a common theme in the submissions.

The site selection process is considered to be flawed and biased.

The initial sites should have been re-visited when the Biosphere was designated.

The proximity of the proposed WwTP / SHC to a densely populated residential area is of particular concern to many objectors. The selected site is unacceptable at a fundamental level.

The proposal will result in property devaluation, health, amenity and other impacts on local community including related to odour and air emissions.

Alternative visions for the area will not be realised if this project goes ahead.

The location of the WwTP site at the southern side of Fingal County is described as being a politically motivated decision.

There is no benefit to the area from the proposed project.

The site should be on poorer lands and away from densely populated areas.

### **Marine water quality**

The need for a tertiary level of treatment is a dominant theme.

The aim should be to retain 'Excellent' water quality.

There is also concern relating to chemicals, micro plastics, viruses and hormones.

A number of objections refer to the location of the outfall in its wider strategic terms and to the termination point close to Ireland's Eye stating that a longer outfall is needed.

To carry out a credible EIA it is necessary to demonstrate that the location selected as the outfall is optimal and will not reduce water quality.

The seabed is shallow and the sandbank acts as a lagoon and will trap sediments.

The modelling is considered to be flawed and local knowledge is more reliable.

It is considered that the northern outfall option should be revisited.

### **Marine environment**

The value of the marine environment for recreation, ecology and fishing is a dominant theme in the observations from the coastal zone.

Velvet Strand is unique as the only beach on the east coast to hold both blue and green flags and as the only blue flag beach on the north of the city. It has a very high community value and historical significance.

Presently wastewater is discharged in smaller quantities up and down the coast and is diluted. The outfall for the scheme falls in the middle of the Malahide production area which is of 'A' status meaning that razor clams are fit for the live and most lucrative export market. Inadequate treatment is proposed and potential accidents will impact this fisheries.

Project could have adverse effects on birds in Baldoyle estuary including from 24-hour tunnelling and compounds. Ecological buffer zones breached. Potential impact on marine mammals due to noise.

### **Population and health**

The impact on health and amenity due to air emissions is a dominant concern in observations from the residential areas of Darndale and Belcamp to the south of the WwTP site, most of which areas lie within DCC. Similar issues prevail in other areas including at Meakstown / Dubber.

It is considered that air emissions including odour are proven to have contributed to poorer health outcomes for populations close to WwTP sites.

The vulnerable nature of some individuals and groups is identified. Long-term health impacts on the thousands of households within a few kilometres of the project are not addressed.

A submission on behalf of the local traveller community refers.

### **Air and Odour**

Odours will make use of outdoor areas unfeasible and will affect day to day enjoyment of private gardens and parks.

There is a lack of trust in the design and future operation of the abatement technology.

### **Roads and Traffic**

The GDD is premature pending roads improvements in the area.

Construction will lead to serious traffic disruptions and impacts on the local community. Significant use by heavy traffic of roads which adjoin an active local park, schools and houses. Traffic management not properly detailed.

In the operational phase the trucks moving sludge from the plant to the proposed RBSF are of concern. Operational phase traffic is in general of concern including in terms of possible impact on emergency vehicles.

### **Landscape and Visual**

Size and height of the plant will be visually intrusive. Size and scale of WwTP are out of keeping. Will constitute a blot on the landscape. Too large for site.

### **Record of Irish Water and related**

The record of operation of wastewater treatment plants leads to no trust.

The problems at Ringsend with respect to odours and overflows will be repeated.

### **Blanchardstown Drainage Scheme**

One observation refers to this permitted scheme, which is to be located close to Blanchardstown Hospital. The tanks will impact the hospital and the orbital pipeline route associated with the GDD is not an efficient route.

### **Noise and Vibration**

A minority of observers raise issues relating to local noise and vibration impacts.

### **Flood risk**

Mayne River is a polder with the central area below sea level and the catchment has regularly flooded.

There is a history of flooding from the Cuckoo, which is a tributary of the Mayne River, which is flooded every few years.

There is no basis for the conclusion that there will be no discernible impacts from the project on the existing flood regimes of the area.

### **Community benefits scheme**

Given the level of economic deprivation in the adjacent areas of Darndale and Belcamp the scheme should be amended to better serve the local community.

### **Appropriate assessment**

Project contravenes article 6.1, 6.2 and 6.3 of the Habitats Directive

Construction and operation phases will have significant negative impacts on habitats and species in Baldoyle Bay SAC, Ireland's Eye SAC and Rockabill to Dalkey Island SAC resulting in certain deterioration of habitats and species contrary to conservation objectives for these sites.

The abundance of case law listed dictates the project cannot be permitted.

### **EIA and related**

EIAR fails to address most of the residents' concerns, including visual impact, noise, odours, accidents and general negative impacts on the area in any forensic detail.

The length of the documents is a deliberate attempt to discourage public consultation.

The EIAR and NIS failed to consider several in combination effects including from the Dublin Port Master Plan 2040 and other developments in the marine environment.

### **Consultation**

Report on consultation is inaccurate.

Consultation with residents further from the plant appears to have been more extensive including at Howth, Baldoyle and Portmarnock.

### **Economic Issues**

Cost benefit analysis has not been produced.

Upkeep, maintenance and operation of plant will not be properly funded.

### **Risk assessment**

There is large potential for environmental disasters due to the location of the WwTP site along the airport flight path.

### **Material assets**

General submissions refer to the adverse impact of the WwTP on property values and on business near the Clonsaugh site.

Two major landowners' submissions refer to the impact on future hotel developments to the west of the WwTP site and residential lands to the east of the WwTP site.

## 5.0 Oral Hearing

### 5.1. Overview

The hearing took place over a six and a half day period. The CPO module, which forms part of the overall hearing is separately recorded primarily in the relevant section of my report.

The hearing on the planning application is summarised in more detail in the report contained in an appendix to this main report. I also attach a summary of some statements made in relation to the CPO in the same appendix.

The commencement of the hearing was interrupted by requests for an independent record of the hearing to be made available, for live streaming and for independent assessment of the Irish Water submissions to be undertaken. These requests were reiterated throughout the hearing.

### 5.2. Main Irish Water submissions

Some of the most significant points raised by Irish Water at the hearing are summarised below.

The **project need was explained and the main components described**. Irish Water describe the proposal as the most environmentally, technically and economically beneficial solution. All **alternatives** have been fully considered. The project will safeguard public health and the environment.

The **capacity of the plant** has been based on analysis of three growth scenarios and provides for anticipated industrial growth including at Leixlip as well as DAA lands. The provision of 20% headroom is a new approach by Irish Water. By monitoring connection agreements Irish Water will be in a position to anticipate capacity constraints and to advance new plans and thus avoid overloads.

A **proposal for UV treatment** was presented. This would be incorporated into the buildings at the WwTP. It was being introduced out of an abundance of caution following the input of a specialist ecologist. The design will be specified to deal properly with the composition of the treated wastewater. Any new regulations in terms of water quality or otherwise will be met.



**Process failure** would not result in any discharge to the marine environment due to a number of factors. These include stoppage of the intake pump in the WwTP, closure of the two main pumping stations which supply most of the effluent and the availability of a very large storage capacity within the pipeline.

Observers' issues relating to marine ecology and ornithology have been responded to in detail and there is **sufficient information to reach complete, precise and definitive findings required for AA** and to draw a positive conclusion. All impacts on European sites and qualifying interests including cumulative impacts are addressed.

The evidence in relation to the **geological conditions** underlying the Baldoyle Bay estuary are well understood and there is no geological fault at that location. A longer outfall would have to have been about twice the diameter and would be likely to have encountered a geological fault which is present.

The issue of **odour has been fully addressed** as part of the design from the outset and robust and effective measures put in place. The most stringent assessment target of 1.5 OUE/m<sup>3</sup> as a 98<sup>th</sup> percentile of one hour averaging periods has been adopted. For the APS, Dubber OCU and WwTP sites the prediction is that even in the worst case meteorological conditions there would be no nuisance odours detectable at the closest sensitive receptor to any of the project elements.

**Health impacts are anticipated to be overwhelmingly positive.** Traffic impacts and future road layouts have also been addressed and are shown to provide for the planned **East West Distributor Road (EWDR)** and others.

Significant consultation with all affected parties has taken place.

In summary, the development is needed and it is the right project in the right place.

### 5.3. **Local authorities and prescribed bodies**

The main participants were **Fingal County Council** which was represented by a large team and **NPWS** who were represented by two ecologists for the duration of the main discussion on ecology and appropriate assessment.

The submission of FCC provides a response to the Irish Water document of January 2019 and addresses the greenbelt policy, development contributions, planning gain,

permeability, water quality, noise impacts at Connolly Hospital, trees and hedgerows, biodiversity including compounds 9 and 10. The location of the WwTP in Clonshaugh is set out in the development plan and the proposal is part of a strategic project to provide adequate wastewater facilities for future growth. The landscape design response is considered appropriate for the Green Belt and HT zonings and the development would comply with objectives SS08 and SS09 as there is a demonstrated need for the location and it would provide for sustainable development opportunities on zoned lands and avoid the need for additional zoning and encroachment in the future. A number of conditions were requested to be attached. NPWS contributed in particular to the discussion on appropriate assessment.

#### 5.4. **Observers' submissions**

Many of the significant points made are addressed in detail in the discussion section of the oral hearing summary in the appendix.

Particular points of note include:

- Need to undertake an **assessment of risk** including in view of the Critical Infrastructure Directive.
- Detailed **submissions on behalf of Gannon Properties** in relation to the roads proposals, safety issues at the site entrance and costs and construction efficiency.
- The importance of **compound 10 as a Brent geese roosting site** and the potential for additional noise impacts associated with the airport.
- Other matters which might be relevant to appropriate assessment including in relation to the **geological conditions at Baldoyle estuary** and impact on the trenchless tunnelling, the adequacy of the **vessel management plan** and the use of **Ireland's Eye by seals**.
- The stated need to **consult with UNESCO** in relation to the Biosphere.
- The potential for **antimicrobial resistant bacteria** to enter the marine environment and the food chain.

The **more commonly stated themes in observers' submissions** refer to matters which were previously outlined in the written submissions including the following:

- Scale and location – 4 times size Croke Park – allowance for expansion. Single plant not the appropriate option.
- Unsuitable and politically motivated site selection process.
- Need for tertiary treatment.
- Blue flag, tourism and recreation will be undermined.
- Noise and impacts on hospital and hospice including closure of windows, aspergillus, odours and lack of access to open space.
- Leaks and odour at Ringsend will inevitably be repeated. Has health impact arising from malfunctions been assessed?
- Danger to recreational assets including swimming and scuba and to fishing.
- Inadequate communications and poor consultation.
- Costings and overruns. Inefficient model.

## 6.0 Planning History

### **Blanchardstown Regional Drainage Scheme**

This is a sewer duplication and storage scheme involving an upgrade of the existing sewer network serving Blanchardstown. It comprises construction of 3.2km of pipeline using trenchless tunnelling, construction of underground storage tanks with combined capacity of 30,000m<sup>3</sup>, provision of Tolka Valley Park Pumping Station, and other works. The application was approved by Fingal County Council. The purpose of the development included allowing for growth within the 9C sewer catchment and reducing the frequency of surcharge and the likelihood of uncontrolled spills to the Tolka and to contribute to the elimination of odours at manholes due to flows exceeding capacity. I attach a copy of a drawing which identifies the location of the development.

An application for Compulsory Purchase in relation to the above was made to An Bord Pleanála (ABP-300747-18) – no objections received.

## Ringsend Upgrade

Permission was granted under ABP-301798-18 for a revisions and alterations to the existing and permitted development at Ringsend WwTP and for a new Regional Biosolids Storage Facility being two components of an integrated wastewater treatment facility and to comprise:

- Continued expansion to permitted capacity of 2.4 million PE.
- To be achieved through introduction of aerobic granular sludge (AGS) technology.
- Omission of 9 km long sea outfall tunnel.
- Further descriptions of the two components is provided in the Board's order.

Subject to compliance with conditions the Board considered that the development would enable sustainable residential and economic growth through delivery of increased wastewater treatment capacity, would improve the quality of effluent discharge to the receiving waters and assist Ireland in meeting its obligations under EU directives, national legislation and planning policy and would be acceptable in terms of odour, noise, vibration and traffic.

The conditions of the decision relating to the two components include:

- Ten year permission to carry out development.
- CEMP and WMP to be submitted and agreed in writing with both planning authorities.
- TMP for construction and operational phases to be agreed with planning authorities.
- MVMP to be agreed. To include appropriate noise and vibration limit set out in the EIAR. To include compliance with BS 5228 in respect of construction and demolition phases. To adhere to specified limits at the nearest sensitive receptor and other requirements. Monitoring to be carried out in accordance with the requirements of planning authorities.
- Odour requirements specified for the two different components. At the Ringsend site limits are set for the site boundary (10 OU<sub>E</sub>/m<sup>3</sup> as the 99.4<sup>th</sup> percentile of hourly averages) and for sensitive receptor locations (3 OU<sub>E</sub>/m<sup>3</sup>

as the 98<sup>th</sup> percentile of hourly averages) and for the RBSF are set for the sensitive receptor locations only (3 OUE/m<sup>3</sup>).

- Standard requirements relating to archaeological materials.
- Detailed landscaping of the two components to include strengthening of boundary treatment, screening of construction compounds, general landscape details, detailed decommissioning and site restoration plan in respect of compounds to be agreed.
- Requirement to comply with planning authorities in relation to surface water management. Specific requirements regarding surface water pipeline traversing site of RBSF, to be realigned and a wayleave provided.
- Details for the prevention of environmental pollution related to fire occurrence and to include assessment of risk of environmental pollution due to fire water and necessary mitigations at the site of the RBSF.
- All works within and adjacent European sites within Dublin Bay to be undertaken in accordance with requirements of suitable ecologist appointed following consultation with NPWS.
- Special contribution in respect of upgrade and signalisation and of R135 and the N2 northbound slip priority junction. Amounts to be agreed.

### **Site of the Regional Biosolids Storage Facility**

Permission was previously granted at this site for development of a waste recovery facility for C&D waste, a biological waste treatment facility, waste transfer facility and sludge hub centre treating 26,511 TPA of municipal sludge. P06F.EL.2045 refers.

Works which were undertaken pursuant to that permission and which are to be retained and utilised as part of the development of this site for the RBSF include part of the road network and entrance and small structures.

### **Gannon Lands to east of Clonshaugh site**

Gannon own an 87 ha development site at Belcamp adjacent to the proposed wastewater treatment plant in Clonshaugh. The zoned Belcamp lands have a development capacity for over 3,000 dwellings and associated mixed uses and a master plan has been prepared and a copy is attached to the owner's submission to

this application. Permission has been granted for phase 1 of the Belcamp lands which comprises 175 units at the eastern end of the holding (ref.F15A/0609, PL 06F.248052).

### **Hotel and other developments at Roundabout**

The lands to the north-west and west of the roundabout at the junction of Malahide Road (R139) and Clonshaugh Road (also known as Stockhole Lane) have been subject of a number of significant applications including:

- Permission granted for Topaz filling station including extension to trading hours. This site is accessed from the roundabout.
- Permission granted on lands to the west of Topaz for various hotel schemes. F08A/1305 for a 325 bedroom hotel extended till September 2019. Up to 10 storeys. PL232704.
- Permission refused for major office development of 5 storeys (phase 1 of master plan) at site further west. The Boards decision largely was based on policy traffic impacts on M1 and M50 in absence of public transport. PL247665 refers.
- Permission granted for an extension to the existing Clayton Hotel (140 additional bedrooms F16A/0437), to the south-west of the roundabout, south of the planned office / hotel / and existing Topaz.

### **Cases which are of particular relevance to the CPO**

Table 3.1 of the CPO Planning Report summarises planning applications made within the area of the Project, and includes commentary in respect of any likely impacts of the project and how these may have been accommodated. I outline the relevant aspects of the planning permission as they remain relevant in the consideration of the proposed CPO later in this report.

### **Land remediation application – IDA Belcamp lands**

In April 2019 FCC received an application from IDA for remediation of lands to the south of the site (part of the IDA / HT holding). This is stated to be a project for site remediation involving removal of 22,000m<sup>3</sup> of contaminated lands, involving installation of a cut-off wall to the south and south west and restoration with grass

and tree line where applicable. An Environmental Impact Assessment report (EIAR) and Natura Impact Statement (NIS) accompany the application. F19A/0149 refers and permission was granted on the 17<sup>th</sup> of July 2019. There is no overlap between this site and the GDD lands.

### **Nearby**

An application for provision of a double circuit 110kV underground transmission line between the Belcamp and Darndale substations was granted permission under ABP-303687-19.

## **7.0 Relevant legislative and Policy Context**

### **7.1. Selected Legal Provisions**

#### **Water Framework Directive 2000/60/EC (WFD)**

This requires Ireland to manage its water resources on an integrated basis to achieve at least 'good' ecological status and to avoid deterioration in the status of any waters.

The coastal waters of Dublin Bay HA09 from Howth Head to Malahide Bay, the location of the outfall have a status of 'unassigned'. The coastal waters of Malahide Bay have a status of 'good'. The transitional water body the Mayne Estuary has a status of 'unassigned'.

#### **Urban Wastewater Treatment Directive 91/271/EEC amended by Directive 98/15/EC (UWWTD)**

This aims to protect the water environment from the adverse effects of discharges of urban wastewater and from certain industrial discharges. The Directive identifies the general need for secondary treatment. For urban waste water discharging into 'sensitive areas' it may be necessary to require more stringent treatment. Sensitive areas are listed under the Urban Waste Water Treatment (Amendment) Regulations 2010 Part 3 Schedule 1. None are relevant to the current proposal.

#### **Urban Wastewater Treatment Regulations (UWWT) (S.I. 254/2001)**

This requires that all urban wastewater systems for a population equivalent of 10,000 and over provide for secondary treatment. The standard to be achieved is to not

exceed 25mg/l biological oxygen demand (BOD), 125mg/l chemical oxygen demand (COD) and 35mg/l total suspended solids (TSS).

**European Communities Environmental Objectives (Surface Water) Regulations 2009 (SI 272/2009) as amended by The European Communities Environmental Objectives (Surface Water) (Amendment) Regulations 2015 (S.I. 386/2015)**

These give effect to the measures needed to achieve the environmental objectives established for surface waterbodies by the WFD. The proposed outfall is within 'coastal waters' as defined under Article 1(7) of the (Water Framework Directive). The target water quality standards for coastal waters are set out under Table 9 of the 2009 regulations. The standards for DIN is less than 0.25 mg/l (median) (34.5 PSU), for good status and less than 0.17 mg/l (median) for high status. For coastal waters there are no specified limits for BOD, SS or MRP.

**Waste Water Discharge (Authorisation) Regulations 2007 (S.I. 684/2007)**

This concerns the authorisation process relevant to a requirement that a licence be sought from the EPA for the wastewater discharge.

**European Union Bathing Water Directive 2006/7/EC (BWD)**

This establishes procedures and standards for bathing waters. Under the Directive, all waterbodies are required to achieve a minimum of 'sufficient' quality, which is based on the main parameters Intestinal Enterococci and Escherichia coli (E. Coli).

**The Bathing Water Regulations (S.I. 79/2008)**

The following bathing water targets are relevant to designated bathing areas.

- E.coli – less than 250 cfu/100ml (excellent quality) 95-percentile.
- Intestinal enterococci (i.e. – less than 100 cfu/100ml) (excellent quality) – 95 percentile.

Local authorities are obliged to ensure that the bathing waters are classified at not less than 'sufficient'. The requirement is also that local authorities take such measures as appropriate to increase the bathing waters classified as good or excellent.



## **European Communities (Quality of Shellfish Waters) Regulations 2006 (SI 268/2006)**

This transposes the Shellfish Waters Directive which requires designation of waters to support shellfish. Limits for a number of parameters are specified. For faecal coliforms the standard to be achieved is equal to or less than 300 in the shellfish flesh and intervalvular liquid.

## **River Basin Management Plan for Ireland, 2018-2021**

The River Basin Management Plan for Ireland, 2018-2021 (RBMP) sets out measures aimed towards achievement of the WFD objectives. The priority objective for this cycle is to secure compliance with the Urban Waste Water Treatment Directive and to contribute to the improvement and protection of waters. Achieving this objective entails addressing waste-water discharges and overflows.

**Marine Strategy Framework Directive 2008/56/EC** This sets a requirement to achieve Good Environmental Status in the marine environment by 2020. There is a requirement that a programme of measures be put in place. The permitting processes which include the foreshore consent process, EIA, SEA and AA leading to appropriate controls on developments in the marine environment will contribute towards the achievement of Good Environmental Status.

**UNESCO Dublin Bay Biosphere Reserve** Biosphere reserves are designated with a view to achieving conservation, development and logistic support and comprise core protection areas with zones where sustainable development is fostered. The ecological significance of the Biosphere is related to the well-developed salt marshes and dune systems and the importance of the area for nesting and wintering waterfowls. It is the only UNESCO Biosphere within a capital city.

**Other European Directives** which are relevant in the consideration of the environmental effects of this case relate to air quality and habitats and birds.

## **7.2. Project 2040 and related**

### **National Planning Framework**

The NPF is the government's strategic planning document. It sets out the spatial pattern which is considered to best accommodate and support change including

growth of one million people. The NPF will inform future strategic national investment, including in infrastructure.

Objectives include:

- Ensure that wastewater needs are met by major projects to increase waste water treatment capacity.
- Implement the Greater Dublin Strategic Drainage Study, through enlarging capacity in existing wastewater treatment plants (Ringsend) and develop the Greater Dublin Drainage Project.
- Provision of additional sludge treatment capacity and a standardised approach to managing wastewater sludge and including options for the extraction of energy and other resources.

### **National Development Plan**

The National Development Plan outlines investment measures to support the NPF, including a major commitment to fulfilling Ireland's infrastructure and investment requirements over the next ten years, through an investment of €116 billion.

The NDP includes the GDD as one of the major infrastructure projects required in the context of the NPF and accommodating growth. Under national strategic objective 9 investment in waste management infrastructure is described as critical to our environment and economic well-being for a growing population and to the achievement of economic and climate objectives.

The associated capital tracker identifies the cost of the GDD as €482m.

### **Capital Investment Plan 2016-2021**

The Government's framework for infrastructure investment highlights the importance of investment including in water services in facilitating economic growth.

### **Water Services Policy Statement 2018-2025**

This was published by the Minister in May 2018 following the NPF and NDP. Priority objectives include bringing and maintaining public water and wastewater services to acceptable international benchmarks and ensuring full compliance with the UWWTD and licensing requirements. Implementation of the NPF requires that services are aligned with the framework.

**Action 13 of the Climate Action Plan 2019** sets the objective to ensure that the selection criteria for each of the Project Ireland 2040 Funds will operate to promote low carbon investments. Also review the selection criteria for each capital funding scheme to ensure that low carbon designs and investments are prioritised.

### 7.3. **Irish Water Publications**

A number of publications of provide relevant supporting information for the application.

#### **Irish Water - Water Services Strategic Plan (2014-2021) – A Plan for the Future of Water Services (WSSP)**

This acknowledges the importance of effective wastewater management in the enablement of social and economic growth and the protection of the environment.

Extension to the Ringsend facility will ensure that it remains within its licence limits but only until 2025, after which date implementation of GDD would be necessary.

#### **Irish Water Business Plan - Transforming Water Services in Ireland to 2021**

Identifies a need for €5.5bn investment in water infrastructure and services.

#### **Irish Water - National Wastewater Sludge Management Plan (NWSMP) 2014-2016**

This is the strategy to ensure a nationwide and standardised approach to management, storage, transport and disposal or reuse of wastewater sludge. Sludge Hub Centres allow for efficiency, flexibility and energy recovery.

Plans for Fingal involve development of a SHC as part of the GDD.

Where required sludge storage may be accommodated at SHCs or separately.

The preferred option for re-use of biosolids is reuse on land.

### 7.4. **Regional Policy**

#### **Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Regional Assembly area**

This was came into effect on 28th June 2019. Amongst the policies and statements relevant to this application are:

- RPO 4.2 Alignment of infrastructure investment and priorities with spatial planning strategy.
- Ongoing wastewater treatment projects critical to deliver capacity at a large scale include GDD and Ringsend.
- RPO 10.12 Requirement that development plans support strategic wastewater treatment infrastructure investment and provide for the separation of foul and surface water networks to accommodate the future growth of the region.
- RPO 10.13 EMRA shall support appropriate options for the extraction of energy and other resources from sewerage sludge in the region.
- Dublin Bay Biosphere is described on page 162. It was designated in 1981, expanded in 2015 and has evolved to include areas of ecological value and the communities that live and work there. It is managed by the Dublin Bay Partnership which includes the local authorities, Dublin Port Company, Failte Ireland and NPWS. RPO 7.20 is to promote the development of improved visitor experiences, nature conservation and sustainable development activities within the Dublin Bay Biosphere in co-operation with the Partnership.
- 5.9 refers to Green Infrastructure and Amenities and the case study notes the three zones including the core areas of high natural value and the buffer zone including golf courses and the wider transitional zone which includes residential areas and other. 300,000 population resident.

### **Greater Dublin Strategic Drainage Study (GDSDS), 2005**

GDSDS was a strategic analysis of foul and surface water systems in the GDA in the context of overloading on existing systems, deterioration in water quality, flooding risks and capacity. The Final Strategy Report 2005 recommendation was the upgrading of all existing wastewater treatment plants in the GDA, the construction of a large WwTP in North County Dublin with discharge to sea and an orbital drainage network to divert in full or in part some existing foul drainage catchments.

The **Strategic Environmental Assessment (SEA) 2008 of the GDSDS** concluded that a new regional wastewater treatment plant should be built in the Northern

Greater Dublin Area, with an orbital sewer serving existing and future sub-catchments in the north, west and north-west of the Ringsend WwTP catchment area, and that the outfall should be located along the North Dublin coastline following a detailed site selection process.

### **Eastern – Midlands Region Waste Management Plan (EMRWMP) 2015 – 2021**

The Eastern-Midlands Regional Waste Management Plan recognises the NWSMP as a core component of the waste plan.

Policy H1 provides that local authorities will work with relevant stakeholders and take measures to ensure systems and facilities are in place for the safe and sustainable management of all sludges generated in the region.

## **7.5. Development Plans**

### **Fingal County Development Plan 2017-2023 (FCDP)**

Key challenges ahead in planning for economic growth include wastewater services. The GDD is a regional wastewater project designed to serve the Greater Dublin Area by augmenting the Ringsend Wastewater Treatment Plant. It implements the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) Final Strategy and the SEA of the GDSDS.

The project includes

- A planned treatment plant at Clonshaugh in Fingal;
- A marine outfall discharging 1km north east of Irelands Eye; and
- An orbital sewer with two pumping stations – at Abbotstown, Blanchardstown and Grange, Baldoyle – which will divert wastewater from the southern areas of Fingal and the north of Dublin City to the new treatment plant.

The Council will liaise and cooperate with Irish Water to ensure the delivery of the proposed Capital Investment Plan 2014 -2016 (as updated) or other relevant investment works programme to provide infrastructure to increase capacity to service settlements.

Chapter 7 outlines the situation within the County in respect of foul drainage and wastewater treatment, and notes that wastewater from south Fingal discharges to

the Ringsend WwTP, which was designed for a capacity of 1.64m PE, but is operating slightly above this. It is necessary to upgrade and expand the treatment plant to its maximum capacity, estimated to be 2.1 million PE.

**Objective WT03:** Facilitate the provision of appropriately sized and located waste water treatment plants and networks including a new Regional Wastewater Treatment Plant and implementation of other recommendations of the Greater Dublin Strategic Drainage Study, in conjunction with relevant stakeholders and services providers, to facilitate development and to protect the water quality of the county's coastal and inland waters through the provision of adequate treatment of wastewater.

**Objective WT05:** Seek the best available technology in all waste water treatment plants proposed for the County.

**Objective WT11:** Establish a buffer zone (not less than 100m from the odour producing units) around all wastewater treatment plants suitable to the size and operation of each plant.

**Objective WT12:** Establish an appropriate buffer zone (not less than 35 metres – 50 metres from the noise/ odour producing part) around all pumping stations suitable to the size and operation of each station.

**Objective WM15:** Implement the adopted Sludge Management Plan and update as required. Work with Irish Water and other relevant stakeholders to ensure the provision of facilities for the safe and sustainable management of sludge generated within the County having regard to the Fingal Sludge Management Plan and relevant environmental legislation.

**Objective WT02:** Liaise with Irish Water to ensure the provision of wastewater treatment systems in order to ensure compliance with existing licences, EU Water Framework Directive, River Basin Management Plans, the Urban Waste Water Directive and the EU Habitats Directive.

**Objective NH18:** Seek to protect the functions of the ecological buffer zones and ensure proposals for development have no significant adverse impact on the habitats and species of interest located therein.

**Sheet 2 Green Infrastructure Maps** show Nature Development Areas (NDAs) including one to the west of Connolly Hospital and one to the north of the NCT centre near Ballymun Junction 4 of the M50. They have been selected for their existing or potential value for wildlife.

**NH20** is to maintain or enhance the biodiversity of these NDAs.

**Objectives including Nh23 and NH24 and others** refer to the protection of ecological corridors and stepping stones including trees and watercourses.

### **Objectives**

The site of the WwTP / SHC lies partly within the **Airport Safety Zones** (Inner and Outer). Objective **DA14 is to review these zones** and to implement the policy to be determined by the government in relation to these zones. **Objective DA10** is 'to restrict development, which would give rise to conflicts with aircraft movements on environmental or safety grounds ... on the main flight paths serving the airport ..'. **Objective DA13** is to 'promote appropriate land use patterns in the vicinity of the flight paths...'. The advice of the IAA will be followed.

The Project lies within or adjacent to lands with the following zoning objectives:

- **Green Belt (GB):** Protect and provide for greenbelt.
- **High Technology (HT):** Provide for office, research and development and high technology/high technology manufacturing type employment in a high quality built and landscaped environment.
- **High Amenity (HA):** Protect and enhance high amenity areas.
- **Open Space (OS):** Preserve and provide for open space and recreational amenities.
- **General Employment (GE):** Provide opportunities for general enterprise and employment.
- **Heavy Industry (HI):** Provide for heavy industry.
- **Dublin Airport (DA):** Ensure the efficient and effective operation and development of the airport in accordance with an approved LAP.

- **Warehousing & Distribution (WD):** Provide for distribution, warehouse, storage and logistics facilities which require good access to a major road network within a good quality environment.

The Land Use Classes Technical Guidance - Appendix 4 - defines a 'Utility Installation' as comprising "A structure composed of one or more pieces of equipment connected to or part of a structure and/ or a facility designed to provide a public utility service such as the provision of heat, electricity, telecommunications, water or sewage disposal and/or treatment".

Waste Disposal/ Recovery Facility (High Impact), such uses are defined within the FCDP as comprising "The use of land or buildings for facilities with high potential for odour, noise, dust and other nuisances including putrescible waste. Examples of high impact facilities are transfer stations and treatment plants for organic and residual waste which have a potential for odour, crushing and processing of construction and demolition waste, and facilities where waste is stored outside of buildings and which is visually intrusive or otherwise likely to be a nuisance, including scrapyards. Excludes landfills".

### **Dublin City Development Plan 2016-2022**

Progressing development of the **Greater Dublin Regional Wastewater Treatment Plant** and associated infrastructure is **essential to the future growth of the region.**

Policies SI2 – to support and facilitate Irish Water in the development and improvement of wastewater systems including the regional wastewater treatment plant and other infrastructure as part of the GDSDS.

The NFS is on lands which are zoned for social, economic and physical development and / or rejuvenation and public service installations are permissible.

### **Meath County Development Plan 2013–2019**

Acknowledges the strategic role of the development of the GDSDS and its role in the future sustainable development. All developments to have regard to the policies expressed in the GDSDS.



### **Kildare County Development Plan 2017-2023**

Capacity of treatment works and associated networks will be a key factor influencing future development. County is dependent on national and regional solutions to the provision of water and wastewater infrastructure.

### **Portmarnock South Local Area Plan 2013 – extended from 7th July 2018 – 6th July 2023**

The GDD Project will provide a long-term solution for wastewater network and treatment services to serve the area.

The orbital sewer corridor extends through lands zoned Open Space (OS) and High Amenity (HA). Open space lands are also designated as an ecological buffer zone, the purpose of which is

*to protect the integrity of the nationally and internationally designated sites, [Baldoyle Bay in this case] by providing suitable habitat for key species such as birds and providing for compatible land-uses around the designated sites.*

These lands are multi-functional landscapes, where agricultural uses are maintained, with nature conservation targets and low-intensity recreational uses.

Coastal and Estuary Landscape Character Types are highly sensitive to development due to their exposed nature. The landscape quality of the estuaries is also regarded as outstanding.

The LAP provides for the reservation of lands adjacent to the Dublin-Belfast railway line to accommodate its future expansion.

The LAP designates quiet areas for birds.

### **The Dardistown Local Area Plan 2017 - 2023**

This plan relates to approximately 154 ha of lands bounded by Dublin Airport to the north and the M50 to the south. New sewer connections will be required. The area will be a strategic employment node, including office, research and development and high technology manufacturing. It is envisaged as maximising opportunities presented by its location close to existing and planned transport network.

### **Clongriffin – Belmayne LAP 2012-2018**

This notes the need to deliver necessary infrastructure to ensure adequate capacity to accommodate the development envisaged by the LAP. The GDD initiative aims to provide strategic drainage infrastructure to ensure that the GDA can develop socially and economically and to ensure future growth can be accommodated. It is an important project to facilitate employment, social progress and economic growth as well as protection of water quality. The emerging sites (3 no.) identified includes one at Clonshaugh.

### **Dublin Airport Local Area Plan 2016**

The 2016 plan which was prepared by Fingal County Council in conjunction with DAA relates to lands close to the airport. The masterplan notes the origin of the airport safety zones in the report prepared by ERM and that this has not been adopted as national policy but is used as guidance.

## **7.6. Natural Heritage Designations**

The project traverses three European sites as follows:

- Baldoye Bay SAC – the outfall pipeline (marine section) passes under this site and construction compounds adjoin the site. The pipeline commences close to the R106 at the point of the tunnel launch shaft and is routed in a north-easterly direction terminating north east of Ireland’s Eye. It crosses under the SAC to a point 600m offshore where it exits the tunnel and continues in an easterly direction.
- Baldoye Bay SPA – as above
- Rockabill to Dalkey Island SAC – 1300m of outfall pipeline and the marine diffuser are within this site.

Further descriptions of the development and its location relative to the proposed project are provided in the Appropriate Assessment section of this report.

## 8.0 Planning Assessment

### 8.1. Introduction

I consider that the key issues in respect of the planning assessment may be considered under the following headings:

- Planning Policy
- Need and Alternatives
- Marine Water Quality
- Air and Odour
- Cultural Heritage, Landscape and Visual Impacts and Tourism
- Roads, Traffic and Infrastructure
- Flood Risk
- Community Benefits Scheme and Contributions
- Other Matters.

Where there are references to the oral hearing any written submissions were received are identified by a number based on the reference attached to the documentation at the hearing (OH-number). Any references to the hearing may also be given by day and time.

### 8.2. Planning Policy

In this section I present the following:

- An overview of policy relevant to the GDD.
- An assessment of the zoning and other development plan objectives.

#### 8.2.1. Policy Overview

In principle the provision of adequate wastewater infrastructure to cater for future development is a fundamental tenant of proper planning and sustainable development and is necessary and / or appropriate in the context of international

legislation including the Water Framework Directive, Habitats Directive, Marine Strategy Framework Directive and the UNESCO biosphere designation. This legislative environment also sets targets for and limits on standards to be achieved, such matters being the focus of much of the substance of this report.

The strong national, regional and local policy support for development of the GDD project is evident from the Policy Context section above, which refers to the place of the GDD in a suite of policy documents. I consider that in principle the need for additional wastewater infrastructure to be delivered by construction of a major wastewater treatment plant in North County Dublin is established in the adopted policy framework, which emerged following a range of studies and consultations. Notwithstanding the submissions of the elected representatives of the Councils and of elected representatives, I consider that it must be concluded that the GDD has long-standing and far reaching policy support. As a basis for that conclusion I refer to:

- NPF National Strategic Outcome 9:
  - to implement the GDSDS through enlarging capacity at Ringsend and providing a new treatment plant in North County Dublin – known as the Greater Dublin Drainage Project
  - to provide for effective waste management including additional sewage sludge treatment capacity and a standardised approach to managing waste water sludge and including options for extraction of energy and other resources.
- The NDP listing of the GDD as one of the major infrastructure projects which is required in the context of the NPF and accommodating growth and is described as a Strategic Investment Priority.
- The WSSP which indicates a need for implementation of the GDD notwithstanding the planned Ringsend upgrade.
- The GDSDS which recommended upgrading of all wastewater treatment plants in the GDA and the construction of a regional wastewater treatment plant in north Dublin and an orbital drainage network to divert some existing catchments from Ringsend.

- The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland area, which reference the GDD in the context of delivery of capacity at large scale.
- The listing in the GDA RPGs of the GDD as one of ten *Critical Strategic Projects for Waste Water and Surface Water*.
- NPF identification of need to provide additional sewage sludge capacity.
- NWSMP which supports suitability of land spreading of a means of disposal of biosolids and as such supports the RBSF.
- NWSMP which presents arguments in favour of regional sludge centres as an efficient and high quality approach to its management.
- The RSES for the Eastern and Midlands area which supports appropriate options for the extraction of energy and other resources from sewerage sludge in the region.
- Eastern-Midlands Region Waste Management Plan 2015 – 2021.
- Objective WT03 of the Fingal Development Plan which is to facilitate and provide for the implementation of the Greater Dublin Regional Drainage Project.
- Objective WM15 of the Fingal Development Plan which refers to the provision of facilities for the safe and sustainable management of sludges.
- Development Plans of Fingal County Council, Dublin City Council, Kildare and Meath County Councils, which support the scheme in principle.

As highlighted by FCC the GDD is a project of regional scale but with national importance. I consider that the policy framework is clear and robust and supports the need for the project and the means of its delivery including by reference to provision of a large plant in north county Dublin and its broad design parameters. The growth of population, which is envisaged in the hierarchy of adopted and approved spatial planning policies is dependent on a parallel upgrade in provision of services including in the area of wastewater infrastructure. In summary I am satisfied that the project is clearly supported at a strategic level in the adopted policy framework.

### 8.2.2. Zoning, Greenbelt Policies, Ecological Buffers and Flight Path

Throughout the report I address some specific policies, which the observers' reference. The principle specific policy matters which I consider are relevant to the decision of the Board relate to the Clonshaugh zoning, the ecological buffers and the location of the site under the airport flight path.

#### Clonshaugh Zoning

The **Clonshaugh site is mainly within the GB zoning**, the objective of which is to protect and provide for greenbelt. An incidental amount of the Clonshaugh site is zoned open space OS and most of the southern strip is zoned for high technology HT in relation to which there is an objective to prepare a masterplan.

I note that in the adoption of the 2017 development plan the planning authority highlighted the Clonshaugh site as the location for the GDD and that the Clonshaugh site zoning remained unchanged. The specific site had been identified at the time. The planning authority through its officials at the oral hearing and in various written submissions has reaffirmed its opinion that the site zoning objective is not contravened by the proposed development.

Some observers state that the development at Clonshaugh constitutes a material contravention of the development plan. It is appropriate that the Board give consideration to how the development of almost 30 hectares of land for a wastewater treatment plant, sludge hub centre and other infrastructure fits within the zoning objective.

At the outset I refer to the nature of the development and to the **permitted uses** within the GB lands. Fingal County Council supports the applicant's position that the WwTP site generally falls within the definition of a 'utility type infrastructural development'. I agree with this interpretation. The zoning matrix would indicate that the proposed land use would be generally considered to be 'open for consideration', which would fall to be assessed in terms of its contribution towards the achievement of the zoning objective and vision and compliance and consistency with the policies and objectives of the development plan.

The arguments presented in the Planning Report submitted by Irish Water is that the development of the WwTP and SHC at the Clonshaugh site will not serve to undermine the **objective of the greenbelt** the purpose of which is to **demarcate**

**urban and rural lands** in order to curb unrestricted urban sprawl into the countryside and to **maintain the separation between settlements** including Portmarnock and Malahide. Further, it is stated that due to the nature of the project as essential public infrastructure it will not set a precedent. The applicant refers also to the extensive landscaping plan to be implemented and the relatively low rise structures which together with the layout and the buffer zone are considered to be consistent with the character of the landscape and will integrate with the area.

The lands to the south and the **High Tech zoning** provides for office, research and development and high-tech uses in a high quality built and landscaped environment. Part of the WwTP site is within this zone in addition. Figure 4.4, 4.5 and 12.5 (Volume 5 Part A of EIAR) show the site zoning, site layout and the landscape mitigation plan, which I consider are particularly relevant for consideration of the principle of development of the site in the context of the greenbelt.

In terms of the criteria which are relevant to the interpretation of uses which are 'open to consideration' namely

- achievement of the zoning objective and vision and
- compliance and consistency with the policies and objectives

my conclusions are presented below.

1. There are aspects of the Greenbelt vision which are not achieved by the proposed development including in relation to recreation and agricultural uses.
2. Regarding the **requirement for 'compliance and consistency with the policies and objectives of the development plan'**, I consider that the proposed WwTP and would be deemed to be necessary for the purposes of implementing the FCDP including its growth strategy and environmental protection measures and also for the achievement of the core strategies of other development plans of counties in the area. As such the proposed use would be consistent with the policies and objectives of the development plan.
3. The consistency with the **established character of the landscape** of the area has been aided by the requirements of the planning authority at consultation stage, which included enlargement of the site to ensure ample

space for landscaping. I consider that the nature of the layout and landscaping responds well to the site location at the edge of the built-up urban area and at its northern, western and eastern side establishes a green belt. I also note that the development in its operational phase would not be a particularly active use in terms of the generation of traffic. The development does serve to demarcate the boundary between the built up area and the rural area, although it does so at the expense of encroaching on the agricultural lands in the greenbelt and significant landscape change.

The **Sludge Hub Centre** at the Clonshaugh site requires separate comment. The Planning Report prepared on behalf of the applicant acknowledges that the SHC might be considered to be a **Waste Disposal / Recovery Facility (High Impact)**. That definition includes ‘**transfer stations and treatment plants for organic and residual waste which have a potential for odour**’. The position of the applicant overall is that the SHC is integral to the WwTP and the planning authority supports this stance. I note that while the SHC will deal with the sludge arising at the site and as such could be considered to be an integral part of the WwTP and fall under the utility definition, it will also cater for sludge from other WwTPs in Fingal and (without mitigation) would have potential for odour. It would not be unreasonable to conclude that the SHC is a Waste Disposal / Recovery Facility (High Impact). However part of its function is also ancillary to the WwTP proposed at the site. A Waste Disposal / Recovery Facility (High Impact) would be ‘Not Permitted’ in the GB / HT zoned lands. In view of the relatively small scale of the SHC element of the proposal I recommend that the Board interprets the SHC zoning in the context of the GDD proposal and conclude that the SHC is part of the overall project. On balance I agree with the position of the applicant and FCC and consider that the development does not materially contravene the development plan.

Should the Board decide that the proposed development is a material contravention the Board may nevertheless grant permission, not being bound by the provisions of the development plan. I consider that there is a strong case to be made that notwithstanding the zoning objective there is considerable strength in the prevailing policy provisions in favour of the development of the WwTP at the Clonshaugh site – this applies also to the SHC. In my opinion the high level support in the development



plan for the GDD and the specific references to the Clonshaugh site should over-ride any concerns which the Board might have in relation to the greenbelt policy.

The Board will be familiar with the circumstances relating to material contravention, which strictly speaking are relevant to circumstances where the Board is considering a decision already made by the planning authority. Nevertheless, the criteria set out are useful in the consideration of this case. If the Board considers that there is validity to arguments presented that the GDD constitutes a material contravention of the development plan then I would refer to these criteria.

I consider that the circumstances outlined under section 37(2)(b) of the Planning and Development Act are clearly met in this case and that the Board can be satisfied that the proposed development:

- Is of strategic or national importance
- Is one to which the issue of conflicting development plan objectives is pertinent, particularly WT03
- Is one which should be granted having regard to national and regional planning policy.

On that basis the Board should conclude that the zoning objective is not an impedance to a grant of permission in view of its strategic importance.

Finally I refer to objective SS09 which is:

*Promote development within the Greenbelts which has a demonstrated need for such a location, and which protects and promotes the permanency of the Greenbelt, and rural character of the area.*

In the event that the Board considers that the development of this site for the purposes of the GDD is demonstrated in terms of a need for this location, then such a conclusion would be further support for the development in the greenbelt. It is the applicant's position following a rigorous four stage Alternative Site Assessment (ASA) and Route Selection (RS) process this siting is justified. My consideration of this matter is set out below under 'Alternatives'.

## **Ecological Buffer Zones**

I consider that the other primary development plan policy issue of particular relevance to the making of a decision on this case concerns the objectives related to ecological buffers. I refer in this regard to the Portmarnock South Local Area Plan 2013 (extended to July 2023). The LAP shows the route of the outfall pipeline related to the WwTP site and identifies the construction corridor and a construction compound to the west of the estuary Baldoyle Bay. The construction corridor would traverse lands which are designated as an ecological buffer zone, the purpose of which is 'to protect the integrity of the nationally and internationally designated sites by providing suitable habitat for key species such as birds and providing for compatible land uses'.

Objective NH18 of the Fingal Development Plan also seeks to **protect the functions of the ecological buffer zones** and to ensure the proposals for development do not give rise to significant adverse impacts on the habitats and species of interest located therein. The proposed development in the short-term will return lands suitable for use as an ecological buffer zone. However, it also has the potential to impact on this function during construction, in which case the ecological buffer zone objective would be undermined. In principle I do not consider that the short-term use of these lands contravenes the ecological buffer zone subject to it being demonstrated that there is no adverse impact on the integrity of the SAC/SPA. If the proposal meets the tests under appropriate assessment then it meets the development plan objective of the policy relating to ecological buffer zones.

I refer in the Biodiversity section to the Nature Development Area (NDA) at the NCT site (Silloogue NDA) and my overarching conclusion is that subject to the relocation of species under licence as necessary and the suitable restoration of the site the NDA objective would not be undermined.

## **Airport Safety Zones**

The location of the WwTP site within the **Dublin Airport Inner Public Safety Zone** has been raised as an issue by observers namely in terms of visual amenity and also in terms of safety. These matters are considered later under Landscape and Visual Impact in the Planning section of this report and under the Risk in the EIA section.

The development plan sheet no. 11 clearly defines the airport safety zones. The policy provision relating to these zones is to **restrict development which would give rise to conflicts with aircraft movements on environmental or safety grounds**, particularly residential development. Objectives DA10 and DA13 are most relevant.

Having regard to the nature of the development and taking into account the written and oral submissions and the EIAR, I am satisfied that this is not a form of development that might interfere with the safety of, or the safe and efficient navigation of, aircraft. It is however policy as set out in the development plan to take into account comments of IAA and comments of DAA referred to the future agreement of matters by IAA. IAA was formally consulted as part of this application and prior to the making of the application and no formal comment was received. The written submission of DAA does not raise any safety matters subject to a condition requiring agreement on the detail of cranes being made with DAA and IAA and to there being no changes to the proposals for surface water management. I conclude that the development is acceptable in terms of the development plan policy provisions.

In relation to the specific matters of **objectives DA10 and DA13** the policy emphasis should be interpreted as mainly applying to uses which would be sensitive to noise. I consider that while the matter of risk was identified by observers there were no specific claims made which would indicate how the development might give rise to conflicts with aircraft movements. Having considered the matter I do not consider that the development would be contrary to objectives DA10 or DA13.

The not unconnected matter of a requirement for an assessment of this case under the **Critical Infrastructure Directive** was raised at the hearing by Ms Kemper Jones (OH-72). Her point was that an assessment of risk would have to be undertaken at some time and that it would be prudent to present it now prior to consent. Her concern was that any risks to the GDD or to the airport associated with the siting of this facility under the flight path would be assessed under that process. Mr McGrath referred to the Directive as applying to built infrastructure and relating mainly to terrorist threats. (Day 5, 11 am). I am satisfied that there is no requirement for this particular risk assessment to be undertaken as part of this application. I address the

matter of the risk of major accidents as a requirement under EIA in the EIAR section of this report.

I conclude that the development complies with national, regional and local planning policies including zoning subject to further consideration of the LAP ecological buffer zone under the appropriate assessment section.

### 8.3. Need and Alternatives

I consider the relevant matters under the following headings:

- Need and Capacity.
- Alternatives and Site Selection.

#### 8.3.1. Need and Capacity

In relation to need and capacity of the development, I consider that these matters are separate to consideration of alternatives, which is addressed later.

The EIAR in V2A, Chapter 3 addresses the **need for the project**, outlining its origins in the GDSDS and the subsequent SEA, which identified a need to develop new infrastructure at the same time as maximising the capacity of the existing WwTPs and networks to ensure that the growing gap between load and treatment capacity could be met. The GDSDS identified a need for new infrastructure to address growth. Table 3.2 shows the recent status of upgrade works at the main WwTPs in the Dublin region. The majority of upgrades planned under the GDSDS have been undertaken, apart from at Ringsend, which has just been permitted. Other works including the transfer of excess loads at Leixlip to Blanchardstown (9C Sewer) catchment are in train.

The applicant states that the re-visiting by Irish Water of the projections for future loading confirmed that the **combined design capacity will not meet demand**, perhaps by 2025 in the case of Ringsend and earlier in the case of Leixlip. Mr Laffey at the hearing noted that the amount of **wastewater generated in the GDA is projected to increase by over 50% by 2050** (OH-1). The 2017 report 'Assessment of Domestic and Non-Domestic Load Report' by Jacobs Tobin refers. By 2050 a predicted treatment capacity deficit of 508,024 PE is envisaged based on the most

likely growth projections. The freeing up of capacity at Ringsend by construction of the GDD involving additional treatment capacity at Clonsaugh and the diversion of flows from Ringsend will facilitate continued growth in other catchments including Dublin city centre and the Lucan / Clondalkin area.

I consider that it is reasonably demonstrated in a range of publications and studies and in the EIAR that there is a need for additional capacity in the region if residential, commercial and industrial growth is not to be constrained. This position is supported by the local authorities in the area and indeed is not subject of third party opposition, who largely oppose the development due to its location and scale and the failure to develop a network of smaller plants, rather than presenting arguments that there is no need to provide additional capacity. I conclude that the development is clearly **needed for the fulfilment of growth in the Dublin region and implementation of the NPF, regional and county development strategies.**

The Board will note that **the 'do nothing' scenario** was assessed as having major negative impacts and was rated as 'Major Negative' in terms of its economic implications due to the required restrictions on development (Section 5.3 EIAR Vol2(A) of 6). I later revisit the issue of 'Alternatives', which matter warrants separate consideration because of the requirements of the EIA Directives and in response to the third party submissions. While observers reject the importance of the 'do nothing' scenario it does further support the case for the project.

Regarding the RBSF, which has been permitted under the Ringsend application and is also subject of this application, the need is established by the **seasonal constraints on land spreading** which requires a level of storage of biosolids. Notwithstanding the **observers' opposition to land spreading of biosolids** that approach is acceptable under current regulations and provides for the use of biosolids and the harnessing of the nutrients they contain, which is also supported in the RSES policy in my opinion. The economic value of the biosolids can thus be recouped. The storage of biosolids at a location close to the two relevant wastewater treatment plants is appropriate in my opinion notwithstanding the proposed continuance of land spreading in a wider area.

It is stated that insufficient **capacity is the major operational issue with the existing Ringsend plant** including in relation to marine water impacts and odour. It

is therefore necessary and appropriate that the Board be satisfied that the GDD project will meet future regional demands post 2025 and that the deficiencies which emerged at Ringsend will be repeated.

To this end the applicant has presented a description of the growth forecasts in the wider area, which culminated in the **selection of the ‘most likely’ scenario**. The basis for the design of the WwTP is related to typical unit loads and a PE of 500,000 with a maximum week peaking factor of 1.5 applied to average daily loads. The projected population is based on the 2016 census figures and other data (OH-1-8). I do not consider that the Board should re-visit these calculations, which appear to me to be based on up to date statistics and sound principles and approach. However, some observers’ comments and oral hearing discussion relating to industrial demand and secondly to headroom are worth reviewing.

Irish Water stated that **industrial demand was underestimated** in previous assessments, including in planning for Ringsend. The manner of calculation for the industrial demand associated with the GDD was initially queried by DAA in a written submission. The applicant’s January 2019 document referring to 3.5.2 of the EIAR confirmed that the future industrial demands which may arise would be catered for by the **headroom allowance of 20% of the sum of the residential and commercial** load and that it was assumed that existing industrial demand would be retained.

As Mr O’Keeffe indicated to the hearing the **provision of headroom constitutes a new practice**. By maintaining tight control on the connections policy Irish Water will be in a position to foresee upcoming capacity constraints and to address any issues in a timely fashion before any overloading arises. If a major mobile international industry was required to be served then the capacity would be in place in the early years when the full 500,000 p.e. of the plant will not be needed. A further application for expansion might then be needed earlier than currently envisaged. (Day 6,15.15).

I consider that it is demonstrated that the additional wastewater treatment capacity in the order of 500,000 p.e., which will be provided after 2025 is needed. In addition I am satisfied that there is sufficient allowance for headroom to cater for any unforeseen high growth including industrial demands and prevent overloading.

In relation to the **RBSF** the EIAR states that it will have capacity to store treated sludge from the GDD and from Ringsend and that the requirement (for 3.0 million PE total) is 34,600m<sup>3</sup> of biosolids by 2040. This will cater for the required 4 month storage. There are three potential products which could arise from biosolids namely biocake, the drier material biofert and the most refined which is struvite. The latter may in future be suitable for bagging and for direct supply to customers. There is a level of flexibility in relation to the nature of the biosolids which would be stored in the facility and there is room for expansion within the site subject to further consents. The different materials have different stacking heights and thus take up different amounts of the floor area. The decision relating to the Ringsend case did not restrict the specific proportions of materials to be stored. I agree that no such requirement is necessary.

I conclude that there is a demonstrated need for the project and that capacity issues have been properly considered.

### 8.3.2. Alternatives and Site Selection

In this section I consider the matter of alternatives and site selection under the following headings:

- Non project options.
- Strategic Drainage Scenarios from the GDSDS and subsequent SEA of GDSDS.
- Site selection.
- Design and site layout
- Other Matters.

#### **Non-project options**

As described in the EIAR and following assessment under the GDSDS, this set of alternatives involves all options other than the provision of new WwTPs to address the shortfall in capacity in the GDA. As such it includes **measures to reduce stormwater, groundwater and industrial inflow to the combined network and upgrading existing sewer networks and WwTPs**. Inflows to the combined sewers are continuously being addressed and are shown not to alleviate or sufficiently

address the shortfall in capacity. The **constraints at Ringsend for future expansion** include the intensity of urban development and utilities in the area. Mr Laffey reiterated this point at the hearing drawing attention to the limited capacity in existing drainage networks to accept flows from future development and to issues of overloading. Due to the intensity of underground utilities and the high levels of traffic, I accept the description of a network upgrade work in this context as constituting a major engineering challenge. None of these non-project options, which were subject of investigation under the GDSDS appear to me to comprise feasible alternatives.

### **Strategic Drainage Scenarios from GDSDS and the associated SEA**

Many of the observers are united in their view that a network of smaller plants is a preferred option to the single large plant. There is support also for options involving treatment of waste close to source. The written observations do not address these matters in detail and do not identify which of the scenarios assessed under the GDSDS or SEA would be preferable and do not propose any other specific scenarios. Where detail has been provided by observers in relation to alternatives the focus is on the process which lead to selection of the large plant option and the perceived flaws with that option as well as the merits of dispersing effluent and odour over wider areas and the preference for a northern marine outfall. Matters related to the selection of the 'single plant' approach and the merits of the approach is the focus of this section of the report.

The **eight strategic drainage scenarios of the GDSDS** summarised in Table 5.1 (Chapter 5 Vol 2 EIAR) of the EIAR include:

- Development of new WwTP at a suitable site to be selected under a future site assessment process for the new regional WwTP of capacity of 850,000PE.
- 7 no. sub-regional catchment based WwTPs of 40,000PE to 150,000 PE with discharge of treated effluent to ground / surface waters or to the coast by way of a regional pipeline.
- Network of 850 no. community WwTPs of capacity of 1,000 PE each with discharge of treated effluent to ground / surface waters or to the coast by way of a regional pipeline.



- 15 sub-regional WwTPs of capacity of 20,000PE to 65,000PE on a catchment based approach with discharge of treated effluent to ground / surface waters or to the coast by way of a regional pipeline.

All scenarios were assessed in the associated SEA against the Environmental Objectives which are listed in Table 5.3 (Chapter 5 Vol 2 EIAR). Of the scenarios considered in the GSDS and the subsequent SEA I consider that the basis for the assessment is comprehensive and broad in scope. The scenarios were all assessed in the SEA against the Environmental Objectives which are listed in Table 5.3 of the EIAR.

Having regard to the totality of the information presented as part of this application I concur with the conclusion that a single regional plant is an appropriate method of addressing the capacity issues. My later consideration of environmental impacts confirms this conclusion. In view of the significance attributed to this issue by observers, I provide additional comment below.

The **scenario of an extensive network of community-based WwTPs** with treated effluent orbital pipeline was assessed by Irish Water and deemed to be impractical including in the areas of energy consumption, sludge management and transportation complexities, environmental risks and major negative impacts for air quality, climatic factors, material assets, cultural heritage and landscape. The scale of the proposed WwTP derives from the policy to provide treatment on a regional basis rather than a county by county basis as noted in EIAR, V2, C3.

I consider that there are certain advantages associated with a large scale plant. The delivery of the highest levels of treatment of wastewater and odour can be most effectively discharged at a large plant where suitable processes, staffing, maintenance and monitoring can be expertly and efficiently delivered. It appears to me that a plant of some scale would be required to address a range of the issues of concern to observers. This would include retrofitting of the design to cater for any new regulations on air and water discharges, which might result from future legislation. I reject the idea that the proximity principle over-rides the advantages of the selected approach.

I do not find any reason to conclude that a smaller plant would lessen adverse impacts, which in my opinion are dependent on the quality of the operation rather

than its scale. The development of a network of community scale plants appears to me to be a fatally flawed proposal due to the **reliance for discharge to small rivers** and streams, which would inevitably be required in many instances. In this regard I refer to the Water Framework Directive status of rivers in the region and the presence of many waterbodies, which are not complying with the requirement for 'good' status.

I consider that none of the observations adequately respond to the concerns listed by Irish Water and I agree with the applicant's conclusion that the option of a network of smaller plants should not be further pursued. It has been assessed and it has been discounted and in my opinion the conclusion is reasonable.

The third party submissions aim to re-visit the previous assessments and to re-open the principle of the main elements of the proposed development involving the new WwTP of regional scale, the orbital sewer and the southern option of the outfall. I am satisfied that for the purposes of the making of this application and EIA, the applicant has thoroughly assessed and properly reported upon the considerations which lead to the project as proposed being presented in this application. I consider that it is appropriate that considerable weight be given to the extensive body of professional input into **background studies, which took place over two decades and which have all pointed in the direction of a single plant to be located in north Dublin.**

I emphasise that the requirement under EIA is to present the main reasonable alternatives considered. I consider that this is achieved. Having regard to the above I consider that it is clear that **detailed consideration has been made of all options** including of the option of smaller plants.

### **Site Selected**

I now respond further to observers' comments in relation to the merits of the selected site and the method of its selection. Observers state that the selection of the **Clonsaugh site was politically motivated.** One former elected representative supports this claim. The decision is described as unfair and one which affects a community which already hosts a wide range of uses.

While the selection by FCC of a site on the periphery of its administrative and electoral area and close to a population resident in the area administered by DCC may have that appearance, these claims are completely undermined in my opinion

by the fact that the **SEA process resulted in Clonshaugh** being selected. That process addressed complex issues in detail and it considered the hurdles to be overcome in obtaining consent for the selected sites. A multi-criteria analysis and consideration of detailed modelling would have been involved. I am satisfied that it was on the basis of this further analysis that the WwTP site was selected.

The selection of the site necessarily was undertaken in conjunction with consideration of where the marine outfall would be located. The site at Clonshaugh was compared to Annsbrook and Newtowncorduff and was considered to be 'more favourable on the basis of a greater number of criteria including less ecological value, better initial dilution and mixing of southern outfall and ease of tunnelling of southern outfall. Section 5.7 of the EIAR further considers the assessment undertaken of the outfall location. The latter was subject of detailed hydrodynamic studies which set out the water quality implications of both northern and southern outfall. The outfall is addressed in more detail later.

At the oral hearing there was considerable discussion in relation to the ASA. Ms Gray in particular set out what she considered are flaws in the selection of the site and the southern outfall (OH-53). She notes that the **Baldoyle Bay SAC / SPA was not identified on the study map** and considered that it was overlooked.

Notwithstanding the omission of a caption denoting the location of Baldoyle Bay SAC / SPA I accept Mr O'Keeffe's confirmation that this and all European sites were considered as constraints in the site selection process. Ms Kemper Jones (OH-72) states that **assumptions in relation to the lack of impacts due to tunnelling under that estuary were premature**. I consider that it would have been possible to revert at any time to consideration of other sites as more information came available and if that was deemed necessary. It is for the Board now to consider the environmental impacts of the selected option including the tunnelling under the European sites.

Ms Gray refers to other details of the ASA process. For instance she states that the southern outfall area is smaller and would be likely to have less constraints than a northern route. Thus there was a **bias towards the southern outfall**. She also refers to the omission of the 'neighbourhood zone' criteria in the SEA stage. I am unconvinced by her claim that the process was flawed and I completely reject the idea that the process should be revisited by the Board for reasons already stated.

Regarding the **designation of the Biosphere in 2015** it is stated that this should have resulted in a re-assessment of the site selection process. However, it is also relevant to note two points presented by Irish Water to the hearing. Mr McGrath noted that the **decision to extend the Dublin Bay Biosphere** was made in the context of knowledge of the GDD. Mr O’Keeffe noted that the Ringsend discharge is into the core of the Biosphere. Regarding the site selection process I consider that the Biosphere was adequately considered.

The increased **importance of the shellfish industry** in the area as a result of upgrades of wastewater infrastructure should also have resulted in re-consideration of the outfall location according to observers. The outfall is not located in a designated shellfish area. I consider that unless it was evident that the site and outfall selections would grossly undermine these resources then the decision to continue with the process was entirely appropriate. In a complicated multi-factorial analysis and the long-term planning for a project of this nature there has to be some limits to the continued re-evaluation of the options and I disagree with the observers’ position.

Regarding the option of a **south Dublin site**, which has been raised a number of times by observers I note the purpose of the GDD to alleviate the Ringsend plant where the north/north-west of the city presently discharges to, thereby freeing up capacity at Ringsend to cater for central and southern catchments. I submit that it is not unreasonable or in any way appropriate that the new regional plant be located at the north side of the GDA, which is envisaged as accommodating high levels of future growth.

Having considered the reports and all submissions I conclude that the approach to the site selected for scheme is based on a proper assessment of the likely environmental effects of the different possible approaches. I do not consider that there is evidence to suggest that the cost of the Clonshaugh option was given undue weight. I reject the simple conclusion that the site selection was largely political.

In my opinion the applicant has presented for the consideration of the Board an application for a development which is proposed following a very thorough, robust assessment of the various alternatives as summarised in the EIAR.

## Design and site layout

Regarding **design options for the plant** there are various matters considered in the applicant's submissions. The site layout has been determined to account for three possible layouts namely based on conventional activated sludge plant, sequencing batch reaction or aerated granular sludge. The building envelopes would not be altered by changes to the treatment method or standard and the heights including of chimneys are maximum.

The **plant layout and building envelop** allows for future add-ons. For example it is stated to be capable of provision of thermal drying, the cost of which may not be justified in the early stages but which may be required in the event of a decrease in land availability for biosolids spreading. The additional UV treatment which can be introduced within the building envelop is a further example of the flexibility of the plant design. I conclude that the design may be considered to be inherently flexible and to facilitate responses to new technology.

## Other Related Matters

The residential community in the vicinity of the plant describe the proposed WwTP as a **project which is not related to the area, which will not benefit the area, will remove the potential for other more attractive uses** and detract from the area's residential and economic attractiveness leading to decreases in quality of life, poorer health outcomes and other adverse impacts on the local community. The scale of the facility being proposed in this location is described as being unfair and inappropriate. Different models of development for this area were envisaged and there is a need for housing.

Regarding the use of the **lands for housing as an alternative**, I note that the requirement under the GB zoning to demonstrate a need for such location would apply. Pending the availability of other equally suitable lands for residential development the 'functional need' hurdle might not be easily overcome. Regarding the alleged failures to realise plans for development in this area this is not a matter for consideration by the Board. Again, I emphasise that the requirement is that the Board consider the merits of the application presented.

Observers refer to the **environmental consequences of accidents and the difficulty of managing incidents**, which is deemed to be more difficult in the case

of large plants. I am satisfied that there is little substance to these concerns. I refer to the later discussion on marine water quality and process failure, and to the applicant's proposals for air and odour management, which address the matter of normal operation and malfunction.

Regarding the option of incineration of biosolids and whether land spreading is environmentally acceptable I consider this later, including in relation to energy efficiency and water, and conclude that there is no objection to the proposed spreading which is compliant with current policy.

Observers have queried whether the **alternatives for sludge treatment or disposal** and particularly an incineration option have been subject of assessment in terms of their environmental impact. The proposal to undertake a feasibility study to further develop alternative sludge reuse or disposal options as stated in Chapter 20 refers. It is clear that the incineration option has not been ruled out in perpetuity, which is reasonable as the options are not static. I consider that it is not necessary for the purposes of EIA or as part of this planning assessment that all available options be assessed and reported upon in the same detail and I note that any amendment to the permitted design would be subject to AA screening and would have to fall within the limits of the permission including its environmental impacts.

Regarding the fact that the plant will treat **wastewater from the surrounding counties** I do not consider that there is merit in revisiting this issue. The very detailed study under the GDSDS, which was a regional study set out firm conclusions which have not been overturned by any subsequent study. Rather there is national, regional and local level / policy support for the facility as sited and for its intended purpose.

It is clear from the applicant's submissions that the assessment of alternatives by the applicant has been wide ranging, and matters of concern to observers have been considered. I conclude that the Board can be satisfied that the main alternatives considered have been described in the EIAR. The task presented to the Board is to assess the merits of the proposed development as presented in this application.

## 8.4. Marine Water Quality

### 8.4.1. Introduction

The **potential adverse impact on marine water quality constitutes the most significant issue identified by a large proportion of the observers** who expressed concern relating to the location of the marine outfall and its length, the failure to provide tertiary treatment and the potential for accidents, all of which are considered likely to **undermine bathing water quality and threaten the Blue Flag status of Portmarnock beach**. The commercial fisheries industry raised concerns relating to marine water quality including the location of the outfall pipeline (marine-based section) and the **diffuser in an area where shellfish for live consumption are harvested**. The importance of water quality impact is further emphasised by the requirements of regulations and directives.

In this section I examine the following:

- The selected marine outfall pipeline location and modelling
- The water quality impacts and compliance with legislation
- Whether there is a need for further design enhancements
- Risk of accidents.

### 8.4.2. Marine outfall pipeline location and modelling

The selection of the southern outfall option from the GDSDS and the modelling undertaken for the assessment of marine water quality impacts were subject of considerable concern in written and verbal submissions. I refer in this section to:

- The background to selection of the outfall pipeline and diffuser location
- The model inputs and validation presented in support of the proposal
- The baseline environment
- Legislative requirements and design standards.

#### 8.4.2.1. **Background to outfall selection and diffuser location**

The selected outfall and diffuser location emerged following a series of marine modelling efforts. The Board will note three main steps in the process involving

- high level evaluation
- comparative assessment of two options
- detailed consideration of the selected option.

The initial high level evaluation in 2011 comprised a background preliminary modelling study to identify potential outfall locations along the north Dublin coast<sup>1</sup>. Two discrete areas (the northern and southern options) were shown to exist where an outfall would minimise impact on the receiving marine environment.

The subsequent **2013 near-field modelling study considered the relative merits of the northern and southern options**<sup>2</sup>. The modelling undertaken was based on a virtual single port which would be the worst case scenario in terms of dilution (OH-38-2). The southern outfall option exhibited more favourable coastal hydrodynamic characteristics namely larger current speeds and greater water depths. As such it allowed for faster and greater dilution of treated wastewater than the northern outfall study area.

In **2015 a detailed hydrodynamic and water quality model** was developed to assess construction and operational phase impacts of the proposed outfall pipeline route on the marine environment examining the area between Balbriggan and Shankill.

Based on the above assessments the southern outfall option is promoted by the applicant as the preferred choice. I consider that no substantive case has been made to support any claims that the northern option is clearly more suitable.

Although the principle of the selection of the southern outfall remains of concern to observers I am satisfied that the approach taken in the selection of the outfall location was thorough, scientific and sufficient.

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<sup>1</sup> Alternative Site Assessment and Route Selection report Phase 1. Subject to consultation.

<sup>2</sup> Alternative Site Assessment and Route Selection report Phase 4. Subject to public consultation.



#### 8.4.2.2. **Model inputs and validation**

The adequacy of the modelling which was undertaken as the basis for the assessment of water quality impacts was subject of considerable discussion in written and verbal submissions and warrants detailed consideration.

The MIKE3-FM model was utilised for the purposes of the application and EIA. This is a **three dimensional, hydrodynamic, sediment and solute transport model**.

Its purpose in this application was to predict water circulation patterns, the movement and settlement of sediments during the construction of the outfall pipeline and the dispersion of treated wastewater and plum trajectories in the operational phase. To generate outputs on this detailed information and for the purpose of model validation there is a requirement for a large body of data, which was obtained from datasets and from field measurements.

I refer the Board to the some of the **data sourced for input to the modelling**:

- Seabed bathymetry information from datasets was the basis for the generation of the model mesh.
- Hydrodynamic calibration of the model relied on measurements of levels, speed and direction of water currents at different depths in the water column at Skerries and Howth – the survey was undertaken over two months in 2012.
- Transport model calibration relied on results of dye dispersion releases at two locations and in different tidal phases.
- Site investigation including drilling of boreholes to investigate the nature of seabed sediments along the outfall pipeline route.
- Other data inputs to the modelling study included the hydraulic flows and pollutant loads from other WwTPs and from rivers.

The model was designed to have a **very high resolution in the vicinity of the proposed outfall pipeline** route and a lower level of resolution further from the pipeline. This provided capability to undertake detailed assessment along the outfall pipeline route / diffuser.

Mr Berry for Irish Water provided detailed information on the approach to and the accuracy of the **model calibration (OH-38-3)**. Calibration of the hydrodynamic and

the solute transport components of the model was made by comparing modelled with data which was recorded in the field in over a number of months in 2012 and 2015. The surveys involved deployment of instruments to gather information about water levels and current speeds and directions and through **use of dye release and current profilers to compare the modelled result with the real world situation**. In relation to the hydrodynamic model fit against tidal data the EIAR information is that at the location of the proposed marine diffuser (ADCP C) the calibration of the model provides a 'good' representation of current speeds and directions. It is concluded in the EIAR and by Mr Berry that the model has been successfully calibrated and validated against field measurements and that it accurately represents hydrodynamics in the study region.

On the other hand observers dispute that the results of the modelling can be relied on and it is claimed that it is a theoretical exercise only. Observers have raised issues based on real life knowledge of fishermen, sailors and others and claim that the coastal conditions are not properly understood or described by Irish Water. Written and oral submissions of observers refer to **data from Howth Yacht Club** and the DVD presented to the hearing includes evidence to the effect that the local knowledge available refutes the result of modelling undertaken. The observers have not raised particular objections to the modelling undertaken but rely heavily on the evidence of local persons including fishermen who have knowledge of tidal flows. In essence it is stated that the local knowledge on tidal flows refutes the results of modelling. It was also queried **why storm events were not modelled** and it was claimed that due to recent storm events the **seabed may have shifted** since it was surveyed.

In response on the matter of storm events, Mr Berry noted that surveying extreme events causes health and safety problems. However, modelling of storm events can be undertaken and in this regard Mr Berry referred to simulations of high winds as part of the assessment of the 'Ringsend levels' of coliforms. Ms Joyce Kemper queried the difference between 2012 and 2015 results in view of seabed changes. Mr O'Keeffe noted that it would be standard practice to re-survey prior to construction and changes could be made if necessary.

I submit that the scientific and continuous records compiled by the applicant in the field as inputs to the modelling are an appropriate basis for decision making. In the

event that the applicant had presented information on tidal flows, which were based solely on witness evidence such evidence would have been dismissed by the Board. The observers' reliance on such evidence should be treated with caution also.

Regarding the **performance of the model** I consider that it is demonstrated to be sufficient for the purposes of the application and I refer to comments made by Mr Berry which stressed the dynamic nature of model and that it takes into account changes which occur in the dynamic environment on a second by second basis, which are not accounted for in the Howth Yacht Club maps. Mr Berry indicates that local knowledge was in fact considered and points to the close relationship between the modelled data and the currents shown in the Howth maps. The dye release maps presented to the hearing and which are presented in the EIAR support that position (OH-62).

In relation to the modelling exercise and related matters, I am satisfied that the assessment undertaken for the location of the pipeline and the diffuser is based on a thorough and professional analysis in terms of the model used and the data compiled for calibration / validation purposes. A wide range of scenarios and the relevant parameters were modelled. I accept that the model is the industry standard for analysing free surface flow hydrodynamics and dispersion in coastal areas and seas and note that it has been used for decades across the world. I refer to the credentials and experience of Mr Berry who was responsible for the modelling and who gave evidence to the hearing. I consider that his evidence is highly convincing and I consider that the Board can be satisfied with the applicant's submissions in terms of their adequacy and the veracity of the conclusions. In the event that following re-survey any adjustments were required the normal restrictions would apply namely that the proposed development would have to comply with the terms of the permission and that AA screening would be considered.

I note the suggestion of observers, which was made on a number of occasions at the hearing that the Board hire a specialist consultant to review the marine water quality issues in this case but do not consider that this is necessary. However, if the Board has any doubts about my conclusions that option is available.

#### 8.4.2.3. **Baseline environment**

Amongst the concerns identified by observers include reference to the particular features of the marine environment. There is particular concern in relation to the location of Baldoyle Bay and the direction of water flow, to the banks out to sea and the shallow nature of the sea in particular. The bathymetry is described by observers as creating a lagoon-like area in which any inputs to the marine environment would be trapped. The comment is made that Baldoyle Bay would be prone to silting up. The quality of the marine environment and its importance for bathing, recreation, commercial fishing and ecology are referenced throughout.

The EIAR describes the receiving environment in section 8.3. The shallow depth of water is noted to be a feature, as well as the gentle slope of the seabed together with the relatively deep water at a location close to Ireland's Eye. Further out is the presence of the north-south sand bank. The predominant current direction of the coast of Ireland's Eye is in the north-west to south-east direction for both neap and spring tides. The tidal currents offshore of Dublin are north/south caused by the tidal wave propagating northwards towards the flood tide and southwards towards the ebbing tide.

The baseline environment is further described in the EIAR under the headings of WFD status classification, Bathing Waters and designated shellfish areas.

Information includes:

- Figure 8.11 shows the WFD assigned status. The discharge lies within 'coastal' waters as defined by the WFD. The coastal waters of Dublin Bay HA09 from Howth Head to Malahide Bay, the location of the outfall have a status of 'unassigned'.
- Figure 8.12 shows the bathing waters classification. Section 8.3.4 notes designation of 8 no. beaches and water quality status. In 2017 only Portmarnock Velvet Strand beach was awarded Blue Flag status but Sutton beach also achieved 'excellent' water quality status. The southern beach at Velvet Strand and Balscadden at Howth are not designated bathing areas.
- Figure 8.2 identifies areas which are designated under the Shellfish Waters Regulations. The designated areas near the proposed outfall route identified do not include the route of the marine outfall.

#### 8.4.2.4. Legislative requirements and design standards

For the purpose of ensuring compliance with the WFD the proposal is required to be assessed to comply with the relevant legislation. I have previously summarised the relevant legislation.

Regarding the **Environmental Objectives (Surface Water Regulations) 2009** as amended and the **Bathing Water Quality Regulations** the standards for reporting are set out in table 8.14 of the EIAR, which is replicated below.

Parameter	WFD Classification	Status	Value	Salinity	Standard	Regulation
DIN (mg/l)	Coastal and Transitional	Good	Less than/ equal to 0.25	34.5 psu	Median	Environmental Objectives (Surface Water Regulations) 2009 as amended
MRP (mg/l)	Transitional	-	Less than/ equal to 0.04	34.5 psu	Median	As above
BOD (mg/l) O <sub>2</sub>	Coastal	-	Less than/ equal to 4.0		95%	As above
COLI (/100ml)	Transitional and Coastal	Good Sufficient	500		95% 90%	Bathing Water Quality Regulations 2008

In terms of the Surface Water Regulations the main factor of interest is DIN. A breach of the standard for DIN could lead to nutrient enrichment in the coastal waters. There is no standard for MRP in coastal waters under the Surface Water

Regulations 2009 and no requirement for it to be assessed. Nevertheless the MRP standard for transitional waters has been adopted and is included in the table. I consider that this is a highly precautionary approach.

The standard to achieve 'Excellent' bathing water quality is as presented in table 8.2 of the EIAR – 250 Escherichia coliform (colony forming units) (cfu)/100ml and 100 Intestinal enterococci (cfu/100ml) by 95% or more samples. The Board will note that the standards adopted in table 8.14 above do not refer to the adoption of 'Excellent' as the standard for bathing water quality. That may have contributed to observers' concerns. Excellent water quality is necessary for a Blue Flag beach. However, as seen below the prediction is that 'Excellent' bathing water quality will in fact be attained.

In terms of the **Urban Wastewater Treatment Regulations**, which set out the requirements which the discharge from the WwTP must meet, the requirement is that the discharge not exceed 25mg/l BOD, 125mg/l COD and 35mg/l TSS. Secondary treatment is the requirement for WwTPs discharging to these coastal waters.

The treated wastewater emission levels will be dictated ultimately by EPA licence under the **Waste Water Discharge (Authorisation) (WWDA) Regulations 2007**. As part of the design process the applicant has reviewed the wastewater discharge licences which have been granted by the EPA. Appendix A4.1 of the EIAR and provides more information and Mr O'Keeffe addressed the matter (OH-2). For the purposes of consideration of the environmental impacts of the proposed project the plant has been designed to conform to the emission limits below.

<b>Parameter</b>	<b>Emission Limit Values</b>	
<b>pH</b>	6-9	-
<b>Temperature</b>	25 degrees C (max)	-
<b>BOD 5 day limit</b>	95 <sup>th</sup> percentile	25mg/l O <sub>2</sub> .
	Not to exceed	50mg/l
<b>COD</b>	95 <sup>th</sup> percentile	125 mg/l
		250mg/l
	Not to exceed	
<b>TSS</b>	95 <sup>th</sup> percentile	35 mg/l
	Not to exceed	87.5mg/l

On the basis that the proposed WwTP discharge complies with the above and having regard to the dilution characteristics at the location of the marine diffuser the applicant states that the receiving waters will meet 'good' status under the WFD and will meet the environmental quality objectives for coastal water nutrient levels.

The applicant also clarified at the oral hearing that under the bathing water regulations the water quality to be attained is 'excellent'.

Regarding the protection of shellfish the standards are established under the relevant legislation is discussed later.

Finally, I refer to the role of the Board which is to determine if it can be satisfied that compliance with European and national standards can be achieved in order to reach a conclusion that the proposed development would be in accordance with the proper planning and sustainable development of the area.

#### **8.4.3. Marine water quality impacts.**

Having discussed the model above and accepted its suitability and validity and having described the baseline characteristics and the standards to be achieved I

now report on the modelled scenarios and the predicted water quality impacts. I consider the following:

- Scenarios which were modelled
- Construction phase water quality impacts
- Operational phase impacts including compliance with Urban Wastewater Treatment Regulations and Surface Water Regulations
- Operational phase impacts including compliance with Bathing Water Regulations and Shellfish Regulations
- The need for additional treatment
- Risk of accidents.

#### 8.4.3.1. Scenarios modelled

The particular **scenarios examined in the modelling exercise** were:

- **Construction phase** – dredging of 3.9km of trench to 5m depth using back-hoe dredger over 78 days and 24 hours per day with deposition of spoil material within the construction corridor route on flood tides from 2 no. 1,000m<sup>3</sup> capacity hopper barges - 300,000 m<sup>3</sup> material in total.
- **Operational phase** was modelled for the continuous discharge of secondary treated wastewater for average flow conditions and for flow to full treatment (FFT) conditions and for process failure involving discharge of untreated wastewater over a three day period.
- In response to the report of the Chief Executive of FCC the model was run for **higher levels of Coli** than originally input (i.e. than reported in the EIAR) and results were presented in the January 2019 document and to the hearing – this is referred to as the ‘Ringsend levels’.

#### 8.4.3.2. Construction phase impacts

The **primary concern in the construction phase in terms of marine water quality impacts relates to dredging and sedimentation**. This matter warrants detailed consideration as it is relevant to the appropriate assessment, particularly



due to potential impacts on reefs and harbour porpoise. There is also potential for adverse water quality impacts from accidental spillages from working vessels.

Regarding the sedimentation effects in the dredging period the model simulates the loss of material from the barges by tracking the movement of particles in the water column. The dredging was assessed for a 78 day period. The simulated placement of dredged material from barges was defined as discrete discharges on flood tides. The characteristics of the sediment were taken into account. The physical process governing discharge of dredged material are described in the EIAR. Heavier fractions are predicted to settle out within a few metres of the dredger and only finer fractions would be put into suspension in the water column during dredging.

Suspended sediment concentrations in the **upper layers of the water column are predicted to dissipate to background levels** within hours.

During dredging **increased suspended sediment concentrations were predicted within the corridor near the sea bed**. In response to observers' concerns I address this in more detail. Diagram 8.5 from the EIAR shows the bottom layer of the water column. The prediction is that for a maximum of 0.8% of the dredging operation the suspended sediment concentrations would exceed 10 mg/l in each of the modelled grid cells. A similar exercise and figures are presented for exceedances of 100 mg/l and the relevant figures are 0%, 0.3% and 0.5% of the dredging period. It is clear therefore that the duration of increased levels of suspended sediment is short. In addition it is noted that the background total suspended solids between in the receiving waters were between 15 mg/l and 50 mg/l for the majority of times. The suspended sediments from each individual placement operation were predicted to dissipate to background levels within 12.25 hours between the placement operations on flooding tides. In summary, the modelled results show **a brief but recurring effect on marine water quality for the duration of dredging** of the seabed. I accept the conclusion presented by the applicant that this would have a **negligible impact compared with natural variability** of total suspended solids.

Regarding the direction of the dispersal of suspended sediments in the construction phase the modelling undertaken shows that the **plume would be concentrated in an area to the north of the outfall pipeline**, which is away from the more sensitive ecological areas nearby at Ireland's Eye. EIAR Volume 5, Figure 9.6 refers.

The Board should note that the proposed **discharge on the flooding tides is one of the three recommended mitigation measures** which are intended to minimise the impact of dredging operations on receiving waters. Mr Berry briefly summarised these in his presentation (OH-5-3). The other measures relate to monitoring of turbidity and suspended sediment concentrations of the receiving waters during dredging and to cessation of works if water column suspended sediment material exceeds 40mg/l above background levels.

Regarding the potential consequences as a result of spillages from the working vessels I consider that such events are unlikely. If spillages did occur they are readily amenable to mitigation. This matter was discussed at the oral hearing and reference made to the modelled levels of dissipation of any spillage which would result in an imperceptible increase in levels of chemicals in waters. I conclude that there would be no likelihood of significant water quality impact related to possible spillages from vessels in the construction phase. I consider that the mitigation measures which are set out in the CEMP adequately address such events and spillages would be likely to be readily contained. The proposed **Vessel Management Plan and MARPOL** guidance, which are subject of comment elsewhere in this report are also relevant.

A further construction phase water quality impact relations to potential flood risk at compounds 9 and 10 which is addressed later.

Cllr Healy at the oral hearing noted that the **option of tunnelling of the entire outfall** was not considered (OH-45). However, I note that this option was under consideration by Irish Water during the pre-application consultations. The alternative of tunnelling the entire length of the proposed outfall pipeline route (marine section) would have resulted in generation of a considerable amount of surplus waste along the entire length and subsea laying techniques for the final section of the outfall pipeline route (marine section) was selected to mitigate impacts. This option would also be likely to have substantially increased the duration of works and the impacts on the residents and ecology. I consider that in the circumstances where it is not demonstrated that the works at the sea bed would not result in significant adverse water quality impacts, it is unclear as to how a more disruptive outfall pipeline could be justified in terms of its environmental impact.

In conclusion in relation to the impacts associated with the construction phase I conclude that the Board can be satisfied that the water quality impacts would be localised and short term.

#### 8.4.3.3. **Operational phase – Compliance with Urban Wastewater Treatment Regulations and Surface Water Regulations**

In the operational phase potential impacts on water quality arise from the discharge of treated wastewater. The predicted results are presented in the EIAR for the average daily flow conditions and flow to full treatment (FFT) conditions, which is the maximum flow that can be treated by the plant.

I have referred above to the emission limit values to which the proposed WwTP is to be designed, built and operated (OH-2-6). The proposal will be required by any EPA licence to meet the requirements of the **UWWT regulations**. The design set out in the EIAR presents three layouts for the proposed WwTP involving a conventional activated sludge plant, a sequencing batch reactor and an aerobic granular sludge plant. The technology to be used has been proven capable in Ireland and abroad. The deployment of AGS would be relatively innovative but is proposed at Ringsend. This treatment method could be deployed in the event of a requirement under the EPA licence for higher levels of nitrogen or phosphorous removal. I am satisfied that the detailed design of the WwTP does not have to be finalised at this time. I conclude that the design proposed will ensure that the wastewater treatment plant will meet the requirements of the UWWT regulations. I recommend in the interest of clarity that the plant design achieve the design values specified for BOD, TSS and COD.

The modelled results for the four parameters relevant to the **Surface Water Regulations and Bathing Water Regulations** (DIN, MRP, BOD, COLI) are presented as the average concentration over the depth of the water column for each scenario at four stages of the neap tide and spring tide namely high water, mid ebb, low water and mid flood. Diagrams 8.25 – 8.68 refer to DIN, MRP and BOD. In general the applicant states that the transitional waters are affected by discharging rivers and not by the discharge plume, which I consider is evident from the diagrams. Regarding **dissolved inorganic nitrogen** this is the critical parameter for coastal waters under the Surface Water Regulations. The median concentration limit for DIN

at less than or equal to 0.17mg/l N in coastal and transitional waters to achieve high status and less than or equal to 0.25mg/l N to achieve good status.

Regarding DIN the modelling showed:

- No predicted impact on receiving waters for average daily flow conditions.
- For **FFT diagrams 8.17-8.24 show the DIN plume achieving good status with a slight local impact to the receiving waters.**
- For process failure for a three day period the DIN plume (diagram 8.25-8.28) was predicted to exceed the 0.25mg/l N limit during high and low slack water stages of the tide with least mixing. The 0.25 mg/l was not exceeded during mid flood or ebb tides. There would be a **Slight impact local to the diffuser on the receiving waters during the simulated three day process failure.**
- In summary for DIN, none of the scenarios predicted the likelihood of any significant impact.

Regarding **molybdate reactive phosphorous** the transitional waters median concentration limit of less than or equal to 0.04mg/l for good status for transitional water is applied in the absence of a coastal waters limit.

The conclusions of the modelling exercise for MRP are as follows:

- No impact predicted for average daily flow conditions
- For FFT the diagrams show a very small MRP plume exceeding the 0.04mg/l at certain stages of tide and very localised to the discharge point
- Regarding the simulated 3 day process failure there would be a small MRP plume from the discharge point exceeding the 0.04mg/l P limit to achieve good water status very localised to the discharge point.
- In summary there would be a **Slight localised impact on the receiving waters due to MRP levels.**

The Surface Water Regulations set a 95<sup>th</sup> percentile concentration limit for **biological oxygen demand** at less than or equal to 4.0mg/l O<sub>2</sub> to achieve good status in coastal waters.

Regarding BOD none of the diagrams (8.49-8.68) show the limit for good status being exceeded in any of the scenarios or tidal conditions and there is **no predicted impact on BOD**.

I separately discuss Escherichia coli (COLI) below in relation to the impact of shellfish and bathing water quality.

Regarding the **need for a longer tunnel** including to address observer's claim that the **suspended sediment would lead to silting up of coastal areas or estuaries** I accept Mr Berry's response that the proposed discharge of 35mg/l will have no such effect. The environmental context is such that there are large amounts of sediment in circulation in the baseline environment. In relation to the observer's claim that the currents direct material towards Baldoyle Bay estuary and that the suspended solids from the discharge would contribute to it silting up, my opinion is that applicant has adequately shown that there would be no such effect in view of the discharge location.

Regarding the **detailed design of the diffuser** the modelling undertaken for a worst case scenario is based on the single port design and the multi-port diffuser would result in greater initial dilution than modelled. This diffuser is a substantial structure and I am satisfied that it can be suitably designed for the required purpose.

Alternatives suggested by observers include provision of **two parallel pipelines** for the last 1km length. As the applicant's assessment has determined the optimal discharge point in terms of dispersal within the study area I am unconvinced as to the merits of the suggested option of a split pipeline.

## **Conclusion**

In conclusion I consider that the results of the assessment as relevant to the surface water regulations and suspended sediment is that there are localised impacts on the receiving waters from the proposed operation of the proposed outfall pipeline route (marine section) discharge point, which I do not consider would be described as significant.

Following mitigation measures, which are contained in section 8.5 and which include matters related to the disposal of drainage materials, monitoring of turbidity and suspended sediment and modifications to the operation, the residual impacts which are identified in the EIAR are:

- Environmental Objectives (Surface Water) Regulations 2009 - will meet 'good' status criteria and will meet the environmental quality objectives for coastal water nutrient levels. There would be an imperceptible residual impact on water quality off coastal waters of Dublin.
- Water Framework Directive – imperceptible impact on water quality of the coastal waters off Dublin, which will not impact on achieving the goals of the WFD of reaching good status.

I have concluded above that the model can be relied upon and I therefore accept these conclusions. The oral hearing submissions of Irish Water experts on the matter of risk is also relevant. I accept his evidence, which I address separately under the heading of 'Risk'.

Having regard to the above I am satisfied that the operational phase the development would comply with the Urban Wastewater Treatment Regulations, would not give rise to significant adverse water quality impacts in the context of the Surface Water Regulations and would not give rise to deterioration in the status of waters under the Water Framework Directive.

#### 8.4.3.4. **Operational phase – impacts on bathing waters and shellfish**

The **potential impacts on bathing water quality and shellfish are the key issues of concern** to the many objectors. The relevant parameter is COLI, which is represented in diagrams 8.69-8.88, V3A of EIAR. The diffuser is a considerable distance from all designated bathing water areas and from other areas used regularly for bathing. I have considered the observers comments in relation to areas which may be designated in the future as bathing areas. It is appropriate that the development does not result in water quality deterioration at these areas.

The diffuser and the outfall pipeline route lie outside of formally designated shellfish areas, which were avoided as constraints from the initial stages of project design. Nevertheless the outfall passes through an area, which is of importance to the shellfish industry and where harvesting is for live consumption. The industry has benefited from water quality improvements due to other wastewater infrastructure projects. The standards for shellfish waters relate to the measured level of Coli in the live flesh of shellfish, not to the level in the water.

Regarding Coli the **Bathing Water Quality Regulations** requirement is that values should not exceed the mandatory value of 500/100ml in 95% or more of the samples in the season to ensure 'good' classification of bathing water beaches. The standard for 'Excellent' is 250 / 100ml in 95% or more of the samples in the season.

In the EIAR the applicant presented the **conclusions of the modelling exercise in relation to COLI** as follows:

- No impact predicted for average daily flow conditions.
- For FFT one diagram shows a localised area (kilometers from the beach) where there is exceedance of the 500/100ml limit to achieve good status.
- Regarding the simulated 3 day process failure none of the diagrams show an exceedance of the limit to achieve good water status.
- Imperceptible impact on water quality of the coastal waters off Dublin, which will not influence any designated bathing waters or Blue Flag Beaches.

The model inputs in terms of the level of COLI had been queried by FCC in its report to ABP on the basis that it was considerably lower than the level of 300,000 cfu / 100ml, which was used at the Ringsend upgrade proposal. In response as published in the submission of January 2019, the applicant ran the model for the '**Ringsend levels**', which the applicant considered to represent an extreme scenario that would not occur in a well-managed plant of the proposed size. The applicant also notes that the measured Ringsend discharge for the period January to April 2018 averaged 81,396 cfu/100ml, which supports the extreme nature of the scenario.

The results of this **extreme scenario modelled for Velvet Strand and Claremont** (Howth) beaches included the 3 day process failure as reported to the hearing (OH-5-6). As such the Board can be satisfied that the most extreme event has been modelled. The graphs show that the concentrations of coliform over the course of the three days did not exceed the 250 / 100ml limit required to achieve 'Excellent' status at any of the designated bathing water areas. Elevated coliform levels return to previous levels within three days. I consider that the applicant has clearly demonstrated that there is no reasonable likelihood of reduction in water quality at the bathing areas. There is considerable evidence to support the conclusion that

'Excellent' water status, which is necessary for the retention of the blue flag at Portmarnock will be maintained as a result of the project.

Regarding the **impact on shellfish** the EIAR concluded that there would be an imperceptible impact on water quality of the coastal waters off Dublin, which will not influence any designated shellfish waters. Following further assessment the modelled results show that for the operational phase based on the higher 'Ringsend levels' of Coli, water quality will be sufficient to prevent impact to protected areas such as shellfish waters according to the applicant. In this context I refer again to the significant dispersion of treated wastewater from the diffuser in the near field mixing zone, which at minimum will result in a 20 fold dilution within 50 m. Thus the applicant states that there will be a negligible impact locally and regionally on shellfish populations.

The significant point of the applicant's position as outlined in January 2019 in response to FCC and observers is that for given the maximum predicted coliform concentration of 147cfu/100ml in water is such that there would be **equal time for uptake/accumulation and subsequent clearance/removal of any coliforms by shellfish for the FFT scenario.**

Notwithstanding the conclusions of the EIAR and Mr O'Keeffe's position and following **further consultation with a marine shellfish ecologist**, the applicant proposed as part of the submission to the oral hearing to modify the proposed development through the **addition of UV disinfection treatment**, to be incorporated in the buildings at Clonshaugh. Mr White outlined the proposal (OH-11 and OH-33).

Regarding the proposed UV treatment some observers raised **concerns relating to its design and operation**. Ms Browne responded on behalf of objectors with a statement which was read out (OH-10). She and other observers highlighted the possibility that the **failure to adequately remove suspended sediments** to sufficient level would render the process ineffective. Others referred to the possible reactivation of viruses after UV. I consider that the matters raised could be relevant in certain circumstances and my considerations follow.

Regarding the argument that the **observers had insufficient time** to consider this proposal or that it should be rejected by the Board my conclusion is that the applicant made available considerable expertise to the observers and I consider that



there would be no benefit to rejecting the proposed amendment. I do not consider that there was failure to adequately consult on this technical matter. Rather I note that the additional treatment was made partly in response to observers' comments following consultations.

At the oral hearing I consider that witnesses for Irish Water particularly Mr White and Mr Fitzsimons satisfactorily responded to observers concerns including by the following points:

- UV will provide a further 90% reduction in E. Coli in order to further protect shellfish waters. It will **reduce and control spikes and variability** thus providing for an upper level of E Coli concentration.
- Performance may be impacted by wastewater characteristics including suspended solids. The **design of the UV would be specified to address the levels of suspended solids** in the treated effluent. It will be designed and operated to achieve an average concentration in the order of 5,000-6,000 E.Coli/100ml in the final effluent at which concentration there will be no impact on the shellfish water. Across the WwTP overall there will be a 99.9% reduction in E. Coli.
- Due to the length of the outfall there would be a 4 hour travel time between the WwTP and the diffuser. This together with the use of a medium pressure UV system as proposed will **prevent the photo-reactivation process**, which might otherwise occur.
- UV is not being introduced in response to and is not relevant to AA issues.

I consider that the proposed UV treatment is a welcome and beneficial addition to the proposed treatment level proposed. I note that it obtained some support amongst observers at the hearing also. The provision of tertiary treatment, one of the core requests of observers including in the written submissions and as outlined by elected representatives is partly met by this upgrade.

## **Conclusion**

I accept the applicant's submissions in relation to bathing water quality and consider that the EIAR outlines a proposal which would ensure that 'Excellent' water quality is

maintained. I also consider that the **EIAR evidence alone could have been relied upon in relation to bathing water protection.**

The impact on shellfish is more difficult to assess but the control of spikes of coliform in water is highly advantageous. While applicant's submissions in the EIAR in relation to FFT levels appear to me to be reasonable, they were not supported by expert evidence on shellfish impacts. When such expert evidence was subsequently obtained it led to the applicant introducing UV disinfection. As such I commend this revision to the Board. The addition of UV treatment will ensure that there is no possibility of endangering the commercial shellfish operation in this area. Subject to that measure, which warrants being addressed by condition, I am satisfied that there would be no adverse effect on the shellfish industry.

I conclude that the development is acceptable in the context of the Bathing Water and Shellfish Regulations.

#### 8.4.4. **Whether there is a need for additional treatment.**

It is an almost universal theme in observations that the **provision of secondary treatment is inadequate.** The call for tertiary treatment appears connected primarily with a concern that the bathing water quality in particular will be adversely affected, but there are also identified concerns relating to shellfish and to habitats, including that Baldoyle Bay would be subject to eutrophication due to nutrient enrichment. The 'add-on' of UV disinfection does not constitute 'full' tertiary treatment. Tertiary treatment could involve removal of nutrients, organic matter, suspended solids, pathogens and heavy metals to a higher level than the secondary treatment. In this regard observers referred to substances which require further technology including pharmaceutical residues, which was raised by Mr Darragh O'Brien TD (OH-43) and others and CPE, which was mentioned by observers including Ms Browne.

It is important to note that the proposed wastewater treatment plant **does not involve discharge into an area which is designated as a 'sensitive area'** under the Urban Waste Water Treatment (Amendment) Regulations 2010. Areas which are so designated in the Dublin region include part of the Liffey and in particular the channel into which Ringsend WwTP discharges. The entire area between Ireland's Eye and Velvet Strand is devoid of any sensitive area designation and as such there

is **no legal requirement for tertiary treatment** in principle. The legal requirement is to provide secondary treatment only.

In response to observers and following further specialist advice, the applicant now proposes to introduce UV disinfectant as described at the oral hearing. This measure was described as being introduced 'out of an abundance of caution'. It is clarified as being in response to shellfish only. It has secondary benefits for bathing waters insofar as Coli are the relevant parameter also.

Regarding the **upgrading of treatment to address hormones, antibiotics and other substances** which are not presently regulated by legislation in terms of wastewater treatment levels, I accept the point made by Irish Water to the effect that the plant could be upgraded if necessary. There is ample lands within the Clonshaugh site for the provision of any add-on treatment at a later stage if required by the EPA in the first instance or later in the event of changes to regulatory requirements, should that occur. I note that the control of some of these items at source is under consideration and that there have been reports in the public realm in relation to research on this issues including by / on behalf of the EPA. I completely reject the idea that there is any relevant matter which should be addressed by the Board in the formulation of planning conditions.

I am satisfied that the proposed level of treatment is sufficient and appropriate.

#### 8.4.5. **Risk of accidents as relevant to marine water quality**

The primary concerns identified by observers in relation to potential accidents and risks relate to aspects of the development which could give rise to **sewage overflow, to the WwTP being overwhelmed** in terms of its capacity with resultant impact particularly on the marine environment being highlighted. Numerous examples of malfunctioning were given in the written observations and the theme continued in the oral hearing. The observers also voiced a general concern relating to the capacity of the proposing organisation to ensure that water quality parameters will not be breached in the future.

Risks which have been identified include those related to **power failure, shock loads and malfunctions at APS and the WwTP in particular**. FCC identified that

there is no mention of **storage on site of untreated material** in the event of a breach at the WTP or APS.

Irish Water's submissions on predicted water quality are also of interest in this respect. For instance Mr Berry's statement (OH 5-paragraph 28) addresses the process failure for three days based on the modelled results. This indicates significantly higher maximum predicted coliform concentration over the course of the simulation within the water near the seabed of 965 cfu/100 ml. Thus there would be significantly higher potential adverse impacts on shellfish in that scenario.

Irish Water in response to the observers' comments referred to the range of embedded mitigation measures relating to identification of operational problems and to the option to control flow in exceptional circumstances. **Storage in process failure circumstances** would be within the network, where there is considerable volume. There are embedded mitigation against total or partial failure events affecting marine water quality, which are set out in 22.5.1 of the EIAR and include:

- Three power supplies at the WwTP. Backup generator at Abbottstown.
- Planned maintenance at WwTP can be accommodated by taking individual treatment units off-line without impacting capacity.
- Pumps to be installed in duty/standby configurations, to address pump failure.
- Telemetry system in the control room of the WwTP will allow operators to control flows from Abbottstown and Ballymun pumping stations and in the event of a problem at the WwTP flows can be slowed or stopped and the large storage volumes in the network mobilised to retain flows.
- Alarm systems at all key items of mechanical plant.
- Surface water management plan implementation relevant also.

After mitigation the discharge of untreated wastewater during commissioning and operation phases is deemed to be 'unlikely' and of 'Limited' post mitigation consequence according to the EIAR.

At the hearing the project manager and design lead **Mr O Keefe gave evidence on risk as well as design**. His firm and unequivocal position was that there would be

no discharge to the marine environment in the event of a process failure (OH-26). The basis for that statement is that flow can be stopped at the two pumping stations which would supply the WwTP and sewage could be stored in network.

Mr O’Keeffe referenced the **Environmental Incident Response Plan as a live document**. Apart from the fact that the risk of a major accident risk is very remote he referred to the possibility of partial and total failure.

The **partial failure of elements** would be met by a maintenance regime and the plant has been designed with in-built redundancy to cater for elements to be taken offline without impacting treatment capacity. As such the discharge emission limit values would still be met.

In the event of a **total power failure** the inlet pumps would not work and the large volumes of storage available in the network would be mobilised to store wastewater through activating the stoppage of pumping at Abbotstown and Ballymun. He therefore emphasised the issue that a discharge of untreated sewage to the marine environment as a result of total failure of the WwTP cannot occur.

I accept the statement made by Mr O Keeffe relating to partial and total failure and consider that there is no credible risk to marine water quality from these scenarios taking into account the limited likelihood of such occurrences and the embedded mitigation. If that conclusion proved to be incorrect and a discharge did occur, then the predicted result water quality results are as set out earlier under the modelled 3-day process failure simulation, which indicated very limited and localised effects taking account of the marine diffuser location and the dispersal characteristics. I have reported Mr Berry’s comments above. I do not consider that there is any likelihood of stoppage of treatment for such a lengthy duration resulting in the plant being overwhelmed as was implied at the hearing. In addition I am satisfied that the operational phase water impacts including in the scenario of process failure provide evidence that there is no requirement for a longer outfall as has been suggested by observers.

Regarding the matter of **shock loads** and the observers’ concern that there is **insufficient early storage capacity in the system**, I refer the Board to the response of Irish Water in section 9.3.4 of the January 2019 document. This comprises a short description of the measures to control of flows by way of the

pumping stations and the telemetry system. Mr O’Keeffe at the hearing noted that almost all flow arriving at the WwTP site is pumped and that the pumps have a limited capacity. I agree that these provide for considerable control over the system.

Mr O’Keeffe referred to existing overflows and to plans to avoid new overflows. He noted that the lands between the N2 and N1 which are zoned for industry will be properly controlled through the Irish Water connection policy under which rainwater will not be accepted into the foul sewers. There is no significant rainfall event that would inundate the plant he stated. In response to a question Mr O’Keeffe noted that existing combined sewer overflows in the catchment will still discharge to watercourses but also referred to their frequency being reduced through ongoing diversion works. I accept the comments of Mr O’Keeffe and consider that there is minimal risk of marine water quality problems due to overflows.

In conclusion I accept the applicant’s position in relation to the marine water quality risks from partial or total failure.

#### 8.4.6. **Conclusion**

I conclude that the overwhelming evidence suggests that the GDD project will provide for necessary planned regional growth and will assist in ensuring that Ireland is compliant with the WFD, the Surface Water Regulations, the UWWT and the Shellfish and Bathing Waters Regulations as a result of the high standard of treatment proposed. I have no reservations in supporting the conclusions of the applicant in relation to the effects on the marine water quality and dependent resources.

#### 8.5. **Air and Odour**

This section of this report deals with the predicted air and odour impacts which may be anticipated in connection with the significant elements of the proposed development. Inevitably there is an overlap with the matter of human health which is also referenced under the EIA section of this report and was discussed at the oral hearing.

Observers have raised issues in relation to odour in particular and a number of submissions refer to **construction dust and vehicles** emissions during construction

and to particular issues which could **impact Connolly hospital**. Air emissions particularly odours it is stated will impact on **quality of life in a highly populated residential area** including through affecting use of rear gardens and public open spaces including named parks and sports facilities.

Observers consider that **air quality and odours will impact on human health** including by reason of the presence of bio-aerosols. Research papers were presented at the hearing and were referenced in relation to the health of residents near WwTPs being adversely affected.

I address the matters arising under the following headings:

- Overview of baseline data, modelling and assessment undertaken
- Assessment of predicted dust impacts and other construction phase impacts
- Assessment of predicted odour impacts
- Other operation phase air impacts.

#### 8.5.1. **Overview of baseline data, modelling and assessment undertaken**

##### **Baseline information**

The **GDD project baseline** is described in 14.3.1 (Chapter 14, Volume 3 EIAR). The data compiled included wind speed and direction which is relevant for dispersal patterns. The influences on ambient air quality are listed in section 14.3.2 of the EIAR and include domestic, commercial and industrial heating, traffic from roads and from air traffic. Emissions of dust and particulates from agricultural activities especially near the Clonshaugh site and sections of the proposed orbital sewer route are relevant. The **main substances which are of interest in terms of existing air quality are SO<sub>2</sub>, NO<sub>x</sub>, PM (PM<sub>10</sub> and PM<sub>2.5</sub>)** and section 14.3.3 describes existing levels of the various substances and the significance thereof. Existing ambient air quality is good for all health related pollutants as shown by the low levels relative to the air quality standard (AQS) presented in table 14.6. In terms of ecological receptors the applicant refers to an area of 1,500km<sup>2</sup> as being relevant for the operational phase air quality assessment, which seems to constitute a very conservative approach. However, in the context of the nature of the development

and the operational emissions, it is not inappropriate and the assessment for NO<sub>x</sub> refers.

The **RBSF weather records** were sourced from Dublin airport records, 4.5 km east of the RBSF. Data collected during five representative years 2012 to 2016 refers. EPA continuous monitoring data records were sourced, depending on the substance of relevance. In relation to the GDD the applicant's submission describes the existing air quality in terms of Zone A data and as such the ambient air quality would also be described as good. Due to the characteristics of the RBSF **dust is likely to be the major source of air quality impacts** and is the main focus of the applicant's assessment. This is also deemed to be the relevant air emission of concern in terms of human health from the RBSF. Localised air quality impacts associated with increased traffic are also identified as a likely significant impact. In summary for the RBSF element the key pollutants are NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, benzene and CO, with particular focus on NO<sub>2</sub> and PM<sub>10</sub>. The applicant states that there is no requirement for an assessment of ecological receptors based on TII guidance and the level of traffic and distance from designated sites. I accept this conclusion having regard to the nature of the RBSF as a storage facility and the lack of relevant operational phase emissions of concern.

### **Modelling and assessment**

I am satisfied that the applicant has relied on standard and up to date modelling for the assessment presented in the EIAR. AERMOD which was utilised in the undertaking of modelling at for the GDD and the RSBF is described in EPA guidance *Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)* as a new generation air dispersion model. I consider that it is suitable to take into account the real world context including topography.

I consider that the applicant has presented sufficient and appropriate information to enable the Board to be satisfied with the modelling undertaken. I note as follows.

- The location of the site is such that there is access to high quality long-term baseline information from two airports (Dublin and Casement), both of which were utilised as part of the assessment undertaken. The former was utilised as the primary modelling input and data from Casement was used to test the sensitivity of the projections.



- The assessment addressed the principle pollutants which are likely to be emitted during the construction and operation phases. These were summarised by Dr Shanahan at the hearing as comprising dust, particulate matter, gases such as nitrogen oxides, carbon dioxide and benzene in the construction phase and odour, fine particulate matter, carbon monoxide, methane and sulphur dioxide in the operation phase. Taking into account the legislation pertaining and the nature of the project I concur that the EIAR assessment was appropriate in terms of the factors considered.
- For the purposes of the modelling the applicant has presented the various assumptions made including for example for conversion ratios, proportions of different sizes of particulates and the like. Other aspects of the modelling consideration including for example in relation to building downwash effects and digital terrain data effects are discussed in the EIAR and I consider that the basis for and conclusions of the approach are set out and can be accepted. Mr Harte had raised the issue of the specific topography at the Clonshaugh site and the meteorological conditions.
- Key sensitive human receptors were identified including residential properties, schools, hospitals and care homes.
- Ecologically sensitive receptors were included in the GDD air quality assessment, with sites within 25km selected which could potentially experience the most significant potential impacts and the focus being on NO<sub>x</sub> concentrations, which is the ecologically relevant impact parameter.
- Predictions were compared with relevant Air Quality Standards (AQS). Added to the predicted impact of emissions are the existing background concentrations for the purposes of comparison with AQS in the operational period.
- EPA guidance AG4 does not suggest specific criteria for studies on odour in Ireland but does set out principles and suggestions which the applicant indicates were followed. I later address the issue of odour criterion.

Regarding the assessment undertaken I refer to the separate preparation of the assessments of the GDD and the RBSF (Volumes 3 and 4 of the EIAR) by two different consultants. This matter was addressed by Dr Shanahan in response to

questions at the hearing. I am satisfied following the discussion that there was a high level of consultation during the preparation of the two different volumes. That engagement enabled Dr Shanahan to stand over the evidence presented in relation to the RBSF as well as the GDD. The issue of background odour is commented on below and I refer below to a slight difference in approach in Volumes 3 and 4. I consider that there are no unacceptable differences in the approaches undertaken, which include marginally different model versions and (as discussed below) different odour criteria and approach to background odours. I also note and agree with the comment made by Dr Shanahan that the nature of the odour and air emissions, which would be associated with the project are well known and understood.

Having regard to the points above I am satisfied with the approach to air impact assessment presented in the EIAR. The applicant's assessment involves a very conservative approach, which is considered to be in line with EPA Guidance AG4.

#### **8.5.2. Construction phase air quality and vehicle related emissions**

The principal construction phase air quality impacts will be associated with dust emissions and vehicle emissions. There are particular issues of concern in addition in relation to works in the vicinity of Connolly Hospital. Due to the extensive nature of the development and the duration of the project and its proximity to residential development, schools and medical facilities, the construction phase impacts in this case are potentially significant.

I consider that the most significant concerns relating to construction phase emissions can be considered under the following headings:

- Dust from earth excavations associated with construction.
- Potential aspergillosis emissions, which might affect vulnerable people.
- Vehicular emissions.

#### **Dust impacts**

The potential for dust emissions affecting sensitive receptors is a likely significant impact throughout the geographic area covered by the proposed project. It is submitted that the dust impacts will primarily affect a 200m zone from construction and that the greatest impact would be within 50m. I accept that point and note the

assessment of this factor by the applicant in terms of the TA Luft standard, which is appropriate in the absence of a national standard. I comment below in relation to the main construction zones.

Works at the **Clonshaugh site** will be over a three year construction period. The applicant has set out aspects of the work and the levels of activity. I consider that the daily traffic and associated dust from track-out from HGVs is likely to impact a small number of residential receptors close to the site egress. The majority of the residents in this area are separated from this site by the regional road and by a significant distance there is no likelihood of significant dust effects on large numbers of people. The most significant potential impacts associated with dust in the construction of the proposed WwTP are those associated with soil stripping and excavations, landscaping and construction traffic. I accept the conclusion presented by the applicant that impacts would be temporary and highly localised.

The **North Fringe Sewer diversion and WwTP access road** elements of the GDD are closer to the more densely populated areas. Work includes a significant amount of trenchless construction as well as above ground works. Some impact on residential amenity is likely to be associated with all construction compounds by reason of air quality and in particular dust and mitigation would be warranted. It is the submission of DCC that the North Fringe Sewer and access road works, which lie within that local authority's administrative area, would not adversely affect the local amenities during construction. I note in this regard the **proximity of these works to the Traveller community site** and the submission on behalf of that community and statements in relation to health characteristics of the population. I consider that subject to mitigation, which I consider can be highly effective, there is no reasonable likelihood of significant effects as a result of dust or indeed any other air quality effect in the construction period.

Regarding the **RBSF**, it is accepted in Volume 4 that due to the total building volume and the proximity of residential receptors there is potentially a large impact associated with the construction of the RBSF. That site includes houses right at the southern site boundary. However, impacts are reduced by the location of construction works at the northern end of the site and a number of significant mitigation measures including those described in Appendix 8B. This includes a commitment to monitoring and to curtail works and implement procedures in the

event of dust impacts occurring outside the site boundary. I consider that it is reasonable to conclude that the overall risk of temporary dust soiling impacts from the RBSF is low.

Construction of **Abbottstown pumping station** requires a 17m deep excavation involving excavation in rock for the most part and a 1km pipeline tunnelling proposed resulting in a large construction compound and relatively long works duration. At this location the **sensitivity of the receptors** in the vicinity is high. The facilities which could be impacted include a Community Nursing Unit at Connolly Hospital and St Francis Hospice. At the hearing Dr Shanahan reiterated that based on the assessment of the EPA draft guidelines there is **predicted to be short-term slight adverse impact on the nearest receptors** (including St Francis hospice) in the construction phase (OH-69). I accept the applicant's statement that a CEMP incorporating a dust minimisation plan will ensure dust impacts are suitably managed in the construction phase. I noted on site that the hospice building is a modern structure and that landscaped gardens are mainly shielded from the construction site by buildings. The submission of HSE is that subject to mitigation there would be no significant impacts at the facades of buildings including the hospice.

At the proposed **construction compounds 9 and 10** required in connection with the micro tunnelling close to Baldoyle estuary, the tunnelling work would take 12 months to complete on the basis of 24-hour per day seven days a week. At the location of these compounds numbered 9 and 10, the applicant's submissions acknowledge potential impacts including in relation to a house on Golf Course Road. Impacts are deemed to be slight and short term impact and will be managed. I accept the submission of the applicant and consider that mitigation to control dust can be highly effective.

The other **eight main locations for the temporary construction compounds** together with the compound at Abbottstown and at the WwTP site are assessed in the EIAR, as are the haul routes. Some smaller temporary construction compounds will be needed at some of the trenchless crossings sites in addition. I consider that it may be concluded that taking into account the pattern of development at these locations and the duration of impact and mitigation measures that no significant residual impacts are likely.

In general in the assessment of the **outfall pipeline (marine section)** there is noted to be limited potential for release of dust and particulate emissions and the magnitude of emissions is assessed as low.

In general in the pipe-laying phase involving the **orbital and outfall pipelines** the impacts will be short-lived and will affect a small number of receptors. Construction of the orbital and outfall pipelines generally within a 40m construction corridor by conventional open cut will be undertaken (apart from at certain road/railway crossings where trenchless techniques are proposed) and some rock breaking may be required at locations for short lengths, which is deemed to be insignificant. Sensitive locations include the temporary school at Malahide Road (R30 Figure 14.4), where a construction compound and road crossing works would result in relatively lengthy exposure time. The existing school is likely to be closed by construction. It is not likely that the dust impacts relating to the pipelines would affect any specific receptor for more than 3 to 4 days. Regarding the areas where pipelines are to be installed using tunnelling techniques the duration of impact would be expected to be longer but the impacts would be not dissimilar.

Regarding monitoring and mitigation I note the HSE request for monitoring of dust in particular and the comment that the programme of monitoring and mitigation presented will ensure that dust would be mitigated by best practice dust suppression and containment, which I agree is achievable.

Having regard to the mitigation measures presented in the application including the proposed finalisation of a CEMP, screening and dust mitigation measures in general I am satisfied notwithstanding the large-scale and lengthy construction duration that the proposed development would not adversely impact on these residential areas by reason of dust impacts.

### **Bio-aerosols and Aspergillus**

As with all large scale projects involving significant earthworks the construction of the GDD will give rise to disturbance of fungal spores, which are dormant in soil. Fungal spores are ubiquitous, including in air. In general there is no reason to even consider this issue as there is no significant likelihood of adverse impacts on residents as a result of bio-aerosols in the construction phase.

Associated with the construction of APS and the western end of the orbital pipeline there is however potential for concern related to particular issue of Aspergillus spores affecting patients at Connolly Hospital and St Francis Hospice. The extensive nature of works involved at Abbotstown and its proximity to these medical facilities is such that the potential for impacts due to the disease 'invasive aspergillosis' affecting persons with suppressed immune systems cannot be ruled out and has been raised by observers. Dispersion of all fungal spores is a function of time and distance and there would be no measurable concentration at 250m from the source according to the applicant's submission.

The HSE publication **National Guidance for the Prevention of Nosocomial Aspergillosis** identifies the need to and means of protecting populations at-risk of acquiring Aspergillus infection. The guidelines specify minimisation of dust generated during construction in the vicinity of hospitals as part of the measures to prevent spread of fungal spores and dust infiltration into patient care areas. The applicant has committed to following the relevant guidelines. As referenced by Dr Shanahan at the hearing closure of windows at the hospital and hospice is a mandatory requirement under that guidance. Active dust suppression measures which would also benefit the control of bio aerosols are also specified in section 14.8 of the EIAR. It is the applicant's position that these measures together with an aspergillus prevention plan will ensure no significant impacts at the façade of buildings.

A comment of the HSE refers to the requirement that monitoring to be undertaken during and after construction to ensure that air quality standards are achieved. The applicant has confirmed that this will be undertaken. This measure relates to the entire development but has particular relevance to the environs of the hospital, including in relation to the issue of Aspergillus. The HSE is satisfied with the applicant's proposals.

Subject to mitigation measures presented I am satisfied that the impact on the residents of medical facilities from fungal spores and dust will be acceptable.

### **Vehicle Emissions**

I accept the applicant's submission that **dust associated with vehicles** from the construction phase traffic would not generally be likely to be a significant impact having regard to the nature of the surrounding roads in particular and the limited

duration of works affecting smaller roads. I note at this point also that the widespread nature of the project inevitably brings traffic changes to some local roads including roads which are residential in nature. Localised air quality impacts including due to vehicular emissions can be anticipated but where local roads are affected the duration of impact is generally short.

Regarding the **operational traffic associated with the GDD** the applicant's submission is that the small number of vehicles compared to the existing levels is such that the contribution of vehicle emissions is accordingly low also. An assessment was undertaken for NO<sub>2</sub> and PM<sub>10</sub> at various sensitive receptors, which indicates that the levels are significantly less than the relevant AQS and furthermore that the contribution of the development in terms of percentage change is small and under IAQM guidance would be considered to be Negligible.

Regarding the **RBSF** it is noted that there is no requirement to undertake modelling for this aspect of the development based on the IAQM guidance. However, the potential dust impacts relating to HGVs is noted and dust related to track-out is one of the four identified major dust generating activities. In the worst case scenario it is noted that there is a low risk of dust impacts and mitigation measures are set out.

In all I consider that there is no evidence to point to the matter of traffic emissions being a particular concern in this case, notwithstanding some localised effects.

### 8.5.3. **Operation phase emissions – odour**

I address below:

- The standards adopted
- Modelling details and scenarios
- Predicted impacts
- The design, operation, mitigation and commissioning
- Cumulative impacts and monitoring.

#### **Adopted standards**

EPA guidance AG4 recognises that exposure to odour is assessed based on odour concentration as well as the length of the time that the population may perceive the

odour. The selection of the standard should relate to the **offensiveness of the odour**. UK guidance recommends odour standards should vary from 1.5 to 6.0  $\text{OU}_E/\text{m}^3$  as a 98<sup>th</sup> percentile of one hour averaging periods at the site boundary. Under this guidance a target benchmark of 1.5  $\text{OU}_E/\text{m}^3$  is set for the most offensive odours, which would include raw sewage and septic sludge. Moderately offensive odours include sources such as aeration tanks and clarifiers at a WwTP and a target benchmark of 3.0  $\text{OU}_E/\text{m}^3$  applies.

In the absence of national standards the EIAR Volumes 3 and 4 described the adopted odour criteria as follows:

- **RBSF** - at sensitive receptor locations including residential houses essentially at the southern site boundary, a limit of **3  $\text{OU}_E/\text{m}^3$**  as the 98<sup>th</sup> percentile of hourly averages.
- **GDD** – at ABP boundary and Clonshaugh site boundaries, **1.5  $\text{OU}_E/\text{m}^3$** .

In effect both limits are set at the site boundaries as there are houses at the boundary at the RBSF site. In adopting **1.5  $\text{OU}_E/\text{m}^3$  for the entire Clonshaugh** facility the designers anticipate minimal odour effects will result. In applying that limit at the site boundaries (as opposed to at the nearest houses for example) the applicant has further ensured that subject to implementation of the design there would be basically no odour detectable at the site boundary and with distance the odour will completely dissipated.

In relation to the **higher level adopted for the site boundary of the RBSF** (in effect) I note that the 3  $\text{OU}_E/\text{m}^3$  level at this location is acceptable in view of the less offensive nature of the material. The applicant sent biosolid samples from Ringsend to a UK accredited laboratory for analysis for the purposes of assessment of the offensiveness of the material. The results correspond to 'unpleasant' but samples were fresh biosolids material and as the material ages the odour becomes less offensive with time. The adopted odour annoyance criteria is therefore 3  $\text{OU}_E/\text{m}^3$  as a 98<sup>th</sup> percentile of hourly averages at sensitive receptors locations identified and described in section 10.2.6 of Volume 4. I consider that this is acceptable. In relation to the different criteria set for the two projects, it is accepted practice and in my opinion makes common sense that a higher criterion can be applied where the odour source is less offensive.



As an aid to further understanding of the **very conservative nature of the approach** I consider it is useful to refer to the definition of one odour unit per cubic metre (OU<sub>E</sub>/m<sup>3</sup>), which is the detection threshold of 50% of a qualified panel of observers working in an odour-free laboratory using odour-free air as the zero reference. I also emphasise the importance of the fact that the **limit is set at the boundary**, thereby not making any allowance for dispersal. While the nearest sensitive receptors include some houses at the site boundary (in the case of the RBSF) it is necessary to refer to the significant separation in the main of residential development from the WwTP / SHC site boundaries. I emphasise that the performance standard which has been adopted in the EIAR in relation to GDD and the RBSF including at the Clonshaugh site, which has garnered most objections **constitutes an extremely stringent limit.**

The 98<sup>th</sup> percentile guidance allows for the possibility that weather conditions may occasionally limit odour dispersion. If those conditions do not arise then the nuisance odours would not be detectable beyond the boundaries as the odour control unit would be performing to design.

At the hearing observers reiterated concerns that **use of rear gardens would be affected by the proposed development.** Significant concern was expressed that the allowance for higher odour levels a limited number of hours over the year would fail to protect the amenity of the area. Dr Shanahan in response noted that dispersal is poorest in conditions which are normally experienced at night. By contrast warm, sunny weather favours atmospheric mixing. I consider that it is demonstrated that there is very limited risk of any adverse impacts in sunny afternoons, which concern is referenced in many of the written submissions.

In conclusion, I have no reservations in setting out my full support for the adopted criteria, which constitute extremely conservative and low limits.

### **Modelling details and scenarios**

In terms of observers' comments on the modelling and scenarios the main concerns identified which are relevant related to the stack height. The observers referred to Dubber OCU in terms of why the stack height of 5m was selected. Mr Harte at the hearing argued for a **higher chimney height** at Clonshaugh, where the treated air will be emitted through vertical stacks of a maximum height of 24m above ground.

In terms of modelling undertaken the **calculated odour emission rates** were derived using the approaches described in the EIAR. I accept the applicant's position that modelling of odour emission rates rather than individual substances is considered more reliable in indicator of potential odour impact. As described in the EIAR some individual substances at the WwTP site were modelled for the purposes of testing. Dr Shanahan described the selection of H<sub>2</sub>S as an indicator substance for odour modelling at the hearing.

A number of **modelling scenarios** were considered by the applicant for the purpose of evaluating the impact of the potential variations in the emission rates. These included normal and peak operating conditions, occasional running of diesel generators and scenarios to test potential variable operating conditions. Very unlikely scenarios were amongst those considered such as continuous operation at peak for all of the OCUs at Abbottstown, Dubber and Clonshaugh. The approach to the selection of stack height was to choose a configuration which leads to a minimum of 8m/s exit velocity, which would provide an effective dispersion velocity for odour.

I consider that the Board should accept that the modelling undertaken conforms to best practice, was thorough and relied upon good quality data.

### **Predicted Impacts**

The written submissions from residents are dominated by **concerns about the potential for adverse odour impacts**. While the majority of comments relate to the Clonshaugh site this perhaps is a reflection of the population density in this general area as well as the scale and nature of the facility. Observers have also expressed concern in relation to the **potential for odours arising from APS, Dubber OCU, from transport of biosolids and from the RSBF at Newtown**. The oral hearing submissions re-iterated these concerns and testified as to the anger in the community around the siting of the WwTP in particular. The evidence of Ms Theresa Doyle and others to the hearing expressed the deep seated and genuine concerns which persist in the local community regarding the likely odour impacts on the environs.

I refer the Board to Dr Shanahan's evidence that in the operational phase predicted impacts are significantly lower than the permissible levels of the assessment criteria adopted for the project. **For the APS, Dubber OCU and WwTP sites the**

**prediction** is that for at least 98 percent of time nuisance odour will not be detectable at the boundary. Dr Shanahan in response to a question at the hearing also clarified that the modelling predictions is that **odour nuisance associated with any element of the project would not be detectable at the boundary for more than 44 hours in any given year**, based on modelling which is reported in appendix 14.5 of the EIAR for the 99.5 percentile. She also stated that in reality the percentage of time would be significantly lower. **Under the poorest dispersal situation** (atmospheric stability categories E and F) Dr Shanahan acknowledged that **nuisance odours might be detected close to the site** but the detailed modelling predictions show that even under these maximum adverse meteorological conditions nuisance odours **will not be detectable at the closest sensitive receptor** to any of the project elements APS, Dubber OCU and Clonshaugh (OH-69). The risk of detecting nuisance diminishes as the distance from sources increase. Dr Shanahan also clarified that in referring to the standards she did not intend to imply that would happen, she was just explaining the standards and what they mean. She reiterated that there will not be any nuisance odours at any receptor.

It must be stated that Dr Shanahan's statements gave rise to considerable objection from oral hearing participants who considered that the potential for impacts for a possible 44 hour period over the year would constitute an unacceptable imposition. That concern is reasonable insofar as any resident would seek to secure minimal impact on their home environment and valued places of amenity. However the concern is misplaced in my opinion. **Any potential impacts would be recorded at the site boundary**, which is a considerable distance of **at least 700m from the traveller community housing and other residential areas south of the R135** from which location most objections arise. The closest individual houses to the WwTP are about 250m from that site and there are very few houses in those rural areas. The houses closest to Dubber OCU are at a similar distance. Regarding the development plan buffer zone of 100m, I note that the Belcamp lands which are zoned for future residential development are about 180m from the site. No significant concern was expressed by the representatives of Gannon Properties in this respect at the oral hearing. I conclude that there is no reasonable likelihood of odours impacting the main residential areas or indeed any of the houses near the site.

Regarding fugitive emissions the potential for odour from vehicles transporting sludge into the SHC and biosolids to the RBSF has been raised by observers. The various submissions made by the applicant refer to a range of mitigation which will be part of the operation of the facilities including use of tankers or covered skips to transport sludges to the SHC. I am satisfied that these measures will be effective and can be easily implemented and monitored.

### **Design, operation, mitigation and commissioning**

I have already concluded above that the modelling undertaken was thorough and suitable and I have set out the predicted impacts. I note that the odour criteria assigned for the GDD and RBSF boundaries will be achieved if the **abatement systems** are properly designed, operated and monitored, which matters are next further discussed. I also report below on the **commissioning phase**, which was discussed at the hearing.

Regarding the on-site treatment of sludges by advanced anaerobic digestion resulting in biosolids and biogas, this will give rise to emissions including a range of substances that contribute to odours. Similarly the APS wet well which will contain raw sewage is a potential source of significant odour. There are a range of odour sources at the WwTP. Biosolids are the main source at the RBSF.

The significant aspects of the design which will avoid or mitigate odour impacts include the **enclosure of tanks and structures, together with containment and treatment of odours and optimisation of stack height** to ensure that the site boundary standards are met. All activities at the Clonshaugh site will be fully enclosed. In addition the layout of buildings at the Clonshaugh site takes into account the dispersion characteristics and has been optimised to promote effective dispersion of emissions.

The overall approach to odour abatement is that odour control units will be used to treat odour and a two stage and three stage **odour control systems** will be used where necessary to give the required treatment efficiency. Regarding the specific abatement technology to be applied this matter is addressed in Appendix 14.6 of Volume 3 for instance which describes the options which would be considered proven technology. This information refers to the options and their advantages but does not specify which will be selected. I noted in this regard that observers have

raised concern that some involve chemicals and that there are concerns that the resulting emissions could impact human health. This level of detail does not need to be specified at this stage, the main point being that the achievement of emissions goals will be the basis for the design approach.

In terms of odour abatement (and other air emission control) the information presented by the applicant results from calculations which take into account emission temperature and character, stack height and other matters. Through changes to these factors the ground level concentration at any given location would be altered. There is a considerable level of detail in the EIAR on these factors.

Observers have expressed concern that the **stack height at Dubber OCU is only 5m**, compared for example with heights of up to 24m at the Clonshaugh site. I am satisfied that the applicant has shown that the worst case assessment has been undertaken and that the stack heights were fully and properly considered. Table 14.36 of the EIAR refers to the consideration of options for that facility and the 5m stack height recommended so that taking into account uncertainties with the modelling the target specification is achieved. I accept that there is simply no requirement for a very tall stack at a relatively small facility such as the Dubber OCU. I note also that the exercise for Dubber was undertaken for all other elements of the project notably including the **Clonshaugh site** and I consider that there is no reason to doubt the adequacy of the design. Finally in relation to the need for an OCU at Dubber, which observers say should be omitted in lieu of treatment at APS, I note that the Dubber OCU is to be positioned at the point where the orbital pipeline changes from a rising main to a gravity sewer at which location there is considered to be a potential for odour emissions. Dubber OCU is thus proposed as a precautionary measure to ensure that any odour impacts are mitigated and I am satisfied that this is the appropriate location for this measure and the appropriate approach.

In terms of the standard of operation of the facilities the applicant has committed to **application of controls which would be applied under EPA licence** and which would be considered to be best practice. In terms of the odour impacts the reference in this regard to the effectiveness of operation of abatement systems will be secured through continuous monitoring of key gases. For the first two years and at regular intervals throughout the lifetime of the facility in addition it is proposed to have an

**independent performance check** undertaken. I note that **observers have expressed a lack of trust about the future operation**, which I consider is demonstrated to be ill-founded.

Regarding the **comparison with Ringsend** this matter was subject of much comment at the oral hearing. Mr Cassidy from the Ringsend / Sandymount Environmental Group attended for the purpose of recording the community's experience of the problems which arose there. I consider that various submissions on behalf of Irish Water refute the argument that there is any reasonable parallel between the facilities having regard to the design measures which are embedded in the GDD proposal. As part of the GDD the OCUs will be designed to achieve the criteria which is set at a very low level. I note in this regard that there are higher odour criteria (meaning less stringent levels) set for the Ringsend upgrade as referenced above under planning history section. There is no comparison relevant between the two plants in my opinion and fears based on such comparison are ill founded.

Irish Water has expressed confidence that the WwTP and other elements of the GDD will be well capable of meeting required standards to ensure protection of the community from malodours. Observers indicate that such **commitments were previously given but were not realised**. It is also relevant to note that the proposed WwTP plant is very different from other plants largely due to technological advances and use of state of the art design approaches. I refer the Board to the fact that the modelling undertaken has addressed all scenarios including maximum operation and adverse weather conditions and that the plant capacity incorporates significant headroom. I consider that I has proven its case.

Regarding the **RBSF where houses are located at the southern boundary** a range of mitigation measures refer. All biosolids would be stored inside and transferred indoors. The development would be sealed and air extracted from the storage buildings on a continuous basis. The internal divisions within these buildings allow operation of separate zones and fast-action doors would be fitted to control and minimise the time of opening. I note the **additional requirement for a certificate of registration** and the ability of the local authority to attach conditions deemed necessary to ensure protection of the environment. As such that facility will

operate under requirements concerning the types and quantities of sludges and control of odours.

In response to a question regarding the **commissioning phase** and whether this might give rise to nuisance, Dr Shanahan noted there are periods of time required, which can be short, for the system to be operating as intended. She commented that if any facility was instantly loaded to full capacity there might be problems. In practice she noted that all of the commissioning involves phasing and for that reason she did not anticipate any problems. The principle would apply to large or small facilities and she confirmed her professional experience included large facilities.

Dr Shanahan also addressed the possibility of **failure or any other peak scenario, which would result in higher odour levels**. Her evidence was that the matter had been studied and that the odour system could deal with such levels and for any required time.

I note in addition at the hearing there was a response made to comments relating to **maintenance works and to the types of odour abatement** to be used and whether nuisance or health impacts might arise. Mr O’Keeffe noted that there is an understanding based on the type of media used of the timeframes for various filters to be effective and he stated that replacement of filters is a fairly seamless process. The maintenance system is to be agreed with Irish Water and it would be in the contractor’s interest to ensure that the system is properly designed and operated. Dr Shanahan noted that all of the proposed facilities have multiple systems and one part can be taken out for maintenance and functioning is thus not impaired.

In conclusion I consider that the potential odour impacts are thoroughly assessed in the application submission and the Board can be satisfied that no significant impacts would result so as to adversely impact residential areas.

#### 8.5.4. **Operation phase emissions – Air Quality**

After some comment on the applicant’s approach to assessment in relation to standards and guidance, I outline below the predicted impacts from the GDD and the RBSF in the operational phase and consider the mitigation measures which are proposed.

## Standards and guidance

Limit values which are set under air quality legislation are concentrations that cannot be exceeded and which are based on WHO guidelines for the protection of human health. Air quality legislation also sets 'guide values'. These are set as long term precautionary measures for the protection of human health and the environment. As noted in the EIAR, WHO guidelines differ from the European Union air quality standards (EU AQS) as they are primarily set to protect public health from the effects of air pollution whereas AQS are recommended by governments and other factors including socio-economic factors may be considered in setting the standards.

Notwithstanding that they are not mandatory it is relevant to note that the WHO guidelines might be considered to be the levels to which we should be aspiring in order to minimise adverse health impacts of air pollution. The applicant references these standards and considers them in the assessment for the GDD in Tables 14.3 and 14.4 refer.

## Predicted air quality impacts

In terms of the GDD the potential sources of emission from the GDD are primarily associated with occasional use of back-up generators at APS and from the combined heat and power system at Clonshaugh. The parameters of concern are particulates, nitrogen dioxide, sulphur dioxide, carbon monoxide, hydrogen sulphide, mercaptans and ammonia. In all, fifty-two sensitive receptors near elements of the project were considered. **Air dispersion modelling undertaken to determine potential impacts from the CHP and the backup generators concluded** there would be no exceedances of the air quality standards by the operation of the GDD. At the RBSF the air quality impacts of concern (apart from odour) relate to possible dust related to biosolids and potential impacts related to health have been identified by observers.

Regarding concerns raised by observers, a very high proportion of observers particularly in the vicinity of the Clonshaugh site and at Dubber and Abbottstown and the RBSF site referred to consideration of human health and specifically matters relating to aspergillosis and dust (which are considered above in terms of construction phase impacts) and to viruses and bacteria. In particular in relation to the Blanchardstown area the submissions of Mr Lyons and Mr Bourke (OH-51) refer



to the **possible transfer including by air of C.Diff and other pathogens** including very small airborne viruses such as polio and norovirus. These would come from sewage which would be contained in underground structures at locations close to Blanchardstown village and hospital and the hospice. Ms Browne raised a similar matter also in the context of treated wastewater and the human health concerns.

Dr Hogan's evidence refers to health related impacts (OH- 70). While his suitability to give evidence on this matter was challenged by Ms Browne, I accept his expertise and consider that his evidence should be accepted. Mr Bourke an observer who referred to the impacts from the proposed tanks at Blanchardstown also has expertise in the area of industrial microbiology. I refer the Board to Mr Bourke's paper and note that the emphasis of his submission relates to the possible emission on antimicrobial resistant bacteria (AMR) from the associated vents related to tanks, which are to be constructed under a different and permitted scheme. I address the matter nevertheless insofar as it might be deemed to have relevance to other elements of the project.

Regarding the possibility that the **GDD would give rise to spread of AMR bacteria**

Dr Hogan refers to a HSE publication, which is the national guidance document for infection-control specialists in relation to CPE. He notes that this guidance does not mention that wastewater is a consideration. In the absence of effective wastewater treatment there can only be increased infection and spread outside hospitals.

Regarding the spread to rivers and lakes or the sea of CPE Dr Hogan notes the EPA report and the bathing water quality limits and that there would be no level of antimicrobial resistant bacteria in treated wastewater, which would pose a risk to human health.

I note that the underground tanks to which Mr Bourke refers have permission and the treatment of the wastewater including from the hospital has to be undertaken and can be completed to ensure no health effects. However, the matter raised by him has essentially arisen in other observations regarding the Clonshaugh site. I consider that the observations have not presented sufficient information to support a reason for refusal of permission or an amendment to the scheme in order to address the matter of particular bacteria / viruses. I accept Dr Hogan's comments in relation to the benefits of the scheme from a health point of view. I have considered the detail of the assessment undertaken by the applicant. In the circumstances where I am

satisfied that the compilation of baseline information and the modelling were professionally considered I consider that it may be concluded that the predicted impacts are valid and that the standards, which are required to be met will be met.

The potential sources of air quality impacts (other than odour) in the operation phase of the RBSF is primarily dust from biosolids. As described earlier in relation to odour mitigation, all loading and unloading will be within the sealed buildings which will be fitted with self-closing doors for pedestrian use. Trucks will be covered. Taking these measures into account the potential for significant dust impacts after mitigation can be discounted in terms of its significance for residential amenity or human health. Regarding vehicular emissions I consider that the additional traffic generated would not give rise to significant vehicular emissions which would impact human health or residential amenity.

The potential for **adverse health effects from biosolids** is of concern to third parties. This has been raised also in terms of the objection to land spreading and is considered later in relation to water quality impacts but is relevant to air emissions too. It is the applicant's submission that the treatment of sludge in the SHC prior to its arrival at the RBSF will eliminate any concern relating to pathogens or viruses. I accept this position and note in addition that the handling of material at the site will ensure no fugitive emissions. I am satisfied that there is no potential significant impact in this regard.

A final matter relates to an objection by residents of the Meakstown area that they will be affected by **air quality impacts from two facilities namely the RBSF and Dubber OCU**. Dr Shanahan at the hearing acknowledged that this area is the sole location which was considered relevant in terms of cumulative impacts and the assessment was undertaken and potential adverse impacts discounted following consideration of the results of the modelling. I consider that her evidence should be accepted having regard to the modelling results presented and nature of the emissions which would be associated with the RBSF (a moderately offensive material) and the small scale of Dubber and the separation distance to houses.

#### 8.5.5. **Conclusions**

In conclusion I am satisfied that the applicant's assessment demonstrates that all **relevant air emissions standards will be met**, that the **development will not give**

**rise to odour nuisance** at residential areas and that **no adverse health impacts** will arise. This conclusion stands for all elements and activities associated with the GDD including those at Abbotstown, Newtown, Clonshaugh and Dubber and for the RBSF in the construction and operation stages.

The Board will note that the matter of air emissions including odour does not fall under licence by the EPA. There was discussion at the oral hearing as to how any complaints would be addressed. The initial comment of FCC was that except for the RBSF the local authority does not have an enforcement function in relation to odour. Mr McGrath noted that it would be open to the planning authority or a member of the public under section 160 of the PDA to require that Irish Water's legally binding obligations under the application were met. I note that under SI 787 of 2005 European Communities (Wastewater Treatment) (Prevention of Odours and Noise) Regulations 2005 it is required that the design, construction and operation and maintenance of wastewater treatment facilities avoids nuisance arising from odours or noise. The legislation also requires that plant operators report to the EPA on incidents. I note also that there is provision for sanction under section 63 of the Environmental Protection Agency Act 1992 in relation to compliance with the requirement that any wastewater treatment plant under a sanitary authority's control is operated and maintained as to ensure that it avoids causing nuisance through odours or noise.

I am satisfied therefore that there is strong legal provision to ensure that the conditions of the permission including in relation to all air mitigation measures are enforced. I consider that the relevant technical matters arising are capable of resolution in the context of a modern plant, which I am satisfied is designed to operate within foreseeable capacity. I consider that the Board can be satisfied that the development would be acceptable in terms of air and odour emissions.

## **8.6. Cultural heritage, Landscape and Visual impacts and Tourism**

In this section I address not only the impact on cultural heritage and the landscape, I also refer to the value of these assets in terms of tourism, which matter has been raised in a number of submissions.

The scale of the project and its linear nature, together with its location in an area at the edge of the capital city in an area with a long history of settlement and in the marine environment, means that the development would have a **significant effect on archaeological sites and protected structures and their settings**. 1% of the county's archaeology would be impacted by the development.

There are a number of **designed landscapes** in the area where the project would be located although these have been significantly altered. The Clonsaugh facility due to its scale, nature and location in an agricultural area, would constitute a **major landscape change** which might be deemed to be negative in character.

I address the following matters:

- The archaeological impacts.
- Designed landscapes and protected structures.
- Landscape and visual impacts including the effect on tourism and residential development.

#### 8.6.1. **Archaeological impacts**

I consider that the main archaeological impacts, which are likely to arise in this case relate to:

- Known and identified direct impacts on archaeological sites.
- Construction compound 1 at Abbotstown.
- Marine archaeological impacts.
- Other.

In considering this matter I refer the Board in particular to figures 16.1 – 16.6, Volume 5A of the EIAR.

#### **Identified archaeological impacts**

I consider that it is clear from the information presented in the EIAR that where possible **avoidance of impacts on known archaeological sites** is achieved in the layout of the outfall and orbital pipeline routes. Due to the **high level of investigation** work which has been undertaken by the applicant the proposal complies with FCDP policies relating to avoidance of impacts. I consider due to the

mitigation measures the project accords with policy CH02 of the FCDP which, provides for preservation by record.

The **predicted impacts on archaeological monuments** nevertheless includes three very significant negative direct impacts. Overall, direct impacts are unavoidable at 10 no. archaeological sites. A further 10 areas of archaeological potential would be excavated and other areas subject to testing / test-trenching. Excavation under licence is proposed, which will ensure sites are fully preserved by record.

The report of DAHG indicates satisfaction with the mitigation measures presented. The Department does not indicate reservations regarding the allotted 3 months identified in the CEMP although the planning authority has suggested the timeframe is short. Given the linear nature of the development and the proposed working in short sections, I consider that this matter can be reasonably addressed by the licencing procedure and does not warrant particular planning conditions. I note the conditions of the community archaeologist of FCC, which I consider are largely reasonable. In view of the archaeological impacts predicted I recommend that these conditions be largely reiterated. I am unconvinced that the requirement for separate publication of archaeological findings (other than the formal report) is justified and have omitted it from my recommendation.

### **Compound 1**

There are a range of issues arising in the vicinity of the proposed compound 1, which will be sited in close proximity to St Caoimhin's church and graveyard (AH2/BtH2), a recorded monument as well as a protected structure and an area where there are mature trees associated with Abbotstown demesne. The FCC archaeologist referred to the possibility that earlier burials are likely to have taken place in the area which now lies outside the graveyard wall. The area at St Caoimhin's also contains mature trees and is within the landscape associated with Abbotstown House (BtH4).

Irish Water propose that the compound be set back from the church and graveyard in order to protect trees and archaeology during construction. Agreement with FCC on an appropriate buffer zone is proposed. I also consider that it is appropriate at this location that a site-specific tree survey take place and appropriate measures put in place for the tree protection. I agree with the recommendation of the Parks Department of FCC that boundary treatment for the pumping station should be

agreed with the planning authority. I consider that the vernacular design idiom of APS will ensure that it is integrated into the area. Subject to the buffer zone being agreed following archaeological investigations and a tree survey, I consider that there would not be any significant adverse impacts on St Caoimhin's church and graveyard or the view from Abbotstown house as a result of compound 1.

### **Marine environment**

The large area designated as an area of archaeological potential at the coast encompasses the sites of compounds 9 and 10, part of Baldoyle estuary and the foreshore. A number of **shipwrecks** are known to exist along the coast and an observer has stated that archaeological impact should be avoided by tunnelling.

Regarding the presence of shipwrecks along Portmarnock Beach and the matter of underwater archaeology in general within the route of the marine outfall, I consider that this has been adequately explored and is well understood. Some anomalies identified in geophysical surveys were determined not to be archaeological in origin. The pipeline will be tunnelled under a newly discovered shipwreck.

**DAHG (DAU) recommends that the potential for discovery of hitherto unrecorded archaeological remains should be mitigated** as per the applicant's assessment. The commitment by the applicant includes general and underwater monitoring which will ensure that archaeological remains are identified.

Following mitigation including excavation and underwater monitoring no residual impact on cultural heritage sites is predicted. I accept this conclusion.

### **Other archaeological impacts**

The **site of the RBSF** has been subject of extensive test trenching in 2002 and no archaeological material identified. 30m north of the site boundary is DU014-013, Newtown Castle, a motte and bailey. This monument was flattened in 1952 but remains visible on aerial views as an oval enclosure. As mitigation a screened buffer zone will be retained between the site of the proposed development and the archaeological site, which will not be impacted by the proposed development. No mitigation is required and no residual impacts predicted. I consider that the applicant's conclusion is robust.

One additional matter was raised by FCC and that concerns the extent of removal of hedgerows across the GDD pipelines, some of which are townland boundaries. The applicant has presented a methodology regarding townland boundary protection, which I consider is considered acceptable subject to requirements for retention of original hedgerow for appropriate replanting. This was discussed at the oral hearing and a reduction in the working width can be achieved at locations where townland boundaries would be impacted. A condition on this matter is recommended.

The wastewater treatment site is identified as an area of archaeological potential due to its extensive size and there is a requirement for monitoring. I consider that the recommended mitigation will ensure that any remains will be fully resolved.

I conclude in relation to the archaeological impact that the development proposed is acceptable.

#### 8.6.2. **Designed landscapes, protected structures and architectural heritage**

There are a number of **demesne landscapes** through which the proposed pipeline would pass. I consider that the **most significantly potential impacts relate to Abbotstown demesne (DL1 / BtH4), Emsworth (DL9 / BtH18) and Springhill (DL4/BtH14)** taking into account the architectural heritage importance and the nature of the development impacts. Lower Middleton House located to the northwest of the WwTP also warrants consideration.

The largest of these is the **Abbotstown House demesne** which has been much altered including through construction of the M50, Connolly Hospital and the NSC grounds and buildings. Change is ongoing due to development of major institutions and associated with the GDD would be largescale temporary works, tree loss and the permanent pumping station. The front of the house is orientated away from the main construction compound and temporary visual impacts are largely avoided. However, there will be inevitably some tree loss in the area, which is overlooked by Abbottstown house due to the orbital pipeline construction. Following inspection and the oral hearing discussion I do not consider that the proposed development would be detrimental to the setting/outlook from the protected structure but it is appropriate that tree loss be minimised. A general condition relating to tree surveys and protection which I recommend below will ensure no significant adverse impacts.

Regarding **Emsworth** this is a building of considerable architectural importance and the associated demesne lands remaining would be traversed for a short distance by the outfall pipeline and compound 7 would be located nearby. I note the comments of the FCC conservation officer which relate to the impact from a temporary construction compound. I agree with the overall recommendation and consider that the temporary impacts would be acceptable and that no modification to works would be warranted. The recommended tree survey condition is an appropriate mitigation measure.

**Springhill House** retains significant architectural interest and would be potentially impacted by the proposed development. In this regard I refer to photomontage VP5, which shows the view from the front of Springhill House across a woodland area. From this location the upper level of the buildings at the Clonsaugh site would be visible. Similar limited views of the WwTP / SHC facility would be anticipated from other demesne landscapes. Confirmation was obtained at the hearing that there would be no visible plumes from the facility, a point which I consider is especially relevant to this house, which is orientated directly in line with the site. I conclude that the limited view of the Clonsaugh site structures would not significantly detract from the view from the house or interfere with its heritage value.

The confirmation of an absence of plumes is also significant in relation to **Lower Middleton House** and due to distance and orientation I do not consider that the demesne landscape would be significantly effected in the long-term.

I note and agree with the comments of the FCC Conservation Officer which largely discount any potential significant impacts on other heritage sites including **Dubber House (BtH 26)** and the **thatched cottage at Dardistown (BtH5)**, which are protected structures.

Regarding the **Old Portmarnock ACA** at Drumnigh Road this would be affected on a temporary basis by compound 8. I disagree with the FCC Conservation Officer recommendation that the impact would warrant re-location of that compound, which in my opinion would not be feasible and would constitute an excessive requirement for temporary impacts. The treeline at this location along the shared boundary with Trinity Gaels should be retained.



Regarding **St Doulagh's church and cemetery (VP10)** adjacent the Malahide road and some distance from the edge of the site, I am satisfied that there would be no significant visual impact including due to orientation and screening.

I consider that the development would not impact on the architectural heritage associated with the **former Belcamp House**, a recorded monument and listed on the NIAH for its historical and architectural character and is almost 700m from the proposed WwTP. No issues were raised by the conservation officer of FCC in connection with this site.

Due to the linear and underground nature of the orbital route and the outfall pipe the impact on architectural heritage is mainly associated with tree loss which could affect the setting of the houses and their associated features. The remaining construction phase impacts involving indirect effects on demesne landscapes are temporary and do not generally warrant specific comment in my opinion.

I conclude that the impact on demesne landscapes and protected structures arising from the GDD is slight, short-term and not significant.

### 8.6.3. **Landscape and Visual impact - Tourism, Leisure and Residential Uses**

The receiving landscape is a highly diverse mix of institutional, industrial, residential, coastal and agricultural uses and contains demesne landscapes, high amenity / recreational areas, major roads and electricity infrastructure. In the EIA section of this report I provide an overview of the landscape and visual impacts. For the purposes of the planning assessment and taking into account the assessment above in relation to the demesne landscapes and the associated protected structures, I consider that there are three remaining key matters which require further comment:

- Other landscape and visual impacts from the Clonsbaugh WwTP / SHC
- Impact on sensitive landscapes, which are of importance for leisure and tourism.
- Tree protection.

In this section I refer to the viewpoints from the photomontages presented in Volume 6, where relevant. A description of these views and what they represent is given in

Appendix A12.1. Some of the views are representative – for example VP3 from the road at Springhill is representative of local community views.

## **Clonshaugh**

At the outset it is relevant to point out that following consultation with the planning authority the site layout provides for generous areas of **naturalistic planting and formal landscaped areas**. The development of this **29.8 hectare agricultural plot** for a major utility will obviously constitute a **major landscape change**. The development of 18m high buildings (including through the construction phase) will give rise to significant visual impacts. The development includes also the **stacks associated with odour control units and a flare stack, which would be up to 25m** in height. In terms of the development proposed, I would describe the proposed development as having a low site coverage, with a high level of soft landscaping and that the buildings proposed are relatively low in scale and of medium height. In terms of the detailed design of the buildings there are some matters which are proposed to be addressed through agreement with the planning authority. I consider this is acceptable as the nature of the elements to be agreed includes minor details such as window positions. The primary elements of the buildings proposed including heights and external finishes are well considered and are described in sufficient detail for the purposes of assessment of the landscape and visual impacts. In the interest of clarity and to allow for further refinement of landscaping and building design I recommend a condition providing for final agreement with the planning authority.

The **existing site character** at present does not significantly contribute to the visual amenities of the area. It is a largely featureless plot of land which is flat and is subdivided into large fields with sections of hedgerow retained. This landscape is not designated as being of high amenity value as the planning authority emphasised during the oral hearing. I consider that no such designation would be warranted. Furthermore, the site is not highly visible from areas to which the public have access. The view to the site **from the main residential areas and from the associated parks** is separated by a band of Scots Pine trees along the R139, by the major road itself and by the bank of lands north of the Malahide Road, which are zoned for hi-technology type development. I consider that VP13 clearly demonstrates that the development would not in any way affect the amenity value of **Belcamp Park** or of the residential areas, which would be sensitive to such changes. VP11 further shows

that even from the area to the north of the R139 due to site screening and the extent of intervening lands there would be no visibility to the proposed development.

The southern site boundary landscape scheme takes account of the future development of the area including the **planned east-west distributor road** and the redevelopment of the HT / IDA lands. At a more detailed level the applicant proposes to provide dense ornamental shrubs, a plinth wall and railing and widespread planting of poplars. I agree with the conclusion of the planning authority that the formal style of the planting proposed at this location is appropriate.

The **landscape scheme proposed for the north, west and eastern site boundaries** is approached in a manner which the applicant acknowledges is deliberately different. The landscape plan proposes organic embankments to provide visual screening. The embankments will be planted with dense bands of hedgerow species. Between the mounds there will be specimen trees planted in wildflower meadow, which would reflect the demesne landscapes to the east. I consider that the general thrust of the approach to these three boundaries is appropriate and that the reservation of these lands and the planting proposed is in keeping with the broad objectives for the area including the greenbelt.

In terms of the **visibility of the proposed development from the western side**, this is limited due to the separation of the site boundaries from the main roads. The development together with the reserved agricultural lands as viewed from the point at which the egress road joins the Clonshaugh Road / Stockhole Lane is indicated in VP1. This is a surprisingly busy road given its width. The majority of receptors would be motorists, who would not be considered to be sensitive receptors. I consider that (at most) **passing motorists** would have a glimpsed view to the development which would be mitigated by the deep buffer zone. From this location where there is a **small cluster of houses** and I agree with observers that there would be clear views to the proposed buildings pending maturation of planting. In the long-term the upper level of the buildings would remain visible and the planted banks would form a more dominant landscape element. I do not consider that the residents would experience unacceptable levels of visual intrusion.

Regarding the unoccupied house to the north, there is an expansive view across the full body of the site and as a result the level of visual change experienced is more

significant. VP4 refers. As planting would mature only the highest building elements and stacks would be visible from this direction. I have referred to Springhill House to the north-east earlier and note that this is an occupied residential development, which I consider would not be materially impacted in terms of landscape / visual impacts by the proposed development. Regarding a nearby new dwellinghouse at VP3 I note that there are a few other houses nearby. The selected viewpoint represents those few other houses (occupied and unoccupied) quite well and I am satisfied that the visual amenity of residents would not be adversely impacted notwithstanding the major landscape change.

Finally I note that the **Clayton hotel** which is represented by VP2 is presently partly occupied on a full time basis. This residential receptor might be adversely impacted by the proposed development and comments to that effect were offered at the hearing. The image presented in the EIAR shows that the development would be visible from upper levels of the Clayton hotel. The landscape in the foreground contains a suburban character dominated by the road and roundabout and the petrol filling station. The mid and far distance are presently of rural landscape (cottages, agricultural and horticultural buildings and large fields) with sea views at the horizon. The recently constructed substation is also a significant element. The Board will note the horizontal sub-division in the colour scheme of the proposed development. I agree with the applicant that this is effective in minimising the visual impact of the development as viewed from this distance and height. I also consider that while the poplars from this direction would add to the incongruous nature of the development in the landscape (but are appropriate in the long-term) they would also serve to screen the development.

Regarding **views from sensitive receptors to the south of the R139** including Cara Park these houses are 700m minimum from the site and there is extensive boundary screening and an intervening road. No significant adverse impact arises.

Having regard to all of the above I consider that the landscape and visual impacts associated with the development would not adversely impact on the landscape of the area in terms of the residential amenities of the area.

## **Tourist and Recreational amenities**

A number of specific matters are referenced in the submissions of Bord Failte and individual observations and are considered below.

**Bord Failte notes the importance of various tourist attractions** including country demesnes and protected structures (including Belcamp House and Dubber Castle and others) and notes the importance of the mitigation measures particularly at the WwTP site. While all of these add to the cultural heritage value of the area and consequently to its tourist value and potential, I consider that none are major tourist destinations in themselves. Furthermore, having regard to my conclusions on the limited extent to which they might be impacted, I consider that this is not a matter which should overly influence the assessment of this case. I note the conclusions of Bord Failte in relation to the overall development and its merits. I concur with the comment in relation to the mitigation measures, which would follow as a requirement from any permission.

Third parties refer particularly to the **historic importance of features in the area**, particularly associations with Grattan, Markievicz and Swift and others (including the site of Belcamp House) and the first east – west transatlantic flight (Velvet Strand). Having regard to the nature of the development I do not consider that the historical associations would be diminished by the development, which does not directly impact the relevant areas on a long-term basis. Notwithstanding the proximity of the site of Belcamp House, I consider that the evidence available indicates that its setting would not be adversely impacted. Any future tourist related development would not therefore be impeded by the proposed development in my opinion.

There is also a widespread objection by large numbers of observers to the fact that the **Clonshaugh site is visible from the flight path**, from T2 at the airport and from what is allegedly an **emerging hotel cluster** to the west of the site, adjacent the Clayton hotel, which is stated would also be adversely affected. Elected representatives referred to this area at the hearing. The visibility of the main element of the GDD project from planes arriving in the country is deemed to be unacceptable as it would detract from the green image of the country by its industrial character and its large scale. The wastewater treatment plant / sludge hub centre would be visible from the flight path as planes come in to land. Obviously only a small proportion of

passengers would have a view and then only for a very short time period. The large facility would not remove any valued landscape assets and it would replace an area of commercial agricultural use. I cannot see why visitors would have any objection in principle to a modern wastewater treatment plant at the edge of a capital city and I do not accept that this is an issue of significance.

I consider that similar arguments refer in relation to the **view to the site from the airport including T2**. In the EIAR VP8 refers. The Clonshaugh development would not be highly visible except from elevated locations such as the top of an elevator in T2. It is necessary to add that there is so much existing intervening urban development of similar character that the proposed Clonshaugh WwTP / SHC would have an insignificant impact.

I have earlier discussed the **Clayton hotel and VP2**. While there is reference to this area being an emerging hotel district there is currently only one hotel in situ and there is no development plan or other designation of this area for hotel uses. I consider that there is some merit in the applicant's position that the hotel market would focus on airport-related stays.

Overall, in terms of the impacts of the proposed development on tourist amenity I consider that there is no evidence that the development would in the long term detract significantly from any particular tourist amenity or from the attractiveness of the area for tourists or detract from the image of the country.

Regarding **recreational amenity assets** which are likely to be affected by the proposed development there are a range of direct and indirect impacts, some of which are significant and adverse but also are short-term being related to the construction phase. I consider that the area which would be most affected would be the **coastal zone where the traffic management measures and the works generally are likely to deter visitors** from the area around Baldoyle Bay estuary and the car park which is adjacent the southern end of Portmarnock beach. In addition Board Failte has referenced the **R106 as a main entry point to Malahide**, while also noting that there are alternative access options. I consider it unlikely that construction traffic congestion would significantly deter visitors to Malahide village or to the Castle. There would however be additional congestion and delays. I am

satisfied that for major events including concerts at Malahide Castle visitors can be accommodated on other routes.

At **protected views along Golf Course Road and Coast Road** there would be short-term and limited impacts on the visual amenities. I do not consider that this would be a significant impact as the compounds would be on the landward side.

In the main the **beach users** from the more urban parts of Portmarnock will not experience any alterations in terms of use of the northern end of the strand. The works mainly involve tunnelling under the strand. There will be some nuisance associated with the development of compound 10 but beach access would be maintained. Observers have referred to the use of public roads for parking during peak summer periods and state that this will be interrupted. I consider that parking restrictions cannot be ruled out pending a traffic management plan being finalised. However, in my opinion this would not be likely to significantly diminish the value of the coastal area for recreational purposes even in the short-term.

At the **sports grounds at Abbotstown** direct impacts upon the recreational assets associated in particular with cross country running will be experienced. These running routes can be re-designed for the period. Traffic through the site will not directly impact other sports facilities and I consider that indirect impacts would not be significant. At the **ALSSA facilities** at Santry a narrow strip of sports grounds will be impacted also for the pipeline route for the short duration of the works and pending restoration. This is on the edge of the grounds and continued use may be feasible.

Regarding the **recreational uses of the sea including for daily swimming**, kayaking, diving and similar activities I consider that these will not be affected in view of my conclusions above relating to marine water quality impacts. I have concluded elsewhere that there would be benefits in terms of water quality.

Regarding the site of the **RBSF**, it has already been significantly altered and amended. While it contains natural and visually attractive elements, these would not be highly evident to passing motorists on the adjacent road or to residents of nearby houses. Motorists viewing the site from the elevated N3 would have a very brief and glimpsed view only.

Regarding the site of the **Abbotstown facility** I am satisfied having regard to the nature of the nearby hospice use, the limited number of occupants at any one time

(up to 40), many of whom are day patients, the limited outlook from the building and the design of the proposed pumping station, that the proposed building subject to appropriate fencing and planting of the boundaries would not detract from the visual amenities of the facility to such a degree as to warrant further action / amendment to the proposed scheme.

### **Tree Protection**

A proposal to submit a preliminary tree survey, which could be followed with an on the ground survey was made at the hearing. Based on my inspection and the documentation presented I consider that the Board may conclude that the main impacts are on relatively immature species, which are of limited landscape or ecological value. The value of a detailed tree survey at this time would be limited and is not warranted in my opinion. The applicant in previous submissions has committed to protect trees and to replant where their removal was required, thereby fulfilling the requirements imposed under policy NH27 of the development plan. In general I consider that the applicant's approach is acceptable and any matters arising are appropriate to be addressed by condition, which I have previously referenced.

### **Conclusion**

In conclusion having inspected the area and considered the submissions of the observers and the applicant I consider that the development would be acceptable in terms of landscape and visual impacts affecting residential receptors and protected structures and on landscapes and protected views and would accord with the development plan.

## **8.7. Roads, traffic and infrastructure**

The development would be located within and likely to impact on an area containing major roads and rail infrastructure and which is already heavily trafficked. In particular, the location of the development in the area to the north of the M50 and close to the junction of that motorway with other major roads, which already suffer some peak time congestion means that traffic impacts constitutes a significant issue in this case.



I consider that the main issues arising relate to:

- Protection of existing and planned roads and transport infrastructure.
- Construction traffic impacts on the road network.
- Entrance sightlines and road safety issues.
- Operational traffic impacts.
- Mobility management and other issues.

#### 8.7.1. **Protection of existing and planned roads and transport infrastructure**

The protection of the existing road network and of existing and future public transport is briefly considered here and also dealt with elsewhere in relation to the topic of 'material assets'. The EIAR clearly describes the measures which have been undertaken in the protection and avoidance of adverse impacts on road and rail, including the planned metro lines and the following are noteworthy in my opinion:

- The applicant has shown evidence of route planning to avoid impacts on existing and planned infrastructure and utilises a narrower construction corridor where appropriate to minimise impacts on infrastructure.
- An Engineering Specialists Report for Crossings has been prepared and there will be widespread use of trenchless techniques.
- Pipelines are at distances agreed with the relevant authorities in terms of required vertical separations at crossings of railway and roads.
- Consultation with TII and FCC and Iarnrod Eireann will be continued (OH-25).

I consider that it may be concluded that the development would not adversely affect the existing roads or prejudice the provision of future public transport. The use of trenchless crossings of roads minimises some traffic congestion issues and reduces safety concerns but a detailed assessment of the traffic impact is nevertheless warranted and is set out below.

Regarding proposed road improvements in the area the issue of most concern to some observers, particularly Gannon Properties, relates to a future road which is planned to be developed to the south of the WwTP / SHC site. The planned road is the **Malahide Road realignment scheme (or East West Distributor Road, EWDR)**

and will involve improvement of the junction between the R139 and the R107 and includes the construction of a link road connecting the R107 Malahide Road and the Clonshaugh Road and a **further road linking it to the R139 (the north-south link)**. The oral hearing discussion between FCC, Irish Water and representatives of Gannon Properties was fruitful. Based on that discussion I consider that the following may be concluded:

- There is a high level of understanding and co-operation between the planning authority and the applicant on this matter and the GDD design and layout make suitable provision for the future road.
- The representatives of Gannon expressed concern about the timelines in the delivery of the EWDR (2027). The Board should note that the development of those lands is proceeding from the east (with a limited number of houses). It is not within the remit of this application or the functions of Irish Water to provide more of this infrastructure than is required to serve the GDD project.
- The provision of a two-way road to serve the proposed Clonshaugh facilities is appropriate at this time, and the WwTP site access road can be widened in the future to the required width for the north-south link road. The works for future widening (from 5m to 18m) can occur while retaining operational access to the WwTP.
- Design and construction standard of the north-south link road to be agreed with FCC.
- The proposal for separate entrance and egress to the site should be considered to be a short-term measure as is further discussed below.
- The proposal presented during the hearing to construct a widened culvert, which will allow for the ultimate 18m width road is in the interest of the proper planning and sustainable development of the area. This was a revision to the original proposal which allowed for widening but did not propose construction of the full width culvert for the 18m road (OH-66-4). Sufficient lands for the wider culvert are provided within the CPO line.

- Proposal accords with policy MT41 of the FCDP to seek to implement road improvement schemes including the East-West Distributor Road: Malahide Road to Stockhole Lane.

I conclude that the development will not interfere with the provision of planned roads or public transport and that the construction of the pipeline by trenchless techniques at crossings of road and rail infrastructure minimises impacts on existing infrastructure.

#### 8.7.2. **Construction traffic impacts - GDD Project Elements**

The Clonshaugh site where the majority of development is to be focused is designed with a **one-way left-in from the R139 (JA) and left-out arrangement from the egress (JB) onto Clonshaugh Road at the west** of the site. The local road network including Clonshaugh Road/Stockhole Lane to the west (egress location) is very heavily used and is narrow and poorly aligned.

Another focus of construction works is the **NAC / NSC**. At that location construction traffic will be accommodated by existing junctions at new or upgraded roads, which are heavily trafficked but are also less congested. In the coastal zone roads can be heavily used from time to time in the summer months.

The application submissions include an **outline construction traffic management plan**, which sets out all of the site access points and haul routes along the road network and shows their location in the context of the construction compounds. Use of the working wayleaves and the crossing of all motorway, national and regional and busy local roads by tunnelling reduces the direct impacts through avoiding the need for road closures.

Nevertheless the development of this **major project would give rise to high traffic levels and peak predicted traffic levels** are presented in Table 13.2 Vol 3 for example. Large weekly numbers of HGV movements are associated with the WwTP site (2,750 cars and 438 HGVs), the NFS diversion (196 HGVs), the orbital sewer (450 HGVs), the access shaft (2,520 cars and 226 HGVs), the tunnel under Baldoyle Bay (840 cars and 53 HGVs) and Abbotstown pumping station (220 cars and 50 HGVs). The GDD would generate significant construction traffic across a wide area.

Baseline data was compiled from turning count surveys which were carried out, then adjusted to take account of seasonal variation and yearly traffic growth to determine the background traffic flows for the years to be analysed. For the purposes of assessment the construction project peak period phase 5 (2024) was assessed. Following consultation with FCC the applicant presented an assessment of eight existing junctions (listed below) together with the new junctions at the WwTP site, JA and JB. The significant results of the traffic analysis for the 2024 construction peak is presented below in summary. This overview is based on the information presented in tables 13.6 – 13.15 of the EIAR. The original tables include all data on the various junction arms and the ratio of flow to capacity figures, queue lengths and delay times and present the 'no construction' traffic levels for 2024.

<b>Junction</b>	<b>Performance during peak construction period</b>
J1 – Clonshaugh Road roundabout.	Marginally higher peak hour queues result.
J2 – R139 / Clonshaugh Road roundabout. Currently over capacity arms B and D. Arm A not over capacity – RFC under 0.85 and short queue lengths.	Small increase (0.88RFC) on Arm A in PM peak. No other significant changes.
JA – egress from Clonshaugh site onto Clonshaugh Road.	Small queues and short delays at the site egress – no extra queues on Clonshaugh Road - exiting traffic will not have priority.
JB – left-in entry from Malahide Road R139, which has two lanes both directions and footpaths.	No delay anticipated.
J5 – R139 / R107 Malahide Road – existing signalised crossroads. Currently over capacity on all arms with average delays of 22 mins presently predicted to rise to 42	The peak construction phase would result in a temporary maximum increase (of 0.171) in the PM peak on one arm. Typically would add a minute to delays.

minute average delay even without construction by 2024.	
J8 – R106 Coast Road / R123 Moyne Road. By 2024 capacity predicted to be exceeded at Moyne Road arm in AM peak.	Adding in the construction traffic additional temporary increase in RFC of 0.035 at the Mayne Road arm in 2024. The other arms will operate within capacity with and without construction.
J9 – R106 coast road / golf links road priority junction.	Junction will operate within capacity with small queues and delays in park hours in 2024.
J10 – R106 coast road / station road three arm mini roundabout. Currently all arms are over capacity.	At most the additional of construction traffic results in a 0.001 increase RFC on all arms.
J11 – R843 Snugborough Road / NAC signalised priority junction. Existing capacity issues now and in 2024 without construction.	Development would increase delays from 1.27 mins to 1.31 average. An increase of 0.0007 degree of saturation in 2024 at most. (DOS value of over 1.0 indicates it is over capacity).
J12 – R843 Snugborough Road / priority junction. Used only for major events.	Not to be used for construction.

The selected junctions comprise a suitable geographic spread across the area most affected and in my opinion are appropriate in that the focus is on roads close to the Clonsaugh site, at the NSC / NAC and in the coastal area, thus including narrow roads and significant junctions. I am satisfied that the assessment took into account permitted projects which have the potential to impact the road network in terms of **potential cumulative impacts**, which include Dublin airport runway, development at NSC and Connolly Hospital, bus rapid transit projects, Metro lines, Ringsend WwTP upgrade project and Malahide Road realignment scheme. In general minimal potential cumulative impacts on traffic are anticipated as a result of these projects as

they will not overlap in timescale or will not generate significant traffic in the vicinity of the GDD. Table 13.1 outlines the individual developments including the Ringsend WwTP upgrade but does not reference the RBSF.

In summary it may be concluded based on the assessment which I consider is thorough, that the **development will impact five of the 10 assessed junctions which are or will be over capacity**, and which will remain so during the peak construction period. The significance of the construction process impacts in accordance with EPA criterion based on the temporary increase in 2024 (at most and for four junctions only) a Slight Negative Effect. I consider that this conclusion is reasonable based on the figures presented and the criteria. It is important to acknowledge that traffic impacts in the vicinity of the Clonshaugh site will impact the area for about three years. However, the use of trenchless crossing greatly alleviates the potential impacts.

I refer to **mitigation measures set out in section 13.11.1**, which include detailed construction programme, scheduling of deliveries outside of peak traffic hours and liaison with relevant authorities and stakeholders. These measures, which will be subject of further agreement with the planning authority will ensure that the effect of traffic generated in the construction phase including its impacts on local residents and schools and houses is minimised to the extent possible. The agreement of the detail of measures with the planning authorities is acceptable. I disagree with observer comments that it excludes members of the public.

I note the submission of the applicant that there are no anticipated abnormal loads and that it is intended to **comply with the DCC HGV Management Strategy**. Further in response to comments of DCC the applicant has referred to the commitment to undertake pre construction and post construction **visual pavement surveys and to remedy** any relevant damage. A condition on this matter is recommended.

Subject to further consideration of the cumulative impacts and in relation to peak construction phase and its impact on traffic levels, I consider that it is demonstrated that while the works will take place in an area which will be increasingly congested, the construction traffic would not in itself contribute to that congestion to such an extent as to be considered to be contrary to the proper planning and sustainable

development of the area. The GDD development is therefore acceptable in terms of construction phase traffic impacts. I separately refer later to specific safety issues relating to vulnerable users.

### 8.7.3. **Construction traffic impacts from RBSF and interactions with GDD**

The site of the RBSF is quite separate from that of much of the GDD project. The information presented in Volume 4 of the EIAR refers. The site adjoins the R135 at a location close to the N2 at a location to the south of Kilshane Cross and north of a slip road to the N2. This regional road terminates at the substation to the south. The slip road from the N2 is indicated in Volume 3 as a construction access route for the orbital pipeline, a location close to trenchless crossings of the N2 and two regional roads. The slip road also serves to provide access to Huntstown facilities. As such this is an important area from the point of view of the construction of the GDD and the RSBF and serving other major developments. In addition, this is an emerging warehouse/employment area which is anticipated to change considerably in the next two decades due to the building out of 182 ha of zoned lands. All of this serves to put the junction of the N2 and R135 in context in terms of its critical nature.

The development of the RBSF site would be in two phases and the **second phase between would largely overlap with the construction phase of the remainder of the GDD**. The interactions between the two major projects in terms of traffic generation was presented by Mr Cannon at the hearing and in Volume 4 of the EIAR (OH-31). Mr Cannon confirmed the concurrent traffic impact from the operation of Building 1 of the RBSF would coincide with the construction of part of the orbital sewer (at access point 4) for a duration of about 10 weeks, adding about 9 HGV in and 9 HGV out movements from the GDD orbital construction to the 4 HGV arrivals and 4HGV departures from operation of Building 1. He noted in addition that construction of the orbital sewer section near the RBSF would precede the construction of Building 2.

Regarding the roads junctions which would be affected during the construction phase, I consider that due to proximity to the N2 it is acceptable that the traffic assessment focused on the narrow area nearby. In the table below I present some information relating to the two most constrained junctions (Kilshane Cross and Elm Road roundabout) and the traffic impacts for 2024.

Junction	AM Peak	RFC	Delay (sec/veh)
Kilshane Cross R135 signalised	Without project	1.007	178
As above	With project	1.010	181
Roundabout	Without project	0.831	24
As above	With project	0.918	34

I consider that it is clear from the above extracted data, which comprise the worst case scenarios and the most congested junctions that the development would further impact on junctions which are already at or near capacity as defined by the accepted standard of 0.85 RFC for instance. The increased delays which are those which can be attributed to the project would be described as slight.

Mitigation measures for the construction phase include:

- Details construction programme aiming to avoid coincidentally high volumes of traffic using the same roads where possible.
- Deliveries scheduled outside of peak traffic hours.

In relation to the construction phases and taking into account the cumulative impacts, which I am satisfied are fully addressed in the EIAR and at the hearing, it is evident that while the development would contribute to overall traffic congestion at some junctions in the area, the contribution to that congestion would not constitute a very significant impact on the area or the functioning of the road network.

#### 8.7.4. Road safety issues

The works impact on a number of areas, which may be used for emergency access or by pedestrians and cyclists. I consider that **road safety issues** are of particular concern in the following respects:

- Requirements to maintain emergency access at Connolly
- Impact on residential areas



- Works in the vicinity of places of education or recreation including the coastal roads.

In overall terms it is appropriate and necessary to point out that the highest standards of safety are required to ensure the safety of vulnerable road users in the construction of the development in particular. Finalisation of a detailed CTMP and compliance with safety legislation will ensure that all feasible safety measures will be put in place and procedures followed, which should reduce risk to the lowest levels. I refer below to specific parts of the GDD and RBSF developments moving from west to east.

Regarding the specific impacts on Connolly hospital I note that there has been considerable engagement between the HSE Estates Department and the applicant, including in relation to the matter of **not impeding the 'Blue Routes'** during the construction of the development. The emergency vehicle routes will be maintained due to the installation of a large length of pipeline to be constructed by trenchless techniques. As such I am satisfied that the proposed construction phase would not impact on the operational requirements of the hospital in terms of emergency traffic.

Regarding the **recreational use of lands at NSC**, construction works will be accessed by way of the NAC Snugborough Road entrance and an entrance off the L3090 to the east. There are footpaths and signalised crossing points at or close to these junctions. At the hearing in response to a question Mr Cannon justified the selection of the northern of two possible entrance options onto the L3090, including on the basis of the availability of a southbound right hand turning lane. The selected entrance location has the advantage of less land ownerships being involved in addition and it is currently used on occasion. There is a signalised junction to the south for local residents and for general pedestrian crossing. The health and safety issues to be managed at the campus are broad and extend beyond traffic safety measures. I consider that the proposals will ensure that traffic safety is maintained and vulnerable users protected.

The **lands in the vicinity of the RBSF** generate little activity by vulnerable road users. As such traffic safety issues are largely restricted to vehicular traffic. Nevertheless in relation to the safety of such users the details of the access to the RBSF have been the subject of a recommended condition relating to footpaths. I

agree in principle with condition no. 5 subject to a minor modification to the wording, which was suggested by Irish Water (OH-27-2). I note however that the Board did not apply any such requirement under 301798-18. Having regard to the minor nature of the works to be undertaken and the separate powers of the planning authority, I conclude that this condition would not be warranted and the matter can be otherwise resolved.

Regarding a concern of observers it is noted that there are **no proposals to use Baskin Lane** to the north of the WwTP site in connection with construction or operation. It is perhaps necessary also to point out that the nature of roads in the vicinity of the proposed WwTP site including Stockhole Lane / Clonshaugh Road are such that they would not be frequently used by many residents for cycling or walking.

A **review of existing vulnerable road users amenities** confirmed the limited footpaths and cycle lanes present along the R139 where the WwTP site entrance would be located. A footway will be installed along the proposed access road, frontage to the site and internal roads within the proposed WwTP to facilitate vulnerable road users. The applicant considers that severance due to the GDD is imperceptible as marginal changes in traffic flow are unlikely to create or remove severance. In relation to the entrance and exit to the WwTP site from the R139 and the question of traffic management, the **possible signalisation of the entrance junction** needs to be further considered due to the considerable distance between signalised junctions, the high residential population, and the likelihood of pedestrians crossing this heavily trafficked regional road. At present there is a large distance between suitable crossing points but there are also few destinations which would generate crossings by pedestrians. In the absence of officials from Dublin City Council at the hearing this matter was not progressed. Pending the outcome of the final road safety audit I have no further comments on this specific matter. Because of the importance of this matter I recommend a **condition requiring finalisation of the road safety audit** and implementation of its recommendations.

I agree with the suggestion made at the oral hearing on behalf of Gannon Properties that in the **long-term the in-out arrangement** including an entrance at Stockhole Lane / Clonshaugh Road **should be eliminated** in favour of use of the East-West extension route as the sole entry to the site. The Board may wish to consider a condition in this respect, noting that the relevant local authority for the R139 is Dublin

City Council. However, in the EIAR it is clearly stated that the junction from the R139 which will operate as a left turn entry only priority junction to the WwTP site will be omitted should the remainder of the Malahide Road realignment scheme be constructed. I take this as a commitment to be implemented in the long-term. However, the matter is of importance and I consider that a condition should be attached.

The main points which arose in the road safety audit to date were considered in the entrance design according to the applicant's submissions. Account was taken of **DMURS but it was not strictly applied**. I consider may not be unreasonable in the circumstances of the regional road, but all conclusions should be further tested under the finalised road safety audit. There are also emerging proposals for a bus lane along the R139 which will have to be considered. In the event of incidents along all routes and junction access and egress, suitable measures will be put in place including emergency diversions.

The applicant states that the developed boundary treatments will ensure that **required visibility splays** are maintained and suitable arrangements will be made for gates and for access to Craobh Chiarain GAA club and in the future to accommodate the new substation onto the north-south road. The applicant also indicates that the requirements of DCC including the provision of an area for HGVs (3 no.) to wait off the road carriageway are complied with in the design. I consider that the aspects of the development are acceptable.

I note that witnesses for Gannon also called for a more **efficient use of public expenditure**, referring to the long section of the egress road to Stockhole Lane, which ultimately will be closed off. In the present circumstances I consider that this option provides for the safe construction and operation of a major facility, is a feasible alternative and is acceptable.

**Mitigation measures of particular relevance to safety include:**

- Restrictions on construction activities during drop-off and peak collection times in the vicinity of schools.
- Liaison and communication strategies including informing of and of scheduling of events and avoidance of clashes with local events.

- Appropriate signposting.
- Outline construction traffic management plan to be finalised.

Having considered the various submissions I am satisfied that there are no road safety issues in this case which would warrant a refusal of permission or a significant alteration to the development and the proposal is acceptable in terms of traffic safety.

#### 8.7.5. Operational traffic impacts

I consider that the conclusions presented for the operational phase traffic associated with the GDD may be summarised as follows:

- Operational phase traffic is of less significance than construction phase.
- All existing junctions presently operating within capacity expected to continue to operate within capacity. JA and JB (WwTP site entrance and exit) to operate below capacity.
- **The most significant impact as a result of the project will be the addition of 35 vehicles to the R139 in the PM peak**, which will result in increased delays at the Clonshaugh roundabout junction (J2) in the peak hour by 40 seconds (onto existing 22 minutes delay).
- Other junctions including **J2, J5, J10, and J11 currently operating over capacity will experience further capacity issues** as traffic grows with or without the development of the project.

Neither the observers nor the planning authority have provided any information which undermines the basis for the above conclusions and I consider that they should be accepted.

I note that nearby residents have referred to the operational phase traffic including from the **importation of sludge and the transport of biosolids**. There would be no capacity issues as a result of the development at the egress (Junction A). Amenity effects would be perceptible to a very small number of houses at the Stockhole Lane / Clonshaugh Road side of the WwTP and to the few houses in the immediate vicinity of the RBSF. The traffic and particularly the HGVs would add a small amount to the existing traffic passing by houses between Junction A and Clonshaugh Road

roundabout, all of which has been fully detailed in the EIAR. I consider that the long-term the development of a single entrance onto the future EWDR would largely relieve the likely impacts on some individual houses, but I note that this is some years from realisation.

The RBSF access requires further comment. In full operation in 2040 the level of traffic which would be anticipated at the RBSF would be 70 HGV arrivals and departures. The **N2 northbound slip road exceeds the theoretical carrying capacity** of 1.0 RFC in all scenarios at that date in the AM peak. The **Kilshane Cross signalised junction** theoretical carrying capacity is also exceeded in all scenarios at that time. Based on information presented including tables 13-22 and 13-22 of EIAR Volume 4, I am satisfied with the conclusion that the proposed RBSF component would result in an imperceptible impact in 2040. In this regard I refer to the separate consideration below in relation to the proposals for a special contribution, which shows that there is a need an upgrade of this junction even in the 'do nothing' scenario.

In conclusion I consider that the operational phase of the development in the vicinity of Clonshaugh and at the N2 junction serving the RBSF would add to traffic congestion but the associated traffic impacts would not be significant and would not warrant a refusal of permission or a significant alteration to the proposed development.

#### 8.7.6. **Mobility management and other issues.**

In view of the distance from bus stops and the relatively low level of employees I consider that the requirement for a **Mobility Management Plan** to promote sustainable forms of development might be added as a condition only on the understanding that its implementation is likely to be delayed. The applicant's comments note the absence of bus stops along Clonshaugh Road or near the entrance at the R139 and 2 km distance from Junction B and 4km from Junction A to the nearest bus stops. The number of staff will not be sufficient to provide a feeder bus service, Irish Water states. The predicted staffing levels at the WwTP site will be 25 staff members for the first shift, 10 in the second shift and five in the third shift. At Abbotstown the pumping station will have two staff per day for general maintenance. I agree with the applicant that the 4 km distance existing bus services would prove

impractical for use by employees but also consider that it is likely that the existing situation will be improved. I accept the point made regarding a feeder bus.

I note that **mitigation measures for the operational phase** set out in 13.11.2 include measures to encourage sustainable modes of transport, which may include taxis or commuter tickets and car sharing options and scheduling of shifts to avoid peak traffic flows. Covered cycling parking will be provided to allow for a maximum of 10 bicycle spaces. I recommend that a **MMP be agreed** with FCC and any such plan could be reasonably targeted to address existing conditions and to evolve as the public transport environment changes.

#### 8.7.7. **Conclusion**

I conclude that the proposed construction phase and operational phase traffic impacts have been appropriately considered by the applicant and that no significant adverse impacts which would warrant a refusal of permission or significant alteration to the proposal are anticipated. The development provides in particular for the minimisation of congestion and hazard and protects existing and planned roads and public transport infrastructure.

#### 8.8. **Flood risk**

The Flood Risk Assessment (FRA) in Volume 3B of the EIAR and Chapter 17 of Volume 3 and Volume 4 and the RFI document present the case on behalf of the applicant. The applicant focuses on the WwTP and APS as the infrastructure which is most vulnerable to being adversely impacted by flooding and on the potential downstream increases in flooding. I note the comments made in the FRA in relation to potential groundwater related flood impacts and concur that these can be discounted.

The development, which comprises essential infrastructure is classified as '**Highly Vulnerable**' under the **Flood Risk Management (FRM) Guidelines** and in the event of it being located in Zone A or Zone B would require a Justification Test. Observers have commented that parts of the development is at risk of flooding and that the flood risk assessment is not adequate.

The following comprise the most significant matters raised by observers in my opinion:

- Observers' submissions in relation to the **Mayne and Cuckoo** adjacent the WwTP site, both of which are stated to have a history of flooding. Submissions of elected representatives and others refer.
- Submissions of Ms Joyce Kemper to the hearing that **construction compounds 9 and 10** would be in an area which is subject to coastal flooding.
- The issues relating **Abbotstown Stream** made in the HSE comments including the report of Roughan O' Donovan engineers under the CPO application.

I assess the matters arising under the following headings:

- WwTP site.
- Coastal zone and construction compounds.
- APS and Connolly hospital.
- Pipelines and the RBSF.
- Conclusions.

#### 8.8.1. **WwTP site**

The **WwTP site** falls within the catchment of the Mayne River. The north of the site drains to the Cuckoo tributary at the site boundary, the south to the main channel of the Mayne and a small area to another tributary to the east. The Mayne enters the sea at Baldoyle estuary where there are European sites.

The FRA presents data from known historical flood locations. There is no data relevant to the WwTP site. The **nearest recurring historic flood locations** is at Stockhole Lane about 1.1km to the north-west of the site. The FRA also relies on data from the 2011 Fingal East Meath study published in 2011 and a useful map is extracted from that study with the WwTP site superimposed. I accept the applicant's comment that these maps are more accurate than the PFRA maps. I have also

examined the maps on the relevant website (floodinfo.ie) and taken that information into account.

In relation to observers' comments relating to the flood risk to the WwTP site from the **Cuckoo Stream**, this small stream is acknowledged by the applicant in the FRA to be the most significant flood risk to that facility. The applicant notes that while part of the **WwTP site is within the 100 and 1000 year fluvial flood event areas no infrastructure will be within those parts of the site**. As all development (other than landscaping) at the WwTP site will be within Flood Zone C, I consider that there is no requirement for a Justification Test. I consider that the development adheres to the requirements of the FRM Guidelines including the avoidance of areas prone to flooding as the first step where possible. From examination of the information presented by the applicant and the most up to date information in the public realm I consider that there is no likelihood of fluvial flooding of the proposed infrastructure from the Cuckoo stream. The available shows no historical flooding issues at this location and no predicted flood zones which would affect the vulnerable infrastructure.

In view of the proposals outlined to ensure **attenuation of surface water to green-field** rates there is no risk that the development would contribute to downstream flooding. In addition, the development due to its location and layout has avoided impact on any existing floodplains, which also mitigates against downstream flooding.

I conclude that there would be no adverse impacts related to flooding as a result of the WwTP / SHC site development.

#### 8.8.2. **Coastal flooding and construction compounds**

Leaving aside the matter of coastal flooding, which is addressed in the next paragraph, no observers have raised issues of concern in relation to construction phase project elements, which if subject to flooding could give rise to adverse environmental impacts. I do not consider that there are any operational stage coastal flood risks. Ms Sabrina Joyce Kemper and other observers have raised issues relating to the **potential flooding of construction compounds 9 and 10** to be positioned in a coastal area which is prone to flooding and close to European sites. I



agree that this warrants assessment. I do not consider that there are any other significant issues relating to coastal flooding.

The EIAR describes the location of **compounds and temporary storage areas and launch pits as being in low risk zones** in terms of flood potential. Prevention of interference with any overflow routes as a result of suitable positioning and storage of materials during construction is also referenced. With the exception of compound 10, I accept that the construction phase elements of the development will not be subject to flooding or exacerbate or give rise to downstream flooding. Regarding the observers' comments I consider that **Compound 9** would not be in an area prone to flooding being in a Flood Zone C.

The RFI of Irish Water submitted to the Board acknowledges that **Compound 10 is located in an area that is prone to flooding**. It is in Flood Zone A as shown on Figure 1 in the Flood Risk Assessment Report (Appendix A17.1). I consider that the requirements for a justification test are not relevant except in the circumstances of the provision of vulnerable infrastructure, which is not especially relevant in at this location.

Measures which will ensure no impact as a result of flooding events are set out in paragraphs 45-48 inclusive of the Irish Water RFI submission. Mr O'Keeffe contributed to oral hearing discussion on this matter. Mitigation measures outlined include selection of piling method to ensure hydraulic sealing of shafts and measures to ensure that all storage of bentonite, solvents and hydrocarbons are above the most extreme flood risk area, if necessary by development of raised areas. I am satisfied that the compound and works areas can be satisfactorily contained and protected and that potential contaminants can be suitably positioned above the flood level. I consider that the proposed mitigation measures are realistic, feasible and sufficient to address potential risks associated with potential pollution emanating from any flood event at the site of compound 10. I am satisfied that this is an construction phase engineering matter which has been sufficiently described for the purposes of EIA and AA and that the Board can be satisfied that it would not give rise to significant pollution events after mitigation.

Subject to the mitigation measures proposed in the EIAR including in the OCEMP and the SWMP I am satisfied that the construction phase would not result in adverse effects related to flooding.

### 8.8.3. **APS and Connolly hospital issues.**

Both the **Abbottstown pumping station site and Connolly Hospital** through which the orbital sewer will traverse are within the catchment of the Tolka River. These lands are significantly elevated above watercourse. The concern identified by Roughan O'Donovan in the HSE submission is that the FRA has not taken sufficient consideration of **Abbotstown stream, which has been diverted and has constrictions** which have resulted in flooding on the hospital campus. It is considered that flooding may arise in a 1 in 1000 year fluvial event and that more detailed modelling would provide a more accurate and better estimate of flooding including flood extent, flood depths and overland flow. I note the recommended condition contained in that report which is that a detailed 2D flood assessment be carried out on Abbottstown stream prior to commencement of any works and provided to HSE Estates – this should include details of any proposed remedial measures to avoid potential flooding of either the Abbottstown pumping station or the construction compounds. As an alternative it is recommended that the culvert be significantly upgraded.

The applicant has no objection to complying with the request of HSE and indicated that a condition to this effect would be acceptable. This could further consider the claim that a compound and access shaft are vulnerable to flooding. However, it is also clearly stated by the applicant (and I consider that this is a reasonable conclusion) that the use of trenchless techniques will ensure that the proposed works will not exacerbate any flooding in the vicinity. I accept the applicant's statement in this regard and consider that there is no requirement for further flood assessment for the purposes of this application. I also note that any enlargement of any culvert would be subject of AA screening. I consider that the development is acceptable as proposed and that there is no likelihood of significant flood risk associated with Abbotstown Stream and related to the proposed development.

In terms of the **potential flood issues at APS**, I consider that due to its small size and the proposal to attenuate to green-field rates, the issue of potential downstream

flooding is not significant. The main concern in the assessment of this case should be to ensure that the proposed infrastructure itself is not vulnerable. The pumping station site is not within or close to an area of historical flood event other than one associated with major road networks, which I consider is not relevant due to the separation distance and topography. The site is within a Flood zone C area, which is a suitable location for highly vulnerable development including essential infrastructure.

I conclude that the works at Connolly Hospital lands and the APS would not give rise to adverse impacts relating to flooding.

#### 8.8.4. **Pipelines and RBSF.**

In relation to the remainder of the proposed **orbital sewer route and the outfall pipeline route**, these project elements would not be deemed to be vulnerable to flooding. For the most part in addition these pipelines pass through areas which are not prone to flooding, the exception being at watercourse crossings locations. In order to avoid any potential flood risk issues at these locations two main proposals are presented in the EIAR, namely use of suitable trenchless construction techniques and location of construction sites / launch pits beyond the floodplain of the summer peak flood. Due to their relatively small scale the presence of the pipelines would not be likely to contribute to downstream flooding. As such I consider that any identified concerns relating to flood events along the pipeline location are not highly significant issues in this case. I conclude that there are no likely significant flood risks associated with the pipelines.

Regarding the **RBSF site** I consider that due to its location in Flood Zone C and having regard to section 4.3.4 of Volume 4 of the EIAR in relation to historic flooding patterns, there is no significant likelihood of flooding of the infrastructure proposed for the site. In relation to the impact of the development on downstream areas the proposal to attenuate surface drainage to green-field run-off rates with an allowance for climate change will ensure no increased risk of flooding elsewhere. I note a proposal to remove localised depressions and topography within the site, which will address any potential pluvial flooding. I accept the conclusions presented by the applicant that there are no flooding impacts predicted as result of the RBSF.

### 8.8.5. Conclusions

I consider that the flood risk associated with the proposed GDD and the RBSF when considered in accordance with the Flood Risk Management Guidance is acceptable. The development is for the most part located in areas of low flood risk and I have addressed above any issues relating to other locations. I conclude that any environmental impacts can be suitably mitigated by the measures described by the applicant.

I note the recommended conditions presented in the FCC Chief Executive's report, which are set out in paragraph 55 of the RFI. The applicant has indicated no objection to these detailed measures which include reference to Codes of Practice, CIRIA standards and to the obtaining of permission for works from OPW. The Board does not normally attach conditions relating to third parties or Codes of Practice. I consider that it is appropriate that a general condition be attached that the applicant agree proposals for surface water drainage with Fingal County Council and Dublin City Council. I have examined the recommended planning conditions of the conditions Drainage Division and do not recommend attachment of any further of these requirements, which are largely covered by separate procedures. I consider that this standard condition will address the issues raised by DAA in relation to changes to surface water and the potential that open areas could constitute a risk to aircraft.

In conclusion I am satisfied that the development would not result in increased flooding downstream of the site and would not give rise to adverse ecological consequences or effects on material assets including in the construction phase. The development is not itself vulnerable to flooding.

### 8.9. Community Benefits Scheme, Contributions and other matters

In the application and oral hearing submission the applicant proposes to address the matter of community benefits by:

- A **social procurement initiative** to provide local employment opportunities.
- Measures to ensure SMEs on **social enterprises benefit** from delivery of the infrastructure.

- Provision of a **permanent wastewater education zone** at Clonshaugh.
- In-kind support for local projects that seek to enhance or protect the local natural environment, which would be a continuance or expansion of funds and campaigns which it already supports.
- **Habitat management proposals** for the site of compound 10.

Observers have referred to part of the environs of the project as highly disadvantaged. The local population which would benefit from any measures or fund which might be established are mainly resident within the DCC administrative area. In relation to the natural environment assets are in the jurisdiction of FCC. DCC have made no comment on this matter in the report of the Chief Executive and was not present at the hearing.

The applicant's position is that following a **community needs analysis study** measures which relate to education and employment are most needed in the area, which is well served with sports and community facilities. Mr O'Boyle gave evidence to this effect at the hearing. Mr Hamilton reiterated the nature of the infrastructure investment in a major public project. He stated the employment of a **community liaison officer** during the construction phase is only part of that person's role, which will include coordinating with all stakeholders to ensure effective implementation of the community benefit scheme.

It should be pointed out that at the hearing there was no significant enthusiasm amongst members of the public for the proposed community benefit scheme or any similar measures as they sought to oppose the development overall or particular aspects. A number of the written submissions and officials of Fingal County Council sought to secure enhanced measures and to revise the applicant's proposals.

I agree with the general thrust of those submissions that the wastewater education facility is not one which is targeted at the local community rather is one which has a regional remit, attracting school tours from a wide area and probably on a once-off basis. However the facility could target local schools subject to particular programs being put in place as part of its operation. Mr Hamilton describes the **wastewater education facility** as maximising benefits for communities in proximity to the proposed development. I recommend a condition to the Board that the operation of the facility include measures to target schools in the local area.

I note the suggestion that Sillogue NDA lands be acquired as a community gain for the purpose of it being managed as a habitat. I do not recommend this suggestion to the Board.

Regarding the payment of the financial contributions the suggestion of Fingal County Council's officials was that an **annual sum in the amount of €10,000** be payable towards supporting water conservation and habitat improvement projects within the project catchment area, which would be of benefit to the local community(OH-80). This suggestion was countered by Irish Water on the basis that it is a public service provider and secondly that it would have to be demonstrated that some amenity have been affected. (OH-79) The applicant was less hostile to the argument also presented by FCC in relation to payment of **a once off capital contribution to 0.0001% of the stated capital cost**. I consider that such a payment is reasonable in the context and scale of the construction of the GDD element and that this matter should be addressed by condition.

Regarding the **general financial contributions scheme** it is the position of Fingal County Council that payment of contributions in respect of any office building within the WwTP plant (500 sqm) and at the administrative building within the RBSF (110sqm) is required and would be in accordance with the Draft Water Services Guidelines for Planning Authorities. In the Board's decision relating to wastewater treatment plants at Ringsend and Arklow (301798-18 and 302556-18) neither attracted a contribution under the DCS. I proposed to follow that approach in my recommendation.

FCC has provided a recommended wording in relation to a special contribution condition and set out the rationale for the payment in the amount being **€15,000 out of the total overall cost of €202,950 towards upgrading a slip road** which is will be impacted by traffic from the RBSF connecting with the N2 (OH-80). Payment of a proportion of the overall amount is reasonable. I note the agreement of the applicant at the hearing in this respect. I refer to the Board's decision under 301798-18 which attached a requirement for a special contribution in respect of the upgrade and signalisation of the R135 and the N2 North Bound Slip Priority Junction. The amount was to be agreed with the planning authority. In the interest of consistency I recommend that the same approach be undertaken in this case.

The applicant has indicated a willingness to agree with the planning authority a name for the Clonshaugh facility. A **suitable name** may assist in properly marketing the facility including in terms of the proposed wastewater education resource. I therefore recommend a condition to this effect.

Various submissions refer to the **cost of the project**. In relation to financing the most up to date information was provided by Mr Laffey who gave a cost estimate of €500 million and who referred to the Irish Water Strategic Funding Plan 2019-2024 as the basis for measures to implement the objectives of the WSSP. That figure is broadly in line with the GDD project cost listed on the Capital Tracker on the Project 2040 website. Mr Laffey noted that the project has been approved by the board of Irish Water as an urgent priority and that sufficient resources will be available in a timely manner for the project. The observers made certain references to cost over runs on different largescale projects, which I do not consider are relevant to the Board's consideration of this proposal. Observers also queried the **cost benefit assessment**. In my opinion these are not matters of relevance to the determination of the Board.

Observers consider that implementation of the proposed development under a **Design, Build and Operate** approach is an inappropriate means of progressing the development. This approach to delivery of major infrastructure has been commonly applied and I consider that there is nothing to suggest that it is fundamentally flawed. The design parameters are clearly established in the application.

Regarding the Biosphere and the question of whether there is a requirement for **further consultation with UNESCO**, I have considered this matter further since the hearing and confirmed my opinion that there is no legal requirement for formal notification. In response to discussion regarding procedures relevant to UNESCO Mr Murray noted that the Biosphere steering committee is chaired by Dublin City Council who made a submission on the GDD. Mr Harte noted that a number of other bodies have an input into the steering group and reiterated that the committee had not been notified, noting that there are only 112 such sites in the world. In response to whether the Biosphere would be threatened Mr O'Keeffe noted that the Ringsend discharge is into the core of the Biosphere. I consider that the further assessment of construction and operational impacts later in this report addresses the protection of

the ecology of the Biosphere and that there are no other matters arising and no need for formal referral of the application.

I consider that there is merit in the recommended condition 2 of FCC which refers to the preparation of a comprehensive document setting out all mitigation measures and recommend a condition to that effect. As the document would be primarily relevant to FCC I recommend that the planning authority be given the responsibility of agreeing its detail.

FCC requested that a pedestrian pathway be provided at a particular location along the route of the orbital pipeline and condition 17 recommended by FCC is to that effect. This refers to the developer liaising with the HSE to **provide for a cinder type public path along the pipeline between Ch 0,500 and CH 0,700**. The particular Local Objectives of relevance is 116 on Sheet 13 and it refers to the provision of greater public access to publicly owned lands and the establishment of walking trails linking Blanchardstown village, the river and the Abbotstown lands. The submission of Irish Water (OH-76) on this matter refers. I agree with the applicant that the tests for planning conditions as set out in law would not be met by a condition to this effect. No element of the proposed development results in a requirement for this condition. In addition, the issue of the legal powers for undertaking of compulsory acquisition refers. Therefore notwithstanding the merits of the proposal and the development plan objective I do not recommend a condition along these lines.

## 8.10. Conclusion

In relation to the planning issues arising I would highlight the following conclusions:

- The need for and nature of the proposed development is justified and the objective to develop the GDD including the Sludge Hub Centre and the Regional Biosolids Storage Facility is embedded in a range of policy documents.
- The proposed development complies with the development plan including the zoning objective.
- The development is required to ensure sufficient capacity for planned growth.



- Alternatives were sufficiently considered are not shown to be preferable.
- There has been adequate consideration of the site selection, including the location and length of the marine outfall. The assessment involved professional expertise, a multi criteria analysis and site investigations.
- Air and odour modelling undertaken as the basis for assessment, which I consider can be relied on showed that there would be no exceedances of air quality standards.
- The adoption of an extremely conservative odour threshold at the Clonshaugh site, the RBSF site and the site of Dubber OCU and the design of the abatement measures will ensure that odour will be contained and treated, will be dispersed in the atmosphere and will not detectable beyond the boundaries of the sites.
- Marine water quality impacts related to the construction of the project would be localised and short-term.
- The proposed development will comply with the Urban Wastewater Treatment Regulations, would not give rise to significant adverse water quality impacts in the context of the Surface Water Regulations and would not give rise to deterioration in the status of waters under the Water Framework Directive.
- The development by reason of the level of treatment and the location of the marine diffuser will ensure retention of 'Excellent' water quality status at bathing areas and is acceptable in the context of the Bathing Water Regulations.
- Following the addition of UV treatment there will be no possibility of endangering the commercial shellfish industry in this area and the development will comply with the Shellfish Regulations.
- The impacts on archaeological sites have been considered in detail and can be reasonably mitigated.
- Significant landscape change would be envisaged in places but the design and layout of all major facilities has been carefully considered. The development would be acceptable in terms of landscape and visual impacts

including on residential receptors and protected structures, landscapes and views and would accord with the development plan.

- The proposals in terms of roads and traffic are acceptable. The development would not give rise to a traffic hazard subject to further consideration of the entrance to the Clonshaugh site under the finalised road safety audit and implementation of any recommendations. The proposal is compatible with the planned roads layout at Clonshaugh / Belcamp. The increases in traffic and congestion are acceptable.
- The development would not give rise to an unacceptable flood risk and would comply with the Flood Risk Guidelines recommendations. Temporary risks are amenable to mitigation and have been fully considered.
- In principle and in terms of the planning issues arising the proposal is acceptable.

## 9.0 Environmental Impact Assessment

### 9.1. Introduction

This section of the report comprises an assessment of the likely significant effects of the project comprising the GDD and RBSF components. It should be read in conjunction with remainder of the report and considered in the context of the nature and character of the area and its environmental assets.

As an application under Section 37E of the Act and having regard to the thresholds for EIA there is a clear legal requirement for EIA in this case.

The requirement for EIA arises as the project is of a type and scale identified under Schedule 5 Part 1 of the Planning and Development Regulations 2001-2018 as amended. The type and class of project is:

Waste water treatment plants with a capacity exceeding 150,000 population equivalent as defined in Article 2, point (6), of Directive 91/271/EEC.

The application was submitted after 16th May 2017, the date for transposition of Directive 2014/52/EU amending the 2011 EIA Directive.

The Directive was transposed into Irish legislation on September 1st of 2018 under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018, **after** the application was received.

The legislation relevant for the purpose of considering whether the information contained in the EIAR is adequate is A94 of the Planning and Development Regulations 2000. I am satisfied that the information contained in the EIAR complies with Article 94 of the Planning and Development Regulations 200, as amended, and the provisions of Article 5 of the EIA Directive 2014.

## 9.2. **Compliance with Legislation**

In compliance with legislation the requirement that the development submit an Environmental Impact Assessment Report is met in this instance as described below.

The EIAR comprises the following documentation:

Volume 1: EIAR Non-Technical Summary

Volume 2: Introduction (Part A – Report and Part B – Appendices)

Volume 3: Proposed GDD Project (Part A: Report and Part B: Appendices)

Volume 4: Regional Biosolids Storage Facility (Part A: Report and Part B: Appendices)

Volume 5 Drawings (Part A: Proposed GDD Project and Part B: Regional Biosolids Storage Facility).

Volume 6: Proposed Project Photomontages.

I consider that the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors: (a) population and human health; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape and it equally considers the interaction between the factors referred to in points (a) to (d).

In accordance with Article 5 and Annex IV, the EIAR provides a description of the project comprising information on the site, design, size, characteristics and other relevant features of the project. It also provides a description of the likely significant effects of the project on the environment and a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.

The EIAR includes a non-technical summary of the information referred to in Article 5 (a) to (d) and additional information specified in Annex IV relevant to the specific characteristics of the overall project and project type and to the environmental features likely to be affected. In this regard, the EIAR provides a description of the evidence used to identify and assess the significant effects on the environment. The EIAR provides an adequate description of forecasting methods/ evidence used to identify and assess the significant effects on the environment. Any difficulties which were encountered in compiling the required information are set out under the respective environmental topics which were individually assessed.

The features of the project and/or mitigation measures envisaged to avoid or prevent what might otherwise be significant adverse effects on the environment are set out under each environmental topic considered. The potential impacts and mitigation measures are presented in each chapter and are summarised in Chapter 24 of Volume 3A and in Chapter 17 Volume 4. A summary of residual impacts is presented in Chapter 25 of Volume 3A and Chapter 18 of Volume 4. Where proposed, monitoring arrangements are also outlined. Environmental interactions and cumulative impacts are addressed in Chapter 23 of Volume 3A and in Chapters 16 and 19 of Volume 4.

In relation to the documentation presented I consider that it is comprehensive and well founded. I particularly note the comprehensive nature of site specific investigations, the availability and use of other high quality data and use of recognised techniques and guidance. I am satisfied that the EIAR has been prepared by competent experts.

My assessment below is based on the information provided by the applicant, including the EIAR, the reports and submissions made in the course of the

application by the planning authorities, prescribed bodies and observers and the applicant's responses.

I am satisfied that the information provided in the EIAR is sufficiently up to date and is adequate for the purposes of the environmental impact assessment to be undertaken.

### 9.3. **Public participation**

In terms of the public participation element of the process I note that many objectors refer to the large volumes of material and to their scientific nature. It is stated that the information presented makes public access to and understanding of information unreasonably difficult. I consider that the nature of the material submitted was unavoidable and reflects the complexity of the project and the diversity of issues involved. In this regard I note that a number of the topics which are required to be considered under EIA could not have been properly addressed without the undertaking of very detailed site-specific analysis and the provision of expert reports on the same. All of this adds to the volume of the applicant's submission, which I agree is significant when considered in its totality. The submission of the non-technical summary fulfils the legal requirements which aims to aid public involvement. I also note that in the main observers' interests would be focused on a limited number of issues. I consider that the clear layout of the EIAR together with the executive summary at the start of every chapter facilitates understanding.

In terms of access to public information I note the efforts by the applicant in the lead up to the making of the application, which involved a number of events throughout the area affected and various rounds of consultation with members of the public and with other stakeholders. Observers have queried the number of events particularly in the Clonsaugh area. I am satisfied that the applicant has complied with all statutory requirements and comment that those requirements have been exceeded.

In relation to the period after the application was lodged I note the omission of certain volumes of information, which came to the applicant's attention and the Board was notified of such occurrence. At that point the documents which had been omitted were advertised by way of further public notice and a period for further

consultation was opened. In addition I note that all observers (and all objectors to the CPO) were notified by letter and comments invited.

In relation to the receipt of a response from Irish Water to observations (and objections), I note the objections of some observers that copies of this information was not made available to them prior to the oral hearing. The parties were however all advised of that information prior to the hearing, which I considered adequate.

Regarding the request to live stream the oral hearing, I rejected this request on a number of occasions in line with normal procedures.

The very active engagement of elected representatives on behalf of their constituents is noted. The presence of officials of Fingal County Council throughout the hearing added to the information available.

Regarding participation in the oral hearing I consider that the applicant made significant efforts to engage with the public and to assist observers. These included an offer to host a technical workshop on the proposed UV treatment and the daily posting of oral hearing presentations onto the website.

The EIAR sets out general commitments to continue engagement, notably including the appointment of Community Liaison Officers.

I conclude that the consultation process was thorough and certainly was well in excess of the legal requirements.

#### **9.4. Description of the Proposed Project**

The project comprises the following main elements:

- A 500,000 PE Wastewater Treatment Plant and a co-located Sludge Hub Centre at a 29.8 hectare site at Clonshaugh
- A 13.7km orbital sewer from Blanchardstown to connect to existing drainage networks and to transfer load to the WwTP
- An Odour Control Unit (OCU) at the interface between the rising main and the gravity sewer elements at Dubber
- A North Fringe Sewer (NFS) diversion to the proposed WwTP
- Abbotstown pumping station in grounds of National Sports Campus

- A 11.3km outfall sewer including land and marine sections terminating at point 1km north-east of Ireland's Eye
- Ancillary infrastructure including access roads and landscaping
- A Regional Biosolids Storage Facility at an 11.4 hectare site at Newtown, Dublin 11.

Apart from the RBSF the project is generally described as the GDD project.

The development as described in the EIAR was amended by the addition of UV treatment, which was introduced at the oral hearing.

The GDD is to be developed in a single phase and there is no indication of plans to develop further phases at this time, although previous proposals were for a higher PE level and the project incorporates space for expansion should that be required. There is no requirement for the Board to assess any future phases.

The RBSF will be constructed in two phases and phase 1 will be operational at the time of construction of phase 2 of the RBSF and of the GDD.

## 9.5. Alternatives

The EIA Directive requires that an EIAR contain a description of the description of reasonable alternatives studied by the developer, which are relevant to that project, including, as appropriate, an outline of the likely evolution of the current state of the environment without implementation of the project (baseline scenario), as a means of improving the quality of the environmental impact assessment process and of allowing environmental considerations to be integrated at an early stage in the project's design.

I refer to the earlier sections of this report which deals with this matter. I have considered all of the written and oral submissions made in relation to alternatives. It is relevant to note that the principle of developing a large wastewater treatment plant in North County Dublin has already been subject of SEA and that the follow-up studies which emanated from that process were undertaken and formed the basis of the project before the Board.

Volume 2A of the EIAR considers the main alternatives in relation to the overall project including the RBSF. It describes the strategic scenarios, GDD alternative

sites assessment and the route selection, the alternatives of the outfall location, the potential for reuse of treated wastewater, alternatives to biosolids disposal including thermal processes and landfill and alternative sites for the RBSF.

Throughout the documentation there are more references to alternatives which were considered in terms of detailed design. In all I consider that there is ample evidence that all reasonable alternatives relevant to the project were considered and that environmental considerations were integrated throughout all stages of the project design. In my opinion, it is clear that the selection of the alternative chosen has taken into account environmental effects of the project.

The do-nothing scenario is considered in the EIAR and rejected on the basis of five Major Negative Impacts under the Environmental Objectives of Biodiversity, Population and Human Health, Water, Air Quality and Material Assets. The assessment of this scenario is a legislative requirement under the EIA Directive. In this case this option cannot be taken forward due to the Major Negative Impacts which would arise and its effect on the curtailment of regional growth and its rejection by the applicant is appropriate.

I consider that the legal requirement to provide a description of the reasonable alternatives studied by the developer has been met.

#### **9.6. Conclusion on EIAR Compliance with Legislation**

I am satisfied that the information provided in the EIAR is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment to be incorporated into its decision on the planning application. I am also satisfied that the information contained in the EIAR complies with the provisions of Article 3, 5 and Annex (IV) of EU Directive 2014/52/EU amending Directive 2011/92/EU.



## 9.7. Likely Significant Effects on the Environment

### 9.7.1. Introduction

In this section, I consider the direct and indirect significant effects of the development against the factors set out under Article 3(1) of the EIA Directive 2014/52/EU:

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

In the assessment below I address the two project components under the above factors.

I have carried out an examination of the information presented by the applicant including the written reports, drawings and the EIAR and the information submitted during the oral hearing. I have considered all of the written submissions made by the planning authorities, prescribed bodies and observers. A summary of the main issues raised during the course of the application has been set out at earlier and in the appendix of this report. I have visited the site on the dates indicated on the front cover.

In the assessment of impact significance I follow the terminology adopted in the EIAR.

### 9.7.2. Population and Human Health

#### 9.7.2.1. Population

##### **Introduction and Existing Environment – GDD and RBSF**

The EIAR provides detailed descriptions of the area including the location of residential settlements, of economic resources and recreational amenities. A range

of data is presented in relation to the relevant factors and amenities and facilities are mapped.

The main residential areas in the vicinity of the overall project include houses at the site boundary of the RBSF, Dubber Cottages close to the proposed OCU, traditional two-storey housing estates at Belcamp and Darndale about 800m from the WwTP / SHC site and to the south of the R135, a number of Traveller community residential areas including at Cara Park which is over 600m from the southern boundary of the WwTP / SHC site and close to the NFS diversion and access road and various locations close to the proposed orbital pipeline, individual houses which are scattered throughout and a number of apartment developments concentrated on the area to the east of the WwTP/SHC site. Residential use of the hotel to the west of the proposed WwTP / SHC site was noted at the hearing. There are extensive lands identified for future development notably the Gannon holdings to the east of the WwTP/SHC site.

A community infrastructure audit reported that sporting facilities and amenities are adequately provided for across the project area notably at Abbotstown and Portmarnock coast but also throughout the region. This includes highly valued amenities such as Velvet Strand and major national institutions such as the NSC and NAC. Local amenities of more importance for daily recreation use by residents include GAA clubs, golf clubs and parks such as Belcamp Park.

Tourist amenities in the area include major infrastructure such as the airport and associated uses including hotels. National sporting infrastructure also has a tourist dimension. Assets of tourist importance include Malahide Castle and other houses and landscapes of cultural heritage value.

Economic activity reported in the EIAR includes airport related uses, several business parks and a variety of small businesses which serve the needs of the local population including Kinsealy riding centre. The planned expansion of airport related economic uses is noted. Marine related activities include commercial fisheries focused on shellfish and recreational uses of the marine environment including kayaking, sailing and diving.

The study area contains significant healthcare uses including St Michael's House at Belcamp which is under 600m from the WwTP site, 200 m from the proposed access

road. Connolly Hospital and St Francis Hospice Blanchardstown would be 450 m to 220 m from the proposed APS and compound 1. Cappagh National Orthopaedic Hospital is 400 m from the proposed orbital pipeline. Community infrastructure close to the study area includes cemeteries. Educational facilities include a number of primary and secondary schools and a third level college.

### **Potential Impacts - RBSF**

The provision of the RBSF facility which would support residential and economic development is considered to be a Significant Positive Impact on Population. Otherwise as suggested in the EIAR the category 'Population' is not especially pertinent to the RBSF site and all of the matters arising are best considered under 'Human Health' and other particular topics.

There are houses close to the RBSF site at the eastern site boundary. While the movement of construction and operational phase HGVs would be perceptible as would the scale of the completed RBSF facility I consider that impacts would be Slight and not generally Significant, having regard to the existing and emerging character of the area and the nature and position of the development. Uses in the area are largely industrial and commercial and there are no recreational or tourist amenities of significance close to the RBSF site. As such the impact on resident, working and visiting populations would not constitute Significant Impacts as a result of landscape changes or impacts on amenities.

Positive effects which are noted include employment (direct and indirect) but the number of posts would not be described as a Significant Impact.

### **Potential Impacts - GDD**

I consider that the Significant Impacts on population from the GDD are:

1. Positive long-term impacts to population through the provision of facilities to support residential and economic development.
2. Indirect positive effects from the protection of water quality and dependent recreation facilities.
3. The impact due to road closures and diversions at three local roads where open cut techniques are to be used and where residential properties are

affected for about 3 days. The impact would be Significant Negative and Temporary.

4. The impact on Kinsealy Riding Centre through which the pipeline traverses. Due to the nature of this facility involving horses and children the impact of construction through these lands would be Significant Negative and Temporary.
5. A major alteration to the access arrangement to Craobh Chiarain GAA will be required in connection with construction of the WwTP/SHC site access road. This impact would be Significant Negative and Temporary.
6. Impacts to the grounds of the NSC and NAC due to construction traffic and the direct impact on the national cross country track through which the orbital pipeline passes. This is a Significant Negative Temporary Impact.
7. The impacts on some individual houses, including as a result of construction phase working relating to tunnelling. This is a Significant Negative Temporary Impact.
8. Provision of new infrastructure which will support development of new residential and employment areas. This would be a Significant Positive Long-term impact.

The EIAR concludes that the impact on a waste recycling facility by reason of short term (1-2 day) road closure to facilitate open cut construction is a Significant Negative Temporary Impact. A traffic light will be installed to regulate HGV movements. Even prior to this mitigation measure I would not describe this as Significant as described in Table 6.1 in view of the nature and location of the facility and access road.

Construction employment in the order of 300 jobs and about 40 jobs in the operational period is described in the EIAR as a Slight Positive Impact. I consider that this is a reasonable conclusion, I note that some of the employment is specialised and that in this context there may be validity to the observers' claim that benefits will go abroad. The economic benefits to the area will however largely remain.

On the general issue of disruption to social and commercial activity due to road works and traffic measures I note that it is proposed that the majority of roads are to be crossed by trenchless techniques thus minimising impacts on resident and visiting populations.

Bord Failte has commented on the possible consequences due to traffic congestion in terms of access to Malahide but there is an alternative route. The possible avoidance of the Portmarnock area in its entirety as suggested is not supported in the traffic assessment undertaken and is unlikely to deter a high proportion of users due to rail access as an option for visitors travelling from the city in particular.

Disruption to access to recreation facilities at Velvet Beach include noise and visual intrusion and car parking impacts. These would be Neutral and Imperceptible Impacts in my opinion as the activities / resources themselves could still be enjoyed and access to Velvet Strand maintained.

In general construction and operational traffic will add to traffic levels at junctions which are already congested notably at the Clonshaugh Road area in the operational phase. While there would be a negative impact at that location the overall impact including in the construction and operational phases is described as Neutral and Imperceptible as the project GDD traffic is proportionally small. Due to the level of congestion arising at a particular junction this remains a significant effect.

Impacts on commercial and recreational fishing during construction due to temporary loss of grounds is described in the EIAR as a Slight Negative Temporary Impact. I agree with this conclusion. There will be a particular impact along the working corridor but other fishing areas will be available and the duration is short. The long-term impacts are considered to be Neutral and Imperceptible.

Use of the sea environment for recreation such as sailing may be affected by construction of the marine outfall which will take place in the summer months. However I note that there are no direct impacts on access to fixed infrastructure and it is considered that impacts on recreational uses can be managed and will not result in significant adverse impacts.

Impacts on tourism related transport infrastructure would be described as Neutral and Imperceptible. I consider that there would be minor adverse effects on the views from hotels near the site pending maturation of planting. The visual and traffic

disturbance impacts related to the construction phase would have a Slight Negative on tourist amenities including hotels and beach access. In the overall scheme of things I consider that the impact on tourist amenities would reasonably be described as Slight, Negative and Short-term. I reject the idea that there would be significant effects on any emerging hotel areas or on the image of Ireland due to views from the air / airport of the site of the WwTP / SHC in construction of operational phases. I consider that there are no relevant Significant Impacts on tourist amenities.

Disturbance to agricultural activities is addressed under Agronomy / Material Assets.

### **Mitigation and Residual Impacts**

I am satisfied that the mitigation measures presented to address the Significant Negative and Temporary Impacts on three local roads serving residential development and involving diversions to ensure that access is maintained at all times results in a Slight Negative Brief residual impact.

To address the impacts on Kinsealy Riding Centre it is proposed to limit works so that peak hours are not impacted and to minimise use of large machines, alarms etc. The conclusion presented in the EIAR is that these measures would reduce the Significant Negative and Temporary Impacts to Moderate Negative and Temporary Impacts. On balance I consider that this is a reasonable conclusion.

The changes to the Craobh Chiarain GAA access involve mitigation including a permanent re-routing of the access and would not directly interfere with use of facilities and would give rise to a Neutral and Imperceptible Residual Impact level it may be concluded.

At the NSC there are options for re-routing courses including the national cross country routes. The area would be impacted by a substantial construction phase including compound 1 and there would be considerable use of the grounds of NSC and NAC by HGVs. This would be mitigated by a CEMP including traffic management. The result would be a Moderate Negative Temporary Residual impact.

I consider that the tunnelling impacts affecting a house at Golf Course Road is amendable to mitigation only involving relocation of residents for a few days. I consider that this would remain a Negative Significant Temporary Residual impact.

I consider that due to the level of additional congestion arising at a particular junction this remains a significant effect.

#### 9.7.2.2. Human Health

##### Overview

In addressing the topic of human health for the purposes of EIA the requirement, which is set out in national guidance is to consider human health in the context of other factors in Article 3(1) of the Directive.

##### Potential Impacts - GDD

I consider that the potential Significant Impacts on Human Health from the GDD are:

1. Noise and vibration impacts on a small number of sensitive receptors and on the hospital and hospice during construction would constitute Moderate to Imperceptible Impacts. Other facilities which are likely to be impacted will not be occupied during evening or night time. Impact duration would be Short-term.
2. Aspergillus is of concern where there is largescale construction and where vulnerable communities are present, and could affect medical facilities close to compound 1 in the construction phase. It is not otherwise of concern to human health. I consider that this is a Potential Short-term Significant Impact.
3. Due to the protection of public water supply and the marine environment the development would be associated with Significant Positive Impacts.
4. Positive impacts through the provision of wastewater infrastructure.

In general as set out in the EIAR the main significant impacts due to noise are those which arise at night-time and due to **use of tunnel boring machines on a 24 hour basis**. The impacted receptors include **Connolly hospital West Wing** where there are occupied wards and the careful location of machinery is set out as a mitigation measure. Other potential noise sensitive receptors including units of Connolly hospital, schools and St Michael's House will not be occupied at night. The EIAR identified the consultation on this matter which has taken place. There is one house (**R35 on Golf Links Road**) where night time noise levels will be in excess of the 30dB<sub>L<sub>aeq</sub></sub> criterion for indoor rooms at night and for a period of more than a few days

(up to ten days is likely due to tunnelling through the night) and where relocation of residents would be the only effective mitigation.

In general I consider that the construction noise impacts are reasonable and are achievable. At the hearing Fingal County Council reiterated its support for condition 13 of its recommendation. This includes measures relating to Connolly hospital and APS and other sensitive receptors. There is no significant divergence between the applicant's approach and the requirements of the planning authority. The recommended general condition to agree a noise and vibration plan provides for these details to be addressed by the planning authority.

The observers comment on the potential effects from **operational noise** from Dubber OCU. I note the separation distance between this small facility and the nearest houses, which is in the order of 350m at which distance I do not consider that there would be any significant noise impacts and no human health impacts. I consider that the same conclusion may be drawn in relation to the noise impacts at Baleskin Reception Centre which is 250m from the noise source.

I have considered the potential for significant adverse **marine water quality impacts** in the operational phase (including in the event of plant failure) relating to bathing waters or shellfish water. Such events could to give rise to indirect human health impacts. My conclusion is that there is no likelihood of such effects, hence my position as above that public health impacts would be positive.

Significant indirect effects on **drinking water quality** at private wells during construction, which could impact human health can be discounted in view of proposals to monitor any potentially affected wells and to provide alternative sources. I am also satisfied that the pipeline location and construction will eliminate leakages which could impact human health.

The SHC provides a new facility for disposal of sludge arising from maintenance of septic tanks and thus **indirectly protects aquifers used for drinking water** and protects human health. This is a Moderate Long-term Positive Impact.

I have outlined and assessed the predications for air quality under the construction phase and based on the good site and traffic management and compliance with the TA Luft standards for dust and particulates I consider that there is no likelihood of significant adverse health impacts. I refer to the EPA guidance, which recommends



consideration of health impacts in terms of adopted standards, which set limits for the purposes of health protection of vulnerable people.

Localised elevated dust emissions and traffic related emissions are not ruled out and I note the concerns of observers who testify to particular health impacts amongst family members, including residents close to the WwTP / SHC site. Notwithstanding these factors I consider that it can be concluded for the purposes of EIA that the population would not experience significant dust related health impacts. I refer to Dr Hogan's point also that the standards are set to ensure protection of vulnerable rather than robust individuals (OH-13-26).

I have separately addressed **dust related vehicle emissions** in the construction phase and noted the assessment of NO<sub>2</sub> and PM<sub>10</sub> at various sensitive receptors. I have concluded that there is no likelihood of significant air quality impacts. That was amongst the concerns of Mrs Elaine Jones who referred to the health of individual family members and considered that the matter of vehicle emissions had not been properly assessed.

As **air emissions from the facilities in the operational period** will not breach the AQS I agree with the applicant's conclusion that there will be no adverse human health effects. I have addressed this matter in more detail in the Planning section.

Regarding the observers' concerns in relation to **fungal spores and viruses** including antimicrobial resistant bacteria, I consider that there is no reasonable basis for concluding that there would be significant adverse impacts in the context of the fully enclosed facilities and the high levels of design and treatment. Further I note that one of the main focuses of the observers concern relate to a permitted development and not to the proposed development. In this regard I refer the Board back to the Planning section of my report.

Odour would not be associated with direct health impacts and a very low boundary limit is set in any case. Some observers have raised issues relating to indirect effects and cumulative impacts. I note in this regard that the EIAR also refers to psychological impacts, which are described as Imperceptible. I concur with this assessment.

Regarding other issues which are raised in observations including health issues relating to rodents, these matters are amenable to being addressed by the proposed rodent and pest control plan and would not constitute potential Significant Impacts.

### **Mitigation and Residual Impacts - GDD**

The requirement for mitigation arises in relation to construction noise and Aspergillus. In its commitment to adhere to **guidance on Aspergillus** I consider that the applicant has ensured that there would be no significant effect in this regard. There is also a **potentially significant noise impact** from the works at Connolly hospital. Part of the mitigation for Aspergillus involves maintaining closed windows, which is also identified as a reason that noise impacts predicted will not affect patients (but not as a noise mitigation measure). The particular buildings which are of concern are modern structures, which would be likely to be well provided for in terms of air conditioning. The mitigation which is presented in section 7.5.2 for noise in the construction phase includes that rock breaking and piling at this location and at the house at Golf Course Road would be restricted to daytime hours only. This point was re-stated at the hearing and would be likely to be incorporated in any noise management plan. In the context of the lack of specific objection from St Francis Hospice or Connolly Hospital (HSE) on this matter and having regard to the DPHLG guidance I conclude that impacts arising after mitigation are acceptable. The high background level is also noted at this location and in this context I concur with the conclusion that the measures proposed would reduce the Residual Impact significance to Moderate at this location.

I consider that similar conclusions may be drawn at locations close to houses where 24 hour tunnelling will be required. The **impacts from noise** will be within adopted criteria but at a number of houses there will remain a Moderate or Significant Impact even after mitigation. Prior notification of residents which is proposed would mitigate the impacts. Apart from **re-location of residents of specific individual houses** particularly R35 for the 10 day duration (which has been suggested) there is no further evident means to address this matter.

In relation to impacts which are purely related to vibration the information presented in the EIAR shows that the levels of vibration which are predicted would not result in adverse impacts to property including underground infrastructure. There is a need

however for a **method statement in relation to the operation of medical equipment** at Connolly hospital and I consider that this should be specified to be included as part of any plan to be agreed with the planning authority.

As such there is a Significant Residual Short-term Impact due to noise and vibration. Residual Positive Impacts related to protection of bathing water and shellfish water quality and indirectly due to treatment of sludge in the SHC are likely.

### **Potential Impacts - RBSF**

I address the proposed **land spreading of biosolids** largely in relation to water quality impacts. Any health impacts would be considered to be an indirect effect of the RBSF in the event that water pollution gave rise to health impacts as a result of drinking water contamination or in relation to foodstuffs. I am satisfied that there is insufficient evidence to support any conclusion that there would be significant adverse health impacts including through long-term indirect effects on water and food consumed by humans.

Construction phase noise and dust effects would impact on residential populations near the site but this would be a Short-term Slight impacts as a result of the minor nature of increases in noise and dust. When taken in combination these effects could give rise to Short-term Slight impacts on human health.

Regarding **potential cumulative impacts of the RBSF and Dubber OCU** there is no reasonable likelihood of significant odour impacts such as might give rise to psychological impacts and as such constitute a health impact. I have earlier considered the matter of cumulative impacts and the evidence of Dr Shanahan to the hearing. I consider that there is no potential for significant adverse effects from air emissions including odours including when considered on a cumulative level so as to materially breach the standards for a significant duration.

I am satisfied that there are no other significant adverse effects on human health including in relation to transport of biosolids by road from the GDD site.

The economic benefits arising from employment could be considered to constitute indirect positive impacts on human health through improved access to well-being and healthcare, but it would not be a significant impact.

I conclude that there are no potential Significant Impacts on Human Health from the RBSF. Any impacts would be limited to slight impacts in the construction phase.

### **Mitigation - RBSF**

The measures proposed for the construction stage are centred on preparation and adherence to the CEMP, a traffic management plan and other measures in the EIAR. The Community Liaison Officer will be available to deal with complaints in the first instance and for community consultation.

### **Residual Impacts - RBSF**

I concur with the position set out in the EIAR in relation to residual impacts namely that there would be no significant adverse impacts.

### **9.7.2.3. Conclusion on Population and Human Health – GDD and RBSF**

Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed GDD and RBSF development. I am therefore satisfied that the proposed development would not have any unacceptable significant direct or indirect impacts on Population and Human Health. I conclude that following mitigation the significant effects on Population and Human Health are as described below.

**Positive long-term impacts to population and human health** from the provision of adequate wastewater and sludge treatment and from the provision of biosolids storage capacity to support planned residential and economic growth in the Dublin region while securing compliance with European Directives. Positive long-term indirect impacts to human health from the protection of bathing water and commercial shellfish areas.

Significant negative temporary impacts on population and human health as a result **of noise and vibration and disturbance**. The sensitive receptors which are likely to be impacted include parts of Connolly hospital, St Francis hospice and some individual houses and a school. Potential impacts on Connolly Hospital are minimised through design mitigation measures including the construction of a 1km tunnel to accommodate the orbital pipeline through the campus, by mitigation measures to ensure maintenance of emergency routes and by measures to minimise air and noise effects on the use of wards. Temporary rehousing of residents will be

considered in the case of individual residential properties, in the absence of other mitigation being sufficient. Dust impacts and emissions from vehicles during the construction phase will have a temporary and highly localised impact.

Notwithstanding the mitigation measures proposed, the residual impacts could still be significant albeit localised and temporary in duration.

The adoption of **conservative odour criteria** minimises potential adverse impacts due to odour. The design, implementation and monitoring of odour abatement systems and adherence to the adopted criteria set out in the EIAR and by condition below will ensure that odour emissions do not reach a level that could cause odour nuisance at or beyond the site boundary of any of the facilities.

Operational **traffic** will result in increased congestion at junctions which are already congested and which will be congested at the time of operation of the wastewater treatment plant and the regional biosolids storage facility. The proposed development will add to delays at those locations.

### 9.7.3. **Biodiversity**

In this section I present

- a summary of the baseline environment
- a description of the potential significant impacts
- an assessment of the mitigation and residual impacts

on marine biodiversity, ornithology, terrestrial biodiversity and freshwater aquatic biodiversity as a result of the construction and operation of the GDD and RBSF as relevant.

This section of this report should be considered in conjunction with the Appropriate Assessment section, wherein some of the information to support conclusions is provided.

#### 9.7.3.1. **Marine biodiversity**

##### **GDD**

##### **Overview and baseline environment**

A marine impact assessment in the EIAR addresses potential impacts on the benthos, marine mammals, fish, plankton and water quality and reports on the extensive range of surveys undertaken between 2012 and 2017 including geophysical and benthic surveys of the outfall pipeline (marine section) route, underwater surveys of the reefs at Ireland's Eye and extensive monitoring of harbour porpoise. I consider that the following survey / research results are noteworthy:

- Mapping of Baldoyle Bay SAC confirmed its extent accords with the SAC designation. The marine outfall passes underneath.
- Other relevant sites include Rockabill to Dalkey Island SAC where the diffuser and part of the outfall are located and Ireland's Eye SAC, 800m to the south.
- Marine habitats of importance for wintering birds include mudflats and sandflats, qualifying saltmarsh interests for Baldoyle SAC and rocky reefs.
- Land and boat based surveys confirmed the importance of the area for harbour porpoise. IWDG records show bottle nose dolphin use the outfall pipeline area on a regular basis and year round. Both are Annex II species. Other infrequent cetacean sightings are in Table 9.14.
- Harbour (common) seals and grey seals (qualifying interests of Lambay Island SAC) forage within / around discharge point and breed on Ireland's Eye.
- Underwater noise recording and modelling were undertaken.
- Marine benthos along the outfall pipeline is a diverse but typical population.
- No hard reef features (or other Annex 1 habitats) were recorded along outfall pipeline route (marine section). Inter-tidal and subtidal rocky reef complexes (Annex 1) are recorded on the northern and eastern shorelines of Ireland Eye.
- Highly mobile surface sediments are present at the marine diffuser location. There is high sediment content where reefs at Ireland's Eye are present. There is a low ow concentration of metals, PCBs and aromatic compounds along the proposed outfall pipeline route (marine section).
- Mussel reefs which are along the south and west of Ireland's Eye would be sensitive to smothering and in dense aggregations can be designated as an Annex I habitat. They are not present along the outfall pipeline.

- Key water quality parameters relevant to marine ecology are discussed in section 9.3.5 of EIAR along with the surveys undertaken. Unpolluted status of Dublin Bay (HA09) transitional waters in terms of the Nitrates Directive. Ecological status of the transitional waters at the location of the outfall is presently undetermined but previously was good.
- Otters may occur in the area on occasion especially in Baldoyle estuary but may be discounted as a key receptor for assessment purposes due to the infrequent visits and negligible likelihood of being directly impacted by pollution events. Indirect impacts relating to prey are addressed under the assessment of fish.
- Fisheries interests recorded which are expected to be in the area include Atlantic salmon, sea and river lamprey and various marine fish species including some which are of importance as prey or are threatened or vulnerable (cod, spurdog, sandeels, herring, sprat, plaice and whiting) and of commercial value (notably razor clams).

I consider that the key receptors for biodiversity assessment are:

- The European sites in the immediate vicinity namely Baldoyle Bay SAC, Rockabill to Dalkey Island SAC and Ireland's Eye SAC.
- Mudflats and sandflats and three saltmarsh habitats and rocky reefs, which are important for wintering birds and in their own right.
- Cetaceans (including harbour porpoise and bottle nose dolphins) and seals.
- Marine benthos.
- Fish and shellfish.

### **Potential Significant Impacts**

**Potential significant impacts construction phase impacts** on ecological receptors in the marine environment are discussed below. The significance attributed in the list below is based on the terminology set out in Table 9.5 of the EIAR. The information presented takes into account the oral hearing discussion.

- **Working at the microtunnelling compounds which could impact migratory and juvenile fish, benthos and otter by noise / vibration or**

**pollution**. This is considered to be an impact of **Negligible Significance** due to use of bunded protection, pollution prevention measures and having regard to possible pathways. The comments in the appropriate assessment section relating to the containment of spillages are relevant to the **protection of sandeels** which are important for harbour porpoise and is relevant also to prey for birds. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.

- **Tunnelling underneath the Baldoyle SAC** is further discussed in the appropriate assessment section. There are potential impacts due to **surface air venting or bentonite breakout** which could result in small physical breakages in the saltmarsh or mudflats or small spillages of bentonite. I accept the applicant's evidence that any such occurrence would have a Negligible impact on benthos and fish but may induce some avoidance including by seals and harbour porpoise. Any impacts on saltmarsh habitat in the SAC would affect a very small area and would be of short-term duration but resulting in a **Minor Impact Significance due to the ecological value of the saltmarsh habitat**.
- There is also **potential that noise and vibration related to tunnelling operations would impact benthos, fish, seals and harbour porpoise and other cetaceans**. This is discussed in more detail in the appropriate assessment section in relation to species which are qualifying interests of European Sites and benthos. It may be concluded that **vibration effects would not impact marine benthos or other species**. The detailed underwater noise assessment was not subject of dispute at the oral hearing or in written submissions. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.
- Waterborne noise impacts from the micro tunnelling operation is indicated to be on the **limit of perception for salmon and lamprey** and no significant adverse effect (avoidance or injury) is expected. I accept that vibration associated with the TBM is well below a level which would be perceived by marine benthos. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.



- The **noise impact on marine mammals due to microtunnelling** is likely to be imperceptible to cetaceans and likewise for seals based on the data presented. I note that the Ecological Value assigned in the EIAR to seals is Medium. Ms Joyce Kemper at the hearing reported on the importance of Ireland's Eye for seals based on the 2018 surveys. Attributing a higher importance to Ireland's Eye as a habitat for seals would not change the assessment conclusions presented by the applicant as the EIAR evidence takes into account significant use of the Portmarnock area and the outfall pipeline route by seals. I consider that the **noise impact** which is short-term and of negligible magnitude would be described as of Negligible Significance **except for the harbour porpoise for which a Minor Significance would be attributed due to its ecological value.**
- Dredging in the marine environment - **impacting the benthic environment potentially impacting reefs.** The results of modelling undertaken are reprinted in section 9.4.3 of the EIAR. None of the discharged sediment will impact the reefs at Ireland's Eye. The impact magnitude of Negligible for a short – term duration results in a Minor Impact Significance.
- **Dredging plume may result in a small reduction in the area available to seals and harbour porpoise for foraging** although noise impacts may in any case induce avoidance of the area. Harbour porpoise use echo-location during navigating and hunting and are routinely found in areas of high natural turbidity. Seals are likely to show avoidance if they encounter a plume. **Dredging plume in summary would have a Minor Impact Significance on migratory fish and pinnipeds, on reefs and on harbour porpoise.**
- Dredging through **direct impacts on the seabed would give rise to a loss of habitat for benthos and fish** including sandeel (an important food source for harbour porpoise and also affected by smothering), cod, marine benthos and shellfish including the important commercial species razor clam. The impact of dredging on the codling nursery was addressed at the hearing. Due to the **short-term impact and avoidance and rapid physical recovery of the seabed (OH-32) I am satisfied that impacts would be of Negligible Significance.**

- **Pollution events including from vessels.** The magnitude of such events is at most Negligible and such events would have no more than a **Negligible to Minor Impact Significance** on marine species. That matter was discussed at the oral hearing following which I accept the case made by Irish Water in relation to the dispersal of any pollution to levels which would be inconsequential particularly at or near Ireland's Eye. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.
- Due to the duration of the construction there is **potential for effects on seasonal migration of salmonids, harbour porpoise and nursery fish** species in the area.
- Due to significant noise impacts predicted from the construction of the **interface between the micro-tunnelling and dredged area** (which may require sheet piling or installation of a caisson) and from the **crossing of the existing fibre-optic cable** (which also may require sheet piling), **harbour porpoise, salmonids and pinnipeds may be exposed to potentially harmful noise levels.** The likely impact significance due to noise is Negligible for marine fish and Minor for salmonids. The impact on pinnipeds and cetaceans results in a Minor Significant Impact which will require mitigation to monitor for the presence of the species during these activities.
- **Loss of habitat along pipeline and at marine diffuser.** Installation of the marine diffuser will result in a direct impact on the seabed within the SAC but there are no qualifying interests in this area and the overall impact to benthos will be of Negligible significance. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.
- Noise associated with this activity will be related to the activity of vessels (no piling is anticipated within the RDISAC). **Noise impacts from the construction of the marine diffuser** are expected to be less than that of the dredging activities and of Minor Significance for Harbour Porpoise.

In the **operational phase** the potential significant impacts are:

- Discharge has **potential to affect water quality and shellfish.** The diffuser is located in an area where there is high levels of dispersal in the near field

mixing zone and is designed to enhance dilution. Dispersal is predicted to be by a factor of 20 within 50m and a factor of 33 within 500m. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.

- The **suspended solid load for normal operating conditions will be within the range routinely recorded**. No direct effect on harbour porpoise is anticipated as this species is routinely found in high turbidity shallow waters. In the worst case scenario of highest suspended solids load there would be an almost **imperceptible increase in background turbidity at 500m**. **A radius of 500m would be equivalent to 0.07% of the total SAC**. The modelling also indicates that the **sediment plume would discharge away from Ireland's Eye coastline**. The resulting Minor Impact Significance due to habitat loss for harbour porpoise and Negligible for the reef features is a solid conclusion in my opinion. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.
- The **consequences of a pollution event during the operation under licence of the WwTP would be a Negligible Impact Significance**. I concur with this conclusion. I refer in this regard to Mr O'Keeffe's statements to the oral hearing and to the results of the modelling for process failure as dealt with in the earlier section on marine water quality. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.
- Regarding the **localised predicted increase in DIN at the diffuser** this may lead to increased productivity and attract pinnipeds and cetaceans, resulting in a negligible but potentially beneficial impact magnitude. It is shown in the water quality modelling however that this will not lead to eutrophication. Details of a 20 year benthic monitoring programme of a similar project are reported in the EIAR. Negligible impacts to marine benthos (apart from the immediate vicinity of the diffuser) were recorded, and at a distance of 750m from the diffuser there would be no impact on the reef features. A **Negligible Impact Significance on reefs from the increase in DIN** is a reasonable conclusion. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.

- The operational impacts on different fish species will vary but a negligible magnitude of impact can be anticipated overall including for commercial fisheries. These impacts can be discounted from further consideration in terms of marine biodiversity for the purposes of EIA.

### **Mitigation measures**

The EIAR mitigation measures relevant to this topic are:

- Related to the microtunnelling – avoidance of any discharges, CEMP and other best practice management, volume and pressure management relating to use of bentonite.
- Related to the dredging of the subsea surface – discharge of dredged material only on the flooding tide and monitoring of plume, ramping up of noise, vessel management plan and use of passive acoustic monitoring and marine mammal observers, establishment of safe zone, minimise duration of dredging, stop if sightings by mammal observers, implementation of CEMP, avoidance of discharge or disposal of waste to sea, MARPOL guidance.
- Regarding installation of the marine diffuser – minimise duration of dredging, monitoring of noise and use of marine mammal observers, cessation of works where necessary and ramping up of noise on re-commencement.
- Operational phase mitigation – adherence of targets in EIAR and licence conditions.

### **Residual Impacts**

Subject to the above measures and taking into account the proposals for control of noise and maintenance of water quality, particularly the SWMP and CEMP, I concur with the conclusion of the EIAR that the residual impacts of note would be:

- Saltmarsh habitat impacts due to air break out - Negligible to Minor Residual Impacts.
- Harbour Porpoise impacts from sediment plume during construction – Minor Residual Impacts.
- Migratory fish impacts related to noise and vibration from works at tunnel interface – Minor Residual Impacts.

- Negligible Residual Impacts otherwise predicted.

### 9.7.3.2. Ornithology

#### **Ornithology – GDD and RBSF**

##### **Overview and baseline environment**

In this section I consider the impacts from the GDD on estuarine, marine and terrestrial ornithology.

Due to the distance and the land use at the RBSF site there is no reasonable likelihood of significant impacts on estuarine or marine ornithology. Any relevant ornithological comments are included under RBSF Terrestrial Ecology.

The EIAR has utilised sources of information which are recognised and presented the results of a specific walkover, vantage point and boat based surveys. The timing and methodology authorities is outlined and it appears to me to be appropriate and was discussed at the oral hearing in relation to the Clonsaugh site in particular.

The key receptors identified include Baldoyle Bay SPA and other wetland sites of significance importance for overwintering water birds including Malahide Estuary SPA, Rogerstown Estuary SPA, Skerries Island SPA, North Bull Island SPA, South Dublin Bay and Tolka River Estuary SPA. The baseline environment is described in considerable detail in section 10.3 of the EIAR. This includes a number of tables including a list of species recorded during baseline surveys which are also SCI's of Baldoyle Bay SPA (table 10.6), of other species recorded at this location generally (table 10.7) and the birds listed as being present at Ireland's Eye SPA and Howth Head Coast SPA and recorded during the vantage point surveys.

Farmland birds reported in the area included the Annex I species the Kingfisher at the Tolka. No works are proposed in the immediate river corridor and the area has high levels of activity and noise. In general the breeding bird assemblage is of local importance. There were no agglomerations of winter birds recorded apart from at the coastal areas as discussed at the hearing.

During the consultation phase and in observers' submissions the use of the WwTP site by birds was raised and this was discussed at the hearing. The matters raised included the possibility that migratory bird species from the coast used these fields

for foraging and species identified included Brent geese, oystercatchers and curlew. I am satisfied that there is no evidence to support the original submission in the EIAR which does not attribute any particular ornithological value to this site. I have discussed this further in the Appropriate Assessment section and in the oral hearing summary. For the purposes of EIA I am satisfied that no further comment is needed. At the RBSF site only one species of medium conservation concern (robin) was noted. Snipe which was recorded was deemed likely to be visiting.

### **Potential Significant Impacts**

It was identified in the EIAR and I concur with the conclusion that the key aspects of the project impacts which could give rise to significant effects relate to the following:

- Disturbance/displacement due to land take in the vicinity of the microtunnelling compounds 9 and 10 involving direct habitat loss and working on a 24-hour basis for 18 months duration.
- Visual disturbance related to the above activities and involving construction workers and vehicles and structures.
- Displacement or disturbance due to vessel activity in relation to the dredging of the subsea section and laying of the pipeline. Similarly at the location of the marine diffuser.
- Works at the interface and crossing of the fibre optic cable and maintenance. Involving piling.

Noise related to piling at the proposed microtunnelling compounds which will take place in daytime hours has the potential to impact birds at a distance of 90m from the activity. Within that area is part of Baldoyle Bay SPA and the area of impact would also encroach on the Quiet Zone, which is designated under the Portmarnock South LAP. Surveys which were recently undertaken and are presented in the EIAR indicate that low numbers of birds use these areas. There would be a degree of habituations to noise at this location. Disturbance / displacement effects are therefore not potentially significant in terms of general noise and habitat loss. Piling will take place for two weeks only. It is concluded that a Negligible Impact Significance will result and I consider that this conclusion is supported by oral hearing discussion. The matter is further discussed in the appropriate assessment

section. There is no requirement for further consideration of this matter in relation to EIA.

I consider that there would be no significant indirect impacts on Baldoyle Bay including from any plume or due to impacts on the sandeel population or other prey, which matters are fully considered in the EIAR. The information presented by the applicant is sufficient and this matter does not require assessment under EIA.

**Potential significant impacts on estuarine, marine and terrestrial ornithology** are therefore identified below. This accords with the conclusions presented in Tables 10.15 and 10.16 of the EIAR in relation to estuarine and marine ornithology and with Chapter 11 of the EIAR in relation to terrestrial ornithology.

- **Visual impacts affecting birds in an area up to 500m from microtunnelling compounds** and resulting in disturbance / displacement. The areas which would be affected are large and the number of birds including many species which are SCIs of Baldoyle Bay SPA and Ireland's Eye SPA are high. For these SCI's a Major Impact Significance is concluded. For the other birds found to use the area to be affected but which have a lower ecological value a Moderate or Minor Impact Significance may be concluded.
- **Disturbance / displacement due to piling and vessel traffic associated with the interface and fibre optic crossing and the outfall pipeline work and the marine diffuser construction**, which could affect a range of birds notably SCI's of Ireland's Eye SPA particularly auks and SCIs of Howth Head Coast SPA. The sensitivity of the relevant individual bird species to vessel traffic, the distances from activity where disturbance is likely and the likely presence of the species in the area including on the water during these activities are all outlined in detail. The area of disturbance overlaps with Ireland's Eye SPA. Generally a Moderate Impact Significance.
- Potential for significant impacts on farmland birds during the construction of the GDD and the RBSF. Generally common and widespread species found in surveys.

## **Mitigation measures**

The **EIAR mitigation measures relevant to estuarine and marine ornithology** are:

- Related to the visual disturbance effects at compounds 9 and 10 the erection of hoarding under supervision of an ornithologist and in the appropriate period is proposed.
- Full reinstatement of ecological habitat at compounds 9 and 10.
- Vessel Management Plan as detailed in Appendix A10.2.
- In order to address particular sensitive receptors which could be affected by dredging, restriction on the timing of construction is required – works between April and October.
- Mitigation relating to farmland birds includes suitable timing of vegetation removal, suitable checking, replanting and provision at the site of the WwTP and APS of nest boxes and cavities.
- During construction, no vegetation would be cleared from the site during the bird breeding season to avoid disturbance to nests, subject to results of a breeding bird survey, prior to construction.

I consider that the evidence presented is sound, is based on expert and experienced advice and that the mitigation measures are appropriate and capable of implementation.

## **Residual Impacts**

I consider that it may be concluded that following mitigation measures relevant to the ecological receptors, which are likely to be impacted by the GDD the following summarises the Significance of Residual Impacts.

- Visual disturbance impacts at microtunnelling compounds – Residual Moderate Impact Significance for SCI species and Minor Impact Significance otherwise.
- Vessel disturbance and piling related noise at interface and fibre optic crossing – Residual Minor Impact Significance.



- No Significant Residual Impacts on farmland birds as a result of the GDD, including from the use of the WwTP site.

### 9.7.3.3. **Terrestrial and Freshwater Aquatic Biodiversity.**

This topic is relevant to all elements of the GDD and RBSF.

#### **Terrestrial Biodiversity - GDD**

##### **Overview and baseline environment – GDD**

Regarding terrestrial ecology and baseline conditions:

- 60% of the GDD project is within transitional or buffer zones of Dublin Bay UNESCO Biosphere reserve and the GDD involves tunnelling under a core area of the Biosphere reserve. Qualifying features of European sites are within the zone of influence.
- The project passes under Baldoyle Bay pNHA and close to Royal Canal pNHA (350m to the south at Abbottstown), Sluice River Marsh pNHA (910 m north of outfall pipeline route) and Feltrim Hill pNHA (1.2 km north of the orbital pipeline) and passes through or encroaches into Nature Development Areas (NDAs) and Ecological Buffer Zones (EBZs) identified in the FCDP 2017 and the Fingal Biodiversity Action Plan 2010 – 2015 and which are located at Abbottstown, Sillogue Park Golf club, Mayne (compound 7) and Portmarnock (compound 9).
- Details of surveys reported in the EIAR included examination of possible Annex I dune habitats at compound 10, other fauna and terrestrial habitat surveys, bat, badger, otter and smooth newt surveys.

Terrestrial habitats are described 11.3.2 of the EIAR. Noteworthy features include:

- Compound 9 will be in located in horticultural land and compound 10 in an area of improved amenity grassland both of which habitats are of local importance (lower value). Mixed fixed dune (CD3) habitat of local value occurs east of the proposed temporary construction compound where outfall pipeline route will be tunnelled. There is no potential loss of Annex I habitats.
- General absence of protected plant species. Significant local importance of trees and hedgerows including for their value in supporting protected species.

- Smooth newt is present at ponds at Coldwinters / compound 2.
- Identification of badger setts – there are 8 setts within corridor.
- Absence of significant bat roosts but detailed surveys were undertaken.
- Absence of signs of otter but their presence is likely.

An observer Mr Michael Keating has raised issues relating to the adequacy of the ecological assessment and the likely impact on a pond and meadow habitat north and northwest of the NCT site at Ballymun. The orbital pipeline would pass through the lands. While smooth newt was not detected at the site they are present at a location 250m to the north. A large number of common frog (1454 adults in 2019) together with birds and insects are reported in the submitted survey. Bat activity in the area is stated to have been recorded for two species in hedgerows and treelines along the boundary with the golf club.

This observation was discussed at the oral hearing (OH-44). In relation to the adequacy of the survey data presented this site is not given specific priority in the EIAR. However, Mr McCrory referred to the suite of surveys (2012-2017) which were undertaken as described in section 11.2.3 of the EIAR and he also noted that any survey is a snapshot. The report of Mr Keating identifies a range of protected fauna and aquatic invertebrates, with some emphasis on common frog. The species reported by Mr Keating were all surveyed and assessed in the EIAR.

I conclude that the assessment of terrestrial biodiversity undertaken was based on sufficient survey material, including in relation to the Sillogue NDA site at Ballymun and the other NDAs and EBZs.

### **Terrestrial Biodiversity - Potential impacts - GDD**

The **potential significant construction phase impacts on terrestrial biodiversity** are discussed below:

- Potentially significant impact on mixed broadleaved woodland, on hedgerows and **tree lines, on bats, smooth newt and badgers.**
- Loss of **habitats of local importance.** NDAs could be directly affected. Potential impact on EBZs. Compound 9 site comprises approximately 20% of

the quiet zone designated under the LAP as a supporting function for migratory birds.

- Indirect impact on species due to removal of woodland hedgerows and tree lines which are **foraging and commuting routes**.
- Throughout the GDD including pipeline routes, the APS and the WwTP / SHC sites the removal treelines and hedgerows and mixed woodland would reduce bat foraging habitat and availability of insect species resulting in a direct significant adverse impact on bats. Potential impact on mature broadleaf trees at WwTP and Blanchardstown, which may occasionally be roosting or resting places for small numbers of bats. Potential disturbance of bats due to lighting in the construction phase.
- Direct impacts on five **ponds at Coldwinters**, which are used by smooth newts. Displacement and potential for harm.
- Direct **impacts on badger setts** within the proposed construction corridor. Displacement and potential for harm. One active sett and one disused sett likely to be impacted by construction disturbance. Neither is a main breeding session or an annex to a main breeding sett. Three setts will be directly impacted during construction.
- Regarding the WwTP site the **removal of 1.6 km of hedgerows** (800m of which abuts a drainage ditch along the southern boundary) is a permanent loss of a feature of local importance (higher value).
- Loss of **wet grassland (GS4) at Kildonan** including removal of seed bank.
- Impact on Sillogue NDA near Northpoint at Ballymun is likely to include potential impacts on common frog, badgers and bats as identified in the relation to the individual species above. There is also potential for common newt to re-located from the drain at the golf course to the north.

The potential significant **operational phase impacts on terrestrial biodiversity** are described in section 11.5 including a summary table 11.15. Regarding receptors of ecological significance I note as follows:

- Directional drilling at Blanchardstown will pass under roots of trees in the Tolka Valley Regional Park (part of the NDA) avoiding any direct or indirect habitat impact.
- Regarding the submission of Ballymun Wildlife Group (also referred to as the Keating report) the oral hearing response of Mr McCrory refers (OH-63). The area to be impacted is the Silloge Park Golf Club NDA. NDA's have been identified in order to provide opportunities for habitat improvement and this objective is not prevented by temporary use for construction – these areas are not designated for occurrence of protected species. The EIAR acknowledges direct habitat loss. I agree with the conclusion that this temporary impact does not undermine the long term opportunities for habitat improvement as the orbital sewer will affect only a small part of the NDA and largely is installed underground at this location. Translocation of species under NPWS licence as required.
- No part of the project is within any habitat above the mean high water mark which is part of a European site or within any terrestrial NHA or pNHA and no impacts on the pNHAs including indirect impacts are likely.
- No component or aspect of the project is to be located within any terrestrial NHA or pNHA there will be no impacts during the operational phase.

Regarding mammals other than those referred to above, no anticipated operational activities giving rise to noise or visual disturbance is likely and there is no additional land take. Hedgerows will be re-established and tree surveys undertaken.

My conclusion therefore is that the **potentially significant impacts on terrestrial biodiversity** are:

- Habitat impacts including loss of a wet grassland at Kildonan.
- Habitat impacts related to loss of hedgerows, trees and scrub along the pipeline.
- Impacts on protected species and which require licence from NPWS including smooth newt, bats, common frog and badger, including at the lands at Northpoint.

- Disturbance or reduction of habitat for farmland birds and bats.

### **Mitigation and Residual Impacts - GDD**

The EIAR sets out a range of mitigation to address terrestrial habitat impacts and notes that the **GDD has been designed as far as possible to avoid high-value biodiversity receptors**, much of it will be underground with habitats reinstated.

A further overarching mitigation measures for terrestrial biodiversity as set out in 11.7.1 include appointment of an **Ecological Clerk of Works** to act as a liaison in the discharge of planning conditions relating to biodiversity.

### **Specific mitigation measures relevant to terrestrial biodiversity are:**

- **Reinstatement and replanting** will be undertaken along the pipeline routes and where relevant topsoil from wet grassland and neutral grassland habitats will be reinstated its original location. The oral hearing discussion on tree and hedgerow surveys and the condition recommended below is an associated mitigation.
- Regarding terrestrial habitats all **hedgerows are proposed to be re-instated** as feasible and planting will be implemented as part of the landscape strategy, resulting in ecological corridors which will be maintained in the operational phase.
- Activities affecting the smooth newt at Coldwinters would be subject to licence and at the hearing NPWS accepted in the circumstances of the case that to obtain a licence prior to the application would not be reasonable. This point refers also to badgers. **Avoidance of the core breeding area of smooth newt at Coldwinters**, including the largest pond which retains water all year is proposed by the applicant. Elsewhere it is proposed to capture and relocate the species from affected ponds to an alternative pond prior to construction and undertaking of works under licence with monitoring as necessary.
- Various measures are set out in relation to the **protection of bats** in the construction and operation phase, the nature of which I would describe as fairly standard best practice for large scale projects but which I consider have been thorough addressed in the application documents. Section 11.7.4 of the EIAR refers for example. These include measures specific to the major

construction sites required for the development and to the pipeline routes and involve protection of bats and reinstatement of habitat.

- Mitigation for badgers will include pre-construction surveys, disturbance licences, **exclusion and closure of five badger setts** (three permanently). A Wildlife Act disturbance licence will be obtained. Two setts which are to be reopened will be protected from construction activity by an exclusion zone. The fence for the proposed construction corridor will allow unimpeded movement of badger.
- Many of the above matters are relevant to the **Sillogue NDA**. Given the concern which has arisen and the possibility that the nearby population of smooth newt (or any other mobile species) might take up residence at this site prior to construction and to the most up to date information presented by observers in relation to the importance of the site for common frogs, I **recommend a condition requiring agreement with the planning authority** on restoration proposals for this site. Together with the condition recommended elsewhere relating to tree protection and surveys and the licencing procedures which would be operated by NPWS, I consider that no significant residual impacts are likely.

I agree with the applicant's conclusion that there are **no significant residual impacts** on terrestrial biodiversity related to the GDD.

Regarding difficulties encountered in the compilation of the EIAR the applicant notes that a **small number of locations could not be accessed**. There is no indication from any of the written submissions that these areas require further consideration.

### **Terrestrial Biodiversity - RBSF**

#### **Terrestrial Biodiversity - Overview and baseline environment – RBSF**

The site comprises areas of **grassland, with dry meadow and grassy verges** and areas. There are 3 no. European Sites within 10km and these are separately considered in detail under the appropriate assessment section of this report. There are **no pathways to the proposed Natural Heritage site** within 5km of the site and therefore no possible impact.

The site of the proposed RBSF can reasonably be described as being of **local importance (higher value) for terrestrial biodiversity**. The key receptors identified in surveys include:

- Signs of badger foraging and commuting on the site. No setts.
- Five bat species recorded on the site, mostly Leisler's bat, with some activity of Common pipistrelle, and low numbers of the other species.
- It was determined that the trees and structures on site are not suitable for roosting of bats and I accept this conclusion. Treelines and hedgerows deemed to be of negligible value for roosting bats but of importance for commuting.
- Bat activity largely was absent from part of site where buildings are proposed.

### **Potential Significant Impacts - RBSF**

Potential significant impacts on terrestrial biodiversity from the RBSF are identified below. I accept the conclusions of the EIAR. I conclude that the following Significance of Impacts may be attributed:

- As the proposal subject of this application retains half of the site grassland which will be suitable foraging for badgers and there are no significant changes to boundary hedgerows and proposals to introduce a landscaped berm, the **impact on bats, badgers, habitat value is Imperceptible**.
- **Operational phase impacts will be Imperceptible.**

### **Mitigation measures - RBSF**

The EIAR **mitigation measures relevant to terrestrial biodiversity** are:

- Application of standard measures to protect birds and bats and prevention of invasive species spread.
- Planting to mitigate loss of trees, lighting to consider bats.

### **Residual Impacts - RBSF**

As a result of the mitigation measures relevant to the ecological receptors the Significance of **Residual Impacts is Imperceptible**.

#### 9.7.3.4. **Freshwater Aquatic biodiversity**

##### **Freshwater Aquatic Biodiversity – GDD**

##### **Freshwater Aquatic Biodiversity - Overview and baseline environment – GDD**

The **GDD project comes close to or traverses a number of water courses.**

Commencing at Abbotstown at a location 130m from the Tolka, it crosses the Santry and Mayne rivers and is proposed to be 50m from the Cuckoo Stream at the Clonshaugh site and crosses that stream (a tributary of the Mayne) at the north-east. The north-south access road to the WwTP/SHC site is proposed to cross the Mayne which would be culverted. In terms of the description of the catchments and their proximity to aspects of the proposed development (including construction compounds) and ecologically important sites and connection between the watercourses and catchments full details are in section 11.9 of EIAR.

The **Tolka, Mayne and Santry and Cuckoo stream are ‘at risk’ of not meeting good status** under the Water Framework Directive under the 2018-2021 River Basin Management Plan. The connectivity between the watercourses and the NHAs is summarised in Table 11.18. Fisheries records reveal no records for watercourses which might be impacted for protected species but the Tolka is a salmonid and lamprey spawning habitat. The Cuckoo and Mayne have barriers which exclude salmonid potential. Drainage ditches which are proposed to be crossed were surveyed and revealed to have no potential fisheries habitat. In general **macroinvertebrate biodiversity and freshwater flora diversity are low.**

In terms of ecological importance the **Tolka** has been designated in the EIAR as of ‘county’ importance which is reasonable in view of its salmonoid potential. It also contains good habitat for white-clawed crayfish.

The **three other watercourses are evaluated as being of local importance (lower value)** with limited natural habitat, limited biodiversity and Bad to Poor ecological status. As such under the NRA guidance the importance of these receptors are as pathways to downstream protected marine areas and the potential for indirect impacts on areas of international importance. Regarding details of the habitats and macroinvertebrate communities, habitat characteristics and potential and Q values Table 11.20 of the EIAR refers and a series of photographs are provided.



The surveys indicate that **no invasive species were found during surveys** of watercourses but are known from the wider catchments of the Tolka and Santry.

### **Freshwater Aquatic Biodiversity - Potential Significant Impacts - GDD**

**Potential significant impacts on freshwater aquatic biodiversity** are identified below. I accept the conclusions of the EIAR. The list below only identifies potential Impacts of Significance of Minor (or greater) and a number of the potential impacts would be considered to be of Moderate Impact Significance.

- Impacts including on **downstream marine sites through contamination** in the construction phase.
- Introduction of **invasive species** including to downstream protected sites.
- **Suspended solids pollution** is an issue throughout the project including at the temporary compounds, 19 no. outfalls to ditches etc, at the stream crossings and at earthworks locations notably at APS and the WwTP / SHC sites.
- The **crossing of all watercourses** associated with the orbital sewer route using trenchless methods. **Risks of air break out, bentonite blow out,** sedimentation, interception of hyporheic zone and noise impacts on fish are identified. These events if they occurred would in themselves constitute impacts which would need to be addressed including for example the requirement to treat large volumes of sediment laden waters.
- Impacts related to **spillages of fuels or concrete**, wash-down and dust.
- Potential impacts from above include significant effects on habitats and fish.
- The **Mayne crossing at the Clonshaugh site** entrance road by culvert can be associated with potential obstruction of fish and aquatic fauna as well as a reduction in vegetation and habitat. The culvert and bridge construction are described as moderately negative on a local scale but permanent. There is also a degree of certainty that such impacts will occur.
- There are potential changes to the **catchment hydrology** due to increases in hard standing and access roads and buildings. In the absence of mitigation

these could impact downstream areas. Hydraulic impacts would be moderate negative or slight negative.

- In the operation phases the potential significant impacts also includes pollution of the watercourses and downstream areas including from **leakage or spillages of untreated wastewater**. Observers have referred to these issues being under-estimated.
- Table 11.21 of the EIAR sets out in full the potential impacts in the absence of mitigation.

### **Freshwater Aquatic Biodiversity - Mitigation measures - GDD**

The **EIAR mitigation measures relevant to freshwater aquatic biodiversity** include a range of detailed measures which are described in section 11.14 and are related to:

- **No in-stream works** in general – the exception is at the proposed access road where a culvert is required. A commitment during the hearing to facilitate a culvert to cater for the long-term width of the road avoids further in-stream works at a later date.
- The reduction and **prevention of suspended solid pollution** in relation to which a range of best practice and site specific measures are presented including SWMP, IFI guidance in the control of discharges to fisheries waters, location of all vulnerable infrastructure in Zone C, location of all temporary compounds and storage and tunnelling launch pits in Flood Zone C where possible, adherence to CIRIA guidance including as specified in the EIAR. I have earlier discussed the particular issues relating to compound 10 which I consider were adequately addressed by the applicant.
- Site specific measures including at the **northern boundary of the WwTP** site involving buffer zones, planted earthen mounds and maintenance of riparian vegetation. Also proposes a **20m buffer zone where trenchless crossings** are to be undertaken, launch and reception pits to be outside this and installation of silt fences along buffer. Use of clear span structures where culvert systems to be installed and following of **IFI guidance**.

- Further **control measures relating to trenchless crossings** of watercourses which address the potential risks from this work include treatment and de-silting of groundwater dewatering as required and if necessary obtaining of discharge consent.
- Specific measures relating to the **installation of a culvert at the Mayne** including timing, bank protection, maintenance of river substrate and design to ensure flow regime allows for salmonids in future.
- Measures relating to **pollutants, use of concrete, general surface water** management and, compounds and invasive species are described. These together with the measures to deal with incidents and accidents are fairly standard in approach. The formulation of an Emergency Operating Plan is included.
- A range of proposals are listed throughout involving monitoring of water quality during works. Supervision by ECoW. Where trenchless techniques are used monitoring shall involve looking for signs of air blowout and silt plumes.
- In the operation phase standard measures including a SUDs at the sites of APS and Clonshaugh are proposed with maintenance and inspection as appropriate.
- The **potential for leakages of sewage** is avoided through best construction practice and minimising the number of joints. Pipes will be tested for air tightness prior to being used for sewage. Flow monitors at APS and the inlet to the WwTP will allow for identification of any significant leaks. The ABP and WwTP would be designed with secondary containment.

### **Freshwater Aquatic Biodiversity - Residual Impacts - GDD**

As a result of the mitigation measures, which I consider are well described in the EIAR and to be capable of being effectively implemented, I am satisfied that there is **no likely significant residual impacts on freshwater aquatic biodiversity** from the construction or operation of the GDD.

## **Freshwater Aquatic Biodiversity - RBSF**

### **Freshwater Aquatic Biodiversity - Overview and baseline environment – RBSF**

The western site boundary contains a tiny polluted drain which drains to the Huntstown Stream and on to the Ward, which 10km downstream is a salmonid stream of good water quality. Upstream of RBSF site are major industries. Downstream the connection is to Malahide Estuary SAC.

### **Freshwater Aquatic Biodiversity - Potential Significant Impacts - RBSF**

Potential impacts on freshwater aquatic biodiversity are identified below. I accept the conclusions of the EIAR Volume 4.

- Potential for **small adverse impacts due to spillages** during construction. Significance is Imperceptible and Temporary.
- Potential for impacts **in the operational phase related to contaminants in run-off** from buildings and hard standing including of contamination associated with biosolids.

### **Freshwater Aquatic Biodiversity - Mitigation measures - RBSF**

The EIAR **mitigation measures relevant to freshwater aquatic biodiversity** are:

- Stormwater would be attenuated and discharged at greenfield runoff rate. Petrol and oil interceptors would be used to remove any potential contaminants from run-off from the site.
- No runoff containing biosolids to be discharged to watercourse but instead to be discharged to foul sewer.
- Other standard measures relating to prevention of water quality deterioration.
- Operation of SWMP.

### **Freshwater Aquatic Biodiversity - Residual Impacts - RBSF**

All of the mitigation measures set out will ensure that there is no adverse impacts on the surface water and thus that the construction and operation phases would not impact any downstream areas including Malahide Estuary SAC and watercourses and groundwater. Following mitigation, it may be concluded that there would **not be**

**any significant adverse impacts on freshwater aquatic biodiversity** as a result of construction or operation of the RBSF.

#### 9.7.3.5. **Conclusion on Biodiversity – GDD and RBSF**

Having regard to the above, I am satisfied that the adverse impacts identified would be avoided, managed or mitigated by measures forming part of the proposed GDD and RBSF development. I am therefore satisfied that the proposed development would not have any unacceptable significant direct or indirect impacts on Biodiversity. I conclude that the significant effects on Biodiversity are as described below.

There is potential for a number of slight or short and very localised negative impacts to **marine biodiversity**. Air surface venting or bentonite breakout associated with tunnelling under Baldoyle Bay SAC would impact saltmarsh on a very small area for a short duration. Discharged sediment from dredging in the marine environment could impact on reefs, which is mitigated by the controlled discharge of dredge spoil. Noise and vibration from works at the tunnel interface could lead to avoidance of the area by marine mammals, which is mitigated by use of marine mammal observations and passive acoustic monitoring during piling activities.

There is potential for **short-term moderate impacts on birds** including bird species which are special conservation interests of Natura sites. This could result from visual disturbance impacts at microtunnelling compounds and the presence of vessels working in the marine environment during dredging and pipe laying. There is potential for disturbance to birds as a result of noise from piling at the interface and at the fibre optic cable. Mitigation measures which are presented will ensure that there are no significant residual impacts.

#### 9.7.4. **Land, Soil, Water, Air and Climate**

##### 9.7.4.1. **Land and Soil – GDD and RBSF**

###### **Land and Soil - Overview and Baseline Conditions – GDD**

Baseline soils and geology was established through desktop research and drilling of boreholes and geophysical surveys. This included work to investigate the marine

outfall pipeline and the nature and characteristics of sediments, which would be encountered there.

The 29.8 ha site and the North Fringe Sewer diversion line were investigated including true boreholes of depth of 7m (OH-22). No bedrock encountered. Glacial materials overlying fluvio-glacial gravels dominate.

An unregulated landfill (subject of a recent planning application) is to the north of the R135.

The route of the orbital and outfall sewers (land based) are generally composed of glacial materials overlying limestone. Along the orbital route in places there is made ground and depth to bedrock is about 2.5 m.

At Abbotstown the noteworthy feature is the shallow bedrock (1.6 m below ground level). A 17 m deep excavation is required.

Along the full pipeline routes glacial materials overlying limestone depth of about 4.5m below ground and at the coast there is a transition into estuarine deposits.

Low risk of karst. Faults are identified. It is stated by observers that there is no full understanding of the geology underlying Baldoyle Bay estuary and the matter was discussed at the hearing. All reasonable means of investigating the geology near Baldoyle Bay were pursued and I consider that the geology is well understood. The EIAR including the relevant appendices provides high quality data which I consider demonstrates a thorough knowledge of the construction context including the proposed tunnelling under the SAC. I accept the applicant's experts evidence that there are no faults in that area and that the data is sufficient.

### **Land and Soil - Potential impacts – GDD**

I consider the significant impacts in terms of land and soil are:

- Permanent **loss of agricultural lands**.
- Sterilisation of **aggregates or bedrock resources**. This includes impacts which would affect the potential expansion of Huntstown Quarry.
- **Potential to encounter contaminated soils** at the locations shown on figures 18.3 sheets 1-3, which includes various crossing points of the project.

- **Potential to encounter soft ground / marine sediments**, notably at the crossings of Cuckoo Stream and close to the coast.
- Impacts on marine environment and ecology including protected areas as a result of **mobilisation of contaminants**.

The EIAR describes county geological heritage sites, which I am satisfied will not be impacted.

I agree with the conclusion of the EIAR that the impact significance would be Moderate in general as the character of the effect would be in line with baseline or emerging trends. This is relevant in particular to my consideration of the impact significance in terms of loss of agricultural lands at the WwTP / SHC site and to the potential impacts on the future exploitation of aggregates.

#### **Land and Soil - Mitigation measures – GDD**

- In general the aim will be to **minimise impacts** including through standard construction methodology. Re-use of soils and subsoils as appropriate. Protection of soil and subsoil structures through working techniques including storage, minimal traffic, suitable handling and appropriate surface water management measures.
- Where suitable aggregates are encountered in the construction phase **materials will be used on site**.
- SOIL CONST 2 to SOIL CONST 4 are specific measures which address contaminated land procedures. The baseline investigations identified **no contaminated lands**. At the hearing Mr Grehan confirmed that there are no known contaminated areas which would be relevant. In the event of such lands being encountered they will be taken and suitably disposed of.
- Adherence to **BS6349-5 in relation to dredging to minimise mobilisation** of contaminants in marine environment if present – **testing has not identified contaminants in marine sediments**, which are described in detail.
- The loss of agricultural lands may be considered to be not significant in the context of the small proportion of agricultural lands impacted on a larger scale. That is the approach set out in the EIAR and I consider that it is reasonable.

- In relation to aggregates the Abbotstown reserves are not high value and would not be likely to be extracted due to proximity to medical institutions. The impact from the orbital sewer on the potential expansion of Huntstown affects a relatively small potential area.
- There is in effect **no possible mitigation for the loss of lands / aggregate reserves**. I agree with the EIAR approach in relation to the Abbotstown reserves and consider that the loss of aggregates and lands has to be considered in the context of the viability of extraction of the trends in the area. In this context I would not describe these issues as significant effects.

### **Land and Soil - Residual Impacts – GDD**

Subject to mitigation I consider that it may be concluded that after mitigation there are **no significant residual impacts on soils and geology**.

### **Land and Soil - Overview and Baseline Conditions – RBSF**

Site investigations show that the site is made up **cohesive glacial tills underlain by the sand / gravel on silt on a layer of made ground**. Overburden is 13m deep minimum.

No county geology sites affected. The **site aggregates are deemed unsuitable for commercial exploitation**, which is important to note in the context of proximity to Huntstown quarry, the capital city and the M50.

### **Land and Soil - Potential impacts – RBSF**

I consider the most significant impacts in terms of land and soil are:

- **Potential to contaminate soils** during the construction process. This is a Slight Impact and is not a significant adverse impact due to the overburden depth.
- By the provision of **storage for biosolids an indirect Moderate Positive Impact** results. This is due to avoidance of land spreading within the periods which are disallowed under Nutrient Management Plans.

### **Land and Soil - Mitigation – RBSF**

Standard measures are set out including the implementation of a finalised CEMP and waste management plan and adherence to CIRIA guidance.



### **Land and Soil - Residual Impacts - RBSF**

There are **no significant residual impacts** in my opinion, which accords with the conclusion in the EIAR that residual impacts would be Imperceptible.

#### **9.7.4.2. Conclusion on Land and Soils – GDD and RBSF**

Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed GDD and RBSF development. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on Land and Soils.

#### **9.7.4.3. Water – GDD and RBSF**

This section of this report deals with hydrology and hydrogeology and separately summarises the conclusions on marine water quality impacts. Flood risk assessment undertaken is considered also.

#### **9.7.4.4. Hydrology and Hydrogeology – GDD**

##### **Overview and Baseline Conditions - GDD**

The EIAR describes the **baseline conditions** including:

- The identification of watercourses notably the Mayne River and Cuckoo Stream, the Sluice and Baldoyle estuary. The WFD status where it is assigned is 'Poor' and Baldoyle estuary is 'Eutrophic'.
- The aquifers are poor or locally important only. Vulnerability varies – Extreme at Abbotstown, Low at WwTP site and High at Velvet Strand (although there is a layer of boulder clay between bedrock and gravels).
- No public water supplies. 10 properties within 1km of the GDD have private and public supplies.

##### **Potential Impacts – GDD**

**Embedded mitigation which ensure impacts are avoided are:**

- The sand gravel aquifer at Portmarnock golf course where **shallow wells are used for irrigation is underlain by stiff boulder clay** - no significant

adverse impacts likely. No impact anticipated on private wells used for drinking water.

- Use of **trenchless techniques** and best practice construction avoids risks to surface water quality at crossings.
- Tunnelling marine outfall under stiff boulder clay ensures **no pathway between development and golf club wells or Velvet Strand** sand and gravels. 20m depth of launch pit at tunnel drive/ receptor shaft at Portmarnock.
- All sites including construction compounds in Flood Zone C where possible.

I consider the most significant potential impacts on hydrology and hydrogeology are:

- Potential that during construction of APS and WwTP/SHC sites **increased risk of flooding**. Slight Impact.
- Potential for deterioration of **water quality due to contaminants in runoff**. Could impact on Cuckoo, Tolka, Mayne, Sluice and Santry watercourses which includes waters entering Baldoyle estuary. Slight Impact.
- Potential **for flooding and contamination associated with Compound 10**, which is in Flood Zone A and is immediately adjacent ecologically sensitive sites including European sites. This would be a Significant Impact.
- Risks associated with **construction phase dewatering** - limited to small areas. This is not a significant impact due to limited amount of dewatering and short duration and use of wells and availability of alternative supplies. I consider that this is a Not Significant Impact.
- Similarly the **risks associated with groundwater contamination** in construction and operation would be classified as not being of significance for the same reasons. A Not Significant Impact.
- Potential to **alter the flow regime** as a result of largescale project.

#### **Mitigation - GDD**

- Application of SuDS at APS and WwTP / SHC sites will **attenuate runoff** to greenfield rates.

- Application of **CIRIA guidance** on control of water from linear projects will minimise water quality impacts and support the primary mitigation measures under the CEMP.
- Emergency Response Plans to address spillages.
- Location of potentially polluting substances on elevated ground in areas prone to coastal flooding including compound 10. Mr O’Keeffe’s reference to the CEMP provisions at the hearing is relevant. Mitigation measures outlined include **selection of piling method to ensure hydraulic sealing of shafts and measures** to ensure that all storage of bentonite, solvents and hydrocarbons are **above the most extreme flood risk area**, if necessary by development of raised areas. Section 9.4.1 of the EIAR notes that the use of bunded protection at microtunnelling compounds adjacent Baldoyle Estuary as mitigation.
- Agreement with **IFI on method statements** at the few watercourse crossings to be crossed by non-trenchless means.
- Installation of **puddle clay along pipes to prevent preferential flow paths**. Other measures to protect watercourses during trenchless crossings. Watertight design of sewers.
- Suitable positioning of launch and reception pits relative to summer peak flood of 1:20 return period.

### **Residual Impacts**

- The location of all development and most of the construction in areas of low flood risk minimises potential water quality impacts relating to flooding in the construction phase and avoids downstream **flooding** of other lands. The location of compound 10 within Flood Zone A results in low level risk of adverse effects on the environment due to the proximity to European sites, which is mitigated by the measures in the CEMP including the piling method, bunding and use of best practice in relation to storage of material. The development will not result in any significant residual impacts relating to flooding.

This impact area comprises largely matters which have been avoided through design or which would be considered to be amenable to mitigation involving standard construction practice. I am satisfied that Compound 10 which is within the coastal flood zone can be satisfactorily designed and that potential contaminants can be suitably positioned above the flood level. The mitigation measures which have been described in the applicant's submission are realistic, feasible and sufficient to address potential risks associated with potential pollution emanating from any flood event at the site of compound 10.

I agree with the conclusion in the EIAR that there will be no significant residual impacts on hydrology or hydrogeology after implementation of mitigation measures.

#### 9.7.4.5. **Marine Water Quality - GDD**

Rather than undertake lengthy repetition I provide only highlights of marine water quality impacts in particular, which I have thoroughly considered above in the Planning Assessment. This impact factor is not relevant to the RBSF.

##### **Overview and Baseline Conditions - GDD**

Regarding baseline conditions of the marine water quality the facts have been presented earlier. The inputs to the modelling undertaken are comprehensive and the modelling was appropriate and sufficient. The water quality parameters to be met are presented and a conservative approach adopted insofar as the assessment assumes transitional status for MRP assessment.

The **baseline conditions are of the highest quality** including by reason of the suitability of the area as a shellfish 'A' and supporting a Blue Flag beach as well as ecological sites of international importance.

The **sediment composition** where dredging is to take place has been investigated and the **plume modelled**. The methods of dredging are clearly described.

Detailed investigations of the marine environment have culminated in the selection of this location for the marine outfall including the position of the diffuser. This has included increasingly refined steps and modelling (of hydrodynamics and solute transport) using recognised software and calibration against field survey data.

**Different scenarios were modelled** including the extreme plant failure scenario.

## Potential Impacts – GDD

I consider the most significant potential impacts on marine water quality from the GDD are:

- When considered on a region level and taking into account the provision of additional wastewater treatment capacity to relieve Ringsend the project can be associated with **indirect positive impacts**.
- Impacts to marine water quality from **suspended sediment from 6 months of seabed dredging** during construction.
- In the operational stage the GDD would have no impact on marine water quality in average flow conditions, a Slight / Imperceptible Impact in FFT conditions on area in immediate vicinity of discharge only, and in the event of **process failure a Slight Impact on waters in the immediate vicinity** of discharge based on the modelling but an Imperceptible impact based on Mr O’Keeffe’s evidence which I accept.
- I disagree with comments of observers that the development would have significant adverse operation phase impacts including as a result of **nutrient enrichment** impacting on the estuary. I consider that the applicant has demonstrated that such operational effects will not occur.
- I have addressed other alleged impacts in the detailed assessment of water quality earlier including in relation to **reduction in bathing water quality** and Blue Flag. Excellent water quality will be maintained.
- Potential impacts on marine water quality supporting commercial fisheries. I consider that this has been further addressed by the addition of UV treatment, which will be designed in accordance with requirements and taking into account the suspended sediment in the treated wastewater.
- I consider that there is no requirement for a longer outfall or higher standard of treatment. There is no adverse impact from operation.

## Mitigation – GDD

- Release of sediment from dredging barges on flooding tide. Modelling shows discharge will deposit material mainly close to the dredging corridor. Subject

to timing of release as proposed under mitigation measures presented the **plume will flow in a northerly direction** away from Irelands Eye.

- Monitoring of dredging operations and if exceeds 40mg/l above background level then **suspension of dredging**.
- The operating plant would be monitored under the terms of an EPA licence.

### **Residual Impacts – GDD**

I consider that the residual impact on marine water quality would be Slight to Imperceptible in the construction phase and operational phases.

#### **9.7.4.6. Hydrology and Hydrogeology – RBSF**

##### **Overview and Baseline Conditions - RBSF**

The EIAR describes the **baseline conditions relevant to hydrology and hydrogeology** including:

- Baseline conditions were established including by site visit and water testing.
- Huntstown Stream is along the south and west site boundaries and has a WFD status of Good overall but in the immediate environs of the stream is stated to be influenced by Huntstown Quarry as noted by elevated levels of chemicals indicating cement leaching. As noted earlier this connects with Malahide Estuary SAC. The **Quarry, Power Station and Proposed Bioenergy facility discharge under licence to the stream**.
- **Aggregate resources are at depth** and unlikely to be considered viable for expansion of Huntstown Quarry.
- Sampling undertaken upstream of the site shows that the **stream is ‘at risk’** of not meeting Good WFD status in terms of biological quality.
- The RBSF site hydrology is influenced by an existing surface water system installed as part of the proposed waste facility.
- The position of the RBSF buildings is within Flood Zone C.
- The groundwater body status is good. There are no groundwater wells in area and Huntstown quarry influences the groundwater flow direction.

- The groundwater vulnerability rating is classified as low due to the 10 m low permeability glacial till. Negligible likelihood of increased vulnerability.

### **Potential Impacts – RBSF**

I consider that the most significant potential impacts on hydrology and hydrogeology are:

- Accidental spillages of chemicals or hydrocarbons.
- Potential that water could be impacted from biosolids.
- There is a relatively high fire risk at this site and potential adverse impacts on local hydrology related to firefighting runoff.

### **Mitigation – RBSF**

The relevant mitigation measures include:

- **Best practice measures including in relation to potential spillages.**  
Incorporation in the design of hydrocarbon interceptors and similar standard measure and attenuation of waters prior to discharge to watercourse. Any impacts related to biosolids is mitigated by the embedded measures which include discharge of all washings / sweepings to the foul system.
- **Containment of firewater in on-site attenuation** and controlled discharge to stream by way of a shut-off valve.

### **Residual - RBSF**

I am satisfied that the measures proposed will ensure no significant adverse impacts. Residual impacts would be Imperceptible.

#### **9.7.4.7. Conclusion – Land, Soils and Water**

Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed GDD and RBSF development. I am therefore satisfied that the proposed development would not have any unacceptable significant direct or indirect impacts on Land, Soils and Water. I conclude that the significant effects on Land, Soils and Water are as described below.

The development would result in positive marine water quality impacts by the provision of wastewater treatment capacity to meet planned growth and to reduce reliance on Ringsend wastewater treatment plant.

In the operation phase marine water quality impacts on shellfish areas are mitigated by the dispersal characteristics at the location of the diffuser and the design of the wastewater treatment plant including the proposed UV treatment. Bathing water quality will not be reduced even in the highly unlikely event of a failure of the plant due to the location of the diffuser in an area of high natural dispersal characteristics, the range of design measures and the control which can be exercised over flows to the plant. Excellent water quality at Velvet Strand will be maintained.

The construction phase risks to water quality are avoided by the geological conditions including the depth of boulder clay separating existing shallow irrigation wells and Baldoyle Bay SAC from the microtunnelling under the estuary and are mitigated by use of trenchless crossings of streams, by the application of best practice including the measures set out in the CIRIA guidance and the adherence to IFI guidelines. There would be no significant residual impact. As a result of seabed dredging there will be impacts to marine water quality from suspended sediment increases, which would be of short duration. Subject to mitigation measures relating to deposition of dredged material and monitoring there would be no significant residual impact.

The location of all development and most of the construction in areas of low flood risk minimises potential water quality impacts relating to flooding in the construction phase and avoids downstream flooding of other lands. The location of compound 10 within Flood Zone A results in low level risk of adverse effects on the environment due to the proximity to European sites, which is mitigated by the measures in the CEMP including the piling method, bunding and use of best practice in relation to storage of material. The development will not result in any significant residual impacts relating to flooding.

#### **9.7.5. Air and Climate**

##### **9.7.5.1. Air**

As this matter is dealt with in detail earlier I present a brief overview in this section.



## **Overview and Existing Environment – GDD and RBSF**

The existing air quality is considered to be good. The EIAR relies on available good quality meteorological data and justifies the selection of the EPA monitoring sites. The assessments utilise up to date and appropriate modelling methods and appropriately target the key pollutants which are likely to be emitted from the activities associated with the GDD and the RBSF in the construction and operational phases.

### **Predicted Impacts**

During construction the likely significant impacts are related to Aspergillus, to dust and particulate matter and gases from traffic. In the operation phase the GDD and APS and Dubber OCU have potential to give rise to odour effects and other air emissions. In the vicinity of the RBSF the likely significant impacts would include dust from biosolids and traffic related emissions.

### **Mitigation and Residual Impacts**

I consider that dust emissions from construction are amenable to mitigation and a detailed range of measures are presented in the EIAR. Slight impacts on a very small number of houses are anticipated.

The design of the various facilities and the treatment of air emissions prior to discharge in a suitably designed stack will ensure that air quality standards will be adhered to in full. No significant Residual Impacts would result.

The odour criteria adopted are very conservative and are suitable to the context, the type of facilities and offensiveness of the odours. Odour impacts will be reduced by ensuring that all gases pass through odour control units prior to venting to the atmosphere. Implementation of an odour management plan as detailed in section 14.8 (volume 3A) and 10.2.7 (volume 4 part A) is proposed. There would be no odour nuisance even at the site boundaries.

There are commitments to a process proving phase at commissioning and at regular intervals throughout the operation of the facility and proposals for monitoring including individual independent quarterly performance checks in the first two years of operation. These checks will verify the effectiveness of control measures and

ongoing compliance with required performance targets. Continuous monitoring is also proposed.

There will be occasions when adverse weather may result in exceedances of the conservative odour limits set. Any such increased odour levels would be at the site boundary and for about 44 hours per annum and would be most likely to occur at night-time. I am satisfied that there would be no impact in such circumstances on the residential areas to the south. I consider that this is an Imperceptible Impact.

There would be no Significant Residual Impacts.

#### 9.7.5.2. **Conclusion –Air - GDD and RBSF**

The adoption of **very conservative odour criteria** minimises potential adverse impacts due to odour. Odour abatement systems will be designed, implemented and monitored to ensure that odour emissions do not reach a level that could cause odour nuisance at or beyond the site boundary.

The design of the facilities will ensure the achievement of the **air quality standards** which are provided for in legislation. There will be no adverse air quality impacts.

**Dust impacts and emissions** from vehicles during the construction phase will have a temporary and highly localised impact.

I conclude that there will be no significant residual impacts on Air due to the comprehensive mitigation and management proposals for the elements of the GDD and for the RBSF.

#### 9.7.5.3. **Climate**

##### **Overview – GDD and RBSF**

The international agreements on climate change the European Council in 2014 endorsed a binding target of at least a 40% reduction in greenhouse (GHG) emissions by 2030 over 1990 levels. In the interim there have been adopted revised targets for the control of various substances, most recently the European Union (National Emissions Ceilings Regulations) 2018 which give effect to EU Directive 2016/2284. The new regulations set reductions to below 2005 levels for some

substances. Ireland has generally complied with the ceilings for SO<sub>2</sub>, VOCs, NH<sub>3</sub> but failed to comply with the ceiling for NO<sub>x</sub>.

### **Predicted Impacts**

Arising from the GDD there would be predicted to be direct and indirect increases in CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O as described in section 14.5.6 of Volume 3.

Localised increases in ambient levels of air pollutants as a result of increased traffic levels could result in increased CO<sub>2</sub> and GHG emissions for the RBSF.

### **Mitigation and Residual Impacts**

The GDD and RBSF designs include a number of embedded measures which are positive in terms of the reduction of GHG emissions.

The design of the WwTP in particular will minimise GHG emissions through optimising design and operations processes as is described in the EIAR and summarised at the hearing (OH-15). In the consideration of alternatives as discussed in Chapter 5 of Volume 2 energy consumption was amongst the factors including in terms of power requirements and energy usage for pumped flows. Length of pipeline and gradient are demonstrated to have been considered along with building orientation to maximise solar gain. The containment of CH<sub>4</sub> and its use in the CHP is relevant. Biogas which is to be produced at the SHC anaerobic digester will be used. It is also noted that the maintenance of energy efficiency will reduce production of CO<sub>2</sub>. At the site of the RBSF solar panels will contribute about 40% of annual energy demand. Good control of the activated sludge system will reduce N<sub>2</sub>O and CO<sub>2</sub> emissions.

Regarding the energy requirement relating to pumping the oral hearing submission of Mr Lyons and Mr Bourke is particularly relevant. They outlined alternatives to the proposed development, which were stated to be positive in terms of energy efficiency (OH-51). The route of the orbital route it was stated would work but the energy demands were high. The main alternative suggested by them involved a route for the orbital pipeline, which was stated to be at lower gradient. While there are likely to be routes for the pipelines which are more energy efficient I refer to the fact that the route selection is a multi-factorial process and I consider that the requirement for the Board is to consider the project on its merits. It is clear that the applicant has given due consideration to energy efficiency and some of the

alternative scenarios were rated poorly for this reason. I do not consider that it is demonstrated that the route selected or other elements of the proposed project are in any way fundamentally unacceptable or contrary to the proper planning and development of the area in terms of energy or climate issues.

A further alternative which it is stated would result in reduced energy consumption and thus contribute positively to climate change is the option of incinerating biosolids either for the purposes of contributing to fuels at electricity generating facilities or for the running of the proposed GDD / RBSF requirements. I consider that while this may be a viable future option there is no onus on the applicant to select it at this time and in this regard I note the validity of land spreading as an alternative.

In relation to the GDD I consider that there are no significant predicted impacts on climate and that there is no requirement for mitigation measures other than the embedded measures which are presented in the application detail. In relation to the RBSF I concur with the applicant's statements that significant climactic impacts are unlikely except in relation to increased traffic. I consider that these sources would be described as having an Imperceptible impact significance. I accept the submission of Irish Water that any climate impacts which would result from the projects would occur elsewhere if this project did not proceed at this location.

In conclusion there would be no significant residual impacts on Climate.

#### 9.7.5.4. **Conclusion on Air and Climate – GDD and RBSF**

Having regard to the above, I am satisfied that the adverse impacts identified would be avoided, managed or mitigated by measures forming part of the proposed GDD and RBSF development. I am therefore satisfied that the proposed development would not have any unacceptable significant direct or indirect impacts on Air and Climate.

## 9.7.6. **Material Assets, Cultural Heritage and the Landscape**

### 9.7.6.1. **Material Assets**

#### **Overview**

The development has the potential to significantly affect material assets in particular including medical institutions, existing roads, rail and power-related and other infrastructure including planned infrastructure such as Metro. In addition many of the issues raised in relation to the Gannon property lands at Belcamp relate to the impact on material assets and in this section of this report I respond to those matters. There are other development lands which could be impacted and I also briefly reference the concerns of DAA in relation to their future development proposals. Taking a broad approach to the matter I consider it appropriate also to examine the impact on recreational assets and residential properties.

### 9.7.6.2. **Material Assets – GDD**

#### **Baseline Conditions**

The site context and the variety of land uses is such that there is a large range of infrastructure, lands and activities which fall to be considered under the heading of material assets.

The content of the EIAR is heavily focused on the existing utilities / infrastructure. However it also refers to other particular assets in relation to which there appears to have been considerable engagement, namely significant watercourses, the Connolly hospital lands and the golf courses and coastal public amenities. This approach does not attribute the same level of assessment to other material assets including sports facilities and there is no reference to residential assets.

The information presented in its totality in the other sections of the EIAR does cover all matters relevant to material assets and I consider that it is sufficient to enable the Board to undertake an EIA. In this regard I also refer to the approach recommended in guidance, which I consider that this has been met in the EIAR. There is no additional requirement for information on this topic.

## Potential impacts - GDD

- Observers' concerns extend to the effect of the proposed development on their **dwellinghouses, community and recreational facilities**. In general I do not consider that the community and recreation facilities will be significantly affected. The issues relating to residential properties and the associated amenities have been considered elsewhere and given the conclusions relating to the lack of environmental impacts on those areas I consider that there is no likelihood of property devaluation and no significant impacts in this regard.
- Nearby medical facilities and their operation could be significantly impacted in the construction period. Significant effects on **St Francis hospice** can be discounted in view of the limited occupancy and the nature of the building in particular. The impacts on the operation of **Connolly Hospital** including its future development potential, use of the emergency 'Blue' routes, and the use of wards are minimised by route design, use of trenchless techniques involving construction of a 1km tunnel through the campus, noise abatement measures and adherence to specialised guidance related to aspergillois.
- **Gannon lands** impacts are mitigated through the development of a widened culvert at the Mayne crossing, which will facilitate future road provision including the **north south link which will connect to the future EWDR**. Further mitigation of impacts is found in measures relevant to landscape and visual impacts and to air and odour emissions.
- In general the **residential areas** which contain larger numbers of residents are too far separated from the development to be adversely impacted in the construction phase other than by additional traffic.
- Operational traffic will result in **increased congestion at junctions** which are already congested and which will be congested at the time of operation of the wastewater treatment plant. This will add to delays at those locations.
- The **route alignment in general minimises impacts** on sports pitches and other material assets. Impacts on the natural environment and recreational amenity of the coastal area will be mitigated by design including the tunnelling under Velvet Strand and by the maintenance of access as is proposed at the beach car park. Effect on golf course dealt with by avoidance and further

mitigation is not required, including in relation to the irrigation systems in place. In the operational phase the protection of the recreational assets associated with the high quality bathing water is the primary mitigation measure. The introduction of UV treatment is a mitigation measure to ensure the highest levels of protection to the commercial shellfish fisheries.

- The **raw materials** which would be impacted include approximately 84,200 m<sup>3</sup> of material, to be sourced from quarries and various pipes for the sewer route as well as concrete and steel installation, building materials and mechanical and electrical equipment.

### **Mitigation measures – GDD**

- Impact on major utilities will be mitigated by maintenance of suitable vertical separation between the head of pipes and base of infrastructure, by adherence to codes of practice and required approvals will be obtained.
- Crossing of watercourses by trenchless techniques as recommended by IFI will be undertaken in general. Where an alternative approach is required it will be agreed in advance with IFI. The crossing of the Mayne by the NFS diversion sewer will be by a box culvert and under the terms of a consent to be obtained.
- Reinstatement of lands and land drains together with suitable handling of material, supervision of works and control of potentially polluting substances to ensure that lands affected by construction can be returned to appropriate usage.
- The requirement for materials to be imported will be minimised where possible. Huntstown quarry could be used as a materials source. Landscaping plans aim to minimise surplus material. All materials will be suitable sourced and handled and used in a sustainable manner.
- Relocation of residents for a period is to be considered in relation to the house near a compound. Noise mitigation will be required at other locations in the construction period.

- Mitigation of the effects of traffic in terms of safety will be through traffic management measures. Operational traffic congestion increases associated with the GDD and RBSF will contribute to existing deficiencies in roads.

## **Residual**

I agree with the conclusion presented in the EIAR that there is limited potential to adversely affect utilities supplies and transport. I have elsewhere presented my conclusions in relation to noise, air and odour, marine water quality and other environmental effects which might be of relevance in terms of material assets related to residential and recreational property. No significant impacts are anticipated in terms of the material assets impacts.

The long-term provision of adequate wastewater treatment to serve the growing Dublin region is a **major positive residual benefit on material assets** through facilitating use of zoned services lands.

As a result of design and avoidance measures there would be **no adverse impact on existing and planned major infrastructure** including Metro West and the future Malahide Road realignment and the associated north south link. The development potential of zoned lands at Belcamp will not be adversely affected.

Potential **impacts on Connolly Hospital are minimised** through design mitigation measures including the construction of a 1km tunnel to accommodate the orbital pipeline through the campus and by mitigation measures to ensure maintenance of emergency routes and to avoid air and noise impacts affecting the use of wards.

Operational traffic will result in **increased congestion at junctions** which are already congested and which will be congested at the time of operation of the wastewater treatment plant. This will add to delays at those locations.

I consider following the implementation of the mitigation measures, the residual impacts on material assets arising from the construction and operation of the GDD would be moderate, negative and short term.



### 9.7.6.3. **Material Assets – RSBF**

#### **Overview**

The confined nature of this site together with its proximity to a major road and general separation from recreational facilities and amenities are relevant factors. The history of development of part of the site is also significant. A small housing scheme to the south has been completed.

#### **Potential impacts**

Apart from the roads and traffic issues, I consider that there is very limited potential impact. The construction phase impacts are referenced earlier in relation to noise and air as well as population and human health. The operational traffic and potential for noise and odour to adversely affect residential properties is also addressed and would be deemed to be imperceptible.

#### **Mitigation measures**

The primary construction phase mitigation measure is the adoption and implementation of a CEMP and associated traffic management measures. The agreement in principle to undertake site entrance works and to contribute towards upgrading of the northbound slip road were confirmed at the oral hearing as further mitigation measures. The impacts on material assets including residential properties will thus be Imperceptible but there would remain a Slight impact on the roads network.

#### **Residual impacts**

No Significant residual impacts are predicted on material assets during construction or operation phases for the RSBF.

#### **Monitoring**

There is no proposed monitoring and no requirement.

### 9.7.6.4. **Cultural Heritage – GDD**

#### **Introduction and Existing Environment**

The area in which the proposed development is to be developed contains a wealth of sites of archaeological interest and areas of archaeological potential. In addition the

area contains a number of demesne houses and buildings of architectural interest including some which are not formally recorded under the NIAH or record of protected structures.

### **Potential Impacts**

I consider that the potential significant impacts are:

- Direct impacts on recorded monuments. In all 10 sites are directly impacted. This is a Very Significant Impact in the case of 3 no. individual archaeological monuments.
- Direct impacts on areas of archaeological potential. In some cases the impact is Very Significant.
- Potential impacts on marine archaeology specifically shipwrecks cannot be ruled out although none are identified within the corridor of the outfall pipeline.

Direct and indirect impacts on architectural heritage including demesne landscapes are described in the EIAR and it is concluded that the Impact Significance is Slight in terms of direct impacts. I agree with this conclusion and have set out my reasoning for that earlier in this report.

I note in addition that the avoidance of cultural heritage assets was pursued throughout the project design. The assessment undertaken has also involved several phases of archaeological testing, underwater archaeological assessment and geophysical surveys including of the WwTP site where follow-up testing was undertaken and at the Orbital Sewer route.

### **Mitigation Measures**

The mitigation measures include:

- Archaeological test trenching throughout the lands affected by the GDD project as precursor to a programme of works to ensure full preservation by record.
- Monitoring of dredging by a specialist underwater archaeologist under licence.
- Underwater or wade surveys along any watercourses to be impacted.
- Written and photographic records of townland boundaries. Reduction in width of hedgerow removal at townland boundaries as agreed at oral hearing.

- All recommendations subject to approval by NMS.
- At two specific locations Springhill House and Middletown Lower House full photographic landscape record to be undertaken to address indirect landscape impacts.

### **Residual Impacts**

I agree with the conclusion in the EIAR that after mitigation the Impact Significance would be described as Imperceptible in accordance with accepted practice.

#### **9.7.6.5. Cultural Heritage – RBSF**

##### **Overview and Existing Environment**

To the north of the site (30m from the boundary) is the archaeological site of the levelled Anglo-Norman motte Kilshane Motte / Newtown Castle, which is a protected structure and a recorded monument.

The site has previously been assessed for archaeology by the carrying out of test excavations across the entire site. No archaeological material was identified.

No potential impact on known archaeological monuments in area due to distance.

##### **Potential Impacts**

An associated buffer zone at Kilshane Motte will be incorporated into the proposed development. The main storage buildings within the overall development site would be situated greater than 100m south of the neighbouring Motte and Bailey, which would be protected by a landscape buffer zone and no impact is therefore likely.

No direct impacts on any items of cultural heritage, archaeology or heritage interest on site or in the vicinity of the Proposed RBSF Component.

##### **Mitigation measures**

No mitigation measures are required.

##### **Residual Impacts**

No negative residual impacts are predicted.

#### 9.7.6.6. **Landscape and Visual – GDD**

##### **Overview and Baseline**

The assessment of the WwTP/SHC is accompanied by high quality photomontages. The identified areas of higher sensitivity include the coast, the Tolka Valley and the Malahide Road Demesnes.

##### **Potential Impacts**

I consider that the potential impacts of significance are:

- The GDD will give rise to significant landscape and visual effects throughout the construction period. The EIAR description of a Moderate to Slight Impact is reasonable.
- Short term localised impacts associated with the orbital and outfall routes would generally be Slight in terms of significance. This would include impacts related to loss of trees and hedgerows. I am satisfied that there is adequate information available in the habitats survey details for the purposes of EIA.
- The significance of impacts at the WwTP / SHC site would be greater due to the change in landscape character from agricultural to construction site, the use of cranes and the emerging structures which would be prominent in the low lying area. I consider that this is a Moderate Impact Significance due to it being consistent with emerging trends and does not alter a sensitive aspect of the environment. The greenbelt designation at this location is not for the purposes of landscape protection.
- In the operational phase there are Substantial Impacts on houses to the north and west of the site (VP1 and VP4). The house to the north is unoccupied. The changes at the west near the egress would be visible to residents and to substantial numbers of passing motorists.
- Views from the Clayton Hotel would be of Moderate Impact Significance as the development is in line with the emerging character including at the HT lands.

Regarding cultural heritage sites the earlier consideration of Emsworth, Springhill and Lower Middleton refers. At Emsworth the main concern relates to tree

protection. Springhill House and Lower Middleton House and other protected structures discussed earlier will not be impacted in any significant way in my opinion as the upper part of the proposed buildings at the WwTP site would be barely visible and would blend into the skyline.

## **Mitigation**

Extensive mitigation measures are presented in the EIAR. These include:

- Restoration of orbital and outfall routes including transplanting of hedgerows or new planting.
- The reduction in hedgerow removal at townland boundaries and the need for tree surveys and tree protection measures as recommended by FCC will be recommended for adoption by condition of any decision to grant permission. This matter was discussed and agreed at the hearing by the applicant and the planning authority. Mitigation is addressed in the OCEMP.
- Maintenance of landscaped buffers of appropriate character to be implemented. High level of internal planting.
- Arrangement of building blocks clustering the highest elements to the south where the HT lands are located and in general providing space between blocks for planting and to ensure that the development reads as a cluster of elements in a campus style development with a high degree of visual permeability. Adoption of appropriate colour scheme for buildings.
- Adoption of a vernacular design at APS. Screen planting at fencing. FCC recommendations regarding need for tree survey and tree protection measures highly relevant to this area also.

## **Residual Impacts**

I am satisfied that the significance of residual impacts would be reduced to Moderate at Clonsaugh. In general I consider that after mitigation the landscape and visual impacts would be Slight or Imperceptible. The residual impacts are acceptable in my opinion and the resulting development would be associated with a Neutral Quality of Effects.

#### 9.7.6.7. **Landscape and Visual - RBSF**

##### **Introduction and Existing Environment**

The EIAR Volume 4 contains photomontages of the proposed development site. The site context would not be described as especially sensitive in terms of landscape and visual impacts being influenced by the adjacent elevated N2 and the general character of the area which includes large facilities at Huntstown and a range of smaller business parks as well as one-off residential house and agricultural lands. There are no landscape designations and no valued landscape features.

##### **Potential Impacts**

I consider that the most significant potential impacts are:

- Significant and temporary impacts affecting adjacent houses on the R135.
- Visual impacts from elevated sections of the N2 are of interest due to the numbers of motorists. A Slight Negative Temporary Impact.
- Impacts would be Moderate and Negative in the operational phase due to the massing of the buildings and the proximity to residential receptors in my opinion.

In general I am satisfied that the development would read as part of the emerging landscape in an area designated for heavy industry.

##### **Mitigation**

The most noteworthy mitigation measures are:

- The construction of earthen berms to provide immediate screening at the southern boundary of the site.
- Final landscaping of the site which includes extensive planting.

##### **Residual Impacts**

I consider that no negative residual landscape or visual impacts are likely for the RBSF either during construction or operation.

#### 9.7.6.8. **Conclusion on Material Assets, Cultural Heritage and Landscape**

Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and matters to be addressed in planning conditions. I am satisfied that the proposed development would not have any unacceptable significant direct or indirect impacts on **Material Assets, Cultural Heritage and Landscape**.

#### 9.7.7. **Cumulative Impacts and Interactions**

The assessment of cumulative impacts in the EIAR as revised by the updated information presented at the hearing (OH-37) provides a comprehensive examination of the projects which it is considered have potential to overlap with the GDD and RBSF and to give rise to cumulative impacts. In terms of the actual presentation of information there is a more detailed account of cumulative impacts in Volume 4. As the two components are part of the same EIAR and the same application I am satisfied that when the entirety of the information is taken into account it is sufficient to enable the Board to draw conclusions relating to interactions and cumulative impacts. In all it is considered in Volume 3 of the EIAR that 12 no. projects have the potential to overlap in their temporal scope and to be likely to interact with the project having regard to their scale and nature and thus to give rise to potential significant cumulative effects. Based on the approach taken in Volume 3 of the EIAR the relevant projects for the purposes of cumulative impacts are:

- The aviation fuel pipeline to be constructed between Dublin port and airport.
- Housing at Belcamp on the Gannon Properties lands.
- The proposed land remediation at a location 300m from the WwTP site.
- Residential Development at Baldoyle – The Coast – which is about 400m from the outfall pipeline.
- National Paediatric Hospital Development at Connolly adjacent the orbital sewer.
- Blanchardstown Regional Drainage Scheme.
- Drumnigh Residential Development to the north of the outfall sewer.

- The new runway at Dublin airport.
- Red Arches housing development at Baldoyle.
- Ringsend WwTP upgrade project extension.
- Station Manor Portmarnock housing development – to the north of the outfall pipeline.
- Sutton to Malahide Greenway.

As the application for the Sutton to Malahide Greenway has not received consent it could be discounted in the assessment of cumulative impacts. I have considered the potential for cumulative impacts from other projects including projects which currently permit dumping at sea of dredged material and the permitted Howth Harbour dredging scheme both of which were discussed at the hearing. I consider that these projects are not significant for the purposes of EIA. I do consider it relevant to take into account developments close to the RBSF namely the Huntstown facilities, which are described in Volume 4. These may be relevant to cumulative water and air impacts. Emissions would have been considered as part of the existing background data with the exception of the proposed bioenergy plant for which an extension to the permission has been granted. As the Huntstown bioenergy facility should be considered in terms of potential cumulative water quality and air impacts. The principle cumulative impacts and environmental interactions are described below.

In terms of **population and human health construction phase impacts** from the proposed development and other projects if undertaken at the same time could give rise to increased noise, traffic and air emissions, which could give result in cumulative effects on residential properties and potentially on health. In view of the nature scale and location of these potential sources of impact I consider that there is no reasonable likelihood of significant cumulative impacts.

In view of the separation distance and the mitigation measures for the GDD and RBSF project there is no potential for significant **cumulative marine water quality** impacts from the Ringsend upgrade in the construction or operational phases. My earlier conclusions in relation to the water quality impacts from the GDD refer. There are no potential water quality impacts from the RBSF proposal which would result in cumulative impacts with other proposed projects.



All of the projects which have been identified as having potential for significant cumulative effect could give rise to **cumulative effects on water quality** and on the wider environment including on protected species and habitats during construction. This could result from release of suspended sediment and contaminated run-off into the same catchments traversed by the proposed project. All of the projects have listed adherence measures which would have to be complied with under the terms of their consents to undertake the developments. Discharge from the Huntstown facilities is under licence. Therefore subject to **adherence to measures set out in the CEMP** and to the implementation of effective surface water management there would not be significant cumulative effects on water and / or on related ecology or environmental resources.

The projects identified as having the potential for cumulative effects with the GDD and RBDF may involve **habitat loss including due to removal of trees and hedgerows**. I accept the applicant's statements to the effect that this cumulative loss of habitat would not increase the magnitude of the effect of the habitat loss. No significant cumulative effect on terrestrial biodiversity is likely.

The potential that the RBSF and GDD components of the overall project could result in **cumulative impacts on air including odour** was addressed at the hearing by Dr Shanahan. Her evidence was to the effect that an area where consideration of cumulative impacts might be relevant and is between Dubber OCU and the RBSF but that examination of the information lead to a conclusion that no such cumulative effects arise. In this regard she referred to the isopleths in the EIAR. I accept this evidence. The specific matter of the permitted Huntstown bioenergy facility is addressed in Volume 4 wherein it is concluded that the odour contribution from Huntstown is negligible when considered in the context of the RBSF study area and the combined impacts would be well below the adopted odour annoyance criteria. I am satisfied that there is no potential for significant cumulative air impacts.

The **traffic assessment** in Volume 3 took into account permitted projects which have the potential to impact the road network in terms of potential cumulative impacts, which include Dublin airport runway, development at NSC and Connolly Hospital, bus rapid transit projects if permitted, the possible Metro lines, Ringsend WwTP upgrade project and the future Malahide Road realignment scheme. In general minimal potential cumulative impacts on traffic are anticipated as a result of

these projects as they will not overlap in timescale or will not generate significant traffic in the vicinity of the GDD. Table 13.1 outlines the individual developments including the Ringsend WwTP upgrade and while it does not reference the RBSF the conclusions remain robust. In considering the potential traffic assessments the approach in Volumes 3 and 4 has been to take into account likely future traffic as a result of zoned lands and to consider what may be a likely worst case scenario. In this respect it may reasonably be concluded that the cumulative impacts are fully addressed.

I have considered the potential for significant **cumulative landscape impacts** and consider that no such impacts are likely due to the separation distances and taking into account the emerging character of the wider area.

When the RBSF is taken into account with the Ringsend upgrade and the GDD wastewater treatment plant and sludge hub facility it may be concluded that there are additional positive cumulative benefits arising from the provision of a means of dealing with sludge in the region. The indirect effects of land spreading of biosolids are described in Chapter 19 of the Volume 4.

I am satisfied that the impacts including those arising from interactions, indirect and cumulative impacts are not significant and can be avoided, managed and / or mitigated by the measures which are presented by the applicant in the EIAR as amended by any oral hearing submissions and which would form part of the proposed development if permitted. In addition I refer to a number of the conditions which are set out below to address further matters which have arisen. I am satisfied that consent for the development can be permitted having regard to the significant effects, the resulting interactions between the environmental factors and the cumulative impacts.

#### **9.8. Vulnerability of projects to major accidents and/or natural disasters**

The requirement to address the vulnerability of projects to major accidents and / or natural disasters under the EIA Directive is addressed by the applicant in Chapter 22 Volume 3 of EIAR and in Chapter 15 Volume 4 of EIAR.

Observers have made a number of wide ranging comments relating to risk. This section of this report refers only to what are considered to be potential major risks and natural disasters. I have elsewhere considered matters related to plant failure.

I have reported earlier on comments made by Ms Joyce Kemper in relation to the Critical Infrastructure Directive and the requirements for risk assessment which emanate from that legislation. I have also considered the matter of airport related risk in terms of planning policy. I accept Mr McGrath's comments that the Critical Infrastructure Directive is relevant to existing infrastructure only. My consideration of the matter of risk below relates to the requirements of EIA and in this regard I have taken into account the advice in the EPA Guidance documents. A brief summary of the matters relevant for consideration is set out in the application documents. It is appropriate that the focus be on potential major accidents and / or disasters based on a likelihood of occurrence.

In considering the applicant's submissions as presented in the EIAR in particular I consider that it is relevant to note the reference to major accident plans and documentation pertaining including to the airport, Huntstown power station, to fire risk and to Irish Water's own procedures.

### **Potential impacts - GDD**

Taking into account the likelihood and the consequences of a major accident and / or natural disasters that the project may be vulnerable and all submissions made on this issue I consider that the likely significant potential impacts for assessment are events due to the following:

- Tunnelling – this is Unlikely but there is potential for Serious Consequences.
- Fire at the WwTP site or at Abbotstown – this is also Unlikely to occur but potentially is Serious in terms of risks to life and pollution.
- Accidents related to power lines, which are Unlikely but would be Serious.
- Pollution events related to release of silt to the aquatic environment. I agree with the assessment undertaken in the EIAR which describes these events as Likely prior to mitigation and potentially Serious due to impacts on Natura sites in particular. The same reasoning applies to other pollutants.
- Road traffic accidents are Likely given the scale of the works and Serious.

- Explosion related to biogas which in the absence of mitigation could be hazardous and result in pollution. In the absence of mitigation this could be considered to be a Likely risk and would be potentially Serious.
- Significant odour release in the operational phase which prior to mitigation might be considered to be a Likely event. I agree with the applicant's assessment, that the consequences of such event would be Limited.
- Similarly without mitigation a marine accident due to vessels colliding in the construction phase might be reasonably described as a Likely event and one which would potentially have fatal consequences and lead to environmental damage. A consequence rating of Serious is reasonable.

I consider that there might be an argument that taking into account certain embedded mitigation some of the above scenarios would not meet the threshold for consideration under this section. However, taking a precautionary approach to the matter I have attributed the highest plausible level of risk and consequences.

I note that the above all constitute Medium risk scenarios and that there are no High risk scenarios likely. Low risk scenarios are discounted.

The observer Ms Joyce Kemper call for an assessment of risk related to the airport flight path and the interaction with the site of the WwTP and stated that the identified risk should not have been rejected. Neither IAA nor DAA has raised any concerns in relation to this matter. Nevertheless, the Board may wish to consider vulnerability of the development in the event of a need to use the flight path in an emergency situation. That risk was considered in the EIAR and is presented in Table 22.4 but was deemed to be Extremely Unlikely. The site of the WwTP is in the Outer Public Safety Zone, which is identified on the development plan Sheet 11. I conclude that the classification of risk undertaken in the EIAR as Extremely Unlikely is appropriate in that context. The same conclusion may be drawn in relation to a terrorist threat, which is not specifically addressed in the EIAR. I consider that there is no value for the purposes of EIA in an exercise which considers a risk which is of such infinitesimal likelihood, particularly in the absence of any comments from the relevant authorities. I agree that all plausible risks were considered and that the decision to discount risks Low risks is acceptable. Further, I consider that there would be no requirement for such matters to be assessed under any risk assessment relevant to

any planning application. I have previously addressed the comments made in relation to the Critical Infrastructure Directive, which I am satisfied do not apply.

### **Mitigation and Residual Impacts-GDD**

The primary mitigation measures which are relevant to the events identified above and which are presented as part of the project are:

- Measures which fall under legal provisions relating broadly to health and safety which would address **risks relating to working close to power lines and the use of vehicles and of vessels at sea**. The related measures which are presented in the EIAR are the adoption of a Vessel Management Plan and a Traffic Management Plan. The Likelihood of an event would after mitigation be considered to be Very Unlikely.
- The design and selection of appropriate construction which together with **subsidence and vibration monitoring would lead to protection of the stability of roads and railways**. The Likelihood of an event would after mitigation be considered to be Unlikely. Regarding the **risks to Natura sites associated with the tunnelling** I consider that the concerns raised by Ms Joyce Kemper including in relation to the need for intervention pits and the level of understanding of the geology under Baldoyle Bay estuary were adequately addressed at the hearing and that there is no plausible risk related to tunnelling, which would impact Baldoyle Bay SAC.
- The Likelihood of a **pollution event which would impact the natural environment** is reduced by mitigation including a SWMP and a VMP to Very Unlikely. The measures involved are clearly capable of implementation. In particular the implementation of the VMP addresses the risk of pollution in the marine environment.
- Subject to the implementation of the odour abatement technology and measures which are presented in relation to monitoring and incident response procedures, **risk of a significant odour release** is reduced to Very Unlikely.
- Fire risk including due to **risks associated with dried sewage sludge and the risk of gas explosion related to biogas** would be Very Unlikely after mitigation including under the OCEMP and embedded design measures.

- An **emergency incident response plan** will also be put into effect. This is a live document which will be subject of regular monitoring, review and update.

### **Conclusion - GDD**

It may be concluded that following mitigation there would be no major accidents or natural disasters, which taking into account the risk of the event in combination with the consequences would present significant residual impacts or environmental effects.

### **Potential impacts – RBSF**

Taking into account the likelihood and the consequences of a major accident and / or natural disasters that the project may be vulnerable to and all submissions made on this issue I consider that the likely significant potential impacts for assessment are events related to the following:

- Fire events and events related to damage to power lines, which are Unlikely but potentially Serious. The risk of fire associated with biosolids is a factor.
- Road traffic accidents which are Likely and which are potentially Serious. The congestion at the junction of the N2 together with the operational traffic levels are relevant.

### **Mitigation and Residual Impacts-RBSF**

The primary mitigation measures which are relevant to the events identified above and which are presented as part of the project are:

- Measures which fall under legal provisions relating broadly to health and safety which would address **risks relating to working close to power lines and the use of vehicles on roads**. The related measures which are presented in the EIAR include a Traffic Management Plan and the recommended financial contribution in relation to the upgrade of the motorway junction are also noted. The Likelihood of an event would after mitigation be considered to be Very Unlikely.
- Regarding the **fire safety aspects** the mitigation measures will largely be covered by separate code and are amenable to being addressed.

- An **emergency incident response plan** will also be put into effect. This is a live document which will be subject of regular monitoring, review and update.

## **Conclusion – RBSF**

It may be concluded that following mitigation there would be no major accidents or natural disasters, which taking into account the risk of the event in combination with the consequences would present significant residual impacts or environmental effects.

### **9.9. Reasoned Conclusion on the Significant Effects**

9.9.1. Having regard to the examination of environmental information contained above in the EIAR and supplementary information provided at the oral hearing by the applicant and observers together with the written submission on file from the observers and prescribed bodies, it is considered that the main significant effects of the proposed development on the environment are as follows:

- Positive long-term impacts to **population and human health** from the provision of adequate wastewater and sludge treatment and from the provision of biosolids storage capacity to support planned residential and economic growth in the Dublin region while securing compliance with European Directives and supporting legislation. Positive long-term indirect impacts to human health from the protection of bathing water and commercial shellfish areas.
- Significant negative temporary impacts on **population and human health** as a result of noise and vibration and disturbance. The sensitive receptors which are likely to be impacted include parts of Connolly hospital, St Francis hospice and some individual houses. Potential impacts on Connolly Hospital are minimised through design mitigation measures including the construction of a 1km tunnel to accommodate the orbital pipeline through the campus, by mitigation measures to ensure maintenance of emergency routes and by measures to minimise air and noise effects on the use of wards. Temporary rehousing of residents will be considered in the case of some individual residential properties, in the absence of other mitigation being sufficient. Dust impacts and emissions from vehicles during the construction phase will have

a temporary and highly localised impact. Notwithstanding the mitigation measures proposed, the residual impacts could still be significant albeit localised and temporary in duration.

- The adoption of conservative **odour** criteria minimises potential adverse impacts due to odour. The design, implementation and monitoring of odour abatement systems and adherence to the adopted criteria set out in the EIAR and by condition below will ensure that odour emissions do not reach a level that could cause odour nuisance at or beyond the site boundary of any of the facilities.
- Positive **marine water quality** impacts by the provision of wastewater treatment capacity to meet planned growth and to reduce reliance on Ringsend wastewater treatment plant.
- In the operation phase marine water quality impacts on shellfish areas are mitigated by the dispersal characteristics at the location of the diffuser and the design of the wastewater treatment plant including the proposed UV treatment. **Bathing water quality** will not be reduced even in the highly unlikely event of a failure of the plant due to the location of the diffuser in an area of high natural dispersal characteristics, the range of design measures and the control which can be exercised over flows to the plant. Excellent water quality at Velvet Strand will be maintained.
- The construction phase risks to **water quality** are avoided by the geological conditions including the depth of boulder clay separating existing shallow irrigation wells and Baldoyle Bay SAC from the microtunnelling under the estuary and are mitigated by use of trenchless crossings of streams, by the application of best practice including the measures set out in the CIRIA guidance and the adherence to IFI guidelines. There would be no significant residual impact. As a result of seabed dredging there will be impacts to marine water quality from suspended sediment increases, which would be of short duration. Subject to mitigation measures relating to deposition of dredged material and monitoring there would be no significant residual impact.



- The location of all development and most of the construction in areas of low flood risk minimises potential water quality impacts relating to flooding in the construction phase and avoids downstream **flooding** of other lands. The location of compound 10 within Flood Zone A results in low level risk of adverse effects on the environment due to the proximity to European sites, which is mitigated by the measures in the CEMP including the piling method, bunding and use of best practice in relation to storage of material. The development will not result in any significant residual impacts relating to flooding.
- There is potential for a number of slight or short and very localised negative impacts to **marine biodiversity**. Air surface venting or bentonite breakout associated with tunnelling under Baldoyle Bay SAC would impact saltmarsh on a very small area for a short duration. Discharged sediment from dredging in the marine environment could impact on reefs, which is mitigated by the controlled discharge of dredge spoil. Noise and vibration from works at the tunnel interface could lead to avoidance of the area by marine mammals, which is mitigated by use of marine mammal observations and passive acoustic monitoring during piling activities.
- There is potential for short-term moderate impacts on **birds** including bird species which are special conservation interests of Natura sites. This could result from visual disturbance impacts at microtunnelling compounds and the presence of vessels working in the marine environment during dredging and pipe laying. There is potential for disturbance to birds as a result of noise from piling at the interface and at the fibre optic cable. Mitigation measures which are presented will ensure that there are no significant residual impacts.
- Operational **traffic** will result in increased congestion at junctions which are already congested and which will be congested at the time of operation of the wastewater treatment plant and the regional biosolids storage facility. The proposed development will add to delays at those locations.

## 10.0 Appropriate Assessment

### 10.1. Introduction

Article 6(3) of the Habitats Directive requires that any plan or project not directly connected with or necessary to the management of a European site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the sites in view of the sites conservation objectives.

The Board is the competent authority in this regard. The Board must be satisfied that the proposed development would not adversely affect the integrity of the European sites having regard to their conservation objectives.

This section of this report assesses whether in view of best scientific knowledge the project, individually or in combination with other plans or projects, is likely to have a significant effect on any European site, in view of the sites' conservation objectives.

The subject application relates to a project that is not directly connected with or necessary to the management of a European site.

The applicant submitted a Natura Impact Statement (NIS) incorporating an Appropriate Assessment (AA) Screening Report.

In considering this section of this report I have also had regard to the totality of information presented by the applicant including the NIS, the EIAR and the written and oral hearing submissions of the applicant and the observers, including contributions from DCHG.

The basis for the NIS includes a number of detailed scientific investigations including field surveys, assessments and modelling which were undertaken to assess and examine the potential for the project to impact on the conservation objectives of a number of European sites. I provide a brief summary of these investigations.

The **estuarine ornithological survey**, the results of which are provided in appendix A. Species composition and temporal distribution of birds associated with Baldoyle Bay SPA is described as fairly typical with most SCIs present in peak numbers in winter and passage and absent or in very low numbers in breeding season, with the exception of Shelduck.

**Coastal and marine vantage point (VP) ornithological surveys** were carried out between December 2014 and July 2016 and March 2017 and July 2017 using a vantage point at Velvet Strand and Ireland's Eye. The results summary in section 5.1.2.1 provides accounts for observations of the SCIs of Ireland's Eye SPA and also notes that some species that are SCIs of Baldoyle Bay SPA were also recorded during the VP surveys.

A **boat based assessment of Auk Fledging** was undertaken in July 2016 and July 2017. The results revealed that fledged chicks were not in the water until mid-July. By the final week of July the majority of guillemots and razorbills had left the area without massing of large numbers of birds in the water being recorded.

**Baldoyle estuary walkover** of coastal and intertidal habitats shows that the boundaries of the Annex 1 habitats as mapped in 2009 have not changed significantly since that time and the vegetation composition of the marine route appears to have remained broadly similar. The pipeline route avoids direct impact on any parts of the SAC.

**Surveys for reefs** in Ireland's Eye SAC and Rockabill to Dalkey Island SAC involved intertidal and subtidal surveys undertaken in 2010 and 2011, used to determine the physical and biological nature of the Annex 1 habitat. Two additional surveys were undertaken to obtain a greater understanding of the features within the vicinity of the outfall pipeline. The results summary indicates that **intertidal reef community complex** is recorded on the eastern and southern shores of Ireland's Eye south of the proposed outfall pipeline route and marine diffuser location. A detailed walkover survey in 2015 indicated populations that were well represented and moderately diverse habitat containing many of the common species found along the Irish Sea coastline. **Subtidal reef community complex** is recorded off the northern eastern and southern shores of Ireland's Eye south of the proposed marine outfall and marine diffuser location. Appendix B - moderately high species diversity and no particular species of nature conservation interest or particularly fragile biotopes recorded. Naturally high levels of siltation.

**Surveys for harbour porpoise in Rockabill to Dalkey Island SAC** and data availability in general is addressed in 5.1.6 including the targeted surveys in 2008. Also more recent site-specific information of cetacean activity in the vicinity of the

proposed outfall pipeline over a two-year programme refers. Full details in Appendix C. IWDG supported the project. High levels of marine mammal sightings recorded. Harbour porpoise numbers increased in late summer during 2015 and 2016. Some of the highest densities recorded in Ireland.

**Airborne noise modelling at micro-tunnel compounds** assessed by a noise specialist. Airborne noise impacts in subsea environment also assessed.

**Water quality modelling and suspended plume analysis** computational models are described briefly in section 5.2.2.1. The backhoe dredger to be used in shallower areas for 12 hours a day will result in excavation of between 200,000m<sup>3</sup> and 400,000m<sup>3</sup> and will take approximately 130 days. Sediment characteristics were obtained from fibro-coring and borehole data. Grey silty sand predominates along the entire route and there is an increasing gravel fraction over the depth. The deposition depth of dredged material is greatest in the immediate vicinity (within 8m) of the trench (greater than 300mm) with deposition depth reducing to 3mm within a few hundred metres of the trench route. Sediment fines (silts and clays) obviously travel further and when discharged during flooding tides a concentration of between 10mg/l and 100 mg/l is recorded out to a maximum distance of around 1400m north of the route. Concentrations of suspended sediments remained just detectable out to 2600m from the pipeline. Almost all suspended plume discharge is predicted to disperse to the north of the route following a controlled discharge. A small surface plume of 1-5 mg/l and 200m to 300 m across would be caught in a small back eddy 350 m north of Ireland's Eye.

**CORMIX model was used to predict the operational plume development,** dilution and effluent concentrations. Following interaction with the surrounding medium the plume becomes a diffuse mass carried along by the ambient current. The results indicated a consistent 20 fold dilution in the near field (50m) from the discharge point. Far field dilutions (500 m) showed greater variability but generally varied between 33 fold dilution during slack events to 100 fold dilution during mid flood or ebb tidal streams. A total suspended solids discharge of 35 mg/l (95<sup>th</sup> percentile) discharge would dissipate to an increased background of 1.75 mg/l within 50m at all states of the tide and vary from 1.06 to 0.035 mg/l at 500m subject to tide. Other water quality parameters assessed were the key treated effluent components and a 3 day process failure.

I consider that the information available constitutes the best available scientific information and is sufficient to allow the Board to carry out an appropriate assessment.

## 10.2. **STAGE 1 - Screening**

Stage 1 of the appropriate assessment process is the screening stage whereby it is determined whether the project is likely to have a significant effect, either individually or in combination with other plans and projects on European sites in view of the sites' conservation objectives.

I refer the Board to the description of the development earlier in this report. In brief it comprises the following elements:

- WwTP at Clonshaugh
- Orbital pipeline
- Abbotstown pumping station
- Outfall pipeline (land and marine sections)
- Other ancillary works
- RBSF at Newtown.

The receiving environment is described in section 3.1 of the NIS. The table below lists the European sites within the zone of influence of the GDD and RBSF project. It identifies the potential pathways to these sites from the development. This is the most up to date information available. I can verify the accuracy of the information presented below as accurate on 31<sup>st</sup> May 2019.

10.3. Conservation Objectives - Table.

Site Name and Site Code	Conservation Objectives and Qualifying Interests (Habitats and Species)	Location / distance to European site and Potential Pathways
<p>Baldoyle Bay SAC (000199)</p>	<p><b>Conservation Objectives</b> <i>Version 1.0, 19 November 2012</i></p> <p>To maintain the favourable conservation condition of the qualifying interests in Baldoyle Bay SAC, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</p>	<p>Marine outfall passes through SAC</p> <p>Hydrological</p> <p>Underwater noise / disturbance</p> <p>Habitat loss</p>
<p>Baldoyle Bay SPA (004016)</p>	<p><b>Conservation Objectives</b> <i>Version 1.0, 27 February 2013</i></p> <p>To maintain the favourable conservation condition of the waterbird population and wetland habitat in Baldoyle Bay SPA, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</p> <p>Shelduck (<i>Tadorna tadorna</i>)</p> <p>Ringed Plover (<i>Charadrius hiaticula</i>)</p> <p>Golden Plover (<i>Pluvialis apricaria</i>)</p> <p>Grey Plover (<i>Pluvialis squatarola</i>)</p> <p>Bar-tailed Godwit (<i>Limosa lapponica</i>)</p> <p>Wetlands</p>	<p>Marine outfall passes through SPA</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>

<p>Rockabill to Dalkey Island SAC (003000)</p>	<p><b>Conservation Objectives</b>  <i>Version 1.0, 07 May 2013</i></p> <p>To maintain the favourable conservation condition of reefs and harbour porpoise, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Reefs</p> <p>Phocoena phocoena (Harbour Porpoise)</p>	<p>1,300m of marine outfall and the diffuser in SAC</p> <p>Hydrological</p> <p>Underwater noise / disturbance</p> <p>Habitat loss</p>
<p>Ireland's Eye SAC (002193)</p>	<p><b>Conservation Objectives</b>  <i>Version 1.0, 27 January 2017</i></p> <p>To maintain the favourable conservation condition of the Perennial vegetation of stony banks and Vegetated sea cliffs of the Atlantic and Baltic coasts, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Perennial vegetation of stony banks</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts</p>	<p>1 km south of marine outfall</p> <p>Designated for coastal not marine habitats. No hydrological link and no open pathway of effect. No real possibility of LSEs.</p>
<p>Ireland's Eye SPA (004117)</p>	<p><b>Conservation Objectives</b>  <i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the bird species listed as SCIs.</p> <p><b>Qualifying interests</b></p> <p>Cormorant (<i>Phalacrocorax carbo</i>)</p> <p>Herring Gull (<i>Larus argentatus</i>)</p> <p>Kittiwake (<i>Rissa tridactyla</i>)</p> <p>Guillemot (<i>Uria aalge</i>)</p> <p>Razorbill (<i>Alca torda</i>)</p>	<p>0.4 km south-west of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
<p>North Dublin Bay</p>	<p><b>Conservation Objectives</b>  <i>Version 1.0, 06 May 2013</i></p> <p>To maintain or restore the favourable conservation condition of the qualifying</p>	<p>2.3 km south of the marine outfall</p>

<p>SAC (000206)</p>	<p>interests which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Annual vegetation of drift lines</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</p> <p>Embryonic shifting dunes</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</p> <p>Fixed coastal dunes with herbaceous vegetation (grey dunes)</p> <p>Humid dune slacks</p> <p><i>Petalophyllum ralfsii</i> (Petalwort)</p>	<p>Hydrological</p>
<p>North Bull Island SPA (004006)</p>	<p><b>Conservation Objectives</b></p> <p><i>Version 1.0, 09 May 2015</i></p> <p>To maintain the favourable conservation condition of the bird species listed as SCIs, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Brent Goose (<i>Branta bernicla hrota</i>)</p> <p>Shelduck (<i>Tadorna tadorna</i>)</p> <p>Teal (<i>Anas crecca</i>)</p> <p>Pintail (<i>Anas acuta</i>)</p> <p>Shoveler (<i>Anas clypeata</i>)</p> <p>Oystercatcher (<i>Haematopus ostralegus</i>)</p> <p>Golden Plover (<i>Pluvialis apricaria</i>)</p> <p>Grey Plover (<i>Pluvialis squatarola</i>)</p> <p>Knot (<i>Calidris canutus</i>)</p> <p>Sanderling (<i>Calidris alba</i>)</p> <p>Dunlin (<i>Calidris alpina alpina</i>)</p> <p>Black-tailed Godwit (<i>Limosa limosa</i>)</p>	<p>2.3 km south of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>



	<p>Bar-tailed Godwit (<i>Limosa lapponica</i>)  Curlew (<i>Numenius arquata</i>)  Redshank (<i>Tringa totanus</i>)  Turnstone (<i>Arenaria interpres</i>)  Black-headed Gull (<i>Chroicocephalus ridibundus</i>)  Wetlands</p>	
<p>Malahide  Estuary  SPA  (004025)</p>	<p><b>Conservation Objectives</b>  <i>Version 1.0, 16 August 2013</i></p> <p>To maintain the favourable conservation condition of the bird species listed as SCIs, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Great Crested Grebe (<i>Podiceps cristatus</i>)  Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)  Shelduck (<i>Tadorna tadorna</i>)  Pintail (<i>Anas acuta</i>)  Goldeneye (<i>Bucephala clangula</i>)  Red-breasted Merganser (<i>Mergus serrator</i>)  Oystercatcher (<i>Haematopus ostralegus</i>)  Golden Plover (<i>Pluvialis apricaria</i>)  Grey Plover (<i>Pluvialis squatarola</i>)  Knot (<i>Calidris canutus</i>)  Dunlin (<i>Calidris alpina</i>)  Black-tailed Godwit (<i>Limosa limosa</i>)  Bar-tailed Godwit (<i>Limosa lapponica</i>)  Redshank (<i>Tringa totanus</i>)  Wetlands</p>	<p>2.5 km to the north of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
<p>Malahide  Estuary  SAC  (000205)</p>	<p><b>Conservation Objectives</b>  <i>Version 1.0, 27 May 2013</i></p> <p>To maintain or restore the favourable conservation condition of the qualifying interests which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p>	<p>2.5 km to the north of the marine outfall</p> <p>Hydrological</p>

	<p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</p> <p>Fixed coastal dunes with herbaceous vegetation (grey dunes)</p>	
Howth Head SPA (004113)	<p><b>Conservation Objectives</b></p> <p><i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the bird species listed as SCIs for this SPA.</p> <p><b>Qualifying interests</b></p> <p>Kittiwake (<i>Rissa tridactyla</i>)</p>	<p>2.6 km to the south of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
Howth Head SAC (000202)	<p><b>Conservation Objectives</b></p> <p><i>Version 1.0, 06 December 2016</i></p> <p>To maintain the favourable conservation condition of the qualifying interests which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts</p> <p>European dry heaths</p>	<p>2.6 km to the south of the marine outfall</p> <p>Designated for coastal not marine habitats. No hydrological link and no open pathway of effect. No real possibility of LSEs.</p>
South Dublin Bay and River Tolka	<p><b>Conservation Objectives</b></p> <p><i>Version 1.0, 09 March 2015</i></p> <p>To maintain the favourable conservation condition of waterbird population and wetland habitat in South Dublin Bay and</p>	<p>7.6 km south of marine outfall and ballasting. Ballasting and pipe assembly</p>

<p>Estuary SPA (004024)</p>	<p>River Tolka Estuary SPA, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</p> <p>Oystercatcher (<i>Haematopus ostralegus</i>)</p> <p>Ringed Plover (<i>Charadrius hiaticula</i>)</p> <p>Grey Plover (<i>Pluvialis squatarola</i>) – proposed for removal</p> <p>Knot (<i>Calidris canutus</i>)</p> <p>Sanderling (<i>Calidris alba</i>)</p> <p>Dunlin (<i>Calidris alpina</i>)</p> <p>Bar-tailed Godwit (<i>Limosa lapponica</i>)</p> <p>Redshank (<i>Tringa totanus</i>)</p> <p>Black-headed Gull (<i>Chroicocephalus ridibundus</i>)</p> <p>Roseate Tern (<i>Sterna dougallii</i>)</p> <p>Common Tern (<i>Sterna hirundo</i>)</p> <p>Arctic Tern (<i>Sterna paradisaea</i>)</p> <p>Wetland</p>	<p>may occur at Dublin port near Tern breeding sites.</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
<p>Rogerstown Estuary SAC (000208)</p>	<p><b>Conservation Objectives</b></p> <p><i>Version 1.0, 14 August, 2013</i></p> <p>To maintain or restore the favourable conservation condition of the qualifying interests, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Estuaries</p> <p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</p>	<p>8.5 km north of marine outfall</p> <p>Hydrological</p>

	Fixed coastal dunes with herbaceous vegetation (grey dunes)	
Rogerstown Estuary SPA (004015)	<p><b>Conservation Objectives</b> <i>Version 1.0, 20 May 2013</i></p> <p>To maintain the favourable conservation condition of the waterbird population and wetland habitat in Rogerstown Estuary SPA, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Greylag Goose (<i>Anser anser</i>) Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) Shelduck (<i>Tadorna tadorna</i>) Shoveler (<i>Anas clypeata</i>) Oystercatcher (<i>Haematopus ostralegus</i>) Ringed Plover (<i>Charadrius hiaticula</i>) Grey Plover (<i>Pluvialis squatarola</i>) Knot (<i>Calidris canutus</i>) Dunlin (<i>Calidris alpina</i>) Black-tailed Godwit (<i>Limosa limosa</i>) Redshank (<i>Tringa totanus</i>) Wetland and Waterbirds</p>	<p>8.5 km north of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
South Dublin Bay SAC (000210)	<p><b>Conservation Objectives</b> <i>Version 1.0, 22 August 2013</i></p> <p>To maintain the favourable conservation condition of the qualifying interest, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Mudflats and sandflats not covered by seawater at low tide</p>	<p>9.1 km south of the marine outfall</p> <p>Hydrological</p>
Lambay Island SAC (000204)	<p><b>Conservation Objectives</b> <i>Version 1.0, 22 July 2013</i></p> <p>To maintain the favourable conservation condition of the qualifying interests, which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p>	<p>9.3 km north-east of the marine outfall</p> <p>Hydrological</p>

	<p>Reefs</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts</p> <p>Halichoerus grypus (Grey Seal)</p> <p>Phoca vitulina (Harbour Seal)</p>	Underwater noise / disturbance
<p>Lambay Island SPA (004069)</p>	<p><b>Conservation Objectives</b></p> <p><i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.</p> <p><b>Qualifying interests</b></p> <p>Fulmar (<i>Fulmarus glacialis</i>)</p> <p>Cormorant (<i>Phalacrocorax carbo</i>)</p> <p>Shag (<i>Phalacrocorax aristotelis</i>)</p> <p>Greylag Goose (<i>Anser anser</i>)</p> <p>Lesser Black-backed Gull (<i>Larus fuscus</i>)</p> <p>Herring Gull (<i>Larus argentatus</i>)</p> <p>Kittiwake (<i>Rissa tridactyla</i>)</p> <p>Guillemot (<i>Uria aalge</i>)</p> <p>Razorbill (<i>Alca torda</i>)</p> <p>Puffin (<i>Fratercula arctica</i>)</p>	<p>9.3 km north-east of marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
<p>Dalkey Island SPA (004172)</p>	<p><b>Conservation Objectives</b></p> <p><i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.</p> <p><b>Qualifying interests</b></p> <p>Roseate Tern (<i>Sterna dougallii</i>)</p> <p>Common Tern (<i>Sterna hirundo</i>)</p> <p>Arctic Tern (<i>Sterna paradisaea</i>)</p>	<p>14.9 km south of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
<p>Skerries Islands</p>	<p><b>Conservation Objectives</b></p> <p><i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the bird species</p>	<p>16.7 km north of the marine outfall</p>

SPA (004122)	<p>listed as Special Conservation Interests for this SPA.</p> <p><b>Qualifying interests</b></p> <p>Cormorant (<i>Phalacrocorax carbo</i>)</p> <p>Shag (<i>Phalacrocorax aristotelis</i>)</p> <p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</p> <p>Purple Sandpiper (<i>Calidris maritima</i>)</p> <p>Turnstone (<i>Arenaria interpres</i>)</p> <p>Herring Gull (<i>Larus argentatus</i>)</p>	<p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
Rockabill SPA (004014)	<p><b>Conservation Objectives</b></p> <p><i>Version 1.0, 08 May 2013</i></p> <p>To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA which is defined by a list of attributes and targets.</p> <p><b>Qualifying interests</b></p> <p>Purple Sandpiper (<i>Calidris maritima</i>)</p> <p>Roseate Tern (<i>Sterna dougallii</i>)</p> <p>Common Tern (<i>Sterna hirundo</i>)</p> <p>Arctic Tern (<i>Sterna paradisaea</i>)</p>	<p>16.9 km north of the marine outfall</p> <p>Hydrological</p> <p>Airborne noise/disturbance</p> <p>Habitat loss</p>
Codling Fault Zone SAC (003015)	<p><b>Conservation Objectives</b></p> <p><i>Generic version 21 February 2018</i></p> <p>Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.</p> <p><b>Qualifying interests</b></p> <p>Submarine structures made by leaking gases</p>	<p>25 km east of project</p> <p>Hydrological</p>
Glenasmole Valley SAC (001209)	<p><b>Conservation Objectives</b></p> <p><i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.</p>	<p>14.8 km south of project</p>

	<p><b>Qualifying interests</b></p> <p>Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)</p> <p>Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)</p> <p>Petrifying springs with tufa formation (<i>Cratoneurion</i>)</p>	No potential for effects as no connecting pathways potentially within zone of influence
Rye Water Valley / Carton SAC (001398)	<p><b>Conservation Objectives</b></p> <p><i>21 February 2018</i></p> <p>To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.</p> <p><b>Qualifying interests</b></p> <p>Petrifying springs with tufa formation (<i>Cratoneurion</i>)</p> <p><i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail)</p> <p><i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail)</p>	8.7 km west of project

As recorded above for 4 no. European sites there is no potential pathway. This was subject of some discussion during the hearing. These sites are considered below.

### **Ireland's Eye SAC**

Regarding Ireland's Eye SAC, which is 1km south of the marine outfall the applicant's submission is that this site is designated for coastal and not marine habitats. There is no hydrological link and no open pathway of effect, thus there is no real possibility of LSE's.

At the oral hearing this matter was further considered. Ms Cawley attending in an advisory capacity for FCC stated that further clarification was required in relation to the ruling out of potential significant effects on Ireland's Eye SAC. Mr Wilson addressed the matter (OH-64). He reiterated that the site is designated for terrestrial habitats. There is no connection between the aquifer that supports the soils on the island and the marine works. There is no work on the island. The plume effects are shown to be negligible in terms of construction phase water quality impacts. The

vegetation is on the opposite side of the works to the project / plume trajectory and in sheltered areas where there is no likelihood of significant sea spray. In the operational phase the plume has been shown not to impact the waters immediately adjacent the SAC. There would be no impact from the imperceptible elevations in suspended sediments or nutrients in the unlikely event that sea water spray did contact the habitat. Based on this statement and the available information presented in the EIAR, the NIS and the background studies and the oral hearing discussion I am satisfied that the evidence firmly discounts any likely significant effect on the habitats which are qualifying interests. I consider that there is sufficient objective information to enable the Board to conclude that Ireland's Eye SAC can be screened out from further consideration.

### **Howth Head SAC**

This is 2.6 km to the south of the marine outfall and is designated for Vegetated sea cliffs of the Atlantic and Baltic Coasts and European dry heaths. The applicant's submission is that there is no hydrological link and no open pathway of effect, thus there is no likelihood of significant effects.

The conservation objectives for this European site are vegetated sea cliffs and dry heaths. These coastal terrestrial habitats are a considerable distance from the project in terms of any pathways which might give rise to significant effects. In relation to the construction and operational plumes the site is to the south and therefore away from and in the opposite direction to the area which might be affected. In any case at that distance there would be no discernible changes in water quality in the construction or operational phases. I consider that there is sufficient objective information to enable the Board to conclude that Howth Head SAC can be screened out from further consideration.

Regarding **Glenasmole Valley SAC**, which is 14.8 km south of the project it is the applicant's submission that there is no potential for effects on the site as there are no potential pathways such as streams or rivers within the zone of influence. I accept this conclusion and consider that it does not warrant further comment.

Regarding **Rye Water Valley / Carton SAC**, which is 8.7 km west of the project, it is the applicant's submission that there is no potential for effects as there are no



connecting pathways such as streams or rivers within the zone of influence. I accept this conclusion and consider that it does not warrant further comment.

Regarding the **Codling Fault Zone SAC 003015** this large SAC was designated in 2016 and is 7km length. It is 25km east of the site. It was discussed at the oral hearing that the site should be formally screened out notwithstanding its distance from the project. The site is not addressed in the NIS. It is considered to be of high ecological importance due to the presence of the habitat 'Submarine structures made by leaking gases' and the associated fauna.

At 25km from the development site this European site is a considerable distance from the influence of the proposed works. It would fall well outside any zone of influence including the defined 15km boundary recommended for consideration under national guidance and as such I consider that its omission from the NIS is generally acceptable. The submission of FCC however was that it should be addressed in the screening stage for completeness. The submission of NPWS that this site had been considered by their in-house marine specialist who considered that there are no issues in terms of appropriate assessment. I am satisfied that there would be no discernible impacts from any of the LSEs associated with the project and that it can clearly be screened out from requirements for further assessment.

I am satisfied that the following sites do not require further consideration:

- Ireland's Eye SAC (002193)
- Howth Head SAC (000202)
- Codling Fault Zone SAC 003015
- Glenasmole Valley SAC (001209)
- Rye Water Valley / Carton SAC (001398)

Elements of the project with potential for likely significant effects are addressed in section 4.2 of the NIS. The potential impact pathways are noted under the following effect themes:

- water quality and habitat deterioration
- Airborne noise and visual disturbance
- underwater noise and disturbance

- habitat loss.

Table 4.1 of the NIS indicates each of the project elements that can give rise to likely significant effects and considers for each project element the relevant stage of development (enabling works, construction works, commissioning and operational stages), the type of effects which might occur under the listed effect themes and the impact pathways as they might affect a European site. Table 4.3 relates to the Likely Significant Effects (LSEs) on qualifying interests or special conservation interests of European sites.

The water catchments traversed by the proposed project are listed and described in 4.2.1 and include the Tolka River, Santry River, Mayne River and its tributary the Cuckoo Stream. An Outline Surface Water Management Plan includes details of discharge locations and measures to ensure no direct discharge of surface water from any elements of works without proper attenuation and treatment. Volume 2 part B appendices refers.

I consider that all potential impacts associated with all elements of the development proposed together with the pathways and the potential LSEs on qualifying interests or special conservation interests of European sites are comprehensively considered in the NIS, that there are no lacunae and that this information is adequate for the Stage 2 assessment.

### **Stage 1 - Screening Conclusion**

It is reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on the European Sites:

- Ireland's Eye SAC (002193)
- Howth Head SAC (000202)
- Codling Fault Zone SAC (003015)
- Glenasmole Valley SAC (001209)
- Rye Water Valley / Carton SAC (001398)

in view of the sites' conservation objectives, a Stage 2 Appropriate Assessment is not therefore required in respect of these sites. This conclusion can be reached on the basis of the best scientific information and for the avoidance of doubt no mitigation was considered in this Stage 1 screening.

Potential for significant indirect effects on the features of interest of the following European sites, having regard to their conservation objectives, cannot be ruled out in respect of the eighteen European sites:

- Baldoyle Bay SAC (000199)
- Baldoyle Bay SPA (004016)
- Rockabill to Dalkey Island SAC (003000)
- Ireland's Eye SPA (004117)
- North Dublin Bay SAC (000206)
- North Bull Island SPA (004006)
- Malahide Estuary SPA (004025)
- Malahide Estuary SAC (000205)
- Howth Head Coast SPA (004113)
- South Dublin Bay and River Tolka Estuary SPA (004024)
- Rogerstown Estuary SAC (000208)
- Rogerstown Estuary SPA (004015)
- South Dublin Bay SAC (000210)
- Lambay Island SAC (000204)
- Lambay Island SPA (004069)
- Dalkey Islands SPA (004172)
- Skerries Islands SPA (004122)
- Rockabill SPA (004014)

Accordingly, a Stage 2 Appropriate Assessment is required to determine the potential of the proposed development to adversely affect the integrity of the said European Sites.

#### 10.4. **STAGE 2 – Appropriate Assessment**

The sites which are brought forward for Stage 2 assessment are now considered under the four impact pathways or themes, which are utilised in the NIS. I consider that this is a full and comprehensive list of impact pathways. Subsequent to consideration of these themes I address cumulative impacts and then draw conclusions.

The four impact pathways are:

- Airborne noise and visual disturbance.
- Water quality and habitat deterioration.
- Underwater noise and visual disturbance.
- Habitat loss.

##### 10.4.1. **Impact Pathway – Airborne Noise and Visual Disturbance**

###### 10.4.1.1. **Description of impact pathway**

The impact pathway airborne noise and visual disturbance as a potential pathway for likely significant effects on European sites comprises the following:

- Microtunnelling under Baldoyle Bay SAC / SPA requires construction of launch and reception shafts at compounds 9 and 10. Noise from piling works during construction of the jacking shafts could be of sufficient level to trigger bird disturbance. The lands which potentially are affected includes designated lands of Baldoyle Bay SPA and non-designated lands. An area of 1.79 hectares on the western side and within Baldoyle Bay SPA and 0.21 hectares on the eastern side of lands within Baldoyle Bay SPA would be exposed to noise levels of 65 to 75 dB LA<sub>max</sub>, which would be sufficient to trigger minor disturbance of birds. The duration of this impact would be under 4 weeks.

- Noise from piling at the tunnel/subsea interface and the fibre optic cable crossing with potential to impact the subsea environments will result due to predicted sound power level of over 65dB $L_{max}$  for a period of two weeks at each location sequentially. This noise impact is predicted to propagate 100m from source. The interface is 1,100 m from Baldoyle Bay SPA and 2,600m from Ireland's Eye SPA and the FOC crossing is 500m from Ireland's Eye SPA. There is a predicted loss of approximately 3ha of subtidal habitat none of which is within a European site.
- All piling noise assessment is based on BS 5228 and it is likely that with the use of newer technology there would be a significantly lower noise level.
- Visual disturbance from the construction and presence of the microtunnelling compounds. Visual disturbance distances vary for the different species.
- Piling, dredging, pipe assembly and laying would be associated with vessel disturbance impacts restricted to the subsea environment between the interface and all along the dredging channel to the diffuser. Some pipe assembly at Dublin port also possible.

#### 10.4.1.2. **Baldoyle Bay SPA**

The conservation objectives for the site relate to 7 SCIs. The baseline surveys results of the birds which are SCIs of the SPA relative to the noise impact zones associated with the western and eastern micro tunnelling compounds and within the visual disturbance zone are presented in the NIS. Small numbers of birds were recorded in the case of the noise impact zones. The development will impact an area of 1.79 hectares habitat within the SPA on the western side and 0.21 hectares within the SPA on the eastern side due to noise at a level which is likely to potentially trigger bird disturbance. That would be for two weeks maximum. The general point is made that birds at the locations close to roads and beach access are likely to be habituated to visual and noise stimuli and that significant exceedances of existing noise would be required to result in disturbance to the species.

**Light-bellied Brent goose** I consider that this SCI is not likely to be affected by airborne noise in view of the low numbers of the species using the area predicted to be affected, they are generally passing through and significant noise disturbance due

to piling is for a short period. However, large numbers of Light-bellied Brent goose use lands within 205m of the compound, which is the zone of visual disturbance for this species. Due to the 18 month duration and the numbers involved the targets of the conservation objectives for Light-bellied Brent goose could be compromised as a result of displacement of birds in large numbers and knock-on effects in terms of competition and habitat availability, which could continue into the operation period.

Mitigation prescribed to address this potential adverse effect on site integrity comprises installation between April and August and under supervision of an ecologist of a 2.4 m high hoarding around the entire perimeter of each compound and any associated access track. This measure would virtually eliminate visual disturbance impacts on birds. The crane which would be used on site would be a low structure (not a tower crane) and would not give rise to a significant visual disturbance. I conclude that the mitigation measure would reduce any impacts on Light-bellied Brent Goose to a very low level. I refer later to use of Dublin Port by Brent Geese, where the potential for airborne noise impacts and visual is considered and may be discounted.

**Shelduck** were recorded only in small numbers in the zone relevant to airborne noise impact pathway and in very low numbers in the subtidal environment. As such it may be concluded that neither the piling at the compounds or the activities in the subsea environment are likely to compromise the targets for this SCI. However due to the presence of Shelduck in large numbers in the 500m visual disturbance zone there is potential for an adverse effect on site integrity for this species. I am satisfied that the installation under supervision and at the appropriate period of site hoarding at the western and eastern compounds as described above will reduce any impacts on Shelduck to a very low level.

**Ringed Plover** were recorded in the surveys as being present in low numbers in the zone of airborne noise and visual disturbance impact. Effects would be restricted to small numbers, would be temporary and reversible. There would not be an adverse effect on site integrity for this species due to airborne noise and visual disturbance.

**Golden Plover** occasionally are present in large numbers in the zones of impact for airborne noise and visual disturbance. Noise and visual disturbance could result in possible significant knock on effects relating to competition and habitat availability,

which could result in birds being lost from Baldoyle Bay SPA. The construction of the GDD could result in adverse effects on site integrity for this species. I am satisfied that the installation under supervision and at the appropriate period of site hoarding at the western and eastern compounds as described above will reduce any impacts on Golden Plover due to visual disturbance to a very low level. Due to the occasional nature of the use airborne noise effects would be temporary and reversible. I am satisfied that there would not be an adverse effect on site integrity for this species due to airborne noise and visual disturbance.

**Grey Plover** does not regularly (or in large numbers) use the habitats within the zones of impact for airborne noise and visual disturbance identified for Baldoyle Bay SPA. The construction and operation of the project will not compromise the targets of the conservation objective for this species and therefore will not cause an adverse effect on site integrity due to airborne noise and visual disturbance.

**Bar tailed godwit** do not regularly use habitats within the zone of impact for airborne noise identified. It is recorded in low numbers in the visual impact disturbance zone and in the subtidal environments. Any effect would be restricted to small spatial extent and will be temporary and reversible. The construction and operation of the project will not compromise the targets of the conservation objective for this species and will not cause an adverse effect on site integrity due to airborne noise and visual disturbance.

**Wetlands** within the area impacted by piling noise will not experience any permanent loss during construction and operation as a result of airborne noise and visual disturbance. A two week impact at worst is anticipated. I am satisfied that this impact pathway will not cause an adverse effect on site integrity for the wetland habitat of Baldoyle Bay SPA.

#### 10.4.1.3. **Ireland's Eye SPA**

The conservation objectives relate to maintaining the favourable conservation condition of 5 SCIs, which are individually considered below.

The water which would be affected by airborne noise or visual disturbance associated with works at the western and eastern compounds is not highly used by the SCIs. **Cormorant** were observed in low numbers predominantly in the subtidal

area of Velvet Strand in Baldoyle Bay SPA but in numbers not exceeding the 1% national threshold. **Herring gulls** were recorded twice in low numbers in the area predicted to be impacted by piling noise and visual disturbance at compounds 9 and 10. A single record of **Kittiwakes** was made in the estuarine surveys in the subtidal area of Velvet Strand and the species was absent from Baldoyle Bay SPA. The area affected by works at the compounds would not be relevant to **Guillemots and Razorbills**. I consider that it may be concluded that the SCI species within Ireland's Eye SPA will not be affected by airborne noise or visual disturbance impacts associated with the activities at the western and eastern microtunnelling compounds.

Airborne noise impacts in the subsea environment with the potential to impact birds are predicted to propagate about 100m from the microtunnelling / subsea interface and 100m from the fibre optic cable crossing. I consider that it may be concluded that the SCI species within Ireland's Eye SPA will not be affected by airborne noise in the subsea environment.

Vessels which will be in place for up to 3 months between April and October along the eastern 1 km of outfall pipeline corridor and at the marine diffuser have potential to cause visual disturbance. Assuming a worst-case scenario of vessels present at the marine diffuser and another group present 1 km to the west a total of 11.8% of the total subtidal habitat of the Ireland's Eye SPA would be affected. This is considered unlikely according to the NIS, but if it did occur it would be for a period of several days to several weeks.

Vessel disturbance in non-designated water is assumed to involve two groups of vessels working simultaneously between April and October moving along the outfall pipeline corridor and the pipeline assembly, undertaking delivery of collars and so on. Also there is potential connectivity between Ireland's Eye SPA and the terrestrial and intertidal habitats near Baldoyle Bay SPA including due to noise disturbance and visual disturbance close to the compounds.

**Cormorant** is a regular user of subsea habitat in the vicinity of the outfall pipeline corridor, is of above average sensitivity to vessel traffic but flexible with regard to habitat use. Disturbance and displacement will occur on a short-term localised and reversible basis. There are substantial alternative habitats available. It can be concluded that the conservation objective for this SCI will be unaffected.



**Herring Gull** is a highly mobile species, spends a significant amount of time in flight and has large foraging ranges. It is not therefore susceptible to visual vessel disturbance impacts. The general area of the outfall pipeline corridor is not of high importance for foraging. Short-term disturbance and displacement of herring gull from the vicinity of the interface and the fibre-optic cable crossing may occur but this temporary redistribution as a result of the GDD would not mean birds would be lost from the SPA population. The conservation objective for this SCI will be unaffected.

**Kittiwake** were recorded in the outfall pipeline corridor in low numbers including at the location of the interface and fibre optic cable crossing. It is a highly mobile bird, spends large time in flight and will not be susceptible to visual vessel disturbance impacts or to subsea habitat disturbance and displacement in the vicinity of the interface and fibre-optic cable crossing during piling. Any effect would be short-term localised and reversible. No birds would be lost from the SPA population. The conservation objective for this SCI will be unaffected.

**Guillemots and Razorbills** were recorded mainly within 500 m of Ireland's Eye and in relatively large numbers between 500 m and 1000 m. It is of medium vulnerability to vessel traffic. Guillemot and Razorbill were the most commonly recorded species within 500 m of Ireland's Eye. Short-term localised and reversible disturbance and displacement will occur during construction due to noise and visual disturbance related to works at outfall corridor / marine diffuser. With a foraging distance of 37.8 km from colonies in the case of Guillemots and 23.7km for Razorbill, habitat in the vicinity of outfall pipeline corridor is not considered critical. However, when both species leave the breeding colony (mid-July to end of July) they are more sensitive to disturbance and displacement impacts. It can be reasonably concluded that if vessel activity is not appropriately managed in this time period birds could be lost from the SPA. Therefore mitigation is necessary to address potential adverse effects on site integrity for these SCIs Razorbill and Guillemot.

The NIS sets out measures relating to vessel management in the relevant period involving a vessel management plan (VMP), which is presented as Appendix F. In response to comments made at the hearing, which queried the effectiveness of the VMP I consider that it is relevant to note that this plan was prepared to add confidence to the prediction that there would be a Negligible Impact Significance on the seabird colony on Ireland's Eye. In this regard it sets out instructions to ensure

that vessels do not unnecessarily encroach onto Ireland's Eye SPA. It includes measures to withdraw from the area in event of largescale auk movements in that direction. It provides for an ornithological watching brief and a clear protocol at the relevant time of the year.

I am satisfied that the plan will achieve the two objectives which I consider are appropriate and sufficient to ensure that there are no adverse effects due to airborne noise or visual disturbance.

1. The proposal to minimise travel of vessels into the SPA boundary through defining an exclusion area is appropriate and is clearly stated in the plan. I am satisfied that it is capable of implementation and that it will ensure no unforeseen impacts related to vessel disturbance, which have not been considered in the NIS or are not known at the time of writing.
2. The measure to address potential impacts on young possibly flightless auks who may gather in large numbers when attempting to leave the area with adults involves suitable positioning of a bird observer. That person will have the power to request boats to leave the area in appropriate circumstances.

Subject to these measures I consider that the conservation objective for Guillemot and Razorbill will be unaffected and there will be no adverse effect on the integrity of the site due to airborne noise or visual disturbance.

It can be concluded that the conservation objectives for the SCIs of this SPA are not compromised by airborne noise or visual disturbance.

#### 10.4.1.4. **North Bull Island SPA**

Due to its location 2.3 km south of the marine outfall this site is outside the range of airborne noise and visual disturbance. The possibility of significant numbers of birds from this SPA being impacted by the project is remote as they will not be present in the area. It can be concluded that the conservation objectives for the SCIs of this SPA are not compromised by airborne noise or visual disturbance.

#### 10.4.1.5. **Malahide Estuary SPA**

Due to its location 2.5 km north of the marine outfall this site is outside the range of airborne noise and visual disturbance. The possibility of significant numbers of birds

from this SPA being impacted by the project is remote as they will not be present in the area. It can be concluded that the conservation objectives for the SCIs of this SPA are not compromised by airborne noise or visual disturbance.

#### 10.4.1.6. **South Dublin Bay and River Tolka Estuary SPA**

The site is 7.6 km to the south of the marine outfall and the SCIs are light-bellied Brent geese, oystercatcher, ringed plover, grey plover, knot, sanderling, dunlin, bar-tailed godwit, redshank, black-headed gull, roseate tern, common tern and Arctic terns.

No noise or visual disturbance impacts due to works at the microtunnelling compounds or the in the marine outfall corridor will occur at this distance. The outfall pipeline construction involves assembly of long sections of continually extruded pipelines which will require to be strung together and then transported to the outfall pipeline corridor for laying. Ballasting activities will also be undertaken off site. A possible location for this works is Dublin port.

**Terns** breed within Dublin port on isolated mooring dolphins. Currently there are 4 structures available for nesting terns. There is potential for significant adverse effects as a result of airborne noise and visual disturbance associated with pipeline stringing assembly and ballasting activities which may be carried out in Dublin port or at adjacent river berths of the Liffey. However, it is stated that these activities will not take place within 100 m of the South Dublin Bay and River Tolka Estuary SPA. In view of the fact that the terns which breed in the port are habituated to frequent shipping traffic, I do not consider that the activities associated with the GDD would constitute a significant adverse effect resulting in a loss of birds from the SPA, subject to the proposed 100m separation.

As pointed out by Ms Joyce Kemper and acknowledged by others at the oral hearing **Brent Geese** (SCI of Baldoyle Bay SPA) are known to feed on spilled cereals and another other foodstuffs within the port from time to time. There is potential for significant adverse effects as a result of airborne noise and visual disturbance associated with pipeline stringing assembly and ballasting activities which may be carried out in Dublin port or at adjacent river berths of the Liffey. However, Brent Geese using a busy functioning commercial port for feeding must be deemed to be habituated to airborne noise and visual disturbance and it can be concluded that the

pipeline assembly and ballasting activities associated with the GDD would not constitute a significant adverse effect resulting in a loss of birds from the European sites in the region.

Equally I do not consider that the pipeline assembly and ballasting activities would be likely to induce behavioural changes amounting to disturbance to any wading or breeding bird in the SPA.

I am satisfied that the evidence supports a conclusion that the conservation objectives for the SCIs of South Dublin Bay and River Tolka Estuary SPA or Baldoyle Bay SPA would not be compromised as a result of airborne noise or visual disturbance.

#### 10.4.1.7. **More distant SPAs – Howth Head Coast SPA, Skerries Island SPA, Rockabill SPA, Rogerstown Estuary SPA, Dalkey Island SPA, Lambay Island SPA**

##### **Howth Head Coast SPA**

This site is 2.6 km south of the marine outfall. The SCI is kittiwake. No airborne noise or visual disturbance impacts can be anticipated to impact kittiwake species inside this SPA due to the separation distance. While there is potential for short-term and localised displacement of kittiwake outside the SPA as a result of piling related to the interface and the fibre optic cable crossing, this would not result in loss of this highly mobile species from the SPA and would not undermine the conservation objectives. I am satisfied that the conservation objectives of the Howth Head Coast SPA will be unaffected and that there would be no adverse effect on the integrity of the site due to airborne noise or visual disturbance.

I consider that the same reasoning applies to:

- **Skerries Island SPA** (16.7km to the north of the marine outfall and designated for 6 SCIs cormorant, shag, light-bellied Brent goose, purple sandpiper, turnstone, herring gull).
- **Rockabill SPA** (16.9km to the north of the marine outfall and designated for 4 SCIs Purple Sandpiper, Roseate Tern, Common Tern and Artic Tern).
- **Rogerstown Estuary SPA** (8.5 km north of the marine outfall and designated for Greylag Goose, Light-bellied Brent goose, Shelduck, Oystercatcher,

Ringed Plover, Grey Plover, Know, Dunlin, Black-tailed Godwit, Redshank, Wetlands and waterbirds )

- **Dalkey Island SPA** (14.9 km to the south of the marine outfall and designated for Roseata Tern, Common Tern and Arctic Tern)
- **Lambay Island SPA** (9.3km to the north-east of the marine outfall and designated for Fulmar, Cormorant, Shag, Lesser Black-backed Gull, Herring Gull, Kittiwake, Guillemot, Razorbill, Puffin).

#### 10.4.1.8. **Conclusion**

I conclude that subject to mitigation as outlined above, the proposed development would not adversely affect the integrity of the designated site by way of airborne noise or visual disturbance and that there is no reasonable scientific doubt regarding this conclusion.

#### 10.4.2. **Impact Pathway - water quality and habitat deterioration**

##### 10.4.2.1. **Description of impact pathway**

The impact pathway water quality and habitat deterioration as a potential pathway for likely significant effects on European sites comprises the following:

- Potential impacts due to water quality effects from upstream works at the RBSF, GDD outfall or orbital pipelines, WwTP / SHC site, APS, construction compounds and all other elements of the overall project in the construction and operational phases involving release of suspended solids or pollutants including due to pipeline leakages.
- Potential impacts from dredging or piling at the interface and cable crossing in the construction of the marine outfall including from plumes of suspended sediment. The overall plume footprint above 5 mg/l suspended solids covers an area of 4.5 km<sup>2</sup>. At bed level within 50m to 100 m from the discharge point concentrations of suspended sediments of over 10,000 mg/l are predicted. Sediment fines are modelled to travel further resulting in a concentration of between 10 and 100 mg/l to maximum distance of 1400 m north of the route.

- Possible release of bentonite associated with microtunnelling works at compounds 9 and 10.
- Surface venting (air breakout) related to microtunnelling.
- Operational phase impacts affecting water quality at the marine diffuser and changes in DIN, MRP, BOD, COLI, turbidity and suspended solids. The suspended sediment load worst case at 500m from the diffuser would be an increase of 2.7 mg/l above minimum background concentration which would be almost imperceptible. The BOD level will be maintained at an ambient background of below 4 mg/l O<sub>2</sub> for these transitional waters. DIN, MRP to be at levels to achieve 'good' water quality status.

#### 10.4.2.2. **Baldoyle Bay SAC**

The site has 4 no. qualifying interests, Mudflats and sandflats not covered by seawater at low tide, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows. The latter three habitats are saltmarsh related qualifying habitats and are considered below as a group. The conservation objective relates to maintaining the favourable conservation condition of the qualifying interests, defined by attributes and targets.

The Sluice and Mayne feed into the main erosion channel between the **saltmarsh habitats** and could be a pathway for pollution incidents and elevated suspended settlements from upstream activities. A further risk arises from the location of **compound 10 within a high risk flood area.**

To mitigate water quality impacts including those arising from upstream events or events at compound 10, a range of best practice and mitigation is presented by the applicant. Any sediments and spillages would be mitigated by measures described in the CEMP and SWMP including bunding. Mr O'Keeffe's reference to the CEMP provisions at the hearing is relevant. Mitigation measures outlined include **selection of piling method to ensure hydraulic sealing of shafts and measures** to ensure that all storage of bentonite, solvents and hydrocarbons are **above the most extreme flood risk area**, if necessary by development of raised areas. Section 9.4.1 of the EIAR notes that the use of bunded protection at microtunnelling compounds adjacent Baldoyle Estuary as mitigation. Finally, I note the proposal to prepare and

implement Emergency Response Plans to address spillages. I am satisfied that these measures will be adequate to minimise impacts from any flood event as well as from normal construction activities throughout. Impacts would be highly unlikely to reach the European site.

The saltmarsh habitats are additionally protected due to their elevated position and any polluted waters arriving in the channels would have an effect only if a pollution incident coincided with very high tides. I accept the point made in the NIS that any such event would be associated with high dilution and pollutants would disperse rapidly. Therefore the impact from the upstream works and from nearby compounds 9 and 10 to the salt marsh habitats can be expected to be negligible. The conservation objective of maintaining a stable habitat (subject to natural processes) and preventing decline or change in the distribution of the salt marshes will be not be undermined. It can be concluded that the conservation objectives for the SCIs of this SAC are not compromised by water quality impact pathway.

Regarding the **mudflats and sand flats not covered by seawater at low tide** in the event of a high sediment load or pollution incident associated with upstream works or operational failures it is noted that the discharge would be directly over this qualifying interest as this habitat is found throughout the bay including at Velvet Strand. The NIS refers to the conservation objectives supporting document for this SAC. The document acknowledges that episodic activities may occur but due to habitat resilience the habitat may be expected to recover within a reasonable timeframe from possible contamination. The qualifying interest and community type will not be impacted by any likely pollution events according to the document. Having regard to this documentation supporting the SAC conservation objectives, I agree with the position set out in the NIS that any likely pollution events would not undermine the conservation objective for this qualifying interest.

I am satisfied that there would be no effect on any of the qualifying interests due to the dredging or piling plumes, which would not impact these distant habitats.

The potential for impacts due to a bentonite release needs to be considered due to variability in geology and the proximity of the microtunnelling works to the qualifying interests of the SAC, notwithstanding the tunnelling depth of about 15m below surface. The level of geophysical survey undertaken was questioned by observers at

the hearing and the baseline information was deemed to be unacceptable in terms of lack of intrusive investigation within Baldoyle Bay SAC. It is Ms Joyce Kemper's evidence for instance that as there is uncertainty about this impact and a chance of a bentonite breakout then the development contravenes the Habitats Directive.

Regarding the general point relating to the adequacy of information on the underlying geology and the risk of weak formations and possible faults, I consider that Mr Wyse adequately addressed this matter at the hearing and that the Board should determine that the geological investigations and reporting meets the test of evidence required for AA. The basis for knowledge includes intrusive surveys either side of the designated areas and from the wider environment and it would be neither necessary nor appropriate in this instance to drill into the saltmarsh habitat, which can be prone to subsidence. I have concluded earlier that the geological conditions are well understood.

I agree with the statements by Mr McGrath that the important matter is that there be no uncertainty about the *consequences of events* such as bentonite breakouts. Although it is a natural material a bentonite release could increase turbidity and suspended sediment load could smother sediments and organisms and adversely affect qualifying interests. Mitigation presented includes bentonite monitoring measures.

One of the Irish Water witness at the hearing presented additional support for comments made in relation to bentonite and air breakout based on his experience of monitoring marine ecology at Corrib. I summarise the evidence at this point and note that it is relevant to the habitat loss pathway also. The evidence was that there were no bentonite breakouts at the Corrib tunnel which was a longer and larger structure. The observers commented on air breakouts which were recorded and the response of Irish Water referred to the greater surface area and the highly pressurised nature of the tunnel at Corrib. Depressions did occur at Corrib during tunnelling sand. There is potential for air breakout as a result of tunnelling but habitat impacts be very small. Changes to the channel are considered extremely unlikely and almost impossible and as an estuary it is constantly mobile and the ecological functions would not be changed and certainly there would not be damage to sediments so as to affect the conservation objectives.



My consideration of the matter of bentonite breakout is as follows. I accept the point that the depth of the route below the estuary further reduces the likelihood of a bentonite breakout affecting the qualifying interests. I also consider that if there is a breakout in the channel or open water the material will disperse harmlessly and if it occurred within salt marsh vegetation then mitigation as presented in the NIS (localised treatment) would be sufficient to ensure no significant adverse impacts on the saltmarsh habitat. The material is viscous and should therefore be easily contained. I concur with the conclusion in the NIS that the qualifying interest and conservation of community type in a natural condition will not be impacted by any likely pollution events including bentonite breakout.

The NIS indicates that possible surface venting (air breakouts) due to escape of compressed air used in the TBM could create some temporary minor depression (1 to 3 m<sup>2</sup>) if it occurred in the main part of the estuary or have an imperceptible impact if located in the salt marsh vegetation. I accept the conclusion in the NIS that the natural condition of the qualifying habitats will not be impacted by this unlikely event and that there would be no net loss of habitat or impact on the integrity of the qualifying interests due to this impact pathway.

Regarding the discharge plume in the operational period, details of the effluent discharge qualities predict significant dispersion of the highly treated discharge. The future requirement to operate under EPA licence also refers. I consider that it is demonstrated in the information provided by the applicant that the operational plume will not impact the qualifying interests of this European site. Observers have expressed a contrary opinion and I have considered the points made but do not agree with them. I refer in this regard to my earlier considerations under the marine water quality section of this report and the modelling results presented.

It can be concluded that the conservation objectives for the qualifying interests of this SAC are not compromised by water quality or habitat deterioration impact pathways.

#### 10.4.2.3. **Rockabill to Dalkey Island SAC**

The marine outfall pipeline passes through 1300 m of this SAC and the marine diffuser lies within the SAC. The two qualifying interests are subtidal and intertidal reef habitats and harbour porpoise. This reef community complex is recorded off the northern, eastern and southern shores of Ireland's Eye, to the south of the outfall

route and marine diffuser. It has been surveyed in detail. Harbour porpoise is present in high densities. The conservation objectives refer to maintaining the favourable conservation condition defined by a list of attributes and targets presented in Table 6-7 of the NIS.

Water quality and habitat deterioration which could affect these qualifying interests could be associated with:

- Marine pollution events
- Construction plume effects on reefs
- Construction plume effects on harbour porpoise
- Operational plume effects.

**Management of risks of pollution** during construction of the outfall pipeline through the CEMP and other measures will ensure that the likelihood of significant adverse effect can be minimised. These measures are to include strict adherence to the MARPOL Guidance.

Regarding **construction effects due to suspended sediment plumes** the general mitigation measure relating to release of discharge from the hopper on the flooding tide only and to monitoring of turbidity refers. The survey evidence shows that the **reefs** are diverse biological populations with a natural high siltation level in the sub-littoral environment. Modelling indicates that suspended sediments would result in only localised elevations when discharged in a controlled manner, as proposed. On that basis there would be no significant plume close to the reefs around Ireland's Eye northern and eastern coastlines. The small localised eddy of slightly elevated surface suspended sediments to the north of the island at a maximum concentration of between 5 and 10 mg/l is well below the natural variability of the waters. At the hearing Irish Water accepted that the complete removal of possible slightly higher levels of suspended sediments at the islands waters during dredging is not possible but this would be detected under the planned monitoring and a stoppage of works undertaken if levels are slightly higher than predicted. I accept the case presented in the application documents including the NIS and conclude that the conservation objectives will be unaffected as a result of construction stage suspended sediment plumes and their effect on the reefs habitats.

The effect on **harbour porpoise due to water quality and habitat deterioration impacts** could occur due to the plume from dredging. This is predicted to result in elevated suspended sediment above 5mg/l over 4.5 km<sup>2</sup> (1.5 km<sup>2</sup> is within SAC). This is 0.55% of the total SAC and the duration of dredging is expected to be 60 days. The plume would have a localised temporary impact on the foraging behaviour of the harbour porpoise due to reduced visibility in the vicinity of the dredging. The species has a large foraging range and in addition is not averse to inhabiting high turbidity waters. Noise due to dredging is in any case likely to induce avoidance behaviour prior to entering the area of the discharge plume. Finally it is relevant that the conservation objective relates *inter alia* to prevention of permanent (not temporary) access to habitats. I am satisfied that the evidence set out in the NIS shows that this impact would not undermine the conservation objective for this site.

Regarding the **operational plume** and the increased suspended solids load of 2.7mg/l increase at 500m and the slight increases in levels of DIN close to the site I note the consideration of this matter in the 6.2.2.3.3 of the NIS. Having regard to the high treatment levels of the wastewater, the dilution characteristics and the distance of the diffuser from the reefs together with the high sediment load which is a natural feature of these reefs, there is no predicted direct impact on the reef features of Ireland's Eye SAC. I consider that the evidence has been presented to support this conclusion. There would be no impact on the conservation objectives of the reefs as a result of construction or operational plumes.

In the operation phase the levels of suspended sediments predicted are stated in the NIS to be undetectable by harbour porpoise. Therefore no impact to this qualifying species is expected. I accept the evidence presented.

It may be concluded based on the evidence presented that this impact pathway would not adversely affect the conservation objectives for reefs or for harbour porpoise.

#### 10.4.2.4. **Lambay Island SAC**

This is 9.3 km north-east of the marine outfall. The conservation objectives relate to Annex I habitats, which are too distant to be impacted by water quality and habitat deterioration effects and to grey seal and harbour seal, which species do require consideration. The foraging range of grey seal and harbour seal is within the vicinity

of the proposed outfall. The conservation objective is to maintain the favourable conservation condition which is defined by attributes and targets. Regarding seals the attributes and targets refer to permanent access (not to short-term or temporary restriction of access or range) and to anthropogenic activities.

Indirect effects on the SAC are possible as the seals forage in areas where the construction related suspended sediment plume will occur. At a distance of 1400m from the dredging the levels will be similar to natural background levels.

The NIS provides evidence in relation to the activity of seals in areas of increased turbidity. Seals may possibly exhibit avoidance if a plume is encountered. The size of the affected area is of negligible consequence when the full foraging range of the seals of the SAC is taken into account and given the short term (under 6 months) nature of the dredging works. The conservation objective relates to prevention of permanent access and the direct impact by the plume will be very localised (within 1500 m of the source) and short-term and will not deteriorate any resources within the range of the species. I am satisfied that the conservation objectives will be unaffected for seal species as a result of construction stage suspended sediment plumes.

Regarding the operational plume the modelled results indicate that the effluent discharge will be significantly diluted at 500m, including for suspended sediments. Having regard to the evidence presented in relation to the response of seals to turbidity and the dispersal I consider that there is no reasonable likelihood of effects on the qualifying interest and that the conservation objective will not be undermined.

As described in the NIS there is a possibility that seals may be attracted to the outfall discharge or to the increased productivity surrounding it resulting in a long -term negligible impact, which would not impact on the conservation objectives for the Lambay Ireland SAC. I accept these statements.

It may be concluded based on the evidence presented that the water quality and habitat deterioration impact pathway would not adversely affect the conservation objectives for Lambay Island SAC.

#### 10.4.2.5. **Baldoyle Bay SPA**

There are several mechanisms by which water quality and habitat deterioration impacts on Baldoyle Bay SPA could occur. Earlier discussion including in relation to habitats of Baldoyle Bay SAC is relevant in this regard. I consider that it is demonstrated that there is no potential for impacts from construction upstream, bentonite release, surface venting and suspended settlements from dredging or piling plume or from the operational plume. It can be concluded that prey species of the SCIs will be unaffected. Regarding sandeels which were refuted by observers not to have been adequately considered I am satisfied that the potential for impacts on these species was taken into account. It may be concluded based on the evidence presented that the water quality and habitat deterioration impact pathway would not adversely affect the conservation objectives for Baldoyle Bay SAC.

#### 10.4.2.6. **Ireland's Eye SPA**

In view of the conclusions above relating to upstream pollution events and bentonite release and surface venting, which would have a negligible impact on Baldoyle Bay and the 5km (minimum) distance of Ireland's Eye SPA no impact is possible at this site due to such impacts. I accept the information presented in section 6.2.4.2 of the NIS that there would be no impact to the prey species of the SPA due to the construction plume, including by reason of the small surface plume effects at a distance of 350m from the north of the SPA, which is outside the designated area. As the operational plume is not predicted to impact the reefs of the SAC (900m from the marine diffuser) it can also be concluded that there will be no impact on the prey species of the SPA. It may be concluded based on the evidence presented that the water quality and habitat deterioration impact pathway would not adversely affect the conservation objectives for Ireland's Eye SPA.

#### 10.4.2.7. **Other European sites**

As the following SPAs are at further distance from the marine outfall than Baldoyle Bay SPA or Ireland's Eye SPA and in view of the information relating to the construction and operation dispersal plumes I consider that it can be concluded with certainty that the conservation objectives for the SCIs of the following European sites are not compromised as a result of water quality or habitat deterioration:

- North Bull Island SPA
- Howth Head SPA
- Dalkey Island SPA.

It may also be concluded that taking into account the modelling results, which I have assessed earlier that the discharged sediment from construction or the operational plumes will not reach the boundary of or the qualifying interests of the following sites and it can be concluded with certainty that the conservation objectives of the following European sites would not be compromised as a result of water quality or habitat deterioration:

- North Dublin Bay SAC
- South Dublin Bay SAC
- Rogerstown Estuary SAC.

The above conclusion is relevant also to Malahide Estuary SAC in relation to potential marine related impacts. It is relevant to note also that the Malahide Estuary SAC is connected to the site of the RBSF by way of the stream at the site boundary but in view of the distance and the mitigation for surface water proposed at the site of the RBSF I consider that it can be concluded with certainty that the conservation objectives of that or any other European site would not be compromised as a result of water quality or habitat deterioration.

Further, in view of my conclusions relating to Baldoyle Bay SPA and Ireland's Eye SPA and the substantially greater distance of the following sites from the marine outfall it can be concluded with certainty that the conservation objectives for the SCIs of the following European sites are not compromised as a result of water quality or habitat deterioration:

- Rogerstown Estuary SPA
- Lambay Island SPA
- Skerries Islands SPA
- Rockabill SPA.

### 10.4.3. **Impact Pathway - underwater noise and disturbance**

#### 10.4.3.1. **Description of impact pathway**

The impact pathway underwater noise and disturbance as a potential construction phase pathway for likely significant effects on European sites comprises the following:

- Low level noise emissions into the sediments and water column above the route of the outfall pipeline, which could impact benthos, birds and mammals
- Low level ground vibration through sediments and in the water column above the route of the outfall pipeline which could impact benthos, birds and mammals.
- Potential for adverse impact on the marine habitats as a result of vibration from microtunnelling. Saltmarsh habitats would be susceptible to instability.

#### 10.4.3.2. **Baldoyle Bay SAC**

I consider that the applicant has demonstrated that the resulting vibration would not give rise to instability at the saltmarsh habitats.

Potential impacts on benthic organisms were studied in detail in the Corrib microtunnelling and the applicant has referenced this case study. The conclusion of a comprehensive benthic survey was a finding of no adverse effects and that there was no impact relative to the proximity of the pipeline or indirectly through changes to foraging opportunities for overwintering birds. I consider that this is a reasonable basis for drawing the same conclusion in the case of Baldoyle Bay SAC.

I consider that it can be concluded with certainty that the conservation objectives for the qualifying interests of the Baldoyle Bay SAC would not be compromised as a result of underwater noise and disturbance.

#### 10.4.3.3. **Rockabill Dalkey Island SAC.**

1300 m of marine outfall pipeline passes through the SAC and the marine diffuser is within the SAC. The interceptor point is 2.6 km west of the SAC and the fibre-optic cable crossing point is 120 m west of the SAC.

The qualifying interest harbour porpoise is subject to a conservation objective which requires prevention of activities that would result in any permanent exclusion of harbour porpoise from the site and that anthropogenic activities should not result in a deterioration of key resources including food. The conservation objectives allow for short-term or temporary impacts.

Underwater noise as a result of piling and dredging has been considered in detail in the NIS, which reports the primary results of modelling undertaken. The fact that the hearing range of cetacean species is not fully understood is acknowledged. The reported studies describe the noise levels at which a temporal elevation of hearing can be induced.

Regarding the effect on prey species for harbour porpoise including sandeels as a result of airborne noise and disturbance the conclusions of the Corrib investigations refers and are applicable.

I consider that it is evident from the information provided by the applicant that there would be no damage on harbour porpoise due to noise from dredgers. It is also clear that the low frequency noise arising which could potentially be heard by harbour porpoise at 20km distance and to which the species is sensitive could give rise to avoidance. The low frequency noise is stated to be not dissimilar to shipping activity. In terms of the requirements of appropriate assessment the latter comparison is irrelevant in my opinion. However, I do accept the point that the greatest impacts on harbour porpoise are likely within 1km. Regarding the piling noise impacts these are of shorter duration but potentially more significant.

Mitigation to ensure no noise impacts to marine mammals within the vicinity of piling and dredging measures are described in section 6.4 of the NIS and include undertaking of works in accordance with the appropriate NPWS guidance, employment of a marine mammal observer, working only when conditions permit effective visual monitoring, maintenance of appropriate buffer zones prior to works including up to 1000m from piling activities, ramping up of noise generating activities, cessation of works if relevant species are within 50m and reporting of such events to NPWS. Observers at the hearing queried the likely effectiveness of such measures in terms of the difficulties of identifying mammals. I am satisfied that these measures are best practice and will be effective and will ensure that there is no risk of direct



injury and no significant adverse noise impact to marine mammals including the qualifying interest of this site.

I consider that it concluded with certainty that the conservation objectives for the qualifying interests of Rockabill Dalkey Island SAC would not be compromised as a result of underwater noise and disturbance taking into account the mitigation measures proposed.

#### 10.4.3.4. **Lambay Island SAC.**

Notwithstanding the relatively remote location of the site there is potential for adverse impacts on the qualifying interests grey seal and harbour seal. The hearing range of seals overlaps in frequency with the loudest and most common anthropogenic noise sources found in the marine environment. The NIS outlines that the majority of sounds produced by dredging will be at frequencies within the lower auditory range and sensitivity for seals. The expected levels are likely to be sufficient to alter species behaviour particularly when very close to the source but not sufficient to cause damage. Greatest impact would be at the low frequency of 1 kHz which potentially can be heard 25 km away. Noise created by piling was higher and above the TTS for both seal species at locations close to the noise source.

It is evident from the above that mitigation is required to ensure that the conservation objectives for the SAC are not compromised. The mitigation measures include adherence to the NPWS Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. These are current best practice and will ensure there is no risk of adverse noise impact to the seals which are qualifying interests of Lambay Island SAC.

In relation to the stated growing importance of Ireland's Eye for seals based on recent surveys reported to the hearing by Ms Joyce Kemper, these may be part of the Lambay Island population. The mitigation proposed would be equally effective at preventing adverse effects to seals using Ireland's Eye.

I consider that it can be concluded with certainty that the conservation objectives for the qualifying interests of Lambay Island SAC would not be compromised as a result of underwater noise and disturbance.

#### 10.4.3.5. **Other European sites**

I consider that it can be concluded with certainty that the conservation objectives of the remaining European sites would not be compromised as a result of underwater noise and disturbance due to distance and the lack of sensitivity of the qualifying interests.

#### 10.4.4. **Impact Pathway – habitat loss**

##### 10.4.4.1. **Description of impact pathway**

The impact pathway habitat loss as a potential pathway for likely significant effects on European sites comprises the following:

- Habitat loss associated with bentonite release or air venting.
- Possible disturbance and / or displacement by habitat loss due to use of lands and works at lands outside the boundary of European sites and could impact birds. This includes temporary uses including compounds 9 and 10 and permanent alterations at the site of the WwTP.
- Habitat loss as a result of marine outfall dredging and positioning of marine diffuser within an SAC.
- Habitat loss potential associated with the interface which is proximate to the nearshore waters of Velvet Strand. Similarly for the fibre optic cable crossing within Rockabill to Dalkey Island SAC.

##### 10.4.4.2. **Baldoyle Bay SAC**

A potential for habitat loss exists due to damage or disruption to the salt marsh vegetation or benthos arising from bentonite release and surface air venting. The matter of potential effects related to bentonite release are referenced above in relation to water quality impact pathways. If a release occurs in the main part of the estuary, that discharge would result in a temporary localised area of pollution which would be broken down and dispersed by tides. Where bentonite breakout occurs within salt marsh vegetation it is not likely to disperse quickly or naturally. As bentonite is viscous the prediction in the NIS is that no more than 6 m<sup>2</sup> area of vegetation could be covered. Without mitigation that could lead to loss of saltmarsh

habitat due to smothering. Mitigation involving measures to monitor bentonite and deal with a bentonite loss are presented and in my opinion would be likely to be highly successful in the identification and remediation of such unlikely event.

In the event of air breakout in the saltmarsh vegetation a minor temporary event is likely but no loss of permanent habitat due to the small size of area and the cohesive nature of the saltmarsh. In the event that air venting occurs within the main part of the estuary or the coastal area of Velvet Strand at the designated habitat, a small but temporary depression in the region of 1–3 m<sup>2</sup> could be created in the sand or mudflats. I accept the applicant's evidence that this would be short lived and would infill naturally.

I consider that it can be concluded with certainty that the conservation objectives for the qualifying interest of Baldoyle Bay SAC would not be compromised as a result of habitat loss.

#### 10.4.4.3. **Baldoyle Bay SPA**

There is potential for effects on SCIs of this site due to:

- Short-term loss of habitat of lands for compounds 9 and 10 and 125m of access track associated with the western compound – these areas will be unavailable for use by birds for the 18 month duration. The lands affected by direct habitat loss are outside this European site but may be used by SCIs of this and other sites. Disturbance effects would also result in habitat loss but this is considered above under impact pathway airborne noise and disturbance.
- Permanent loss of a large area of land through its development and use as a WwTP has been raised as a concern by observers.

Within the area affected by direct habitat loss for construction compounds there was a single record of a Ringed Plover at the eastern compound, which was the only SCI species of Baldoyle Bay SPA recorded in the baseline surveys. It is accepted that these lands are used by SCIs of Baldoyle Bay SPA.

Regarding Brent geese, which was subject of comment in the report of DAHG and discussed at the hearing, the availability of Ms Aebhín Cawley as an advisor to FCC was especially useful in view of her expertise and also her commitment to the AA

process. Ms Cawley has a particular expertise in Brent geese in this region. Her opinion was that the temporary habitat loss will not result in population level effect or a significant decrease in the range, timing and intensity of use of their habitat. She indicated that there is no known significant use of this area by Brent geese. She also referred to the time works are taking place other suitable habitats will be in place nearby at The Murrough spit and possibly also at the planned pitches at Baldoyle Racecourse. The Murrough spit habitat will be an enclosed area of 0.8 hectare, fenced and mown as a bird habitat. It is currently being managed by FCC for this purpose. Her evidence was that there would be no adverse effect on integrity of the site. This was accepted by experts from NPWS.

I emphasise some particular points in relation to compounds 9 and 10 in particular:

- The use of lands by Brent geese in the region is ever changing and dynamic.
- Based on the post 2015 surveys presented by the applicant it is evident that the lands which would be impacted have not recently been of particular importance to Brent geese - surveys described by observers and those which lead to the designation of the quiet zone pre-dates the three year survey period on which the application submissions are based.
- The Murrough and the Baldoyle racecourse proposals are completely separate to the application before the Board and I have not relied on them in the carrying out of this assessment. They are not presented by the applicant in the NIS. I consider that there are no outstanding questions regarding the impact of the development on Brent geese and am satisfied that the development would not result in significant short-term (or long-term) disturbance or displacement effects taking into account surveys results and measures such as use of site hoarding. There is no significant population level displacement.
- As described below there are no cumulative impacts which would give rise to adverse effect on the integrity of the site due to this impact pathway. The question of compensatory habitat simply and the invoking by the Board of the procedures under A 6.4 of the Habitats Directive does not arise.

A discussion at the oral hearing ensued in relation to the matter of habitat loss at the WwTP site relating to use of that land by birds, which matter had been raised in

written observations. Local persons indicated that the farmland is so used and a photograph presented showing use of Belcamp parklands by Brent geese. Irish Water stated that the overview data for the WwTP site does not indicate presence of Brent geese on that site. The representatives of NPWS present indicated no site level data on this land and Ms Cawley similarly had no information other than that provided by the applicant. Ms Flynn indicated that they could potentially use that type of site and Ms Cawley concurred. Dr Tierney (ornithologist) for NPWS said that the area in question has no recorded number of Brent geese and to his own personal knowledge it is not a known important site. The possible presence of geese could be a function of the temporary habitat on the day. Ms Joyce Kemper noted that at the end of the season the birds would go off the estuaries and use any available feeding area including e.g. at Dublin Port where they are known to scavenge grain. A discussion followed as to the timing of the surveys undertaken and the use of bird scarers as recorded in March 2017 data sets was noted. Dr Tierney indicated that the datasets does not lead to certainty that the site was never used by Brent geese noting in addition that the Brent geese habitat is a very dynamic mosaic of what is usable and suitable in Dublin, and is connected with levels of disturbance, openness and other criteria. He was not aware of the WwTP site being of historic importance.

Observers did refer to a comment in the GDD phase 2 report which identified potential moderate impact for loss of winter habitat for lapwing and golden plover and other wader species due to the large pasture fields being suitable for these birds. Regarding use of the WwTP site for other wintering birds the site surveys did not identify any significant use by SCIs and observers' comments did not provide evidence to that effect. I am satisfied that the evidence presented is sufficient to support that conclusion.

The point was made by the Irish Water witnesses that the area where compound 10 is to be located is heavily used in the daytime hours and that it would not be of significance for Brent geese. In relation to the use of the construction compound 10 as a possible night-time roosting area there was no information presented by observers to support any such usage. Nothing in the comprehensive surveys undertaken or in the review of surveys for this area supports the claim that the area could be of importance at night-time. At the hearing there was available significant

expertise on the species. I consider that it may be concluded that the site of compound 10 is not of importance as a roosting site.

Having regard to written and oral submissions regarding the WwTP site I conclude that the site was adequately surveyed in a range of times throughout the over-wintering season. There is sufficient evidence available for the Board to conclude that the WwTP site is not of importance for Brent geese or any other wintering birds although occasional use cannot be ruled out. I consider that it may be concluded with certainty that the conservation objectives for Baldoyle Bay SPA would not be not be compromised as a result of habitat loss within the site itself or at any other locations that may support the SCIs.

I am in agreement with the applicant's submission that the habitat loss during construction will not compromise the targets of the conservation objectives for the other SCIs. The SCIs bar-tailed godwit, golden plover, grey plover, light-bellied Brent geese and shelduck were not recorded in the baseline survey programme of the habitats to be used for the compound and access road. The NIS notes bird surveys recorded ringed plover. Ringed plover do not regularly utilise habitats within the zones of impact identified for Baldoyle Bay. Small numbers could be subject to disturbance and displacement but the effect would be limited, temporary and reversible.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Baldoyle Bay SPA would not be compromised as a result of habitat loss.

#### 10.4.4.4. **Rockabill to Dalkey Island SAC**

There is potential for habitat loss effects on the qualifying interests of this site related to:

- Working involving dredging within the SAC. Installation of a permanent structure (pipeline and diffusers) in the SAC. Both have potential to impact reefs habitat directly. Indirect impacts as a result of water quality effects have been considered above and could give rise to loss of reef habitat.
- Changes to marine fauna in the construction and operation phases could impact harbour porpoise by altering availability or composition of food. Loss of foraging area is possible.

The reefs have been surveyed in detail and are not within the area to be impacted by dredging. The route of the pipeline and diffuser does not connect with the reefs or indirectly affect this habitat so as to reduce its area. I am satisfied that there would be no loss of reef habitat as a result of dredging works or operational water quality impacts. As outlined under the water quality impact pathway the construction and operational plumes would not impact on reefs so as to reduce their area or alter their composition.

The diffuser structure will replace approximately 3.5 m<sup>2</sup> of granular seabed. Its physical presence would not create a habitat loss for harbour porpoise. It is likely that the diffuser will introduce some epi-benthic faunal assemblages and may attract small fish, which may become prey for harbour porpoise.

The disruption of the seabed from dredging would impact large areas of seafloor sediment and benthic communities resulting in potential loss of foraging for harbour porpoise. The construction of the marine pipeline corridor will disrupt benthos over a temporary period but benthos will return to its natural state. The oral hearing submission of Mr Wilson (OH-32) provides a scientific basis for the statements to that effect which are contained in the NIS. There may be a slight reduction in density of benthos and fish until the seabed recovers for the duration of up to one year.

The direct impact to harbour porpoise as a result of the plume (dredging) limiting foraging capacity will be negligible. Slight reduction in prey species may result as an indirect impact for the six months construction and for under 60 days for operations within the SAC. The total size of dredging plume with suspended sediment above 5 mg/l is equivalent to 0.55% of the SAC. I consider that it may be concluded that there would not be population wide impacts for the species as a result.

In the operational phase the minor level of suspended sediments discharged will remain within the natural turbidity range recorded and will be diluted rapidly. Slightly elevated levels of dissolved inorganic nitrogen (DIN) may enhance plankton productivity thus encouraging feeding from prey species in the vicinity but this is a negligible impact due to dispersal. In summary, following the construction period the site will be fully accessible for foraging and may have an enhanced capacity to support prey targeted by harbour porpoise.

I consider that it can be concluded with certainty that the conservation objectives for the qualifying interests of Rockabill to Dalkey Island SAC would not be compromised as a result of habitat loss.

#### 10.4.4.5. **Ireland's Eye SPA**

Herring gull was the only SCI of this SPA which was recorded in any of the areas impacted by habitat loss according to the NIS. The species is commonly encountered in the area and is highly adaptable with large foraging areas. While there could be a temporary redistribution of a small number of birds none would be lost from the SPA population. I concur with the applicant's submissions which indicate that the temporary and reversible effects which would result are not of significant magnitude or duration to affect maintenance of the Ireland's Eye SPA herring gull population, the natural range or the amount of habitat available to the population.

Regarding the other SCIs of this site the use of the water by auks and the potential impacts and the mitigation required has been considered earlier under the airborne noise and visual disturbance pathway. The same assessment and conclusions may be drawn in relation to the matter of habitat loss if the Board considered that this impact category requires consideration. In the circumstances I consider that the assessment on the auk species which are SCIs fits more conveniently within the former pathway.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Ireland's Eye SPA would not be compromised as a result of habitat loss.

#### 10.4.4.6. **North Bull Island SPA**

As noted under consideration of Baldoyle Bay SPA the following SCIs of North Bull SPA were not recorded in the baseline survey programme in the habitats to be used for the compound and access road - bar-tailed godwit, golden plover, grey plover, light-bellied Brent goose and shelduck. It may be concluded that the habitat loss impact pathways during construction and operation will not compromise the targets of the objectives for these SCIs even if they do occasionally use this area any disturbance would be temporary.



Other SCIs were recorded in surveys. Black headed gull was recorded in small numbers within the footprint of the eastern compound. As this species is highly mobile and opportunistic, habitat loss / exclusion could result in a temporary re-distribution of a small number of birds but none would be lost from the SPA. A small number of curlew were also recorded within the footprint of the western micro tunnelling compound. There will be some likely displacement of these birds to alternative habitat but the re-distribution will not result in loss of birds to the SPA population. The remainder of SCIs were not recorded at the location of the micro tunnelling compounds and is therefore considered that the habitat loss impact pathway during construction and operation will not compromise the targets of the conservation objectives for these SCIs.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of North Bull Island SPA would not be compromised as a result of habitat loss.

#### 10.4.4.7. **Malahide Estuary SPA**

The relevant SCIs all overlap with species which are common to the European sites considered above. The habitat loss impact pathway during construction and operation will not compromise the targets of conservation objectives for any of its SCIs.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Malahide Estuary SPA would not be compromised as a result of habitat loss.

#### 10.4.4.8. **Howth Head Coast SPA**

Kittiwake the only SCI for this site were not recorded in significant numbers in the area of construction.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Howth Head Coast SPA would not be compromised as a result of habitat loss.

#### 10.4.4.9. **South Dublin Bay and River Tolka SPA**

The only SCI recorded within habitats where micro tunnelling compounds will be constructed was black headed gull, which has been considered earlier.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of South Dublin Bay and River Tolka SPA would not be compromised as a result of habitat loss.

#### 10.4.4.10. **Rogerstown Estuary SPA**

The only SCI recorded within habitats where micro tunnelling compounds will be constructed was ringed plover. This SCI has been considered earlier under the Baldoyle Bay SPA heading.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Rogerstown Estuary SPA would not be compromised as a result of habitat loss.

#### 10.4.4.11. **Lambay Island SPA**

The only SCIs of this SPA which were recorded within the area of the compounds were herring gull and lesser black headed gull both of which are highly mobile and have large foraging ranges. A temporary redistribution of a small number of birds is possible but birds would not be lost from the SPA population.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Lambay Island SPA would not be compromised as a result of habitat loss.

#### 10.4.4.12. **Dalkey Islands SPA**

No SCIs of this SPA were recorded in the habitats where the compounds and access road will be constructed. This is a substantial distance from the proposed project in addition.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Dalkey Islands SPA would not be compromised as a result of habitat loss.

#### 10.4.4.13. **Skerries Island SPA.**

The only SCI of this SPA which was recorded within the area of the compounds was herring gull which are highly mobile and have large foraging ranges. A temporary redistribution of a small number of birds is possible but birds would not be lost from the SPA population.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Skerries Island SPA would not be compromised as a result of habitat loss.

#### 10.4.4.14. **Rockabill SPA.**

No SCIs of this SPA were recorded in the habitats where the compounds and access road will be constructed. This is a substantial distance from the proposed project in addition.

I consider that it can be concluded with certainty that the conservation objectives for the SCIs of Rockabill SPA would not be compromised as a result of habitat loss.

#### 10.4.5. **In-combination effects with other plans and projects**

The description of projects which are relevant to the potential in-combination effects as outlined in section 6.5 of the NIS and addressed in oral hearing evidence of Ms Kiernan (OH-28) and Mr McCrory (OH-9) in particular and in discussion on Day 5 in the presence of DAHG officials and Ms Cawley advisor to FCC. I have considered the updated planning history presented to the hearing by Ms Gough (OH-30 and OH-37)) and considered that none of the permitted developments are of relevance in terms of in-combination effects.

I have assessed the potential for in-combination effects based on the 4 no. impact pathways. I have concluded that the projects which are considered relevant to Appropriate Assessment in terms of potential for in-combination effects are:

- Dublin Array.
- Alexandra basin works.
- Malahide marina dredging and dumping at sea.
- Howth Harbour Fishery Development

- MP2 project, part of Masterplan 2040
- Aviation fuel pipeline
- Belcamp residential development
- Belcamp land remediation
- Baldoyle residential development
- Connolly hospital development including paediatric
- Blanchardstown Regional Drainage Scheme
- Drumnigh residential development
- Dublin airport runway
- Red Arches residential development
- Ringsend WwTP
- Portmarnock residential development
- Sutton to Malahide Greenway
- Ongoing works at business parks including at Coldwinters.
- Huntstown Bioenergy.

I have concluded based largely on the information presented by Ms Kiernan (OH-37) and following consideration of observers' submissions and the timing of projects or that the following do not warrant consideration for in-combination effects for the purposes of AA:

- Small scale airport developments.
- BusConnects and other transport projects.

The developments which could give rise to airborne noise and visual disturbance as an in-combination effect are the Portmarnock housing, the new airport runway and the proposed cycleway. I am satisfied with the applicant's consideration of these developments in the NIS.

I am satisfied that the mitigation measures for Baldoyle Bay SPA would not result in significant residual impacts. The possibility of displacement or disturbance effects on

SCIs of Baldoyle Bay SPA from other development including Portmarnock residential developments and the cycle route in the event that the projects overlap can be eliminated in view of the planned mitigation measure for the GDD. Regarding the operational impacts of the new runway the terms of the permission limit night-time flights and the issue is that DAA is seeking to operate the new north runway while at the same time facilitating night time flights from that runway. The point of relevance noted by Mr McGrath is that there is currently no limit on night-time flights. The potential for in-combination effects due to the development and from the new runway impacting on roosting areas can therefore be eliminated.

I agree with the assessment of the applicant that the adherence to CEMPs in the case of other developments and as would be applied as relevant to the GDD project would eliminate the potential for significant in-combination effects as a result of water quality effects relating to development on land. The latter comment would refer to the majority of the permitted or planned developments listed above.

The developments to be undertaken in the marine environment namely

- Malahide marina dredging and dumping at sea.
- Howth Harbour Fishery Development
- Dublin Array
- Alexandra basin works
- The proposed MP2 project

have potential for in-combination effects as a result of increased suspended sediments which could impact on reefs or harbour porpoise, which are qualifying interests of Rockabill to Dalkey Island SAC. I am satisfied that potential significant in-combination effects related to the Malahide works can be ruled out due to the small scale and distance, and would not result in a significant in-combination effect on harbour porpoise or reefs or any other qualifying species or habitats.

The Dublin Array and Dublin Port works were discussed at the hearing and both DAHG and Ms Cawley for FCC indicated some concerns relating to the recording of in-combination effects relating to these developments. Potential impacts relate to

sediment plumes and noise. The statement of Mr Wilson in response addressed these developments and the Howth Harbour Fishery Development (OH-64).

Regarding harbour porpoise in-combination impacts from the tunnel / dredging interface, the FOC and the dredging of the marine outfall pipeline including piling are not considered to give rise on impacts on the food source due to the large foraging range but could give rise to disturbance / displacement due to noise.

In this section the noise impact on harbour porpoise is considered in terms of in-combination effects. The **Dublin Array windfarm** is 13km to 28km from the outfall pipeline and could be associated with piling noise which could give rise to disturbance / displacement impacts on harbour porpoise as could installation of cables and vessel activity. A likely three year construction could overlap with the GDD project. The area of impact related to the Dublin Array would be limited due to the linear nature of construction works. Studies indicate a likely 3-5 fold reduction of population size of harbour porpoise in the vicinity of works for a temporary period due to disturbance. The Dublin Array would not create a barrier to movement by the harbour porpoise. I accept Mr Wilson's evidence that the potential for in-combination effects from disturbance / displacement effects from noise or on food sources would be inconsequential due to the limited duration and limited spatial extent. It can therefore be concluded that the GDD in combination with the Dublin Array would not result in significant additional effects and there would be no adverse effect on site integrity.

The **Dublin Port (Alexander Basin Redevelopment ABR)** was assessed in an EIAR and it was concluded that detectable impacts on seals or harbour porpoise are unlikely. It involves disposal of 6 million cubic metres of uncontaminated sediments between 2017 and 2023. Dumping of dredged material as part of the ABR is considered unlikely to adversely affect prey species of seals or harbour porpoise as fish will return to the area shortly after dumping activity ceases. As the area has been used as dumping ground under permit for decades it is not considered to be a significant established feeding area for cetaceans or seals and displacement impacts related to prey are inconsequential. It can therefore be concluded that the GDD in combination with the ABR would not result in significant additional effects and there would be no adverse effect on site integrity.

The **Howth Harbour Fishery development** application included an NIS and Mr Wilson indicates that this was reviewed for the preparation of his statement. The modelling for that project indicates likely suspended sediment loads of 26 mg/l to 47 mg/l and dispersal of sediment plumes in a southeast to northwest direction meaning that the plume associated with this project and the GDD would be unlikely to coincide. I consider that this conclusion can be accepted in view of the planned release of dredged materials as mitigation for the GDD. In addition to the operations in the harbour the project also is associated with a spoil dumping permit allowing for disposal of predominantly limestone to the Burford Bank disposal site. It was assessed in-combination with the ABR according to Mr Wilson. The conclusion of modelling was that the suspended sediment concentration at the dumping site would remain below 20mg/l above background dispersing within 2km. The Burford Bank disposal site is 8.7km south of the GDD diffuser location, which is the closest part of the pipeline. The plume associated with the GDD has been modelled based on the disposal regime to travel northwards. It can therefore be concluded that the GDD in-combination with the Howth Harbour Fishery project would not result in significant additional effects and there would be no adverse effect on site integrity.

The application for **MP2 Project** (phase 2 of the Dublin Port Masterplan) has recently been made to the Board and is accompanied by a NIS which refers to the undertaking of marine works between 2020 and 2034. As such there would be a temporal overlap with the works in the wider marine environment associated with the GDD. MP2 includes the dumping at sea under licence of under 500,000m<sup>3</sup> of dredged material. I have concluded above that the modelling of the GDD marine works has demonstrated that the suspended sediments from subsea dredging will disperse northwards, based on the mitigation proposed. Given that there is a separation distance of 8.7 km between the nearest part of the marine outfall and the licenced dumping location at Burford Bank it may reasonably be concluded that any effects from the GDD would not overlap with any effects from MP2. Therefore there is no potential for cumulative impact in the marine environment between these two projects.

There is potential for some works associated with the **pipe assembly / ballasting activities to take place in Dublin port**. In the event that this is the selected location

consideration is given to potential cumulative disturbance of birds including breeding terns and Brent geese at Dublin Port. An earlier assessment of pipeline assembly / ballasting works within Dublin port concluded that there would be no significant disturbance to wintering or breeding birds in the SPA in combination with ongoing port activities and as such I consider that it may be concluded that there is no possibility of further in combination effects with MP2 in this regard.

I am satisfied that the in-combination effects associated with projects which may be undertaken have been thoroughly addressed. I agree with the conclusions drawn and consider that there is no scientific doubt about the matter.

#### 10.4.6. **Conclusion**

On the basis of the information provided with the application, including the Natura Impact Statement, which when supplemented with the information presented at the oral hearing is adequate in order to carry out a Stage 2 Appropriate Assessment, I am satisfied that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of the following European sites:

- Baldoyle Bay SAC (000199)
- Baldoyle Bay SPA (004016)
- Rockabill to Dalkey Island SAC (003000)
- Ireland's Eye SPA (004117)
- North Dublin Bay SAC (000206)
- North Bull Island SPA (004006)
- Malahide Estuary SPA (004025)
- Malahide Estuary SAC (000205)
- Howth Head Coast SPA (004113)
- South Dublin Bay and River Tolka Estuary SPA (004024)
- Rogerstown Estuary SAC (000208)
- Rogerstown Estuary SPA (004015)



- South Dublin Bay SAC (000210)
- Lambay Island SAC (000204)
- Lambay Island SPA (004069)
- Dalkey Islands SPA (004172)
- Skerries Islands SPA (004122)
- Rockabill SPA (004014)

or any other European site, in view of the sites' conservation objectives and no reasonable scientific doubt remains as to the absence of such effects.

## 11.0 Compulsory Purchase Order

### 11.1. Overview

This section of the overall report refers to the application by Irish Water for confirmation by the Board of the Compulsory Purchase Order entitled Irish Water Compulsory Purchase (Greater Dublin Drainage Project) Order, 2018.

An application in relation to the Compulsory Purchase Order entitled Irish Water Compulsory Purchase (Regional Biosolids Storage Facility) Order, 2018 was submitted in addition. No objections were received and the application does not require further consideration.

The CPO application relates to the acquisition of lands, permanent wayleaves, permanent rights of way and temporary working areas, which are deemed to be necessary for the project known as the Great Dublin Drainage project in relation to which an application has been made to the Board under section 37E of the Planning and Development Act as amended.

The notice of a Compulsory Purchase Order was served under powers conferred on Irish Water by the legislation set out in the notices published on 20<sup>th</sup> June 2018.

The application was lodged on 21<sup>st</sup> of June 2018. An oral hearing was held in the Board's offices on the 2<sup>nd</sup> of April 2019.

The site location and project description are as described earlier in this report and supplemented where necessary in this section. The planning history is as described

above in relation to the overall GDD scheme and supplemented as necessary in this section.

## 11.2. Purpose of CPO

The purpose of the CPO is to facilitate the development of the project known as the Greater Dublin Drainage scheme, the main elements of which are relevant to the CPO are:

- A 500,000 PE wastewater treatment plant and Sludge Hub Centre.
- A 13.7km orbital sewer from Blanchardstown to the WwTP.
- An Odour Control Unit at Dubber.
- A North Fringe Sewer diversion to the proposed WwTP.
- Abbotstown pumping station in NSC grounds.
- A 11.3km outfall sewer including land and marine sections.
- Ancillary infrastructure including access roads and landscaping.

## 11.3. Application Submission

The documents presented in support of the application are:

- Cover letter
- The Managing Director's Order
- Irish Water Compulsory Purchase (Greater Dublin Drainage Project) Order, 2018 executed under seal by the Managing Director and Company Secretary.
- CPO drawings (IW/GDD/CPO/01 - IW/GDD/CPO/15).
- Public notices from the Herald and Irish Independent newspapers published 20th June 2018.
- Sample of CPO notice issued to landowner.
- Copy of certificates of service of CPO notices.
- Engineer's Report together with accompanying appendices, including Routing Report and Planning Report confirming the proposed development conforms

to proper planning and sustainable development, and that the acquisition of lands are suitable and necessary for the purpose required.

- EIAR for the Greater Dublin Drainage project.
- Natura Impact Statement for Greater Dublin Drainage project.
- CD containing EIAR and NIS.

#### 11.4. Format of CPO and Schedule

If it is confirmed the CPO will authorise Irish Water to compulsorily acquire for the purposes of the Water Services Act and of the Greater Dublin Drainage Project:

- **Permanently, the lands described in Part 1 of the Schedule** the lands which are shown shaded in grey on maps submitted. This involves land other than lands consisting of a house or houses unfit for human habitation and not capable of being rendered fit for human habitation at reasonable expense. Part 1 provides details of the quantity, situation and description of the lands, of the owner or reputed owner, lessees or reputed lessees and occupiers.
- **Permanently, the wayleaves described in Sub-Part A of Part 2 of the Schedule**, over the lands described in Sub-Part B of Part 2 of the Schedule the wayleaves which are coloured yellow on the maps submitted. The purposes of the wayleaves is related to wastewater works as defined in the Water Services Act 2007. Sub-Part B provides details of the quantity, situation and description of the lands, of the owner or reputed owner, lessees or reputed lessees and occupiers.
- **Permanently the rights of way described in Sub-Part A of Part 3 of the Schedule** over the lands described in Sub-Part B of Part 3 of the Schedule which lands are shown hatched in red on the maps submitted. Sub-Part A describes the right of way in a general sense and also refers to the right to lay and maintain a suitable roadway and works ancillary thereto over the lands in Sub Part B and the right to do in, on, under or over the lands specified in Sub-Part B anything reasonably necessary or desirable for or ancillary or incidental to the construction, repair, maintenance or alteration of the GDD on any lands including the lands described as rights of way in Part 2. Sub-Part B provides

details of the quantity, situation and description of the lands, of the owner or reputed owner, lessees or reputed lessees and occupiers.

- **Temporarily the rights described in Sub-Part A of Part 4 of the Schedule** to over the lands described in Sub-Part B of Part 4 of the Schedule hereto which lands are shown coloured green on the maps submitted. The rights are described as the temporary right to pass over lands and wayleaves described in Part 2 of the Schedule for the purposes of construction and commissioning the GDD project and shall include the right to lay and maintain a suitable roadway at the lands in Sub Part B, to do in relation to the lands specified in Part B and are necessary or desirable or incidental to the construction of the GDD project on land including the rights and wayleave in Part 2. The temporary working area rights terminate on final commissioning. Sub-Part B provides details of the quantity, situation and description of the lands, of the owner or reputed owner, lessees or reputed lessees and occupiers.

#### 11.5. **Objections and responses**

Written objections were received from 13 landowners / landowner representatives in the first iteration following receipt of the application. On foot of publication of further notices by the applicant an additional 9 no. objections were received, only one of which was from an objector who had not previously made a submission.

Where the written submissions present information, which is most relevant to the planning and environmental aspects, I have assessed any relevant matters in the earlier other sections of this report but for completeness and clarity I have also presented a short reference in the summaries below.

At the oral hearing and in written submissions prior to the hearing some objections were withdrawn.

The 7 no. landowners who retained objections following the oral hearing are:

- Airscape Limited
- Andre and Geraldine Cooper
- Craobh Chiarain GAA Club
- Harcourt Development Holdings

- Health Service Executive
- Shannon Homes Construction ULC
- William Byrne.

I refer below also to correspondence from McCann Fitzgerald on behalf of Hudson Advisors DAC in relation to the plots of Sherman Oaks Limited.

I summarise below the written submissions received on behalf of these objectors (8 no. in all) and the written response of Irish Water to the individual objectors and on matters common to all objectors. The Irish Water response document received on 11<sup>th</sup> of January 2019 is the relevant source for the applicant's comments.

**Airscape Ltd (2 no. written submissions) - Plot no. W5.031/W5.030, drawing IW/GDD/CPO/03.**

The main points of the written objections are:

- Any knock-on effects of any permanent way leave would be detrimental to the planned scheme shown on the attached plans.
- Marketing of the planned Business Park is ongoing.
- Works and the wayleave would act as a deterrent in terms of lettings.
- Would have a negative impact on the Business Park in terms of aesthetics, disruption and inconveniences to business operators.
- A site layout shows the effective site boundary allowing for the future Metro and lands to be ceded to FCC for the construction of a new road.

The main points of the written response by Irish Water are:

- The general response of Irish Water to all objectors applies.
- The CPO as it relates to the land owner consists of the acquisition of a 315 m long 10 m wide permanent way leave and associated 10 m wide temporary working area to facilitate construction of the pipeline by conventional open cut methodology.
- The routing has been subject to significant consultation to ensure compatibility with Airscape's plans. The route is aligned with an internal road/parking area in the proposed Business Park. In addition given the nature of Airscape's

proposed development at this location the width of the temporary working area and permanent way leaves are both reduced from 20m to 10m.

- Construction of the pipeline is likely to be by open cut and the estimated time to complete including permanent reinstatement is 5 to 6 weeks. In addition access is required to the Business Park to the tunnelling compound to the east of the lands for a period of these works (up to 18 months).
- Access will be by way of the L3090 Local Road during construction and by the existing road to the Premier Business Park. Access to the business park itself will be maintained at all times in normal business hours and for scheduled out of hours deliveries. Further consultation can be undertaken regarding the timing and sequencing of works prior to any construction works.

### **Andre and Geraldine Cooper - Plots W13.052, W13.053 – CWL0013**

The main points of the written objections are:

- The proposal would be an infringement of client's right to the quiet enjoyment of their property.
- The scheme does not indicate how it is proposed to carry out the works, how the boundaries would be reinstated and security maintained from the works area.
- The client requests attendance at an oral hearing and that the Board direct Irish Water regarding the payment of any reasonable costs resulting.

The main points of the written response by Irish Water are:

- The general response of Irish Water to all objectors applies.
- The compulsory purchase of the landowners' land will consist of acquisition of a 67 m long 20 m wide permanent wayleave and associated temporary working area. The construction of the pipeline within these lands is expected to be by open cut and by trenchless construction techniques.
- Our valuers have met with the agent for the landowner on a number of occasions but have been unable to reach agreement on compensation terms and consequently the required wayleave has been included in the Irish Water Compulsory Purchase (GDD) Order 2018.

- A combination of open cut and trenchless methods as described will be required. The works within these lands will form part of the tunnelling operation under the N2 national road and the tunnelling work will be a separate operation to open cut works. The estimated time to complete these works including mobilisation, sequencing of activities (open cut and trenchless) up to and including permanent reinstatement is 18 months. For this period access will be from the R132 by way of the temporary working corridor of wayleave 012 immediately to the west of these lands.
- Irish Water sees no basis for the award of costs in this instance nor have landowners articulated such a basis.

**Craobh Ciaran GAA Club - Plots ACQ5.130, ACQ5a.132, W13.052, W13.053,**

The main points of the written objections are:

- Proposal would be an infringement of the client's right to the quiet enjoyment of their property.
- Proposed access would create unacceptable traffic hazard by obstruction of sightlines as described in detail. A safer two-way road system should be in place also.
- Map IW/10001369 which is attached indicates that the area shaded in green will be used as a compound for the work. It is unclear how we will access the facilities while these lands are under such use as it would be unsuitable to be traversing the compound for health and safety grounds – a possible temporary access should be considered at the easterly end of the temporary area, travelling north to the stream which would then be culverted and filled and a temporary road constructed over it to provide access at the location of the existing bridge.
- The club should be connected to the foul sewer as part of the scheme works.
- Irish Water should pay the reasonable costs incurred by client in the attendance of any oral hearing.

The main points of the written response by Irish Water are:

- The general response of Irish Water to all objectors applies.

- The compulsory purchase of the landowners lands will consist of permanent acquisition of 0.345 ha of land along with the acquisition of appropriate working areas of 0.724 ha and 0.078 ha on a temporary basis. This will facilitate construction of a river culvert, new access roadways, a concrete separation barrier, interception point for North Fringe Sewer, new pipeline, three manholes, temporary construction compound and providing for safe access arrangement from the R139 roadway during construction. Drawing strip map CACQ0005 and CACQ0005a and drawing IW/10001369/ACQ /0005 (special issue) refer.
- Detailed discussion with the chairperson and other members has taken place and a number of engagements and refinements were made. Negotiations are ongoing with a view to progressing with a mutually acceptable settlement.
- The design solution of the proposed access realignment and site specific concerns are set out in Appendix 2: Traffic Management Plan of the Outline CEMP.
- The proposed alignment of the planned East-West Distributor Road has been taken into account. Irish Water has no role in its delivery.
- The construction compound at the club entrance will not be the main compound but will facilitate the machinery and materials required to construct the access road and ancillary works. Access to the retained lands of the club will be maintained. Temporary fencing and related measures will be agreed.
- Regarding a new foul sewer to the Craobh Chiarain GAA Irish Water has confirmed that this connection is possible subject to receipt of all statutory consents and conforming with standard connection agreements. This new foul sewer can be laid and a connection made by the contractor, subject to the costs forming part of an overall agreed settlement for the acquisition of the lands required by Irish Water.
- Irish Water sees no basis for the award of costs in this instance nor has Craobh Chiarain GAA club articulated such a basis.

#### **Harcourt Development Holdings - Plot W24.079, W24.078 and W24.080**

The main points of the written objections are:



- Harcourt Holdings land is earmarked for future development. The knock-on effects of a permanent wayleave in the current location would be very detrimental and disruptive to the development plans.
- The current operators are a National Car Testing Centre with an average of 800 customers per day.
- The project would have a severely negative impact on our tenant's daily operations and business.
- Specific reference is made to impacts on aesthetics and to the likely disruption due to heavy plant and machinery operating in a business park.

The main points of the written response by Irish Water are:

- The general response of Irish Water to all objectors applies.
- The GDD project as it relates to compulsory purchase of the landowner's land will consist of acquisition of the 217 m long 20 m wide permanent wayleave and associated 20 m wide temporary working area. The temporary area will increase in width at specific locations to provide for trenchless construction techniques. Strip map CWL 0024 refers.
- The NCT centre, which is operating in the small business Park was identified as a routing constraint. The existing route, which amended the previous intended route was arrived at following consultation with the landowner.
- The route along the northern boundary provides for future development of the lands. Irish Water would have no objection in principle to the construction of car parking or internal roadways over the permanent wayleave.
- The estimated time to complete these works including mobilisation, sequencing and up to and including permanent reinstatement is 18 months. Access during construction would be by way of the existing access roads to the NCT centre and access to the NCT itself will be maintained at all times during normal business hours.

#### **Health Service Executive – Plots W2.005, W2.006, W2.007, W2.009, W2.010**

The main points of the written objection are:

- The HSE is generally supportive of the scheme in this continuing consultation with Irish water and its representatives.
- Our agreement in relation to the compulsory acquisition of the subject lands will not be confirmed until such time as
  - the title review is completed
  - the precise route is confirmed in consultation with and to the satisfaction of HSE
  - Irish Water provide for adherence to the HSE property protocol.
- The attached review of the proposal for 9C sewer upgrade works by Roughan O'Donovan consulting engineers refers.
- The temporary wayleaves do not generally impact on existing buildings but may impact or be in close proximity to future planned development in Connolly Hospital. Irish Water shall undertake to adjust a compound as necessary in response to buildings on site at the time of construction.
- Regarding the permitted car park due to be constructed as part of the works for the National Children's Hospital satellite centre, the compound would appear to require slight adjustment to avoid these works – Irish Water has agreed to review this detail.
- It is recommended that the HSE request a condition from ABP in relation to the construction compounds to ensure that the compounds and wayleaves do not have impacts on either current or future proposed works.
- From an operational point of view it is considered that there are no significant risks to the hospital – the requirement for periodic access for inspections which Irish Water have confirmed will be from the manholes to be constructed at each shaft location refers – any repair works would need to be reviewed on a case-by-case basis.
- The proposed permanent 10m wayleave through the campus is generally under the main access road with minor impacts on car parks – in the unlikely event of major repairs a Traffic Management Plan will be required in order to avoid impacts to hospital traffic.

- In the event of works within the wayleave being required it is recommended that Irish Water be conditioned to ensure consultation with Connolly Hospital.
- In conclusion conditions are recommended by Roughan O Donovan. These include matters related to construction traffic, flooding, building condition reports, noise and dust.

The main points of the written response by Irish Water are:

- The general response of Irish Water to all objectors applies.
- The GDD as it relates to the landowner's lands will consist of the acquisition of a 524m long 10m wide permanent wayleave and a 20m wide at two locations to facilitate construction of access shafts together with temporary working area of 20m width. Construction of the pipeline within these lands by trenchless methodology. Strip map CWL0002 refers.
- The route shown is believed to be the one that causes the least amount of disruption taking into account the constraints.
- At all times the Blue Light corridors will be maintained unobstructed and construction noise / vibration limits will be imposed and met. Due to the depth of the pipeline trenchless technology will be used and for this reason and due to the presence of underlying rock and the planned future operation and maintenance techniques it was possible to reduce the permanent wayleave width from 20m to 10m. The pipe will be at depths of 10m and the access will be likely from access shafts. The completion time will be 12 months.

### **Shannon Homes Construction ULC – W45.158, W45.159, W45.160**

The main points of the written objections are:

- There is no objection in principle to the proposed development traversing their lands. The objection is to the alignment and to the temporary working space.
- The subject site has been granted permission for residential development of 270 houses and site works under PL 06F.244401 (F14A/0132) and works have commenced on the first phase of 60 houses.

- The majority of roads and services infrastructure has been completed. DBFL had liaised with FCC and Tobin consulting engineers in order to establish the preferred alignment for the wayleaves across the site.
- DBFL on this basis developed proposals for a pumping station and surface water attenuation to meet the requirements of the residential development proposal. These proposals formed the basis of the permission granted.
- The current alignment will have a significant impact on the design of these critical pieces of infrastructure and may undermine the ability of our client to meet their obligations in relation to the permission granted.
- We request that the alignment and wayleaves be revised to align with those previously proposed as part of the details submitted with PL 06F.244401 in order to avoid unnecessary delay or expense or disruptive redesign.
- The enclosed map shows the agreed wayleave route and correspondence from 2014 regarding alignment.

The written response of Irish Water notes that there is no objection in principle to the development traversing its lands and includes the following:

- The GDD project as it relates to the landowners lands will consist of acquisition of a 458m long 20 m wide permanent wayleave and associated temporary working area to facilitate laying of pipe by open cut methodology and the crossing of the adjacent railway line by trenchless construction techniques to provide access during construction phase. The majority of works in these lands will be by open cut methodology. CWL 0045 refers.
- The subject lands have been granted permission under PL06F.244401 (F14A/0132) and these works have commenced on site. We have confirmed to Shannon Homes by letter dated 13<sup>th</sup> of November 2018 that the GDD project team is satisfied that the proposed location of the permanent wayleave and temporary working area is compatible with the location of planned pumping station.
- Irish Water would be open to a direction from ABP to amend the location of the proposed permanent wayleave and temporary working area in the lands of Shannon Homes as shown on the attached drawing 3210 2902 – 1141

revision B to further accommodate the permitted development (270 houses) currently under way to avoid any unnecessary constraints during pipeline construction.

- An attached letter from Irish Water dated 13<sup>th</sup> of November 2018 to Shannon Homes Construction Ltd confirms that based on construction information provided by Shannon Homes the proposed GDD outfall pipeline can be constructed within the proposed permanent wayleave and temporary working areas provided for in the GDD CPO. This is notwithstanding the construction underway of a pumping station at this location to service the adjacent Shannon Homes residential development.
- We also referred to planning permission F17A/0412 and condition 17 attached to F14A/0132 and contained within the decision of PL 06F.244401. We confirm that the project team is satisfied that Shannon Homes has liaised with the GDD project team and that the location of the permanent wayleave is compatible with the location of the pumping station.

#### **William Byrne, Kildonan House, Kildonan, Finglas - Plots W10.044, W10.045**

The main points of the written objections are:

- An alternative design would have far less impact. The route should be revised as indicated if permission is to be granted. This amendment would involve the wayleave area being moved further south to the boundary of the M50 and to pass parallel to the M50, continuing in an easterly direction until it either connects with the roadway into Kildonan House and the ESB substation or easterly and then connecting with the R135 and then travelling north along the roadway.
- As designed the route would sever access to the client's home and farm and lead to maximum disruption including to all electric, telecommunication and other services at home and farm.
- It is unclear how it is proposed to provide security to property and to maintain the integrity of boundaries during and after the works.
- The client requires assurances that his private well will not be affected.

- An indemnification is required to deal with the potential of livestock escape as a result of interference with boundaries.
- The client suffers from medical problems requiring frequent access to hospital and needs assurances regarding maintenance of emergency vehicle access.
- The prior removal of noxious weeds should be addressed by condition.

The main points of the written response by Irish Water are:

- The general response of Irish Water to all objectors applies.
- The compulsory purchase of this landowners land will consist of acquisition of a 648 m long 20 m wide permanent wayleave and associated 20 m wide temporary working area to facilitate construction of the pipeline within these lands by open cut methodology.
- A number of amendments were considered in order to deal with the potential impact of future development.
- The design of the route corridor progressed to provide for potential future development by moving the line of the proposed pipe southwards. A critical constraint at the ESB substation was the maintenance of a corridor in close proximity to the M50. Together with the proposed Metro West corridor the pipeline had to be routed north of the substation.
- Access to the works area during construction will be from the R135 via the working corridor to the east of the lands. The estimated time for completion is 18 months.
- The land will be temporarily severed but access to the landowner's home and farm will be maintained. A means of crossing of pathways or roadways during construction will be agreed with the landowner and will be provided. All permanent pathways or roadways will be restored to their original state. This is reiterated in the OCEMP 7.3.9. LLOs will be in place to provide communication between construction contractor and landowner.
- Utilities to home and farm will be maintained without interruption during the course of work on the basis that the owner provides the necessary facilities to enable Irish Water to meet this undertaking. Appropriate identification and

protection measures can be agreed. If required an alternative temporary service route can be agreed.

- Regarding water services all necessary precautions will be taken to protect all watercourses and water supplies against pollution attributable to the laying of pipes. Irish Water or its agents will familiarise themselves with the position, type and size of all underground services. The private well is over 300 m from the trench excavation works and it is unlikely that the works will impact on that supply. In the event of loss of supply as a result of pipe laying works Irish Water will construct an alternative (e.g. a second well) as soon as possible.
- All necessary precautions will be undertaken to prevent the straying of livestock. Irish Water will compensate the owner of such livestock for loss or damage arising from injury or death of the animals by straying due to an act or omission of Irish Water or its contractors.
- Access by emergency vehicles and dust mitigation will be maintained. Design and construction of the pipeline will be to applicable high standards with safety of nearby residents paramount. Measures will be undertaken as described in the OCEMP to prevent spread of invasive species.

**Other Correspondence - McCann Fitzgerald on behalf of Hudson Advisors  
DAC / Sherman Oaks Limited - Plots W48a.166, W48a.167 and W48a.168**

There has been some correspondence from McCann Fitzgerald. The matter in essence refers to Hudson Advisors DAC, who are successors in title to Sherman Oaks Limited, which is one of the entities listed on the CPO Order. The submission on behalf of 'Hudson' sought to remove Sherman Oaks Limited from the CPO Order for the reason that Sherman Oaks Limited has and had no interest in the lands and its removal would be good conveyancing practice. Helsingor is another related company. The matter was discussed at the hearing. Although not formal objectors, the party was notified by the Board of the hearing but did not attend.

**Other response comments of Irish Water**

Response points made by Irish Water, which are relevant to all of the objectors are:

- The objections raise matters which are relevant to arbitration, to planning or to EIA. Notwithstanding that fact and without prejudice, a response is provided on some of these issues.
- The purpose of the project is referenced. The GDD project Routing Report describes the rationale and site selection methodology for the WwTP site and the route selection process and routing constraints of the proposed orbital sewer pipeline and outfall pipeline. The project is being proposed to protect public health and safeguard the environment and facilitate socio-economic growth and represents a major step in the wastewater treatment network.
- In the WSSP the constraints at Ringsend and the requirements for the region are identified and the latest construction start date of the GDD WwTP is the end of 2021 if it is to be operational by 2026 as required.
- In preliminary design stage refinements were undertaken to account for more recent data availability and in response to landowner requests.
- In arriving at the final pipeline route all existing constraints and proposed infrastructural developments were taken into account and having considered all possible alternatives the route shown is the one that causes the least amount of disruption. The pipeline route selection and the rigorous ASA study are referenced together with the EIAR and the NIS. Chapter 5 of the EIAR describes alternatives, which were considered.
- The sequencing of progression of the project is described.
- Regarding construction details the project brochure and the GDD project code of practice were circulated to all. These describe how the pipeline will be constructed and the matters which are relevant to the property affected.
- One of the first construction activities will be the fencing off of the construction corridor. Details will be decided following consultation and will be appropriate to the agricultural activity. Measures will be provided as necessary for the protection of members of the public and animals and to avoid trespass.
- Irish Water will be responsible for restoring all private roadways, driveways, hardstanding and any boundary walls and fences affected by the works to a condition equivalent to that existing before the commencement of works.



- The constitution provides that the state may delimit by law the exercise of the citizens' property rights with a view to reconciling their exercise with the exigencies of the common good. If there is any interference with landowner property rights the landowner will be entitled to be compensated for such interference.
- Costs will be a matter for ABP at its discretion.

## 11.6. Amendments

The Board has been advised of changes to the ownership of some lands since the making of the order and service of notices in June 2018. Proof has been provided of the new notices which were served. The following were subject of written submissions to the Board prior to the oral hearing and were repeated at the hearing:

- Plot W36.120 - notices originally served on Mr Patrick and Mrs Teresa Jones – subsequently notices served on Mr Joseph Jones to reflect updated folio.
- Plots W37.134, W37.135, W37.136 - notices originally served on PKS Farms Limited – subsequently notices served on Cream of the Crop Limited to reflect change in ownership.

## 11.7. Oral Hearing

Oral hearing submissions and proceedings are presented in this section. The Board is also referred to the full record of the hearing, which is available in the form of the recording undertaken on behalf of the Board.

In relation to specific objections I have provided long summaries of the written submissions. Irish Water's responses to objections entailed much repetition and overlap with the written response document. None of the outstanding objectors listed above were present at the hearing.

On opening the hearing I established that Mr Corr of Corr Chartered Surveyors Limited was present to represent 6 no. objectors - all were subsequently withdrawn. No other objector was present.

Irish Water's team at the oral hearing was led by Mr David Holland SC. His opening comment was to the effect that the oral hearing was not separate to the hearing on

the GDD project but is part of an oral hearing much of which has been devoted to planning and environmental issues. While the CPO is a matter of separate jurisdiction much of the evidence already heard in relation to planning, need, policy basis and funding can be taken as read for the purposes of the CPO.

Mr Holland addressed a number of procedural matters and matters related to the need for the project. These are summarised in an appendix to this report.

Mr Downes for Irish Water presented the background to the project, elements of the routing selection and details of the design. His statement of evidence is summarised in an appendix to this report.

Mr Downes then addressed some of the individual objections. There were no material modifications in his written presentation (OH-85) except in relation to the Harcourt Development Holdings property, which I outline below. In considering the information in relation to individual objectors I present only the significant additional points made at the hearing.

#### **Airscape Ltd – strip map CWL005**

The route runs along the roadway and at present there is no planning permission extant in respect of the southern lands, although it is assumed it will be developed. The map CWL0005 shows one valve AV3. The 5 to 6 week estimated time of completion from mobilisation to permanent reinstatement is 5 to 6 weeks (as stated in the previous response submission).

The oral hearing submission in relation to the tunnelling compound to the east of the Airscape lands is that 'in addition' access will be required through t Premier Business Park to the pipeline construction works and tunnelling compound with open cut construction taking place to the east of WL0005 and to take 8 days and tunnelling works to last for 6 to 8 weeks and possibly at a different time to the construction of the open cut section.

There was a discussion about the routing to the west of the business park.

#### **William Byrne – strip map CWL0010**

The pipeline had to be routed north of the substation in view of two constraints – the maintenance of a corridor in close proximity to the M50 for the substation and secondly the proposed route of the Metro West corridor. 1 no. air valve is indicated

on the map. Before excavation across the access road begins a hard stand area will be provided in the land adjacent to the access road crossing to divert access around the open cut area, which works will take up to 3 days.

The preliminary ground investigations show that groundwater levels are below the invert level of the proposed pipeline and the potential for impact on the well is negligible. The water levels will be monitored during construction and in the event of a loss of water supply as a result of the works an alternative supply will be constructed.

There was a discussion regarding the selected southern option involving Mr O’Keeffe and Mr Downes. The route stays as close as possible to the M50 subject to the proposed metro corridor. It could not be brought any further east due to large pylons. The southern side of the substation is very congested and to take that route would also require a much longer tunnel to go under the main road. Depending on ground conditions it could not be stated whether that would be technically feasible. The southern route was disregarded following a high level consultation due to the much greater ease of the other route. In addition, to the east of the N2 that route had it been selected would have involved heading directly northwards in order to avoid existing development.

### **Andre and Geraldine Cooper – CWL0013**

Mr Downes described the route crossing as a relatively short section. The current use is market gardening and in the long term there will be no effect on the use for market gardening. The pipeline will be by trenchless construction to facilitate the N2 crossing. There would be one scour valve on this part of the pipeline which is the rising main.

The consultation is described including recent discussions during which no technical issues were raised. The security concerns are similar to as described in the Byrne submission and of a standard nature.

### **Craobh Chiarain GAA – Overview strip map CACQ0005 and CACQ0005A**

Regarding the previously discussed culvert widening to facilitate the North-South link road and the confirmation in the earlier planning hearing modules that there is sufficient land, I requested an opinion of Mr Holland as to how this sits within the CPO. He stated that there is not in his opinion a necessity for a refinement of the

CPO documentation and did not consider that there is any legal impediment to the consent for the CPO. He noted that there has been no comment from objectors that the land take could be reduced which might prevent the wider culvert being installed. He also added that the broad view should be taken of particular plots as long as the land take is not manifestly excessive.

#### **Harcourt Developments Holdings Limited – CWL0024**

Mr Holland noted that in addition to the NCT centre in Northpoint Business Park, there is another business at the premises namely the small public service vehicle licensing office (SPSV) at the first floor level of the office buildings. The business park is dependent on some form of right of way over the lands owned by FCC.

Mr Holland also noted that the land involved is presently not used and in the event that permanent restoration is not required then the period involved might be less than 18 months.

#### **Shannon Homes ULC – CWL0045**

The land is currently a development site for Drumnigh Manor residential development. While the location of the permanent wayleave and temporary working area proposed in the CPO is compatible with the location of the proposed sewage pumping station and stormwater percolation area which are part of the housing scheme, Irish Water would be open to a direction to amend them if required to further accommodate the permitted development and to avoid any unnecessary constraints during construction of the pipeline.

Mr Holland noted that while we are not inviting the Board to make any amendment and indeed the straight line route is technically preferable we suggest that the matter is best left for agreement and outside of the CPO.

#### **Further procedures**

Mr Corr returned and indicated that all objections were to be withdrawn.

Mr Holland noted that the three reports of Ms Gough, Ms Chambers and Mr O’Keeffe are before the Board and he suggested that very brief summaries of the reports could be distributed and they could be taken as read over the break and if any question arises they can be discussed. Mr Downes would also be available for any questions. After the break it was clarified that there were no further questions.

Regarding particular plots and landowners and the requirements for amendments to the CPO Mr Holland summarised the position as follows.

- He commented on the transfer from PKS Farms to **Cream of the Crop** and the serving of documents noting the shared directors between the two companies. PKS may retain interest however. Cream of the Crop should be added to the CPO.
- Regarding **Mr and Mrs Jones** who are not objectors to the CPO, they voluntarily transferred about 18 hectares to Irish Water and when that plot is added to the lands in Clonshaugh subject of the compulsory purchase Irish Water will have control of the lands necessary for the WwTP. Mr Joseph Jones now has an interest in the lands. The CPO should capture his interests now that we are aware of it. Mr Joseph Jones should therefore be added to the relevant plots.
- Regarding **Shannon Homes** it was noted that they raised the issue of the possible conflict with the permitted plans for their land and in particular referred to a kink in the planned pipeline route. Irish Water is happy to have the CPO confirmed in its present format without a change but would not have been resistant to the minor change suggested by way of straightening the line and we have a map for that purpose. It might be simpler and better to deal with the matter by voluntary discussions. So while it has been canvassed in correspondence that a change be made it is proposed that the CPO be confirmed as sought.
- **Regarding DAA** the letter of April 1<sup>st</sup> was handed in and the letter of 18<sup>th</sup> of August noted. DAA have stated that they are in favour of the project in principle and are likely to benefit from it. However DAA has an objection in principle to being subject to CPO. We now accept this and would propose to remove these plots from the CPO. Where plots are shared with others we would propose to leave them within the CPO. The letter presented suffices for the purposes of the Board that Irish Water will be in a position to undertake the development.
- The client of McCann Fitzgerald, **Hudson Advisors Limited** was discussed in detail. It was noted that a letter returned by the Board addressed the

question of removing from the CPO any reference to Sherman Oaks, which is a company related to Hudson Advisors Limited be removed in the interest of good conveyancing. The Board had previously advised McCann Fitzgerald by letter of the date of the hearing. The objector was not present or represented. Mr Holland outlined the matter in detail noting the purchase by Hudson Advisors Limited of lands, which are outside of the CPO. Irish Water has sought to acquire lands, which previously formed part of the same holding some of which seems to have been transferred to FCC. There is a possibility that Hudson retain some interest in the lands which are within the CPO – that matter is not clear Mr Holland stated and Irish Water needs to protect its interests. Mr Holland noted that if McCann Fitzgerald’s clients don’t retain any residual interests in the lands affected by the CPO then there is no detriment to them by the inclusion in the CPO. If they do retain an interest then it is considered best that the CPO capture that.

Mr Holland made a closing statement. He indicated that the evidence presented over the entirety of the hearing demonstrated:

1. The need for the project and that it is in the public interest.
2. That it is the intention of Irish Water to carry the project into effect within the foreseeable future.
3. Irish Water is in a position to effect the acquisition in terms of its resources.
4. The lands contained in the CPO are necessary and adequate to bring the project into effect. The Board can consider that if the order is confirmed effect will be given to the project.

I closed the hearing.

## **11.8. Assessment**

### **11.8.1. Case for the CPO – General issues**

The criteria for the Board to be satisfied that Irish Water has demonstrated that the CPO is justified by the common good relate to:

- That there is a community need, which is met by the acquisition of the lands or rights over land.
- That the lands are suitable to meet that community need.
- That the alternative methods of meeting the community need have been considered but are not demonstrably preferable.
- That the works accord with or at least are not in material contravention of the provisions of the statutory development plan.

The relevant legislation was listed by Mr Holland at the oral hearing and is included in the title of the CPO. The legislative basis for the powers of Irish Water are noted at this point and were not in dispute at the hearing. In summary the functions conferred on 'water services authorities' under the Water Services Act 2007, as amended were transferred to Irish Water under section 7(1) of the Water Services (No. 2) Act 2013. I am satisfied that Irish Water is entitled under legislation to seek to compulsorily acquire lands or interests in lands, which would include rights of way.

In consideration of the 4 no. listed criteria I have taken into account the reports which were presented and the submissions made at the oral hearing together with all of the written objections made and the full evidence relating to planning, environmental and other issues presented in relation to the GDD Planning Application.

#### 11.8.2. **Community need**

It is necessary for this CPO to be confirmed that there is a community need which would be met by the acquisitions which are subject of this CPO.

The need for the development of the GDD project is subject of detailed consideration earlier in this report. In summary I refer to the following:

- The project origins in the GDSDS, consideration of the project since 2005, the recommendation of the GDSDS that the optimum solution was to provide a new wastewater treatment plant and associated infrastructure in north County Dublin.
- Confirmation of that recommendation in recent analysis which involved consideration of future loads.

- The function of the GDD in serving part of the catchment of the 9C sewer and the North Fringe Sewer thereby releasing additional capacity at Ringsend and other existing WwTPs and allowing for growth in other areas.
- The development will meet the general requirement for adequate and sustainable treatment of wastewater and thus fulfil public health goals and environmental protection while providing for sustainable growth.

I conclude that the GDD project can be considered to be in the interest of the common good and that the community need for the scheme is established.

### 11.8.3. **Suitability of lands to meet the community need**

The land requirement for the project derives from the design of the project and from measures which are to be embedded in the design which are deemed to be necessary or appropriate.

The general location of the development close to the wastewater load which will be treated is relevant. The siting of the SHC at the same site and close to the urban centre is also appropriate. The Clonshaugh site has been selected following a detailed multi-factorial and iterative process over a long period and involving significant consultation and I consider that the selected site is justified.

I consider that it is clearly demonstrated that the site of the WwTP would be under the control of the applicant subject to confirmation of the CPO and in this respect I refer to Mr Holland's submissions in relation to the voluntary acquisitions from the Jones family and the IDA in particular. The lands are of sufficient size to provide for the necessary infrastructure and landscaping as appropriate. Having regard to the location of the site at the edge of the city and the policies relating to the greenbelt the sizing of the site to accommodate generous landscaped areas is appropriate.

The application submissions contain information relating to the natural environment including geology and water. In my opinion these provide sufficient information for the Board to be satisfied that the land is physically suitable for the carrying out of the project and that there is no likelihood of major engineering difficulties and associated environmental impacts.

Regarding the overall route of the pipeline the Routing Report describes the selection of the start and end points and notes the critical constraint in the



intermediate area, namely the development at Collinstown Cross. I consider that the overall route has been adequately justified by the applicant in the overall submissions but particularly in the Routing Report and that it is demonstrated to comprise a reasonable balance between the environmental constraints and route length and that operational efficiencies have also been taken into account.

I note the statements in section 4.3.2 of the Routing Report, which set out the reasoning for the temporary and permanent wayleave widths and include descriptions of requirements for structural stability, adequate working areas, adequate separation between any structures and room for inspection. The proposed temporary working wayleaves at a standard width of 40m are demonstrated in the application submissions to be warranted for the construction phase. Where possible the temporary wayleave is reduced in width but this is not ideal from the point of view of ease of construction.

I consider that the 20m permanent wayleave width is not excessive in general. In response to some particular issues raised by owners, occupiers and others the wayleave width has in some cases been reduced to 10m. That reduced width would give rise to requirements for double handling of materials in the event of a repair being required and it is not a desirable width for the overall length.

The temporary construction compounds are reasonably positioned and of suitable size to cater for the long linear pipe lines and the other major project elements. The requirement for trenchless techniques at infrastructure crossings and other locations is one of the main reasons for the additional enlarged compounds and I consider that it is adequately justified by the applicant in the overall project description.

In conclusion I consider that the lands contained in the CPO are necessary and adequate to cater for the GDD.

#### **11.8.4. Consideration of alternatives**

The expansion of existing wastewater treatment plants has been considered. The EIAR provides information which indicates the limited further scope for additional capacity in this regard and which indicates which plants are at capacity. The expansion of Ringsend has been recently permitted and significant further expansion is ruled out due to the difficulties of upgrading sewerage infrastructure in an area

where there are a lot of underground utilities and which would result in major traffic disruption.

The alternative of a network of a network of community plants has been considered in detail and I am satisfied that it is not demonstrated to have any significant advantages. I am satisfied that the option selected of a larger plant is more appropriate in terms of best technology, environmental management and monitoring and retrofitting. I consider this option to be the best means of providing adequate infrastructure to meet planned future growth in the GDA.

I note that an observer referred to the alternative of routing the pipeline closer to the M50 at the eastern part of the pipeline near Connolly Hospital in the interest of lower pumping costs in the operational phase. I am satisfied that the development design and layout has emerged following a detailed design and consultation. The evidence presented supports the case made by Irish Water that the selected sites for the pipeline and the major components of the project are the most practical and feasible options. The routing detail has also taken into account the level of disruption resulting from a selected route.

In conclusion I am satisfied that the alternative methods of meeting the community need have been considered but are not demonstrably preferable.

#### **11.8.5. Compliance with development plan policy**

I consider that there is a significant policy support for the proposed GDD including high level strategic national and regional support and at the level of the development plans for Fingal and Dublin City.

I have addressed in detail above the zoning objective for the WwTP and concluded that the project is not a material contravention of the provisions of the statutory development plan.

I consider that the applicant, including through the Planning Report and the various submissions of Ms Gough, has demonstrated that the other smaller components of the GDD also comply with the development plan policies and zoning objectives.

I note also that the Planning Report contains images which present the route of the wayleaves and other aspects of the CPO with site layout for permitted developments and confirms that there are no conflicts.

In conclusion I am satisfied that the proposed works accord with and are not in material contravention of the provisions of the statutory development plans.

#### 11.8.6. **Specific Matters**

##### **Airscape Ltd - Plot no. W5.030 and W5.031**

Regarding the line of the route and the proportionality of the land take Irish Water has minimised the impact on this land through the alignment of the pipeline route with the internal roadway of the business park, which allows for further expansion of the business park to the south. The permanent wayleave of 10m width could be incorporated into the road / parking associated with any future expansion to the south. There would be an air valve in situ in addition.

I refer the Board to the indicative site layout which shows a previously permitted layout for the southern side of the holding and I note that the permanent wayleave is incorrectly represented and in conflict with the CPO drawings. I do not consider that it is necessary to clarify this in the Schedule and consider that the CPO maps are the relevant documents for interpretation.

The 10m wide temporary working area, which is proposed to be positioned close to the existing buildings is relevant to an envisaged 5 to 6 week construction to reinstatement phase. I do not consider that this would constitute significant disruption to the operation of the business park. The pipeline route selected is thus completely in keeping with the outlined plans for the lands as described. The permission has lapsed. The disruption is minimised by the narrowing of the wayleaves.

The greater duration of disturbance associated with the planned tunnelling under the Cappogue Road also refers – that involves the lands to the east outside of the Airscape holding but also involves traversing the Airscape lands for access. The indicated duration for which there is a requirement for temporary passage over land is 18 months and the main access will be by way of the L3090 Local Rd, which also is the existing access to the Premier Business Park.

Irish Water indicate that access to the Business Park will be maintained at all times in normal business hours and for scheduled out of hours deliveries. Irish Water have committed to consultation with Airscape regarding timing and sequencing of works prior to any construction works.

In relation to the acquisition of a 315m long 10m wide permanent wayleave and associated 10m wide temporary working area I consider that the evidence is that Irish Water has undertaken all possible measures to minimise disturbance including through reducing the area and the duration of works, to the extent possible. I consider that the requirement for permanent and temporary wayleaves is evident and that they are necessary for the project to proceed.

I recommend that the Board confirm the CPO as it relates to these lands.

**Andre and Geraldine Cooper - Plots W13.052, W13.053**

The main points of objection relate to disturbance and to lack of information regarding the works, boundaries and related matters. I agree with the applicant that these matters are suitable for agreement in the event that the CPO is approved. The applicant has also already responded to some of the issues raised and has presented to the owners various documents of relevance. Irish Water indicate that their valuers have met with the agent for the landowner on a number of occasions but have been unable to reach agreement on compensation terms. Consequently the required wayleave has been included in the Irish Water Compulsory Purchase (GDD) Order 2018.

The compulsory purchase of the landowners land will consist of acquisition of 67 m long 20 m wide permanent wayleave and associated temporary working area. The land is presently in use as part of a market gardening activity. The construction of the pipeline within these lands is expected to be by open cut and by trenchless construction techniques. There will be considerable disruption associated with the works on a temporary basis. The estimated time to complete the trenchless construction works including mobilisation, sequencing of activities (open cut and trenchless) up to and including permanent reinstatement is 18 months.

The land is required for the purposes of crossing the main road by the pipeline. I consider that the route alignment is largely determined by the route to the west and is reasonable given constraints at that location as discussed in relation to the Byrne lands where the substation and pylons are a significant constraint together with the planned metro route.

The land take is proportionate in my opinion. The permanent wayleave will have an associated scour valve. Permanent reinstatement will result in the lands being suitable for use as before.

I consider that the applicant has proven the merits of the application for permanent and temporary wayleaves at this location. I recommend that the Board confirm the CPO as it relates to these lands.

**Craobh Chiarain GAA – Plots ACQ5a.130, ACQ5a.131, ACQ5a.132 and ACQ5a.133**

The objection refers to matters relating to traffic hazard which I have considered under the planning issues in this report. I consider that the entrance arrangements to the site are suitable pending the completion of the entire North-South link road and delivery of the EWDR, which are not within the remit of the applicant. The applicant has advised that the temporary compound would be for machinery and I consider that it would not be a highly active area and in particular would not impede the access to the GAA club and is acceptable. I note the request to provide a club access further to the east but consider that the arrangements presented are sufficient in the context of the limited use of the club and the nature of the compound. In this regard I accept Irish Water's statement at the hearing that the traffic will not conflict between the two facilities. These matters do not require further consideration under the CPO application.

At the hearing the matter of the extent of land take for the 25m culvert was discussed. That would provide for the ultimate full width of the north-south link road proposed at this location in the long-term. The widened culvert would not involve any further intrusion on to the objector's lands. In my opinion it is in accordance with the proper planning and sustainable development of the area that this work be undertaken at this time as the applicant has suggested. I note Mr Holland's opinion that there would not be a conflict between that work and the legal basis for the CPO. I consider that the land take which is for the delivery of the machinery compound and the permanent access to the WwTP site is proportionate and acceptable.

Regarding the provision of foul sewerage to the club I consider that this is a matter between the parties and can be agreed if the CPO is confirmed.

I recommend that the Board confirm the CPO as it relates to these lands.

### **Harcourt Development - Plots W24.079, W24.078 and W24.080**

The route selected would impact on the access way into the Northpoint Business Park which involves passing over lands in the ownership of FCC. Given the nature of the uses at that location there is likely to be some conflict between the 800 NCT customers per day and the construction impacts associated with the trenchless construction close to the junction which may impact the FCC lands. In addition at the western side of the landowner's plot trenchless construction techniques will be proposed and the land take is accordingly widened and significant construction works and duration will occur. Having regard to the benefits of passing under the golf course and the temporary impacts on the objector's lands that are presently disused and peripheral to any activity at the business park, I consider that the proposals are in accordance with the common good and that the CPO can be justified on that basis.

The location of the permanent and temporary wayleaves at the northern side of the plot minimises disruption. Irish Water have indicated that the route has arisen on foot of consultation with the owner. I consider that its location at the edge of the plot is such that it is unlikely to impede any further development of the business park. I also note that Irish Water has stated that there would be no objection to development of internal roads or parking over the permanent wayleave. I consider that the land take and the route alignment are acceptable.

I recommend that the Board confirm the CPO as it relates to these lands.

### **Health Service Executive Plots W2.005, W2.006, W2.007, W2.009, W2.010**

In the main the matters presented by the HSE in the objection to the CPO have no relevance to the decision of the Board. The points made in the submission include detail on flooding, noise, dust and other matters but I do not propose to respond to these items in this section of this report.

In relation to the selected temporary wayleaves and the detail of their use in terms of the management of construction traffic I note the future agreement of a Traffic Management Plan as part of the GDD planning application and consider that this is the appropriate mechanism for promoting and resolving matters identified by the HSE.

Regarding the extent of the land take particularly the width of the permanent wayleave and the disruption this has been minimised through use of trenchless construction. There is no reasonable option in my opinion other than to traverse the hospital grounds taking into account the detailed consideration of the desirable connection point to the existing sewers, the pipeline length, energy demands and other matters as presented in the Routing Report.

I note the comment of Roughan O'Donovan regarding the conflict between a construction compound subject of temporary acquisition and the permitted car park. The agreement of Irish Water to an amendment, which has been noted by Roughan O'Donovan is sufficient to address this matter in my opinion and I do not recommend a change to the CPO.

Regarding the suggestion that the HSE request a condition that the compounds and wayleave do not impact current or future works I consider that any such condition would be imprecise and unwarranted. I draw the same conclusion in respect of the suggestion that a condition be attached in relation to any works to be undertaken by Irish Water within the wayleave and that such works be subject of consultation with the HSE.

I recommend that the Board confirm the CPO as it relates to these lands.

### **Shannon Homes – Plots W45.158, W45.159, W45.160**

The CPO is deemed to be at conflict with proposals for the pumping station to serve a housing scheme under construction. In terms of the applicant's case at the hearing, there appeared to me to be a slightly different emphasis in the submissions made. Mr Downes appeared to lean in favour of the amendment suggested while Mr Holland noted that the pipeline route could be amended by agreement and recommended that the CPO be confirmed as sought. Mr Holland noted that the straight line route for the pipeline is technically preferable. In the absence of any further detail from Shannon Homes and in view of Irish Water's statement that the straightening of the pipeline route would be in their interest I agree with Mr Holland's recommendation to leave the CPO in relation to these lands without amendment. I note that the location of the permanent wayleave and temporary working area proposed in the CPO is compatible with the location of the proposed sewage

pumping station and stormwater percolation area, which I consider is the critical matter.

I recommend that the Board confirm the CPO as it relates to these lands.

**William Byrne - Plots W10.044, W10.045**

The lands at Kildonan House are the place of work and of residence of Mr Byrne. A number of the matters raised in this objection refer to issues which I consider can be resolved by agreement. In this regard I refer to the written response of the applicant in relation to matters including the protection of access, water supply and utilities in particular. The applicant has already provided information on how these matters can be addressed and they are suitable for further discussion.

The objection refers to the selected route amongst other matters. I am satisfied that the suggested alternative of traversing a more southerly route adjacent the M50 cannot be deemed to be feasible or desirable. This is already a congested area already and furthermore is identified in the development plan as the alignment for Metro West. The retention of that option is appropriate in my opinion. The matter of technical feasibility and the crossing of major roads at the more southerly location are also reasonable considerations that the applicant in my opinion correctly took into account. I consider that the development would significantly impact the objector's lands, which are also his place of residence. Notwithstanding the undoubted disruption associated with the lengthy and extensive construction works I am satisfied that the selected route comprises the most appropriate balance between the competing issues at this location.

I recommend that the Board confirm the CPO as it relates to these lands.

**Sherman Oaks - Plots W48a.166, W48a.167 and W48a.168**

The connection between the Sherman Oaks lands and Hudson Advisors DAC Limited has been refuted by McCann Fitzgerald who request amendments to the CPO.

I consider that Mr Holland's statements at the hearing are persuasive. I agree that there is no loss to the interests of Hudson Advisors from the CPO in the event that they have no interest in the subject lands, which are included in the CPO. In the event that they have an interest it is necessary that Irish Water protect its interests



and capture that interest. It cannot at this point be determined with certainty that there is no connection between the lands acquired by Hudson Advisors and the Sherman Oaks / Helsingor lands which are subject of the CPO (Plots W48a.166, W48a.167, W48a.168).

I do not recommend any amendment to the CPO as it relates to Hudson Advisors Limited and I recommend that the name be retained on the CPO as made.

#### 11.8.7. **Modifications to CPO**

A number of modifications which were presented at the hearing are included in the recommendation below. These relate to the omission of all acquisitions relating solely to DAA for legal reasons. . Secondly there is a requirement for addition of names in some cases to capture any interest in lands.

#### 11.8.8. **Conclusion**

I consider that there is an abundance of evidence to show that the development of the GDD which would be facilitated by this CPO is necessary to meet a community need and is in accordance with the development plan for the area.

It is demonstrated that the lands subject of the CPO are suitable to meet that community need and that the interest in the lands have been subject of considerable consultation but cannot be obtained by agreement.

I am satisfied that all reasonable alternatives have been fully considered and are not demonstrated to be preferable. I am satisfied that the resources to undertake and implement the project will be available having regard to the inclusion of the project as a strategic national objective in Project 2040.

I conclude that it is demonstrated that in order to achieve its objectives for the GDD project Irish water needs to acquire lands, permanent wayleaves, permanent rights-of-way and temporary working areas, more particularly described in the documentation including the accompanying maps, to facilitate the construction of the various GDD project elements. I therefore recommend that the Board confirm the CPO for the reasons and considerations and subject to the modifications set out in the schedule below.

## 12.0 Recommendation

On the basis of the above assessment I recommend as follows:

### **Strategic Infrastructure Development Application under the S37E – 301908-18**

Application for Approval for the proposed Wastewater Treatment Plant, Sludge Hub Centre, Orbital Sewer, Dubber Odour Control Unit, North Fringe Sewer Diversion, Abbotstown Pumping Station, Outfall Sewer, Regional Biosolids Storage Facility, all ancillary works including access roads and landscaping and all associated works.

**APPROVE** the above proposed development in accordance with the said documentation based on the following reasons and considerations and subject to the conditions set out below.

#### **REASONS AND CONSIDERATIONS**

In coming to its decision, the Board had regard to the following:

**European legislation**, including of particular relevance:

- Directive 2014/52/EU amending Directive 2011/92/EU (EIA Directive) on the assessment of the effects of certain public and private projects on the environment.
- Directive 92/43/EEC (Habitats Directive) and Directive 79/409/EEC as amended by 2009/147/EC (Birds Directives) which set the requirements for Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union.
- Directive 2000/60/EC for establishing a framework for Community action in the field of water policy.
- Directive 91/271/EEC concerning urban wastewater treatment.
- Directive 2006/118/EC concerning groundwater.
- Directive 2006/7/EC concerning bathing water.
- Directive 2006/113/EC concerning shellfish water.

- Directive 2008/56/EC concerning marine environmental policy.
- Directive 86/278/EEC concerning sewage sludge.
- Directive 91/676/EEC concerning nitrates.

**National legislation**, including of particular relevance:

- The European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended
- The Urban Waste Water Treatment Regulations 2001, as amended
- The Waste Water Discharge (Authorisation) Regulations 2007, as amended.
- The Bathing Water Quality Regulations 2008, as amended.
- The European Communities (Quality of Shellfish Waters) Regulations 2006, as amended.
- The European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended.

**National and regional planning and related policy**, including:

- The National Planning Framework – Ireland 2040, which contains objectives to increase wastewater treatment capacity, to develop the Greater Dublin Drainage project, and to provide additional sludge treatment capacity and a standardised approach to managing wastewater sludge.
- The National Development Plan – Ireland 2040, which identifies the Greater Dublin Drainage Project as one of the major infrastructure projects, which is required in the context of the National Planning Framework and accommodating growth and is described as a Strategic Investment Priority.
- Climate Action Plan 2019, which sets the objective to ensure that the selection criteria for Project Ireland 2040 Funds will promote low carbon investments.
- The Water Services Strategic Plan, which identifies the requirement 2025 for the Greater Dublin Drainage project in order to meet obligations under the Urban Wastewater Treatment Directive.

- The National Wastewater Sludge Management Plan 2016 – 2041, which identified a need for a sludge hub centre for Fingal County to be developed as part of the Greater Dublin Drainage project.
- The River Basin Management Plan for Ireland 2018 – 2021.
- The Greater Dublin Strategic Drainage Study (2005) and the Greater Dublin Drainage Strategy: Overview & Future Strategy (2018).
- The Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly (RSES) 2019-2031.
- The Eastern-Midlands Region Waste Management Plan 2015 – 2021.

**The local planning policy** including:

- The provisions of Fingal County Development Plan 2017-2023, including Objective WT03 to facilitate a new Regional Wastewater Treatment Plant and to implement the other recommendations of the Greater Dublin Strategic Drainage Study, to facilitate development and to protect water quality in the county and Objective WM15 to implement the adopted Sludge Management Plan. Regard was also had to the Green Belt zoning objective for the Clonshaugh site and to the other zoning objectives and policies relating to ecological buffer zones.
- The provisions of the Dublin City Development Plan 2016-2022, which describes the progression of the Greater Dublin Regional Wastewater Treatment Plant and associated infrastructure as essential to the future growth of the region and to Policy SI2, which is to support the development and improvement of wastewater systems including the regional wastewater treatment plant and other infrastructure as part of the Greater Dublin Strategic Drainage Study.

**The following matters:**

- (a) The evidence provided that increased wastewater infrastructure capacity is required in the Dublin region in order to meet demands from planned growth and to divert load from the Ringsend Wastewater Treatment Plant.

- (b) The nature, scale and design of the proposed development including the Wastewater Treatment Plant, the Sludge Hub Centre and the Regional Biosolids Storage Facility and the level of water treatment which is proposed to be achieved and the suitability of the proposed land spreading of biosolids.
- (c) The adoption of conservative limits for odour at the site boundaries and the pattern of development in the vicinity of the proposed project components.
- (d) The design, layout, landscaping and architectural treatment of the proposed Wastewater Treatment Plant and Sludge Hub Centre and the architectural treatment of the proposed pumping station at Abbotstown.
- (e) The range of proposed mitigation measures set out in the submitted in the documentation lodged including the Environmental Impact Assessment Report, and Natura Impact Statement incorporating appropriate assessment screening.
- (f) The submissions made in relation to the application including those submitted at the Oral Hearing and the report and recommendation of the Inspector.

### **Proper Planning and Sustainable Development**

The Board considered that, subject to compliance with the conditions set out below, the proposed development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity and facilities for sludge treatment and biosolids storage, would be acceptable in terms of the quality of effluent discharged to the receiving water environment and would not result in a deterioration in the quality of bathing water or shellfish waters, would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy, would not be contrary to the designation of the Dublin Bay Biosphere and would be acceptable in terms of odour, noise, vibration, landscape, cultural heritage impacts and traffic. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

### **Appropriate Assessment: Stage 1**

The Board agreed with and adopted the screening assessment and conclusions carried out in the Inspector's report that the only European sites in respect of which the proposed development has the potential to have a significant effect are Baldoyle Bay SAC (000199), Baldoyle Bay SPA (004016), Rockabill to Dalkey Island SAC

(003000), Ireland's Eye SPA (004117), North Dublin Bay SAC (000206), North Bull Island SPA (004006), Malahide Estuary SPA (004025), Malahide Estuary SAC (000205), Howth Head Coast SPA (004113), South Dublin Bay and River Tolka Estuary SPA (004024), Rogerstown Estuary SAC (000208), Rogerstown Estuary SPA (004015), South Dublin Bay SAC (000210), Lambay Island SAC (000204), Lambay Island SPA (004069), Dalkey Islands SPA (004172), Skerries Islands SPA (004122) and Rockabill SPA (004014).

**Appropriate Assessment: Stage 2:**

The Board considered the Natura Impact Statement and associated documentation submitted with the application, the mitigation measures contained therein, the submissions and observations on file, the oral hearing submissions and the Inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development as part of the overall proposed upgrade project for the aforementioned European sites in view of the sites' conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

- (a) the likely direct and indirect impacts arising from the development of the Greater Dublin Drainage Scheme and the Regional Biosolids Facility, both individually, when taken together and in combination with other plans or projects,
- (b) the mitigation measures, which are included as part of the current proposal, and
- (c) the conservation objectives for the European sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the aforementioned European sites, having regard to the sites' conservation objectives. In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' conservation objectives.

**Environmental Impact Assessment:**

The Board completed an environmental impact assessment of the proposed development, taking into account:

- (a) The nature, scale and extent of the proposed development.
- (b) The Environmental Impact Assessment Report and associated documentation submitted in support of the application.
- (c) The submissions from the planning authorities, the observers and prescribed bodies in the course of the application and the submissions of the applicant, planning authority, observers and prescribed bodies during the oral hearing,
- (e) The Inspector's report.

The Board agreed with the summary of the results of consultations and information gathered in the course of the EIA, and the examination of the information contained in the Environmental Impact Assessment Report and the associated documentation submitted by the applicant and the submissions made in the course of the application as set out in the Inspector's report. The Board is satisfied that the Inspector's report sets out how these various environmental issues were addressed in the examination and recommendation and are incorporated into the Board's decision.

### **Reasoned Conclusions on the Significant Effects:**

The Board considered that the Environmental Impact Assessment Report, supported by the documentation submitted by the applicant, provided information which is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment. The Board is satisfied that the information contained in the Environmental Impact Assessment Report is up to date and complies with the provisions of EU Directive 2014/52/EU amending Directive 2011/92/EU. The Board considered that the main significant direct and indirect effects of the proposed development on the environment are those arising from the impacts listed below. A Construction Environmental Management Plan (CEMP) is the overarching general mitigation relevant to the project design and delivery for the construction stage. In addition, plans include those relating to Air Quality and Dust Management, Noise and Vibration Management, Traffic Management, Sediment and

Erosion Control, Surface Water Monitoring, Vessel Management and Environmental Incident Responses are also proposed.

The main significant effects, both positive and negative are:

- Positive long-term impacts to **population and human health** from the provision of adequate wastewater and sludge treatment and from the provision of biosolids storage capacity to support planned residential and economic growth in the Dublin region while securing compliance with European Directives and supporting legislation. Positive long-term indirect impacts to human health from the protection of bathing water and commercial shellfish areas.
- Significant negative temporary impacts on **population and human health** as a result of noise and vibration and disturbance. The sensitive receptors which are likely to be impacted include parts of Connolly hospital, St Francis hospice and some individual houses. Potential impacts on Connolly Hospital are minimised through design mitigation measures including the construction of a 1km tunnel to accommodate the orbital pipeline through the campus, by mitigation measures to ensure maintenance of emergency routes and by measures to minimise air and noise effects on the use of wards. Temporary rehousing of residents will be considered in the case of some individual residential properties, in the absence of other mitigation being sufficient. Dust impacts and emissions from vehicles during the construction phase will have a temporary and highly localised impact. Notwithstanding the mitigation measures proposed, the residual impacts could still be significant albeit localised and temporary in duration.
- The adoption of conservative **odour** criteria minimises potential adverse impacts due to odour. The design, implementation and monitoring of odour abatement systems and adherence to the adopted criteria set out in the EIAR and by condition below will ensure that odour emissions do not reach a level that could cause odour nuisance at or beyond the site boundary of any of the facilities.



- Positive **marine water quality** impacts by the provision of wastewater treatment capacity to meet planned growth and to reduce reliance on Ringsend wastewater treatment plant.
- In the operation phase marine water quality impacts on shellfish areas are mitigated by the dispersal characteristics at the location of the diffuser and the design of the wastewater treatment plant including the proposed UV treatment. **Bathing water quality** will not be reduced even in the highly unlikely event of a failure of the plant due to the location of the diffuser in an area of high natural dispersal characteristics, the range of design measures and the control which can be exercised over flows to the plant. Excellent water quality at Velvet Strand will be maintained.
- The construction phase risks to **water quality** are avoided by the geological conditions including the depth of boulder clay separating existing shallow irrigation wells and Baldoyle Bay SAC from the microtunnelling under the estuary and are mitigated by use of trenchless crossings of streams, by the application of best practice including the measures set out in the CIRIA guidance and the adherence to IFI guidelines. There would be no significant residual impact. As a result of seabed dredging there will be impacts to marine water quality from suspended sediment increases, which would be of short duration. Subject to mitigation measures relating to deposition of dredged material and monitoring there would be no significant residual impact.
- The location of all development and most of the construction in areas of low flood risk minimises potential water quality impacts relating to flooding in the construction phase and avoids downstream **flooding** of other lands. The location of compound 10 within Flood Zone A results in low level risk of adverse effects on the environment due to the proximity to European sites, which is mitigated by the measures in the CEMP including the piling method, bunding and use of best practice in relation to storage of material. The development will not result in any significant residual impacts relating to flooding.

- There is potential for a number of slight or short and very localised negative impacts to **marine biodiversity**. Air surface venting or bentonite breakout associated with tunnelling under Baldoyle Bay SAC would impact saltmarsh on a very small area for a short duration. Discharged sediment from dredging in the marine environment could impact on reefs, which is mitigated by the controlled discharge of dredge spoil. Noise and vibration from works at the tunnel interface could lead to avoidance of the area by marine mammals, which is mitigated by use of marine mammal observations and passive acoustic monitoring during piling activities.
- There is potential for short-term moderate impacts on **birds** including bird species which are special conservation interests of Natura sites. This could result from visual disturbance impacts at microtunnelling compounds and the presence of vessels working in the marine environment during dredging and pipe laying. There is potential for disturbance to birds as a result of noise from piling at the interface and at the fibre optic cable. Mitigation measures which are presented will ensure that there are no significant residual impacts.
- Operational **traffic** will result in increased congestion at junctions which are already congested and which will be congested at the time of operation of the wastewater treatment plant and the regional biosolids storage facility. The proposed development will add to delays at those locations.

The Board completed an environmental impact assessment in relation to the proposed development forming part of the overall proposed project and concluded that, subject to the implementation of the mitigation measures referred to above, including proposed monitoring as appropriate, and subject to compliance with the conditions set out below, the effects on the environment of the proposed development, by itself and in combination with other development in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions set out in the Inspector's report.

### **Overall Conclusion**

The proposed development in the operational phase will give rise to impacts which are positive. It will assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy which regulate development at a

national, regional and local level. The GDD components would enable sustainable residential and economic growth through the delivery of increased wastewater capacity while protecting the environment. The Regional Biosolids Storage Facility would assist in meeting the aims of the Sewage Sludge Directive, regulating the use of sewage sludge in agricultural to prevent harmful effects. Environmental impact assessment and appropriate assessment have been considered as set out in the sections above. It can therefore be concluded that the proposed development is in accordance with the proper planning and sustainable development of the area.

### **CONDITIONS**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application and the information contained in the environmental impact assessment report including the appendices which were submitted to the Board on the 13<sup>th</sup> of September 2018, all mitigation measures contained in the EIAR, as amended by the further plans and particulars submitted at the oral hearing except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development, or in default of agreement, shall be referred to An Bord Pleanála for determination, and the proposed development shall be carried out and completed in accordance with the agreed particulars.

**Reason:** In the interest of clarity.

2. The period during which the development hereby permitted may be carried out shall be ten years from the date of this order.

**Reason:** Having regard to the nature and extent of the proposed development, the Board considered it appropriate to specify a period of validity of this permission in excess of five years.

3. (a) All mitigation and environmental commitments identified in the Environmental Impact Assessment Report (Tables 24.2 – 24.17 of Volume 3 and Table 17.1 of Volume 4) shall be implemented in full as part of the

proposed development except as may be otherwise required to comply with the following conditions.

(b) All monitoring measures identified in the Environmental Impact Assessment Report (Tables 24.2 – 24.17 of Volume 3 and Table 17.2 of Volume 4) shall be implemented in full as part of the proposed development except as may be otherwise required to comply with the following conditions.

Prior to the commencement of development the developer shall submit for the written agreement of Fingal County Council a comprehensive document containing all mitigation and monitoring measures set out in the EIAR, the NIS and other Plans and including the commitments given at the oral hearing. The document shall incorporate the monitoring and implementation proposals, as appropriate.

**Reason :** In the interest of development control, public information and clarity.

4. The proposed development shall be constructed to a standard capable of complying with the following treated maximum effluent values:

Biochemical Oxygen Demand – 25mg/l

Total Suspended Solids – 35 mg/l

Chemical Oxygen Demand -125 mg/l

**Reason:** In the interest of clarity and to comply with the requirements of the Urban Wastewater Treatment Regulations (S.I. No. 254 of 2001).

5. The proposed development shall incorporate UV treatment, which shall be applied to all effluent discharges from the wastewater treatment plant.

**Reason:** To further reduce levels and the variability of Coli in the treated effluent discharge in the interest of protecting shellfish water quality.

6. The proposed development shall be designed and operated to meet the following targets for odour:

At Abbotstown Pumping Station and at Clonshaugh Wastewater Treatment Plant and Sludge Hub Centre the adopted odour annoyance criterion of 1.5 OUE/m<sup>3</sup> as the 98<sup>th</sup> percentile of hourly averages shall not be exceeded at the boundaries of the sites.

At the Regional Biosolids Storage Facility the adopted odour annoyance criterion of 3 OUE/m<sup>3</sup> as the 98<sup>th</sup> percentile of hourly averages shall not be exceeded at the nearest sensitive receptor.

**Reason:** In the interest of the amenities of the surrounding area.

7. Prior to the commencement of development, a Noise, Vibration and Dust Management Plan shall be submitted to, and agreed in writing with, the planning authorities in respect of the GDD and the RBSF.

The Plan shall comply with appropriate noise and vibration limits set out in the Environmental Impact Assessment Report in respect of the overall development.

The Plan shall include measures to undertake works during school holidays where necessary to address any potential significant noise impacts on schools.

The Plan shall incorporate detailed method statements to be prepared by the appointed contractor to address the specific noise and vibration impacts relevant to the operation of Connolly hospital and St Francis hospice.

The Plan shall include specific measures relating to the investigation and response to complaints.

Noise monitoring during construction and commissioning and/or operation shall be carried out in accordance with the requirements of the planning authorities.

**Reason:** In the interest of the amenities of the surrounding area.

8. The development shall comply with the requirements of the planning authorities with respect to surface water management.

**Reason:** In order to protect water quality and to avoid the creation of flood risk.

9. A contract specific Construction and Environmental Management Plan (CEMP) and Surface Water Management Plan (SWMP) shall be submitted to and agreed in writing with both planning authorities in respect of the proposed development. This shall in particular address matters relevant to Abbotstown Pumping Station and the tunnelled section of the Orbital Sewer through

Connolly hospital grounds, to Clonshaugh Treatment Plant and Sludge Hub Centre and the Regional Biosolids Facility site. The CEMP and SWMP shall detail and ensure Best Construction Practice and compliance with statutory obligations.

**Reason:** To protect the environment during construction.

10. The existing surface water pipeline traversing the RBSF site shall be realigned and a wayleave provided in accordance with the requirements of Fingal County Council.

**Reason:** In the interest of providing best practice for surface water management and to provide for future maintenance of the realigned pipe at the RBSF site.

11. (a) Prior to the commencement of development, a Traffic Management Plan for the construction and operational phases shall be submitted to, and agreed in writing with, the planning authorities in respect of the development of the Greater Dublin Drainage project and the Regional Biosolids Storage Facility.

(b) Prior to the commencement of development full details of any alterations to the public road network including at the entrance to the Clonshaugh site shall be agreed in writing with the planning authorities. All costs to facilitate these works shall be at the expense of the developer. All works in the public road may be carried out only by the local authorities.

(c) The developer shall increase the width of the culvert at the crossing of the River Mayne as part of the Clonshaugh site entrance, to cater for the full width of the future north south link road.

(d) The developer shall complete a Road Safety Audit, which shall be submitted to the planning authorities for written agreement. This shall address any measures to be implemented by the applicant as part of the development.

(e) The developer shall comply with the requirements of the planning authorities in respect of minimising traffic disruption on the local communities and cleaning and repair of any damage to the public road networks during the construction and operation phases.

(f) Prior to undertaking pre-construction surveys the developer shall liaise with the planning authorities in relation to proposal for pre-construction and post

construction visual surveys of the identified haulage routes. Details of these surveys and of the selected haulage routes shall be set out in the CEMP. Prior to completion of construction the applicant shall submit for the written agreement of the planning authorities a review of the identified haulage routes and a programme of remediation works, including timelines for undertaking works. All works shall be carried out to the satisfaction of the planning authorities.

(g) Prior to the commencement of operation, a Mobility Management Strategy shall be submitted to and agreed in writing with the planning authority. This shall provide for incentives to encourage the use of public transport, cycling, walking and car pooling by staff employed in the development and to reduce and regulate the extent of staff parking. The mobility strategy shall be prepared and implemented by the operator. It shall provide for a phased roll out of measures appropriate to the changing nature of the area and the levels of available public transport.

**Reason :** To protect the existing road network, to ensure that the development does not impede the delivery of future roads in the area and in the interest of traffic safety and promotion of sustainable transport mode.

12. (a) The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within and proximate to the Ringsend Wastewater Treatment Plant site and the Regional Biosolids Facility site. In this regard, the developer shall –

(b) Notify the Department of Culture, Heritage and the Gaeltacht in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.

(c) Employ a suitably qualified archaeologist who shall monitor all topsoil stripping, site investigations and other excavation works.

(d) Once each RMP or area of archaeological potential has been archaeologically excavated, a detailed technical report setting out the findings of excavations together with the studies already carried out in relation to the EIAR shall be submitted to the planning authority.

(e) Provide arrangements for the recording and for the removal of any archaeological material which the Department of Culture, Heritage and the Gaeltacht considers appropriate to remove.

(f) Following consultation with the National Monuments Service and the National Museum, the developer shall agree with the planning authority the arrangements for post excavation analysis and archiving.

(g) A final report on the completed archaeological works shall be submitted to the National Monuments Service, the National Museum and the Planning Authority within one year, unless otherwise agreed.

**Reason:** In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

13. In relation to the protection of trees and hedgerows the following shall apply:

(a) The developer shall appoint an arborist who shall oversee the preparation of a detailed tree and hedgerow survey and protection plan which shall incorporate precise measures to protect trees and hedgerows during construction.

(b) The plan shall be submitted to the planning authorities for written agreement prior to the commencement of development.

(c) The plan shall minimise tree removal in the vicinity of St Caoimhin's church and graveyard and shall minimise the loss of hedgerows, which are also townland boundaries. The exact boundary of the construction compound at St Caoimhin's shall be agreed with the planning authority.

(d) The identification in the plan of trees to be removed and reinstatement of hedgerows shall be informed by the recommendation of a bat specialist who shall liaise with the arborist.

**Reason:** In the interest of landscape and visual amenities and to ensure protection of cultural heritage and biodiversity.

14. Prior to the commencement of the development, the developer shall submit a detailed landscaping plan for each of the development components of the Greater Dublin Drainage project and the Regional Biosolids Storage Facility. Details, including strengthening of boundary treatment including at



Abbotstown Pumping Station, exact siting, screening, decommissioning and restoration of construction compounds, general landscape details including timescales shall be submitted to and agreed in writing with the planning authorities and the landscaping shall be carried out in accordance with the agreed details thereafter.

The landscape plan shall incorporate proposals for lighting which shall minimise light spillage to the boundaries of Abbotstown Pumping Station and Clonshaugh sites.

**Reason:** In the interest of landscape and visual amenities and to ensure protection of biodiversity.

15. Prior to the commencement of development the applicant shall submit for the written agreement of the planning authority full details of all external finishes and boundary treatment at the Abbotstown Pumping Station, the Regional Biosolids Storage Facility and the Wastewater Treatment Plant site.

**Reason:** In the interest of visual amenities.

16. In relation to biodiversity the following shall apply:

All works shall be undertaken under the supervision of a suitably qualified Ecological Clerk of Works.

Prior to the commencement of the relevant phase of development the applicant shall submit for the written agreement of the planning authority full details of all measures to protect badgers, bats, smooth newt and common frog, which shall be based on follow-on surveys where necessary and which shall incorporate any requirements from licences obtained from National Parks and Wildlife Service.

Habitat restoration at construction compounds 9 and 10 and at Sillogue Nature Development Area shall be in accordance with the requirements of the planning authority.

**Reason:** In the interest of the amenities of the area and the protection and restoration of biodiversity.

17. Proposals for a name of the Clonshaugh Wastewater Treatment Facility and of the Wastewater Education Zone shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.

**Reason:** To ensure that the wastewater education zone is suitably identified and to highlight its function as a community resource.

18. Following consultation with the Dublin Airport Authority and the Irish Aviation Authority the development shall submit to and agree in writing with the planning authority proposals for the erection of cranes.

**Reason:** In the interest of aircraft safety.

19. (a) Prior to the commencement of development the developer shall set aside a once off payment in the amount of 0.0001% of the capital cost of the overall GDD project. Details of the operation of the fund shall be agreed with the planning authority.

(b) The operation of the proposed Wastewater Education Zone shall be in accordance with a program of measures to be agreed with the planning authority and to include measures to target local schools.

**Reason:** To offset the impacts on the local community in the construction phase and to maximise the long term benefits of the education facility to local residents.

20. The developer shall pay to the planning authority (Fingal County Council) a financial contribution as a special contribution under section 48(2) (c) of the Planning and Development Act 2000, as amended, in respect of the upgrade and signalisation of the R135 and the N2 North Bound Slip priority junction. The amount of the contribution shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála for determination. The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate. The application of indexation required by this condition shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine.

**Reason:** It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority which are not covered in the Development Contribution Scheme and which would benefit the proposed development.

### **The Compulsory Purchase Order – 302039-18**

In coming to its decision the Board considered that the land take is reasonable and proportional for the stated purpose of providing and constructing the Greater Dublin Drainage project.

The Board is satisfied that the process and procedures undertaken by Irish Water have been fair and reasonable and it has demonstrated the need for the acquisition of lands, permanent wayleaves, permanent rights-of-way and temporary working areas on the lands in question, as set out in the order and on the deposited maps, to deliver the overall project and that they are necessary and suitable.

The Board considers that the compulsory purchase order would be in the public interest and the common good and would be consistent with the policies and objectives of the National Planning Framework, the Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly (RSES) 2019-2031, the Eastern-Midlands Region Waste Management Plan 2015 – 2021, the Fingal County Development Plan 2017-2023 and the Dublin City Development Plan 2016-2022.

### **DECISION**

**CONFIRM** the compulsory purchase order for the reasons and considerations set out below subject to the modifications set out in the Schedule.

### **SCHEDULE**

### **REASONS AND CONSIDERATIONS**

Having considered the objections made to the Compulsory Purchase Order, and not withdrawn, the report and recommendation of the Inspector who conducted the oral hearing into the objections, the purpose for which the lands are to be acquired as set out in the Compulsory Purchase Order, and having regard to the following:

- (a) The strategic nature of the Greater Dublin Drainage scheme in the context of providing increased wastewater infrastructure to meet existing and future demand in the region;
- (b) The community need, public interest served and overall benefits to be achieved from the proposed development;
- (c) The selected lands for the project which constitute a design response that is proportionate to the identified need;
- (d) the provisions of the National Planning Framework, the Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly (RSES) 2019-2031, the Eastern-Midlands Region Waste Management Plan 2015 – 2021, the Fingal County Development Plan 2017-2023 and the Dublin City Development Plan 2016,
- (e) The submissions and observations made at the Oral Hearing held on the 2<sup>nd</sup> day of April 2019.

It is considered that, subject to the modifications set out below, the acquisition of lands, permanent wayleaves, permanent rights-of-way and temporary working areas by Irish Water on the lands in question, as set out in the order and on the deposited maps, are necessary for the purposes stated and the objections cannot be sustained having regard to the said necessity.

## **MODIFICATIONS**

The compulsory purchase order schedule shall be modified as follows:

### **Part 2 Sub Part B**

Plot W3.025 – Lessees or Reputed Lessees – add Cream of the Crop Limited

Plots W28.102, W31.109, W31.110 – remove

Plot W36.120 – Owners or Reputed Owners and Occupiers – add Joseph Jones

Plot W37.135 – Owners or Reputed Owners and Occupiers – add Cream of the Crop Limited

**Part 4 Sub-Part B**

Plot W3.024 – Lessees or Reputed Lessees – add Cream of the Crop Limited

Plot 28.103 – remove

Plot W36.119 - Owners or Reputed Owners and Occupiers – add Joseph Jones

Plot W36.121 - Owners or Reputed Owners and Occupiers – add Joseph Jones

Plot W37.134 - Owners or Reputed Owners and Occupiers – add Cream of the  
Crop Limited

Plot W37.136 - Owners or Reputed Owners and Occupiers – add Cream of the  
Crop Limited.

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**Mairead Kenny**

**Senior Planning Inspector**

**10<sup>th</sup> October 2019**

## 13.0 Appendix

### 13.1. List of prescribed bodies and observers

Written submissions were received from the following prescribed bodies and observers in relation to the planning application 301908-18.

<b>Board's reference number</b>	<b>Prescribed Bodies</b>
LDG-007419-18	Commission for Railway Regulation
LDG-007909-18	Development Applications Unit
LDG-007762-18	Dublin Airport Authority
	Environmental Protection Agency
/	Failte Ireland
LDG-007913-18	Health Service Executive
LDG-007907-18	Inland Fisheries Ireland
	Irish Rail
LDG-007911-18	Meath County Council
LDG-006706-18	Transport Infrastructure Ireland (TII)
	<b>Observers including public representatives</b>
LDG-007586-18	Ashling & Others
LDG-007619-18	Aulden Grange Residents Association
LDG-007544-18	Bailey, Richelle
LDG-007583-18	Brabazon, Tom (Cllr)
LDG-007655-18	Brady, Linda
LDG-007680-18	Brazil, Donna
LDG-007037-18	Broughan, Thomas T.D.
LDG-007686-18	Brown, Samanta
LDG-007549-18	Browne, Betty and Co.
/	Bruton, Richard (TD)
LDG-009310-18	Burnett, Michelle and O Malley Conor

LDG-007591-18	Byrne, Chris
LDG-006735-18	Byrne, Deborah
LDG-007553-18	Byrne, Laurence
LDG-007659-18	Byrne, Michael and Elaine & others
LDG-007626-18	Callanan, Angela & Michael
LDG-009280-18	Cantwell, Eileen and Others
LDG-007471-18	Chambers Ireland
LDG-007554-18	Clare Hall Residents Association
LDG-007519-18	Cleary, Gillian
LDG-007567-18	Clifford, Derek
LDG-007708-18	Clifford-Lee, Lorraine (Senator)
LDG-007748-18	Clontarf Residents Association
LDG-007617-18	Connolly, Barbra and Niall
LDG-007726-18	Conway, Noel
LDG-007465-18	Coolock Residents Association
LDG-007470-18	Cooney, Donna
LDG-008948-18	Coyle, Peter
LDG-007537-18	Crawford, Gary
LDG-008964-18	Cuddy, John and Others
LDG-007706-18	Dalata Hotel Group PLC
LDG-007590-18	Daly, Clare TD
LDG-007689-18	Daly, Peter
LDG-007676-18	Delaney, Barbara
LDG-007589-18	Detorre, Ercolo & Grace
ldg-008800-18	Donabate/Portrane Community Council
LDG-007594-18	Donoghue, Natalie & Others
LDG-007668-18	Doyle, Anthony
LDG-007718-18	Doyle, Breda
LDG-007754-18	Doyle, Therese

LDG-007651-18	Dunne, Máire
LDG-007733-18	Dunne, Niamh
LDG-009472-18	Ennis, Betty and others
LDG-007761-18	Farrell, Eugene
LDG-007704-18	Farrell, Peadar
LDG-007559-18	Fegan, Paul and Paula
LDG-007643-18	Finn, Carolyn
LDG-007710-18	Fitzsimons, Philomena
LDG-007693-18	Flanagan, Declan (Cllr)
LDG-007653-18	Foley-Cusack, Louise
LDG-007720-18	Friends of Balscadden Bay
LDG-007739-18	Furlong, Margaret
LDG-007747-18	Gannon Properties
LDG-007703-18	Gibbons, Brian
LDG-007538-18	Gilland, Alison (Cllr)
LDG-007724-18	Glacklin, Mary
LDG-007701-18	Gray, Terri & Burke, Paul
LDG-007642-18	Gregg, Therese
LDG-007644-18	Gribbin, Jane & Others
LDG-007558-18	Hart, Eamonn
LDG-007484-18	Haughey, Sean TD
LDG-007647-18	Hayes, Marie
LDG-007716-18	Healy, David (Cllr)
LDG-007700-18	Heasman, Charles
LDG-007684-18	Herbert, Celia
LDG-007661-18	Hickey, Stephen
LDG-007672-18	Higgins, Dolores
LDG-007732-18	Hoare, Vanessa
LDG-007734-18	Hogan, Sharon



LDG-007669-18	Hone, Kayleigh
LDG-009309-18	Howth Sea Angling Club
LDG-007555-18	Hyde, Siobhan
LDG-007670-18	Jones, Jennifer
LDG-007382-18	Jones, Joe and Elaine
LDG-007622-18	Joyce Kemper, Sabrina
LDG-007743-18	Kamtoh, Carol
LDG-007717-18	Kavanagh, Emma
LDG-007615-18	Kavanagh, Susan
LDG-007645-18	Keegan, Brendan & Others
LDG-007658-18	Kelly, Stacey
LDG-007675-18	Keogh, Patricia
LDG-007679-18	Kernan, Sarah
LDG-007634-18	Larkin, Eddie
LDG-009483-18	Lyons, Jennifer
LDG-007441-18	Lyons, John (Cllr)
LDG-009281-18	Lyons, Sean
LDG-007568-18	Maher, Darren
LDG-007587-18	Mc Guinness, Mandy
LDG-007629-18	Mc Mahon, Elizabeth
LDG-007627-18	McDonnagh, Winne
LDG-007539-18	McDonnell, Alex (Dr)
LDG-007690-18	McDonoagh, Brian (Cllr)
LDG-007673-18	McGovern, Deirdre
LDG-007687-18	McGowan, Ciara
LDG-007697-18	McGrath, Finian TD
LDG-007735-18	McMahon, Catherine
LDG-007712-18	Meakstown Community Council
LDG-007637-18	Mills, Fiona

LDG-007624-18	Mitchell, Denise TD & Others
LDG-007666-18	Moore, Stephanie
LDG-007565-18	Murphy, Aileen
LDG-007483-18	Murphy, Anne
LDG-007657-18	Murphy, Anthony
LDG-007482-18	Murphy, Maria
LDG-007664-18	Murray, Elaine
LDG-007649-18	Norton, Susan
LDG-007552-18	O Brien, Darragh TD
LDG-007593-18	O Brien, Michael
LDG-009311-18	O Brien, Siobhan
LDG-007713-18	O Callaghan, Cian
LDG-007711-18	O Connor, Gavin
/	O Kane Orla and Others
LDG-007688-18	O Keeffe, Ann
LDG-009308-18	O Kelly, Arthur
LDG-007740-18	O Reilly, Kathleen
LDG-007731-18	O'Carroll, Michelle & David
LDG-007560-18	Pepper, John
LDG-007662-18	Portmarnock Beach Committee,
LDG-007566-18	Portmarnock Community Association
LDG-007585-18	Purdy, Caroline
LDG-007764-18	Regan, Brendan
LDG-007640-18	Reid Perry, Crystal & Others
LDG-007705-18	Reid, Niall
LDG-007727-18	Residents of Newtown Court
LDG-007481-18	Riverside Residents Association
LDG-007648-18	Riverside Residents Association
LDG-008717-18	Rushe, Annabella and Rushe Family

LDG-007636-18	Salmon, Michelle & Others
LDG-007737-18	Seery, Deirdre
LDG-007667-18	Shelley, Barbara
LDG-007547-18	Sherlock, Elizabeth
LDG-007698-18	Shine, Daniel
LDG-007744-18	Sinclair, Dean
LDG-007682-18	Smyth, Deirdre
LDG-007729-18	Snowe, Freddie
LDG-007681-18	Swan, Philip
LDG-007709-18	Synnott, Emma and Others
LDG-007660-18	Taaffe, Elaine
LDG-007699-18	Tolster, Thomas
LDG-007541-18	Tracey, Tom and Breda
LDG-007714-18	Union, Brian and Co.
LDG-009385-18	Velvet Strand Sea Swimmers and Beach Users
LDG-007685-18	Walsh, Bernadette
LDG-007730-18	Walsh, John
LDG-007588-18	Walsh, Stephen and Theresa
LDG-007692-18	Whelan, Sandra
LDG-007738-18	White, Joe
LDG-007618-18	Woodland Residents Association
LDG-007746-18	Wynne, Rachel
LDG-007674-18	Yeates, Karen and Others (Barr, Carol and Quinn, Gerry and Gloria

Written objections were received from the following individuals and bodies in relation to the Compulsory Purchase Order application 302039-18.

Airscape Limited

Andre and Geraldine Cooper

Bovale Developments ULC

Craobh Chiarain GAA Club

David McCarthy

Dublin Airport Authority

Eileen McGovern

Fergus Snow

Harcourt Development Holdings

Health Service Executive

Noel Fox

PKS Farms Limited

Shannon Homes Construction ULC

William Byrne

## 13.2. Planning Application - Written Submissions

This summary expands on the overview presented earlier in this report. It highlights common themes and significant points made in the written observations.

### 13.2.1. Policy

Contrary to NSS and development plan policies:

- Core message of NSS to provide better places to live is not met. WWTP is in an area which would be widely considered to be disadvantaged socially and economically. Proposal does not meet NSS goal of mixed development.
- Contrary to development plan policies to create vibrant residential community and good community facilities and services. Growth and housing needs should be met by use of the land for housing and local amenities as per development plan.
- Objective WTO3 is to implement the recommendations of the GSDSDS. Does not comply with WTO3 as outfall not in the northern part of the GDA.
- The SHC as a land-use is specifically not permitted by the GB, HT and OS zoning objectives. The assertion that wastewater treatment plants are open for consideration on land zoned for open space and amenity contradicts all commentary and policies related to such zones in the FCDP.
- Contrary to specific objectives SS09, SS10 and SS11.
- Regarding the consideration of alternative sites. Scenario 4 was recommended, subject to a comprehensive site selection process. No new site selection assessment was undertaken – instead a re-evaluation of the initial site selection process carried out between 2011 and 2013. In addition to noting the zoning of the site (GB), the ASA concluded that Clonshaugh is one of the weakest of the nine sites. Since then, a new plan has been adopted and several permissions granted for new commercial and residential uses and the nature and character of the area has changed to such a degree that a more detailed evaluation of the changes is required.
- Treatment to secondary standard is not complying with objective WYO5.

- Objective NH10 refers. Not proven that the disturbance of estuary bed and beach from tunnelling will have no negative effect on wildlife, birds and sea life that inhabit these areas.
- NH15 and NH16 and NH17 and DMS 162 refer. If FCC were truly complying with these objectives a grant of permission would not be recommended. Project could have adverse effects on birds in Baldoyle estuary including from 24-hour tunnelling and compounds. Ecological buffer zones breached.
- Compound 9 needs assessment in terms of Objective GM171 to ensure that no development takes place within 10 to 15m of the bank of a water course.
- Objective NH 68 refers. Lack of clarity regarding future possible water based uses, backup is in the event of a malfunction, levels of E. coli in the water as a consequence of the outfall discharge. Why is the applicant not aiming for 'Excellent' water quality?
- Objective NH 69 refers. Not possible to say that the quality of shellfish waters would be protected.

### 13.2.2. **Project need**

The GDD will represent a significant step in the development and expansion of wastewater infrastructure for Dublin and surrounding areas, enabling economic growth in region where there is substantial scope for housing and industry. Will also cater for growth in the city centre. Projected increase in wastewater of over 50% by 2050 must be adequately collected, and treated and returned to the environment with minimal impact. The project is significant particularly in light of the targets of the NPF. (Chambers Ireland).

Others recognise the need for additional wastewater treatment capacity but object to the project proposed or it's siting or design details.

### 13.2.3. **Scale, location and alternatives**

Scale is excessive and location unsuitable:

- Proximity to densely populated residential area, which is described as being disadvantaged and which contains particularly sensitive uses including

nursing home, schools and outdoor amenities, Cara Park, Glin Court Day Centre and St Michael's House.

- Constitutes an unfair burden on local community and area which was blighted for many years including through construction of port tunnel and M1.
- Residents are opposed to the fundamental change in long-standing plans for Clonshaugh. Land should be used for housing and proposal relocated to various named locations on the south side of the city.
- Independent assessment of site selection is required.
- The planning record in the area is problematic. Long promised street and traffic management infrastructure, including Malahide Road bypass and Northern Parkway / Avenue are not implemented, funded or supported.
- We are a working class area and feel that Irish Water is taking unfair advantage by selecting this site. The high cost has deterred observations and most of the observations submitted are on behalf of small groups of residents and a minority are accompanied by large petitions signed by thousands. The opposition to the project is deep-seated.
- Belcamp / Priorswood Park is the heart for community and is used by thousands of residents for active play and by patients from St Michael's house and by tourists. The park is the only thing that separates our home and the homes of many neighbours from the site.
- Property devaluation and other impacts on local community including related to odour and to vehicles transporting sludge.
- Odours will make use of outdoor areas unfeasible and will affect day to day enjoyment of houses and gardens.
- Impacts on health and residential amenity will be severe.
- Lack of benefit to the area and project to take sewage from Kildare and Meath makes no sense.
- Alternative of small scale facilities close to source preferred in keeping with the proximity principle and would be best practice internationally. Construction

of 10 smaller tertiary level plants could be undertaken for €300 million, instead of this €1.2billion facility.

- The site selection does not establish a functional need for the development to be located at the subject site, only that it would be less expensive to do so.
- Selection of Shanganagh for the site visit is criticised in view of that plant's small scale.
- Detrimental to tourism by creation of poor image of the country for air travel passengers and users of the hotels, which bring a lot of tourists to the area.
- Large potential for environmental disasters.
- Location outfall less than 4 km from Velvet Strand. Ancillary developments in Finglas, Blanchardstown and along the course of the pipeline. All communities will be negatively impacted by air and possible watercourse and sea pollution, noise and traffic. Threats to Baldoyle Bay and estuary. A number of objections refer to the location of the outfall in its wider strategic terms and to the termination point close to Ireland's Eye.
- Ask that the Board consider the other two locations proposed for the plant and the alternative northern outfall.

#### 13.2.4. Population and health

Observations in the vicinity of the Clonshaugh site relate mainly to air emissions, to stress and to traffic related disturbance. The vulnerable nature of some individuals and groups is identified. Long-term health impacts on the thousands of households within a few kilometres of the project are not addressed.

Emissions from the marine outfall are considered to impact recreational uses and in the long-term to impact human beings and ecology and fisheries by reason of the failure to remove certain chemicals.

The third major theme in this regard relates to the RBSF and matters relating to the spread of biosolids and impact on the food chain.

Specific matters relating to construction phase include vermin entering schools, traffic safety and related are also raised.



Meakstown area / issues related to Dubber OCU are separately listed below.

The development will lead to health impacts due to air and odour as identified below:

- Combined impact of noise pollution, fumes and odours and emissions from the plant will make this an unacceptable place for people to live. At least five schools nearby and this causes a serious risk to public health.
- Journal of Environmental and Public Health article from May 2016 in relation to airborne pathogenic micro-organisms, bio aerosols, bacterial and fungal communities affecting the health of residents residing close to a WwTP – reported impacts include skin diseases, respiratory and nervous system diseases, headaches and so on.
- Individuals within 500m more likely to suffer diseases. As a respiratory physiologist I see this as a potentially catastrophic matter.
- Particulate emissions could cause health issues. Chemicals that could be harmful to human health include methane, hydrogen sulphide, and ammonia, chlorine and chlorine dioxide. Impacts from flare stacks.
- Queried what emergency protocols are in place, how residents would be protected and what indemnification will be provided for local people in the event that they fall sick because of the plant.
- Ongoing odours lead to stress, headaches and nausea.
- Use of chemicals to mask odours at the WwTP odour control units could have disastrous health implications. Nature and quantity of chemicals unknown.
- Will filters require ongoing maintenance and be ineffective in fully eliminating odours.
- Need full information on what will be discharged from the 6 no. 9m to 24m odour control flues proposed for the WwTP and those at other OCUs.
- Airborne pollution and sewage particles when sludge from domestic and commercial septic tanks is transferred and vents opened to release gases.

Regarding the level of treatment proposed and the emissions to the aquatic environment and their direct and indirect effects on health the following is stated:

- Secondary treatment does not destroy superbugs and prions such as CJD, BSE, residual bacteria and viruses. UV treatment required.
- Potential for adverse effects on aquatic organisms and impact on human beings by way of ingestion of contaminated seafood.
- Pharmaceuticals should be addressed.
- Microbeads are easier to address at source.

### 13.2.5. Record of Irish Water and related

The record of operation of wastewater treatment plants leads to no trust:

- Compliance with EU regulations is poor. Irish Water has a poor record in relation to maintenance of facilities. EPA has fined them.
- Ringsend named by the EEA as one of the worst sources of pollution.
- Specific references to accidents at other sites including Sutton pumping station, Balbriggan raw sewage overflows, loss of blue flag at Killiney close to Shangannagh, continued practice of discharging a mix of raw sewage and septic tank effluent to sea at Howth, temporary swimming bans.
- Design and build and potentially operate nature of contract unacceptable – delays at Ringsend due to structure of procurement lead to problems.
- Omission of application details further undermines confidence in Irish Water.

### 13.2.6. Economic Issues

- Cost benefit analysis has not been produced. Stated €1.2 billion cost should be spent on smaller plants. Failure to undertake CBA during site selection.
- Upkeep, maintenance and operation of plant will not be properly funded. Should not be commenced until funds are ring-fenced and specific deadlines for all stages of project are put in place. Timelines unknown.
- Employment benefits likely to go abroad primarily and not to the local area.
- Would be economically worthwhile to install AGS as phosphorus is a valuable element. Nitrate should also be removed at this stage to prevent algal blooms.

### 13.2.7. **Monitoring and conditions**

- Proactive planning compliance needed at all stages of building and operation.
- Imperative that the community liaison officer communicate proactively.
- Timely publication on website of all tests monitoring the operation is critical.
- Questions relating to precautions regarding water quality during dredging and filling.
- In the event of plant breakdown or power cut, how the plant is to be monitored, procedures in the event of untreated or partially treated sewage being discharged, lifespan of the pipe, frequency of maintenance work to pipeline and outfall and whether outfall is to be monitored on a daily basis.
- Monitoring and measurement of air quality will only be periodic and is unclear.
- Coastal areas and bathing water should be protected and monitored by way of a local liaison commission.

### 13.2.8. **Noise and Vibration**

- Constant and ongoing noise pollution from the operation of the plant, including during the construction hours from 0700 weekdays and 0800 on Saturdays.
- Early morning noise will disrupt sleep. Evening hours also unacceptable.
- Irish water is committed to regular noise audits during construction, but the operational noise is of concern. Inadequate information.
- There are many hazards associated with the use of underwater pipes the laying of which will take a long time with enormous disruption. How will wader species who nest in estuaries react to vibration? Will they be disturbed and unable to reproduce?

### 13.2.9. **Overflows**

- Inadequate information presented in relation to capacity to deal with shock loads. Heavy summer rain is a relatively new feature of weather. Not clear that there is sufficient storage capacity to cater for these loads arriving at the plant and causing untreated sewage to be flushed out to sea.

- Regarding existing overflows there is a lack of clarity as to the extent of their diversion. One existing overflow discharges to the Mayne River. All overflows from new or existing sewage infrastructure should discharge by marine outfall.
- Compliance with Water Framework Directive requires good status for water bodies and the proposal needs to be assessed in terms of the extent to which it achieves this aim, including through reduction of overflows. All possible reasonable measures to reduce frequency and extent of overflows needs to be taken and the Board should pursue this.

#### 13.2.10. **Risk**

- Potential for major accident with detrimental consequences to the large population in the area. No risk analysis in relation to the health of residents.
- Risk analysis should address power failure, location of standby generators outside flooding area, capacity of plants to cope with large volumes of water and sewage, potential for labour or civil unrest and staff training relating to remedial measures.
- In the event of power outages build-up of sewage will occur. Pump failure is designed to be addressed by falling back towards the Tolka River in Finglas. Unacceptable to allow sewage to be pumped into rivers and lakes.
- In event of malfunction at Abbottstown what measures are to be taken? The drawings included in the report of FCC Chief Executive show other sewers feeding into the proposed pipeline. On page 123 the sewer pipeline are shown connecting to the proposed pipeline between compound seven and eight. It is unclear what exactly the pipeline extending to the south of the main pipeline is. On page 124 and 125 other sewer pipelines are shown to be connecting to the proposed pipeline of Cold Winters Finglas. None of these are shown on the overall project context map.
- Release of noxious gases into the lower atmosphere through which planes are rapidly descending raises safety concerns. Plant is directly under main flightpath and would present a bird hazard.

### 13.2.11. **Roads and Traffic**

- High volumes of traffic on R139 includes port traffic. There have been fatalities including of children. Long tailbacks at key junctions and excessive speeds mentioned. Traffic volumes continue to increase. Premature pending the Malahide Road bypass and the Northern Parkway.
- Basis for traffic information presented, including at main entrance is flawed. The traffic forecasts and the outline construction and operational phase measures, which are insufficiently detailed underline the need for a full traffic and transport assessment. No supporting basis for estimates of traffic growth. Inadequate weight to the airport, residential and commercial expansion.
- Construction will lead to serious traffic disruptions and impacts on the local community. Significant use by heavy traffic of roads which adjoin an active local park, schools and houses. Traffic management not properly detailed.
- In the operational phase the trucks moving sludge from the plant to the proposed RBSF are of concern. Operational phase traffic is in general of concern including in terms of possible impact on emergency vehicles.
- Observations include a number of comments in relation to specific roads and junctions including Baskin Lane and Clonshaugh Road being used in the construction and operation periods. Concern relating to the access directly across from Cara Park estate. Closures of rights of way will not be mitigated.
- Potential for traffic mayhem in the event of difficulties with plant operation.

### 13.2.12. **Landscape and Visual**

- Size and height of the plant will be visually intrusive. Size and scale of WWTP are out of keeping. Will constitute a blot on the landscape. Too large for site.
- Regarding views from the hotel, it is queried how a 25 m high gas flare stack and 25 m high odour control units with flues can be camouflaged by berms.
- Inadequate representation of the proposed development in the photomontages. The barely visible yellow lines are insufficient. Model should have been produced. Absence of detailed plans for plant is not good enough.

- I was advised that outfall water would be grey as it was only secondary treatment. Unless the dilution of the plume is instant it will be visible from planes overhead full of tourists, as will the massive storage tanks. Natural resources – importance of and threats arising.

### 13.2.13. **Marine Related**

#### 13.2.13.1. **Recreational**

The recreational assets and their importance are referenced in many observations:

- Velvet Strand is unique as the only beach on the east coast to hold both blue and green flags, as the only blue flag beach on the north of the city. Has very high community value and historical significance.
- Active recreation in the coastal area close to the outfall includes daily swimming, kayaking, yachting, and other related uses including triathlon, the continuance of which would be endangered by the proposed development. Open sea swimming takes place at the point of the diffuser and annual events include the Leinster open sea swim and the Howth Aquaton series.
- Beach at Howth (Balscadden Bay), should be designated as a bathing water as it is a safe location and is used daily by swimmers and has ‘excellent’ water quality. Policy objective to obtain a blue flag adopted by FCC.

### 13.2.14. **Biosphere**

- UNESCO Biosphere was designated in 2015 after the site was identified. It is the world’s only biosphere in a capital city region. Plant and the outfall pipe are completely inappropriate in light of the detrimental impact anticipated.
- Biospheres are intended to be actively managed to balance needs of man and nature. Highlights the importance of water quality and the community.
- The sewage plant will be built in the core zone and will impact on all the areas. The proposed 3,600 l/s of wastewater to be emitted at secondary treatment level into this area is a serious danger to marine life and all users.

### 13.2.14.1. Ecology

In relation to marine ecology the main points are:

- The construction, operational and possible accidental release could affect the reefs and harbour porpoise migratory route. Will lead to contamination.
- Tertiary treatment would make the process safer and lessen the impact on the marine ecology. It is not accepted that increasing the discharge of secondary treated sewage would not have a negative effect on water quality and that the water environment is not nutrient sensitive.
- Assessment in EIAR is especially deficient in relation to fragile marine systems. Potential impacts on aquatic communities could include eutrophication, hypoxaemia, abnormal growth and reproduction.
- Regarding the effect on birds in particular there is reference to the Light-bellied Brent geese and the decision at St Paul's, to the impact of 18 months construction on protected bird species which have a short life span and feed and roost near the proposed micro-tunnelling and the certainty of avoidance behaviour and the possibility of disturbance and reduced reproduction as a result of vibrations. Use of WwTP site by this species.
- The importance of wildlife at Ireland's Eye in recreational and ecological terms means that no consideration should be given to the outfall as designed.
- Tunnelling under Baldoyle Bay should not be considered.

### 13.2.14.2. Commercial fishing and water quality

- 70 fishing vessels fish for razor clams on the east coast of Ireland. Industry of vital importance for the families involved in the local maritime communities and is a multi-million euro export for Ireland. Outfall for the scheme falls in the middle of the Malahide production area which is of 'A' status meaning that razor clams are fit for the live and most lucrative export market.
- Paramount concern relates to storm surges leading to untreated run-off and to potential high levels of pollutants due to lack of tertiary treatment in the scheme.

- Presently wastewater is discharged in smaller quantities up and down the coast and is diluted. In future all waste including industrial would be discharged into one spot in the middle of a shellfish production bed.
- Project engineers admitted that no EIA specific to shellfish had been carried out. Well-known propensity of shellfish particularly filter feeding bivalve muscle such as razor clams to absorb toxins so the omission in the EIAR is serious oversight. Survey required before construction begins.
- At FFT the outfall would have a slight impact on receiving waters local to the proposed outfall in terms of DIN and MRP. Tertiary level required.
- Inadequate information about where and how the plume of effluent will disperse. Surrounding areas should be treated as a high quality shellfish water and returned to pristine condition.
- All nitrates should be removed to prevent potential algae bloom events and any possible potential adverse outcome under normal operating conditions.
- EU Commission complaint envisaged due to breach of environmental law, bathing waters legislation and water framework directive.

#### 13.2.14.3. **Marine outfall and water quality**

- Effects of such a large volume of treated water being pumped into the sea water and the chemicals it may contain and the outflow location of concern. Even with tertiary treatment a plant failure can only result in environmental disaster.
- Modelling fails to lessen beliefs that proposal is environmentally unacceptable.
- Effects on Blue Flag beach, on coastline, flora and fauna and designated shellfish waters would be catastrophic.
- Alternative locations further east, of 10km outfall and of two pronged piping for last 2 km required. Gas pipelines cross substantially greater distances.
- Baldoyle Bay will silt up.



- To the east the sandbank wraps around the seabed and becomes shallow trapping the outflow. Increasingly turbulent weather to be considered.
- Attached tidal stream maps derived from over 100 years of empirical data show that effluent discharged at the proposed location would flow directly onto the beaches at Portmarnock and Malahide.
- Effluent is slightly less dense than cold seawater and will rise into the surface tide and not disperse quickly but will form a concentrated layer flowing directly towards the seashore.
- Falling tide brings the backwash down over Velvet Strand.
- Irish Sea is extraordinarily shallow for such a wide expanse of water (for the most part it is 40 to 60 m in depth only) and its tidal behaviour is therefore unique and environmental considerations are also unique.
- It refers to the complex nature of tidal patterns. Conditions change frequently and tidal systems respond. Waters where the effluent will exit by way of the diffuser will be swept directly into Portmarnock beach on the flood tide. An untreated release of effluent (due to technical issue or heavy rain surge) will carry large nutrient load into these waters and alter the habitat by way of contamination and eutrophication. In the ebb tide effluent is pushed back towards the SPA on Ireland's eye and around Howth Head into biosphere.
- Disaster waiting to happen. Permission should be refused.

#### 13.2.14.4. **RBSF**

Objection to the land-spreading of biosolids and to construction of the RBSF:

- Option of incinerating biosolid product to produce energy at the incinerators at Poolbeg and Carranstown means that proposal is not necessary. Invader (Ireland) has offered to take biosolids for incineration, in line with EU trends.
- Should be located at the existing wastewater treatment plant for Dublin city.
- Objection in principle to land-spreading based on international practice, EPA research paper. Particular concern in relation to the fact that the biosolids contain toxins and that spreading gives rise to health and environmental risks.

- References the European Union ‘*EU- Strategy for Endocrine Disruptors*’, which includes a priority list of chemicals which require regulation.
- Biosolids can replace fossil fuel for powering wastewater treatment plants thus reducing costs for energy.

#### 13.2.14.5. **Dubber OCU / Meakstown**

The submission on behalf of Meakstown Community Council which represents 9,300 residents in the area states:

- The concerns relate to construction traffic, the proximity to 2 facilities (OCU and RBSF) and matters related to the OCU in particular. Objection to the micro- tunnelling at R122.
- Concerns relate to future traffic plans and assurances that traffic audits will take place before and during the development to ensure there are no health and safety risks. Local roads include key arterial routes off and to the M50.
- Proposed OCU should not be placed at Dubber. Un-necessary as odour can be chemically controlled at the pumping station.
- Who will control and monitor the OCU and why are units only 5 m high.
- What contingencies apply in relation to potential flooding and ESB break-down?
- It is queried whether this element of the development has been assessed from a community business perspective. Should be placed in an area that already has basic community facilities including a playground and community centre. Our park remains incomplete after 15 years. Will further detract from area.

#### 13.2.15. **Traveller community submission.**

A submission on behalf of the Traveller community states:

- We are a large population of Traveller families made up of 220 families with approximately 450 individuals living in Cara Close and other named locations.

- We have a lot of serious health issues among families some of them being autism, metabolic conditions, respiratory conditions, heart disease and cancer and a shorter life expectancy than the general public. Life expectancy and mortality is now 11.5 years less than women in the general population and equivalent to life expectancy in the general population in the 1960s. Infant mortality rate for travellers is 3.6 times the rate of the general population.
- The sewage system being put in place is going to have a detrimental effect on the health for families.
- This joint objection is being presented on behalf of the traveller community in the area and on behalf of those who have no literacy or poor literacy.

#### 13.2.16. **Blanchardstown Drainage Scheme**

Mr Sean Lyons refers to:

- Siting of four wastewater/sewage storage tanks. Odour from sewage tanks will be debilitating, resulting in discomfort and annoyance to patients, staff and surrounding area. Effluent from abattoir will also be stored in these tanks.
- Clearing of sewage storage tanks of debris regularly will involve tankers passing by the hospital and densely populated areas with the risk of foul smells.
- If existing pipe 9C to Ringsend is disconnected then at times of flooding or breakdown, sewage could be discharged in the vicinity of the hospital.
- Disruption to patients, staff and families attending hospital, school and hospice in the construction and operation phases will be considerable.
- Cost of energy and pumping along the proposed pipeline would be reduced by a lower ordnance datum and a more direct route.
- Ideally the sewage and other organic wastes could be anaerobically digested and liquid residue treated in reed bed.

#### 13.2.17. **Archaeology and Cultural Heritage**

- Area is of historical importance including by reason of the connections at Belcamp House and archaeology including the importance of the Velvet

Strand including in historical terms and is the site of archaeological wrecks. One of the most visited coastal tourist destinations on the east coast. The comment in the EIA are chapter 7 page 11 that the immediate environs of the proposed project are not typically regular tourist attractions doesn't make sense.

- The pipeline should be tunnelled to avoid the 16 historical wrecks documented in the National archives as being under the sand on Portmarnock Beach.

13.2.18. **Material Assets - Community, business, residential, tourist and marine.**

- Detrimental impact on tourism, recreation, fishing and amenity. Range of existing recreation activities will be impacted including sea-swimming at Velvet Strand, sailing clubs, kayaking and scuba-diving at Lambay Island.
- Grossly undermine the value of our houses and property.
- Businesses including hotels, restaurants and retail within 300m of the plant will be adversely affected. Major impact on the economy of the area, including restaurants and food shops and impact on hotels and local social events.
- Consequences of increase in power consumption on Clonshaugh.
- Conflict with the proposed development of the IDA site for major employment.

13.2.19. **Material Assets - Dalata Hotel Group**

- Objection to the development of WwTP and SHC 400 m from the Clayton Dublin airport hotel. 608 bedrooms now following €36 million investment in tourist accommodation. Extant permission for a 325 bedroom 10 storey hotel at adjoining site – PL 06F.232704 - and an expired permission for a hotel to the west.
- Pattern of development already established and development takes no cognisance of character of area.
- Undue detrimental impacts on the operation and amenity of the established hotel. Constitutes a dramatically significant extent of industrial infrastructure.
- Development is a material contravention of the FCDP and zoning policy.

### 13.2.20. **Material Assets - Gannon Properties lands**

Development to commence in 2018 includes new East-West access road from the Malahide Road which is part of the internal spine road running through the Belcamp development and West across the OS zoned lands and connecting with a future North-South distributor road to R139. Need is recognised.

Regarding the access road –

- The north-south link road is key in opening up the adjacent HT and RA lands.
- Construction of separate carriageways serving only the WwTP and the GAA lands is short-sighted. Future works to upgrade to distributor road standard will be disruptive, difficult and costly and no provision for road widening or for widening the culvert over the Mayne has been made.
- Redesign needed to accord with the development plan and the Atkins orange route. To develop as planned would be a missed opportunity.

Regarding the buffer zone from the WWTP

- Want assurance that the buffer zone does not impinge upon, negatively impact or effectively sterilised to zoned development lands and confirmation as to whether a 300 m or 100 m buffer applies.

### 13.2.21. **Waste / water / soils and geology**

- Risk of contamination of local water table.
- Mayne River is a polder with the central area below sea level and the catchment has regularly flooded. Chapter 3.3 refers to the National Flood Hazard Mapping website which indicates seven locations of historic flooding.
- There is a history of flooding from the Cuckoo, which is a tributary of the Mayne River, which is flooded every few years. No basis for the conclusion that there will be no discernible impacts from the project on the existing flood regimes of the area.
- Impact of breakage of underground pipe has not been assessed.
- Objections to biosolids land-spreading considered under RBSF also relevant.

13.2.22. **Agronomy – general issues**

- Use of valuable agricultural lands inappropriate – should be restricted to poorer lands and 5km from densely populated areas.
- Purchase of approximately one third of a productive family farm. Infrastructure of this nature should be located on land of poor value and at least 5 km from densely populated areas.

13.2.23. **Consultation**

- Report on consultation is inaccurate. Consultation with residents at environs of WwTP insufficient. Shocked to discover the plant was going ahead. Consultation with residents further from the plant appears to have been more extensive including at Howth, Baldoyle and Portmarnock.
- Insufficient consideration of residents of Lower Portmarnock in relation to construction phase impacts from noise and vibration and works at compounds 9 and 10.
- Despite over 14,000 signatures from residents Irish Water is proceeding with this project which we understood had gone away.
- No indication that Irish water have contacted/consulted with a range of groups which use the area around Ireland's eye for swimming/sailing, kayaking, scuba-diving, lobster and other fishing.
- Democratic and transparent scrutiny is essential for all planning proposals.

13.2.24. **Procedural**

- Objection to direct progression of application to An Bord Pleanála. Proposed development does not comply with the terms of the strategic infrastructure development provisions as does not meet any of the three listed criteria.
- No flow of information from the proposals and the seven-week submission period is short. Objection to consultation falling within holiday.
- Inadequate / no visible site notices. Wide scale opposition. Need oral hearing.
- Fee payable is too much and that it is deterring objections.

- The reports on the website are complex and not easily accessible.
- Huge lack of information and communication between the applicant and residents.

### 13.2.25. **Site selection and alternatives**

Site selection does not address the unique planning conditions and history of the Clonshaugh / Baldoyle Bay area.

- Decision by elected representatives of FCC to locate plant at edge of their boundaries. Selected only because of cost and politics. FCC councillor involved in the early consultations - process was not carried out properly, site and proposed outfall route was pre-chosen.
- Key issue from outset was avoidance of designated shellfish waters. In the phase 2 consultation it was highlighted that the mapped shellfish areas were out of date. Improved water has made the area off Portmarnock most popular fishing area on the Fingal coastline for razor and cockle shellfish. GDD team acknowledged the point and indicated as a result need to comply with the Quality of Shellfish Waters Regulations. Should have re-examined alternatives.
- The environmental and socio-economic costs should have removed site at phase 1 of the site selection process when 22 sites were reduced to 12. Clonshaugh site in the GDD phase 2 report including the potential moderate impact for loss of winter habitat for lapwing and golden plover and other wader species due to the large pasture fields being suitable for these birds.
- Baldoyle outfall seem to be the key factor in declaring the most favourable site.
- Three alternative layouts do not provide the necessary detail to properly assess the impacts on the immediate environment.
- The failure to submit the Jacobs Tobin studies to an independent review is a serious error. The location decision made in 2013 would have been impossible in 2015 (when Biosphere adopted) and is not now remotely feasible in 2018.

- Failure to assess option of a number of smaller facilities. Large-scale plant unacceptable. No need for plant.
- Submissions made earlier in relation to the selection of three emerging preferred site options are enclosed. These include references to proposal that the area be designated as a World Heritage Site, to legacy of illegal but remediated dump, to the impact on the established traveller community, to the need for SDZ for the North Fringe.

13.2.26. **Community benefits**

- Given the level of economic deprivation in the adjacent areas of Darndale and Belcamp the community benefits scheme that forms part of this application should be amended to better serve the local community, youth and sports organisations especially in these communities.
- Committee to administer community benefit is required.
- Irish Water and the operator should contribute to environmental schemes to improve and enhance the environment from the WwTP site to the outfall.
- Improved facilities should be provided to benefit the local community.
- Some local houses in the area including on Baskin Lane are not linked to the public sewerage system, which should be addressed.
- Funding should be provided for local community projects.

13.2.27. **AA / ecology**

Potential breaches of Habitats Directive:

- Project contravenes article 6.1, 6.2 and 6.3 of the Habitats Directive
- Construction and operation phases will have significant negative impacts on habitats and species in BB SAC, Ireland's Eye SAC and Rockabilly SAC resulting in certain deterioration of habitats and species contrary to conservation objectives for these sites.
- NIS relies on hypothetical mitigation scenarios and measures to negate the significant negative impacts.



- NIS underestimates negative impacts on marine and in terms of indirect impacts which are in some cases completely omitted.
- The abundance of case law listed dictates the project cannot be permitted.

13.2.28. **EIA and related**

- Application needs to be rejected due to inadequate information.
- The EIA is fatally flawed.
- The chapter 5.7 regarding consideration of alternatives is fundamentally flawed in its hydrodynamic modelling.
- Failure to provide detailed design for construction and operation is unacceptable and extraordinary.
- The entire process must be questioned in view of the omitted documents.
- With the exception of traffic impacts, the EIAR fails to address most of the residents' concerns, including visual impact, noise, odours and smells, future incidents, general negative impacts on the area in any forensic detail.
- Application submissions are perhaps double the size needed which is a deliberate attempt to discourage public consultation.
- EIA process obliges the supply of all relevant information held.
- To carry out a credible EIA it is necessary to demonstrate that the location selected as the outfall is optimal and will not reduce water quality.
- The EIAR and NIS failed to consider several in combination effects as is legally required. The Dublin Port master plan 2040 refers.

13.2.29. **Other**

- Application proposal does not meet the criteria laid out to be considered as strategic infrastructure development.
- Light pollution could affect Dunsink Observatory.

### 13.3. Planning Application – Oral Hearing

The following brief summary of the oral hearing sets out matters pertaining to the Planning Application. Witnesses for the applicant are identified as IW. Where written submissions were received these are given a reference number based on the reference attached to the documentation at the hearing (OH-number). Any references to the hearing may also be given by day and time.

I note that in support of their statements a number of observers handed in research papers and referenced internet sites and articles. These documents are available to the Board.

#### 13.3.1. Overview of oral hearing

The commencement of the hearing was interrupted by requests for an independent record of the hearing to be made available, for independent assessments of the IW submissions to be undertaken and for live streaming. These requests were reiterated throughout the hearing.

##### **Main Irish Water submissions**

Mr Sean Laffey (IW- OH-1) Policy context, **need and financing**.

Mr Ciaran O' Keeffe (IW- OH-2) Project description, EIA process and alternatives. He introduced a proposal to **add UV treatment to all effluent discharges** out of 'an abundance of caution' and following further analysis by a marine ecologist specialising in shellfish.

Mr Lara Gough (IW-OH-3) addressed planning issues, updated the Planning Report and commented on the Marine Strategy Framework Directive and the Biosphere.

Mr Dan O Boyle (IW-OH-4) Consultation to date and commitments.

Mr Alan Berry (IW-OH-5) **Marine water quality** modelling and impacts. Also presented a summary of relevant standards (OH-38).

Mr Ian Wilson (IW-OH-6) Marine biodiversity.

Dr Simon Zisman (IW-OH-7) Marine and terrestrial ornithology. Also presented terrestrial ornithology raw data (OH-39).

Mr James McCrory (IW-OH-8) Terrestrial and freshwater aquatic biodiversity. He presented the NIS and the response to observations (OH-9).

Mr Dara White (IW-OH-11) described the **UV treatment** proposed.

Mr Richard Hamilton (IW-OH-12) Impacts on **population** including sporting facilities and recreation, tourism, businesses, the airport and the traveller community.

Dr Martin Hogan (IW-OH-13) Likely significant effects on **human health**.

Mr Tom Cannon (IW-OH-14) **Traffic and transport**.

Dr Imelda Shanahan (IW-OH-15) **Air and odour impacts**, including consideration of the buffer zone and specific elements. Addressed assessment approach in Volumes 3 and 4.

Dr Imelda Shanahan (IW-OH-16) **Noise and vibration** impacts.

Mr Richard Barker (IW-OH-19) **Landscape and visual** effects.

Mr Faith Bailey (IW-OH-20) Archaeological, architectural and **cultural heritage**.

Mr Kieran O'Dwyer (IW-OH-21) **Hydrology and hydrogeology**.

Mr Eoin Wyse (IW-OH-22) **Soils and geology**.

Mr Philip Farrelly (IW-OH-23) **Agronomy**.

Mr Damien Grehan (IW-OH-24) **Waste**.

Mr Ciaran O' Keeffe (IW-OH-26) **Risk of Major Accidents**.

Mr Ross Kinsella (IW-OH-27) **Regional Biosolids Storage Facility**.

Ms Sarah Kiernan (IW-OH- 28) **Cumulative impacts and environmental interactions**. Update of 'other development' considered for cumulative impacts (OH-37).

Mr Jarlath Fitzsimons / Declan McGrath (IW-OH-29) **Legal Submissions**.

Ms Lara Gough (IW-OH-30) Update of relevant planning history.

Mr Tom Cannon (IW-OH- 31) Traffic interactions between GDD and RBSF.

Mr Ian Wilson (IW-OH- 32) Recolonisation of benthos after dredging.

Mr Dara White (IW-OH-33). **UV design and effectiveness**.

Mr Ciaran O' Keeffe (IW-OH-34). Further information.

### 13.3.2. **Main elected representatives submissions.**

Elected representatives all outlined **shared concerns** relating to location and scale of development and potential impacts on residential areas and reiterated many of points which were raised in written submissions. UV treatment generally welcomed. I have summarised below the comments which are most unique in the various submissions.

#### **Mr Thomas P. Broughan (OH- 36).**

The significant points of the submission include reference to:

- History of **poor planning** in the area and traffic problems.
- **Inadequate risk assessment** and out of date traffic data used.
- Clonshaugh site was selected prior to Biosphere designation.
- Negative **health impacts from airport noise** will be exacerbated.
- Flood risk. Marine **topography will trap effluent**.

#### **Mr Sean Haughey TD (OH-42)**

The significant points of the submission include reference to:

- History of **illegal dumping**.
- WwTP would prevent **alternative desirable development** of area.
- Odour would be combined with coffee and aviation fuel odours.
- Brent geese have been photographed on WwTP site.
- Consequences of **accident from a single large plant** are of concern.

#### **Mr Finian McGrath TD**

The significant points of the submission include reference to:

- The **Biosphere and the shellfish waters** will be negatively impacted. Dublin Bay is a major economic and social asset.
- The **major traffic** during construction will impact the area.

- Scale is excessive including in event of **malfunction**.
- Not needed to serve this area.
- **Cost** of plant.

**Mr Darragh O'Brien TD and Cllr Eoghan O'Brien (OH-43)**

The significant points of the submission include reference to:

- Impact on **codlings' fish spawning** area.
- Lack of treatment of **pharmaceutical residues and hazardous substances**, impact on ecology and surface waters.
- Use of **prime agricultural lands**.
- Impacts on tourism and WwTP location within the **flight path and safety zone**.
- UV disinfection welcomed but procedure failure may occur.

**Cllr Tom Brabazon**

The significant points of the submission include reference to:

- Vehemently opposed to **site selected** and the **process** involved.
- The **traffic disruption** is excessive in particular prior to the Bypass road which should be conditioned.
- **Tertiary treatment plant** would have a much smaller footprint.
- **Proximity principle** not being adhered to by the regional plant.
- Strength of **opposition in local community** emphasised.

**Cllr David Healy**

The significant points of the submission include reference to:

- **Site notices** required near Ireland's Eye under Aarhus. Scuba and kayaking omitted from EIAR.
- **Modelling results** are selectively presented.
- Full assessment of **alternatives** is a requirement.

- Measures to deal with overflows not clarified. **Wesser judgement and WFD** needs to be considered.
- Mr Keating's **Ballymun Wildlife report** submitted refers to an area that should be avoided.

#### **Cllr Mitchell**

The significant points of the submission include reference to:

- Clayton hotel partly occupied by homeless families.
- **Construction phase traffic** and its effect on the congested R139.
- Continued **development of the 'northern fringe'** will be discouraged as people will not want to live or run businesses here.
- Coastal areas will be affected as will the **fishing industry**.

#### **13.3.3. Planning authority and prescribed bodies**

Mr Colm McCoy and Mr David Murray Fingal County Council (OH-40).

In addition to the summary of this submission which I present in the main report the officials of FCC stated as follows. Payment of **contributions** under the DCS is required.

The **community benefits scheme** proposal is positive but there is limited scope for community based activities and sponsorships. Further clarity is required as a follow up to Mr O'Boyle's reference to 'supports for local projects that seek to enhance or protect the local built or natural environment'.

A number of items to be addressed by condition are identified. These include:

- Provision of a tarmacadam **pedestrian path** above the pipeline route between chainage 0+500 and 0+700 to provide public access between the hospital and the NSC in accordance with Local Objective 116.
- Provision of a footpath along the WwTP access route.
- **Condition 13** to be retained in full as recommended by the EHO.

Other comments were made in relation to:

- Temperature regulation / air conditioning in the hospital buildings where **windows are to be maintained closed**.
- Excessive removal of trees and hedgerows needs to be avoided and a **tree survey** undertaken. A tree survey of the whole of the route, employment of an arborist, agreement on tree protection measures and measures to ensure removal of townland boundaries to 10m unless otherwise agreed with the planning authority.
- A condition requiring agreement on the **precise layout of the 10 construction compounds**.
- Reinstatement of **compound 10** is not sufficiently detailed.

Ms Aebhín Cawley – advisor to FCC (OH – 48). **Clarification on screening** out of Ireland's Eye SAC is still required. Clarification is requested on the presentation of **mitigation measures for specific European sites** and their specific qualifying interest and special conservation interests at risk. Cumulative impacts presentation of Ms Kiernan addresses Kish and Bray banks works but further consideration of Dublin Array projects on **harbour porpoise** is needed – it is not sufficient to rely on distance. Temporary **loss of the Quiet Zone** will not result in adverse effect on the integrity of any SPAs.

Ms Ciara Flynn NPWS Divisional Ecologist (OH-46), with inputs during discussion from Dr Tiernan ornithologist. This sets out further observations following original written submission including in relation to appropriate assessment and licencing matters. NPWS contribute to the detailed discussion on specific SCIs and qualifying interest, particularly relating to Brent geese and harbour porpoise.

#### 13.3.4. **Observers' submissions**

Some of the more unique contributions of the individual observations are highlighted below.

Ms Bette Brown (OH-10) read a statement of **response to the proposed UV** treatment. She **requested that the hearing be cancelled** or adjourned in light of this evidence and the need for more information. The requirements of EIA and the power of Board to dismiss an incomplete EIAR apply.

**Portmarnock Community Association represented by Pat Suttle. (OH-41)**

Some of the significant points of this submission referenced:

- **Spreading biosolid** on land is a prudent method of recycling subject to appropriate timing and analysis.
- Any grant of permission should **require incorporation of innovations** and respond to likely forthcoming legislation.
- Clonshaugh Road and upgrade requirements are described.
- Measures to protect the environment and local populations should be in conditions of permission rather than in a licence.

**Ballymun Wildlife Group Report - Michael Keating (OH-44)**

This submission relates to the **ecological assessment of the routing** of the pipeline which is considered deficient as it failed to include information on protected species, it overlooked objectives and policies and failed to conduct an appropriate ecological evaluation of the green space and amenity area. The route **contravenes the FCDP and is contrary to the Habitats Directive** and breaches the Planning Act.

As a community gain the **acquisition of lands for management by DCC** is requested.

A detailed comment on Chapter 11 of Volume 3 Part A of 6 is provided. The species recorded on the site by Mr Keating over the years are listed and photographed and a spring survey of common frog is attached.

**Mr Sean Lyons** (presentation on fob).

Together with Mr Bourke this submission focuses on alternative locations for infrastructure proposed at Blanchardstown and an **alternative route for the orbital sewer which would be more efficient to operate**. The proposed route will work he stated but it will require considerable energy. The RBSF site should be relocated to Ballealy where odours would not be such a problem. Due to topography and wind direction odour will flow to the front of the hospital.

**Mr Bourke** (OH-51) elaborated on the **health effects**. Concerns are biohazard, odours, effect on health and safety and on the Blanchardstown area. In the absence



of Irish standards for odour there can be no legal remedy. Individual components have not been considered including C.Diff and other viruses, which would pose a risk to patients.

**Ms Cooney (OH-58) (Green Party representative and Love Dublin Bay swimmers group)**

The submission points include:

- The pipeline **route under the estuary is damaging** and the alternatives are not properly explored.
- Cumulative effect on harbour porpoise is inadequately considered.
- Better noise mitigation required.
- **Lights at Dunsink** could adversely impact observatory. The project is needed but not assured that best practice is proposed.

**Mr Eamon Hart**

The submission points include:

- Objection to the location **within the three zones of the Biosphere**. Need to **officially notify the Biosphere committee**.
- Our proud and united community needs housing and not a plant of this nature. Selection process a farce and site unsuitable.
- Should have **higher chimneys**.
- Brent geese use Belcamp Park.
- The **process is imbalanced** and observers lack technical support.

**Damien Cassidy (OH-50) from Ringsend / Sandymount Environmental Group.**

In his unavoidable absence at the time I read out his statement. It refers to assurances given prior to the Ringsend development, including in relation to odours, accidents, impact on bathing waters. The proposed plant and the discharge point close to Ireland's Eye is unacceptable.

**Ms Elaine Donoghue Jones** (Resides 300m from the WwTP). The significant points include:

- Permanent **health risks cannot be mitigated**. Why is a medium impact acceptable? What are the cumulative impacts including the stress of living for three years near construction site and increased traffic?
- The claim that there is no reduction in **property values** is extraordinary.
- Dr Shanahan's evidence that there is not a nuisance odour or no odour is queried. Her comment that there would be some change is not in writing.
- Mr Barker's brief is incorrect in terms of **view from my house**.
- As a mother of three children this is a grave injustice.

**Ms Teresa Doyle and others - James Wade** aged 12 (OH-47) Concern about the smell and its **impact on trips to school, beach and use of park** including for the summer camp. He handed in a submissions on behalf of his friends (OH-49). Another young observer Jack Doyle objected to the plant on the basis of smell.

**Ms Breda Doyle** Ms Doyle stated that there is no interest in **the tours of the proposed education centre**. It would not be a treat to visit a giant sewage plant. This is **no substitute for removing the use of our park**, which will result from the plant. The **plans have caused considerable stress**. She asked that when making its decision the Board **consider the children** of the area.

#### **Teri Grey (OH-53) on behalf of local residents of Clonshaugh**

The significant points relate to site selection process:

- **Criteria are weighted in favour of the southern route**, which is shorter and therefore captures more cultural heritage sites for example. The heavily populated nature of area and hotels was dismissed. There are errors in the LVIA. Baldoyle estuary SAC was overlooked in the ASA.
- The **process was made to fit the pre-selected site**. Phases 1 - 4 ASA should be reviewed and if the SAC is included and the 'neighbouring zone' considered then a different outcome may emerge.

#### **Ms Teresa Doyle.**

The significant points include:

- During **venting gases will escape**.

- Online information and court judgements indicates a failure despite upgrades to manage odours and a discharge to the river at similar plant at Mogden.
- Future **expansion is noted** on the drawings. **Scale is excessive.**
- Photographs of Brent geese at Belcamp Park in January 2019.
- Letter from Mr Willie McDonough on behalf of the **traveller community of Cara Park**. The community does not want the facility which is too close to our homes.

### **Gannon Properties (OH-55) including Dara Aiken of Waterman Moylan**

The significant points are:

- Proposed 5m north-south access road including the **Mayne river culvert** should be constructed to the distributor road standard (18m width) - development plan objectives.
- Upgrading the site access road to the planned width which is ultimately envisaged while maintaining access to WwTP would be difficult.
- **R139 junction needs signalisation**. A **single access preferred** and would be a more efficient use of public money.
- Other comments relate to existing sewers and maintenance access including manhole locations.

### **Maurine Mullen (OH – 57) on behalf of Eileen Cantwell and Nikki Gilliland and Low Rock Swimmers and Leinster Open Sea Swimming**

The significant points are:

- The **islands swim is long established** and will take swimmers within reach of the predicted dispersion plume.
- The Board should take a strategic view that this practice of **discharge to sea is unacceptable**. WFD standards are the minimum. GDD should set own level.

### **Mr Philip Swan (OH-59)**

The significant points are:

- 11,000 plus **objections to the Portrane option lead to a change** in the site.
- Extensive research should be made available on the **smaller plant option**.
- **'Future expansion'** contrary to submission of Ms Kiernan and should be conditioned out.
- The tidal movements bring a lot of debris in and will bring in undissolved solids. The **SAC may silt up**.

**Ms Catherine McMahon Velvet Strand Sea swimmers (OH-71)** Ms McMahon's presentation includes **video evidence from a random sample of fishermen** and sailors, highlighting the complex nature of local tides. Local knowledge shows the **actual conditions and undermines the desktop modelling**. On that basis permission should be refused.

Tertiary treatment does not address **micro-plastics**. Local tourism and recreation must be protected. Brexit sea restrictions on Irish Sea access will mean that the Irish Sea will be more important for fisheries. The project scale is disproportionate.

**Mr Edward Burke (industrial microbiologist with 40 years' experience and PhD)** added to Ms McMahon's statement including by the following comments:

- On closure of the outfall from former nose of Howth sedimentation which used to flow inshore to Balcadden or northwards to Lambay Island was greatly reduced. However, **silt deposition will now be resumed**.
- **UV treatment alone will be ineffective** if the suspended nutrients and solids are not removed.
- Various other comments were made relating to maintenance.
- The **polio virus** must be considered and unsterile sewage is a real risk.

**Ms Bette Browne**

The significant comments include:

- **UV proposal cannot be assessed due to detail and timing**.
- **CPE was recovered from treated wastewater** and can still go into the environment from UK experience. Research confirms this point.

- Dr Hogan for IW is not a public health expert but an occupational physician.
- An Bord Pleanála needs **independent reports** on public health.
- There are **serious dangers related to microtunnelling**, outlined in the paper submitted (OH-60).

**Ms Sabrina Joyce-Kemper (founder of NGO and consultant with EU legislation expertise) representing herself and residents from the wider area. (OH-61 and OH-72).**

The comments include matters relating to:

- Failures in the ASA **process has not lead to the least ecologically sensitive site** being selected.
- Under EU law **risk assessment** is required at this time for critical infrastructure assets.
- A **bond for liability** should be in place, not just under the EPA licence. Environmental Liability Directive refers.
- Danger to pedestrians and wildlife disturbance on **golf links road** and turning circle to compound 10 entrance not assessed.
- Events which the NIS state are unlikely / impacts which are imperceptible occurred at **Corrib**. Too many details are left to the contractor including the TBM method. Tunnelling impacts including noise related cannot be assessed and **AA criteria are not met**.
- Lack of **scientific information on geology and vibrations** for AA. Impact of tunnelling boring has not been assessed. **Bentonite breakout** could result in smothering of organisms.
- In numerous NISs lands at compound 9 especially have been identified as a designated feeding area for **Brent geese**.
- The **Briels ruling and Peter Sweetman Ireland** cases are relevant.
- Inadequate consideration of **vibration impacts on birds and prey**. Non benthic zones and additional energy depletion for waders will result.

- The 2011 reports described the **surrounding arable lands** close to the estuary as being ecologically linked with the estuary for these birds.
- **Inadequate information on the UV treatment** and no knowledge on how it can be carried out including by reason of the industrial load. Metals and carcinogens will drop to the substrate at the point of the outfall and pose a danger to humans and ecology.
- The project might include **smaller plants** with constructed wetlands.

### 13.3.5. Further proceedings and discussion

#### **Mr McGrath responded to legal issues (Day 5, 11 am)**

Responding to Ms Joyce Kemper's comments he stated that EU law on threats to **critical infrastructure is not a matter of relevance** to the application and it does not deal with the site selection process.

Regarding scientific certainty it is important not to conflate two separate things – there can be uncertainty as to whether an event would occur.

The clear finding is that there would be no adverse effect on the integrity of any site and no compensatory measures proposed.

**Ms Joyce Kemper** referred to the centre of the Habitats Directive as the **precautionary principle**. If there is any chance of a bentonite break out for example then the project cannot go ahead. The NIS is incomplete and is missing parts and leaving issues to contactors.

**Ms Brown** referred to **the lack of independent EIAR** and the fundamentally flawed reports.

**Mr Berry (OH-62)** responded to Cllr Healy. The model shows a high level of agreement with the Howth Yacht Club maps, which do not account for dispersion or dilution or the ever changing direction and strength of tidal currents. It accurately represents solute plumes. The EIAR information is valid.

**Ms Browne** referred to **increasing storm patterns** and the need to study the environment when there is a major storm and Mr Berry responded.

**Mr McCrory (OH-63)** responded to **AA and Biodiversity issues**. The submission includes a schedule of mitigation measures from the NIS. Compound 10 will be handed back to FCC for dune habitat management based on hydrogeological conditions. Regarding the mitigation measures which are required to ensure that the proposed project does not impact on site integrity, **Table 1 of his submission refers as a single reference point**. This outlined the measures specific to each site. Other measures such as the SWMP and CEMP also apply to the European sites. He noted in relation to the Keating report on the lands at Ballymun, to the north-west of the junction with the M50. The ecological features at this site are described in the EIAR and notable features are all described. In the **Ballymun Biodiversity Action** plan the lands identified are in fact to the south of the M50 and 500m away. The site referred to is the **Sillogue NDA** and a suite of ecological surveys were carried out at this location and are described in the EIAR. Any survey is a snapshot. The focus of the surveys was on the pipeline corridor and the effect is described in the EIAR. The long-term potential is not undermined. NH18 of the development plan is stated to be contravened – however the ecological buffer zone does not include the Sillogue site. The Nanakin River has been taken into account and NH24 is not offended. NH 24 is not applicable. NH27 is taken account of through commitment to protect trees and replant. **Protected species** such as smooth newt have been considered. Badger surveys will be repeated. Mr McGrath noted that table 1 is to respond to Ms Cawley for clarity of exposition.

**Mr Wilson (OH-64)** responded on **marine biodiversity issues**. He addressed the screening out of Ireland's Eye and cumulative impacts on harbour porpoise addressing the Dublin Array, Dublin Port (Alexander Basin) Howth Harbour dredging and construction activities and the codling nursery. Regarding Ireland's Eye, any elevated suspended sediments or nutrients would be imperceptible. Designated habitats are at the opposite side of the island and are elevated.

**Dr Zisman (OH-65)** responded on matters relating to **birds at the Clonsaugh WwTP** site. The 3D character of compound 9 was assessed fully. The wildfowl and waders have been studied for years and there is a robust baseline data. There is knowledge from other sites based on largescale habitat loss. Vibration has been considered. The construction and operation of the WwTP will have no adverse

impact on the integrity of the European sites. Dr Zisman submitted the original field survey reports on birds at the WwTP site. In response to Ms Browne he reiterated that the Clonshaugh site is not of importance for wintering waders.

In response to Ms Joyce Kemper the estuarine bird surveys were referenced. These included the **ex-situ areas of compound 9 and 10**. The potential impacts have been assessed as covered in 10.5 and mitigation in 10.9 specifically in relation to screening and marine impacts. The assessment has also drawn on published information and the experience of experts. Regarding walkers being displaced onto the bank and disturbing birds he stated that the area is already heavily used.

Mr O’Keeffe indicated that the scale of **plant at the construction compounds** would be much less than shown on the image presented by Ms Joyce Kemper. The crawler crane would only be elevated when dropping things into shafts. The OCEMP describes the nature of the compound.

**Dr Zisman noted that wading birds are highly adapted** as they have to deal with the tide. The birds also move between estuaries as needed. The drilling effects would be highly localised and are fully considered in chapter 10. Regarding the ex-situ value of various sites we have taken into account all available information on the feeding of Brent geese and the assessment is based on our good understanding of the lands as a result of the surveys from 2014 onwards. The geese will go where it is convenient and evidence from previous studies over decades of wildfowl and waders confirms consistency of use. In this regard we are fortunate to have very good long-term studies in Ireland. There are many sources of disturbance to which birds have habituated. Regarding the query of Ms Joyce Kemper and the integrity of the site he noted that the integrity of the network is critical. There is no permanent largescale redistribution of birds and no significant impact. Energy levels of winter migratory birds in particular at the end of the season for the flight to Canada is a large amount and the matter of redistribution of birds between estuaries (which has been measured) does not result in a kind of energy expenditure that would have any effect on the birds’ fitness.

**Ms Cawley in** response to a question indicated that the records do not show a significant historical use of these lands by geese although there may have been



usage noting the LAP. **A favourable conclusion may be drawn in relation to AA and Brent geese and compounds 9 and 10.** She indicated that she is not aware of the compound 10 site being of particular importance.

**Ms Joyce Kemper** referred to the Irish Water information which did show use by Brent geese of this area. She stated that the **Murrough spit cannot be considered as compensation as it is part of the normal management of the site.**

Dr Zisman referenced the specific parts of the EIAR which refer to data from **compound 10 and that this was fully considered.** Ms Cawley stated that in relation to the two compounds because of the temporary nature of the use and the availability of the Murrough spit there are no concerns. Ms Joyce Kemper noted that the area of compound 10 is a relatively quiet zone and would be a good refuge and it will be restored, which in itself will be difficult following its being made into a hard surfaced area. Dr Zisman noted that the area is covered by two constantly used paths and so on. Ms Kemper noted that it would be **used at night.** In relation to the use of bird scarers as noted by Mr Harte this indicates that there are birds on the Clonshaugh site from time to time.

An observer interjected regarding the reclamation of the Murrough spit noting that it has been left wild. In addition it was stated that it is a tiny area for such usage. A discussion relating to The Murrough ensued. **Mr Murray** on behalf of FCC confirmed that a management regime is in place at The Murrough and that it is properly resourced. **Ms Cawley** stated that the land will be suitable for Brent geese by next winter. Its small size and present lack of usage by Brent geese was noted by observers.

Regarding **auk protection it was queried how effective the vessel mitigation measures would be** and if vessels could rapidly move out of the way. The board needs to be satisfied that the VMP fully addresses the issues. Dr Zisman for Irish Water insisted that the measure is highly precautionary.

The possibility of an **intervention pit in the estuary** was raised by Ms Joyce Kemper. Mr O'Keeffe stated that in the event of machinery breakdown it would be pulled back and testified as to his experience in this type of work. The drilling is in

competent rock and there should not be anything encountered which cannot be dealt with by the equipment. There is sufficient information on this matter he stated.

On the issue of the specification of machinery (as relevant to the purposes of AA) Mr O Keeffe referred to the OCEMP which addresses all of the details except perhaps slurry usage, which he then commented upon. He noted that recent advances in **bentonite technology includes a smart system** and the tunnel contractors can use less bentonite and tunnel further with less force. Control boxes constantly monitor bentonite usage and send information back to controls. The machine would be designed to go the full distance and should not require maintenance but if needed the machinery would be pulled back out to the launch site. Mr O’Keeffe had never encounter such an event.

Ms Joyce Kemper highlighted the need for **cumulative impact on roosting birds as a result of the new runway and additional flights**. Mr McGrath indicated that there is currently no restriction on night-time flights and that is the basis on which the assessment has been conducted. The issue comes into play only if the new runway is built. Ms Joyce Kemper noted that there are presently very few flights and birds will experience more disturbance in the future.

Following further discussion on the location of and impacts on **Ireland’s Eye habitats** particularly tide washing onto perennial vegetated sea cliffs, Ms Cawley indicated that the responses of Irish Water had resolved all of her questions satisfactorily subject to further documentation of matters as proposed, including in relation to the **Codling Fault Zone SAC**. NPWS concurred. The issue of **pollutants from spillages** was also addressed. In the Irish Water response the information given was that the vegetated sea cliffs higher on the shoreline. The model shows that the dissipation on discharge is away from the island and the possibility that any chemicals including pollutants would be so diluted as not to have an impact. Mr Wilson also stated that the possible increase in solids in the event of a failure at the location of the diffuser which is a point of natural dispersal could not deposit material onto that part of the island. Mr O’Keeffe also reiterated points earlier made that surface water inundation would not affect the plant. Existing CSOs that are in the north Dublin catchment are being diverted.

Ms Joyce Kemper noted the 2018 survey indicated that **50% of grey and harbour seals use Ireland's Eye**. Irish Water noted that the growing population of seals at that location did not change its assessment.

Mr Berry referred to the **storm events** and the fact that the study is focused on long term receiving waters, for which reason the storm events were not modelled. The impact of the outfall on the receiving environment is the purpose of the studies, not the effect of the environment on the project.

Regarding potential cumulative impacts on harbour porpoise as a result of the **Howth harbour dredging project**, when the sediment plume would reach the mouth of the harbour it would result in a 26 to 47 mg/l depending on the tide, which is more or less the average turbidity level in the overall area. As such there is no potential for cumulative impacts Mr Wilson stated in reply to Ms Joyce Kemper.

Regarding the **tracking of dye for 6 hours** only rather than a full 12 hour Mr Berry referred to the limits of detection equipment. Ms Joyce Kemper referred to the southern beach. Mr Berry stated that concentrations of coliform at any stretch of the coast line would not be markedly different from the predicted 1 or 2 coliform level predicted, that the material will disperse evenly and not give rise to 'hot spots' and that the bathing water quality will be maintained at 'Excellent'. He described how the dye released combined with the modelling helped to inform the location of the diffuser.

Regarding the **bathymetry and recent storm events** observers identified a concern that the water depth may not be as surveyed in 2015. Mr O'Keeffe indicated that it would be normal to re-survey.

Mr Tom Cannon (OH-66) responded to issues raised by Gannon Properties and Ms Joyce Kemper. The **link road can be completed** without impeding access to the WwTP. Design including construction standard will be agreed with FCC. The future North-South link road will not be prejudiced. Temporary traffic management measures at the junction of the R139 is required. The Golf Links Priority Junction will operate well within capacity during peak construction. The width is discussed in detail. In the operational phase there will be a maximum of 2 HGV arrivals and 2 HGV departures and three shifts will operated.

Mr Paul Carroll, Senior Engineer of FCC confirmed that the alignment of the proposed access road northwards to the WwTP main facility is consistent with the indicative alignment of a North-South road shown on Map 11 of the FCDP. The **January 2019 South Fingal Transport Study recommended the EWDR** again. One of the purposes of the study was to bring the two local authorities together in relation to a roads strategy. The east west is a longer term road recommended to happen shortly after 2027 and the north-south link road needed to be cognisant of the east west distributor road, individual sections of which will be advanced. The provision of the WwTP access road as part of the development is consistent with the FCDP.

There was further discussion on **roads and traffic issues at the R135 and the main WwTP site entrance**, which IW indicated had been modified in response to a Stage 1 RSA and follows DMURS . The sightline of 3x90m is probably more than is required under DMURS at the egress. Gannon representatives had indicated the wide sweep of the entrance junction and that the safety was not properly taken into account. There could be part of the urgently required infrastructure put into place at this time. The applicant noted also that there is some room for manoeuvre in relation to the design within the red line boundary. Gannon Properties ultimately indicated satisfaction with the co-operation between IW and FCC in relation to the access road but concern about how operational phase traffic can be co-ordinated with the retrofitting of the full width road. The date of 2027 is of concern. The 1800m distance between pedestrian crossings was also highlighted. Amalgamation of existing and future junctions at or near the site entrance is desirable.

Gannon witnesses reiterated that there was a **need for traffic lights at the junction** and amalgamation of works at the entrance. The full road width should be put in place at least up to the river Mayne.

In discussion Mr Murray mentioned the grant of permission for 160 houses partly to secure the future of Belcamp House. Mr Murray noted that the junction is not in the FCC area and there are no matters for FCC to agree.

To facilitate easier construction of the future widened north-south access route IW indicated that a **wider culvert could be constructed within the CPO** lands if the

Board considered it appropriate. Mr McGrath had earlier referred to the limits of the works in the context of the CPO of lands and that the construction of the full width north-south lands would not be possible.

In passing there was also discussion on the substation entrance which it was confirmed would be off the north-south link in the long term.

In relation to **mobility management** it was noted for the next 5-7 years there would not be a high level of public transport available.

In relation to roads and traffic conditions Mr Murray read something into the record in relation to the payment of a **special contribution towards the RBSF** in the amount of €15,000. Mr McGrath noted that this had been agreed following constructive engagement with FCC.

Regarding the impact on **vulnerable users in terms of road safety** in the construction phase Mr Murray indicated that they would engage and Mr Carroll indicated that there could be agreement and an appropriate level of co-ordination including in relation to the CMP.

Ms Joyce Kemper indicated that the issues she had raised had been largely covered in terms of roads and traffic. She noted a bus stop marked close to compound 9 and the applicant noted that this would be likely to be moved for the duration.

The next day Dr Imelda Shanahan (OH-68) responded to matters raised in relation to **noise and vibration. Communication with potentially affected receptors** in advance of intrusive works and engagement in relation to method statements and mitigation are of particular significance. Noise and vibration monitoring to be carried out in accordance with recognised standards. **Closure of windows at the hospital and hospice** is a mandatory requirement under relevant guidance for aspergillus and is not for the purpose of noise mitigation. She referred in detail to three receptors namely the **hospital, hospice and house at golf links road**. Consultation with the hospice was described. Condition 13b is redundant. Condition 13d needs to be modified. Progress of the tunnelling is likely to be faster and noise and vibration levels lower than predicted levels in the EIAR.

Dr Shanahan (OH-69) responded to issues raised relating to **air quality and odour**. The assessment for St Francis Hospice found a predicted short-term Slight adverse impact during construction, related to dust. In the operational phase the predicted impacts are significantly lower than the permissible levels in the Air Quality Standards and the assessment criteria adopted for the project. The **most stringent assessment target of 1.5 OUE/m3 as a 98<sup>th</sup> percentile of one hour averaging** periods has been adopted. For the APS, Dubber OCU and WwTP sites the prediction is that for at least 98 percent of time nuisance odour will not be detectable at the boundary. A 99.5<sup>th</sup> percentile prediction demonstrates that nuisance odour associated with any element of the proposed Project will not be detectable at the boundary of the facility or at any sensitive receptor outside the site boundary for more than 44 hours in any one year. Under the **poorest dispersal situation** (atmospheric stability categories E and F) Dr Shanahan acknowledged that nuisance odours might be detected close to the site but the detailed modelling predictions show that even under these maximum adverse meteorological conditions nuisance odours will not be detectable at the closest sensitive receptor to any of the project elements APS, Dubber OCU and Clonshaugh (OH-69).

Dr Hogan (OH-70) commented on **antimicrobial resistant bacteria (AMR)**, which he described as a significant concern. CPE was addressed in the Jan written response document. The national guidance document for infection control specialists in relation to CPE does not mention that wastewater is a consideration. The bacteria exist and will be spread outside of hospitals in the absence of effective wastewater systems. Wastewater treatment will not totally eliminate AMR bacteria from effluent. Far from increasing the risk of spread of such conditions an efficient sewerage and treatment facility is a hugely important prevention measure.

Ms Angela Bury noted that Dr Hogan did not recommend tertiary treatment. She raised the issue of **algae in terms of the effectiveness of UV treatment**. She also stated that prions and other substances would not be dealt with by this. Dr Hogan in reply noted that such wastes would exist no matter what. The treatment proposed are very stringent he stated referring to the Blue Flag levels and the additional UV now goes beyond that level. Ms Bury referred to ongoing EPA funded research and Dr Hogan indicated that the lead author of that research was the basis

for some of his work. AMR is a huge public health problem he stated the cause of which is related to antibiotic use. He did not disagree that it is a major public health issue. Noting that at least 1% of the population is host to CPE, that there are many other prions and hot spots Ms Bury queried how Dr Hogan could state that there is no pathway noting that these substances accumulate in wastewater treatment plants. She advised that the Board should await the outcome of EPA research, noting that CPE has been found downstream of wastewater plants. Mr O’Keeffe noted that the **UV systems would come with algal cleaning**. Ms Bury noted that there is a lack of knowledge at present about whether mammals can be infiltrated and that is a matter for the future. Mr O’Keeffe noted that any future requirements would be addressed. Mr McGrath noted that the EPA licencing system contains a review process which would enable lower emission values or additional parameters to be regulated as needed.

Ms Breda Doyle returned to the matter of **odour and the 44 hours per year** and the number of residents and schools and the consequences for health of the population. This is not an acceptable impact on the area. The residents who would bear the brunt of the facility will continue to fight it.

After a coffee break Ms Browne queried the type of **odour abatement** measures and Mr O’Keeffe noted that a combined approach would be applied at the areas of most odours.

Ms Crawford of the all **year swimmers of Portmarnock** queried Dr Hogan regarding the health effects at Ringsend, whether they had been studied and if so what are the results. Mr McGrath noted that we are not concerned with an environmental assessment of Ringsend but with the current project. Ms Browne noted that it would be reasonable to learn from Ringsend. Mr O’Keeffe noted that learning from Ringsend we are proposing to cover all tanks. Dr Hogan added on the health issue noting that the 44 hours is a worst case scenario and it will probably be less than that. Further the standard of the odour is not a very powerful smell and there has been enormous measures put into place to achieve that level.

In relation to the health impacts of **operational traffic** Dr Hogan stated that they had been addressed through impact into the assessment of the air environment. He

stated that there would not be a health impact. On the matter of operational phase traffic noise Dr Shanahan noted that the level would not be perceptible.

In relation to a **possible condition in the absence of an EPA licence** Dr Shanahan noted that the normal EPA approach would be along the lines described in the EIAR namely a test program in the commissioning phase which would establish all of the conditions to be achieved, the type of monitoring that needs to be done and the frequency of monitoring. In relation to monitoring the appropriate sampling would be intermittent monitoring based on sampling by an accredited laboratory and verification by the agency that performance has been achieved.

FCC in response to a question on their role stated that they agreed with Dr Shanahan's response to the approach to monitoring. Mr Daly noted that the EPA now relies most on 'sniff' testing as a more influential approach rather than stack testing. The local authority would not have an ongoing monitoring role and this matter would have to be reviewed he stated but he did note that complaints would be raised with the EPA by the local authority.

In relation to whether the **commissioning phase** could be problematic, Dr Shanahan stated that subject to phasing she did not anticipate any problems. In the event of a **failure or any other peak scenario** the odour system could deal with such levels and for any required time Dr Shanahan stated. Mr O Keeffe described how all media used in odour abatement will be monitored and will be upgraded before necessary.

Mr Daly noted that except for the RBSF the **local authority does not have an enforcement function in relation to odour** he stated. Complaints do come to the local authority and would then be raised with Irish Water. Mr McGrath noted that the **standard condition which would apply if permission is granted would present a legally binding obligation on Irish Water to comply** with the requirements in the EIAR, including the mitigation measures and that would be open to the planning authority or a member of the public under section 160 of the PDA. In his opinion it would be very rare that the EPA enforce a planning condition. Mr Daly confirmed that the **EPA do get involved in odour issues in wastewater treatment plants**. Fingal and individuals also have **civil and other powers** Mr McGrath stated.



Mr McGrath added that under **SI 787 of 2005 particularly regulation 3B the EPA** has a role so as to ensure that any wastewater treatment plant is properly operated in terms of noise and odour nuisance. Mr O’Keeffe also noted that there is an internal complaints procedure.

Mr Harte raised the issue of the **specific topography** in the area and Dr Shanahan noted that it was assessed. The worst case scenario which had been considered included 5 years of data and all meteorological conditions.

**Mr Eoin Wyse** (OH-73) responded to Ms Joyce-Kemper’s statement that there was inadequate information relating to the **geological conditions** under Baldoyle Bay. Mr Wyse noted that ground models would always be based on numerous sources and by examining existing landforms a robust model can be developed. Specific investigations undertaken were described. He also noted that the INFOMAR data set had been consulted and referring to Figure 18.2 Sheet 3 of 3 of the EIAR he noted that there is an anticlinal fold running southwest – northeast (not a fault as Ms Joyce Kemper had stated) and would not have implications for tunnelling in the area. A fault would have implications. Mr O’Keeffe noted that the fold can be tunnelled through. A fault does exist he stated as previously referred to and which is just west of Ireland’s Eye – that fault had not been clearly defined previously but was defined in the site investigations. Mr Wyse stated that the fault was identified in the borehole and in the geophysical investigations and it lead to the avoidance of tunnelling in the area. Mr O’Keeffe noted that the fault would extend to the north and south but not east to west. (Day 6-13.12).

Ms McMahan returned to the matter of **compound 10** and the inspection chamber which Mr O’Keeffe noted would not involve any above ground structure other than a manhole type lid and that it would be periodically inspected. In relation to a further question from Ms McMahan on **abattoir effluent** Mr O’Keeffe noted that this was a reference he understood to the Keepak site and that the effluent is already treated prior to discharge to the sewer. Ms McMahan referred to the possibility that the elected representatives were examining an early drawing which involved a pumping station at Grange at Baldoyle road but that was later removed from the application. Mr O’Keeffe agree that that earlier drawing could have been available to the elected representatives. Mr Murray noted that the Chief Executives report reference to the

development plan and the 2 no. pumping stations sets out what was available at the time.

**Mr O’Keeffe** (OH-74) responded to Ms Gray’s and Ms Joyce Kemper’s comments relating to site selection. The **4 stage process was defended**. He confirmed that the European sites were included in the assessment. Microtunnelling under the SAC/SPA is a proven and successful avoidance measure. The pre-screening constraints were referenced as indicated on a diagram attached to his submission. The 2005 report recommended Portrane site but the SEA recommended an alternative site assessment be undertaken. The southern and northern outfalls were identified only in phase 1 of the process. Mr O’Keeffe went through the process which was undertaken and which lead over a two year process to the site selection. (DAY 6 - 12.18).

Mr McGrath noted that the matter of alternatives is addressed in the legal submission. As a supplemental submission he noted that the **EIA Directive sets a requirement that the EIAR set out the reasonable alternatives**, not to assess every conceivable alternative. That has been done and the full background of the information has been put before the Board (Day 6-12.34).

The **option of tunnelling the entire route** was considered and a geological fault which was identified would have made tunnelling more difficult and resulted in a higher risk of bentonite breakout. In addition a much large tunnel would have been required. In relation to the length of the tunnel and whether it could have been longer Mr O’Keeffe noted that a significant structure would have had to be installed at the seabed if the tunnel was to be longer (and therefore in deeper water).

Ms Gough responded on a few issues. She commented on a **proposed cinder path** which had been requested by Fingal Council along the wayleave. She indicating that this would cause problems under the CPO and not to above ground works. The imposition of any condition on this matter would not be lawful as it would not be related to the development and the lands would not be in control of the applicant for that purpose. There would be no connection with the development either. She referred to limits on powers relating to public access as defined under the condition relating to the Old Head of Kinsale. The tests under the DMG would not be met notwithstanding that the request is related to a laudable planning objective.

Regarding a **community benefit fund** Ms Gough noted that the development is related to the provision of essential public infrastructure and the investment of significant funds. It therefore and of itself represents an inherent community benefit. The works proposed regarding reinstatement at compound 10 is also a gain and it is also highlighted that Irish Water will provide in-kind support for environmental / community projects as an extension to projects which it already funds. The additional cost to the public finances under a financial contribution condition would not be appropriate or warranted. It is considered that a condition relating to the naming of the WwTP facility would be acceptable (OH-76).

Submission OH-79 outlines Irish Water's opposition to a **community gain fund** and the matters which the Board might take into account including what special features of the project warrant the condition and how a fund might operate. Irish Water did accept that for a short duration relevant to the construction period a fund might be appropriate. Otherwise no such condition is appropriate. Agreement with FCC of a project name for Clonshaugh site is acceptable and could be addressed by condition.

**Eamonn Hart** (OH-77) handed in a document relating to **local history at Priorswood**.

**In the afternoon Mr McGrath** noted that the **decision to extend the Dublin Bay Biosphere** was made in the context of their knowledge of the GDD but that Irish Water had not made any **contact with UNESCO**. Mr O'Keeffe noted that the impacts on the seabed, the SAC and the SPA have been assessed and therefore the impact on the Biosphere has been assessed and the integrity of the Biosphere is not threatened. Ms Browne again requested contact with UNESCO.

Mr O'Keeffe gave more information on the chemicals used in the treatment plant and the manner of their storage (Day 6 – 14.44) and noted their extensive use in Ireland. At Dubber a bio-filter such as shells will be used. In relation to the possibility of chemicals entering the water he noted that any water would be re-circulated to the plant.

Mr Barker in response to a question on **tree survey** noted that FCC had referred to inadequate information on this matter. Using the digital data he indicated that a preliminary survey could be made available and could be followed at a later time with

an on the ground survey. Ms Bailey noted that the **Abbotstown demesne** has been already impacted and that the nature of the demesne has changed and that there is some specimen planting remaining. The small group of trees within compound 1 are being maintained and would not be visible from the house. No other specimen trees would be affected. Mr Murray noted that the concern about the tree survey extended to a desire that all relevant zones would be protected including those in the Abbotstown demesne.

Mr Barker noted that depiction of a plume if continuous might be appropriate and it was confirmed that there would be **no continuous plume** at the WwTP site. In relation to the level of flexibility in the development including for example the buildings at the WwTP site, Mr McGrath noted that the outer envelop of the buildings could be reduced and Mr O’Keeffe noted that the maximum height had been depicted as well as their located. The detail of windows and doors he noted could be agreed. FCC referenced condition 1 and condition 3 recommended in their report which refers to the external details of the structures to be agreed. The extensive use of poplars at the WwTP site was discussed.

Mr Grehan noted that **no contaminated lands** had been encountered. If encountered these soils would be appropriate disposed of which currently involves export abroad.

Mr O’Keeffe responding to a question on to **headroom capacity and industrial demand** reiterated the scenarios which were assessed. In the event of unforeseen industrial demand there is capacity to take substantially more industrial load.

**Fingal County Council (OH-78)** provided a suggested wording in relation to conditions relating to **road reinstatement and the payment of a special contribution** in the amount of €15,000 towards the cost of upgrade and signalisation of the R135 and the N2 North Bound Slip priority junction. The cost would be proportionate to the traffic generated from the RBSF. The critical nature of the junction and the overall capacity of the road network requires this work.

None of the observers made closing submissions.

**FCC re-iterated its support for the project** which is considered to comply with the zoning, vision and supporting objectives for the greenbelt and with the development plan including WT03 and WT05 and the NWSMP (OH-80).

Irish Water in closing (OH-81) described the project as one of the most important infrastructural projects to come before the Board in recent decades and emphasised the need for it to be progressed.

The hearing was thus concluded in terms of the planning application modules. The further sitting on 2<sup>nd</sup> of April was restricted to the CPO module.

#### **13.4. CPO – Written Submissions**

The written submission of the objectors are summarised above in the CPO section of this report.

#### **13.5. CPO - Oral Hearing Statements**

##### **13.5.1. Mr Holland's statement**

The proceedings are summarised in the main body of this report and the two main statements which were made with respect to the compulsory purchase application are summarised below.

Mr Holland suggested on opening that the authors of submissions in relation to the CPO report, the Engineer's Report, the Planning Report and the Routing Report would make very brief presentations. Ms Chambers, Ms Gough and Mr O'Keeffe would be made available for any questioning, if required. A further witness Mr Downes had a document, which responded to the objections. Mr Holland suggested that the precise response to objectors be deferred until the hearing has heard from the objector. Mr Downes would present part of the report however.

Mr Holland also suggested that it would be assumed that the Board does not require formal proofs as normal, except in the event of an objection from a party in relation to a particular plot. No such objection was made during the hearing.

Mr Holland referred to purpose of the hearing as being to progress the GDD Order, which was made by the Managing Director on June 18<sup>th</sup> on the recommendation of Ms Jane Chambers report, the Planning Report of Ms Gough of AOS and the Routing Report of Jacobs Tobin. The Order was made pursuant to Irish Water's compulsory powers and related matters such as compensation, which he indicated are all listed in the title of the CPO and which he outlined.

By letter of 20<sup>th</sup> June Irish Water sent all the documents to An Bord Pleanála. Irish Water relies on all submissions to An Bord Pleanála, particularly the closing submissions made and the Managing Director's Order in terms of why the CPO should be made.

The need for the project was identified as long ago as 2005. Over the next 30 years wastewater volumes are expect to increase in the order of 50%. It is therefore the view of Irish Water that **the project is necessary** from the point of view of public health and environmental protection and essential for the sustainable growth of Greater Dublin. It **has been prioritised as a key strategic investment in Project 2040** and the Dublin and Fingal development plans. The **alternative of small multiple wastewater plants** has been demonstrated to be a much inferior proposal. The project has been subject of a 7 year multi-phase consultation process.

Mr Holland handed in a series of overview strip maps that seek to show the folio boundaries held by the objectors to enable the acquisition to be put in place in the context of the overall holdings. Drg index 1 refers. A further set of drawings handed in were described as providing a more detailed depiction of the position with respect to the Craobh Chiarain GAA club, Connolly hospital and the its boundaries and the Shannon Homes lands. It also shows the lands acquired from the Jones family (in blue), the IDA, the Gannon holdings and thereby covers all plots for the WwTP site.

#### 13.5.2. **Mr Downes' statement**

Mr Downes presented his Precis of Evidence. He noted that **formal notice was served on the landowners, lessees and occupiers of the lands** affected by the CPO. He gave a brief description of the proposed development. A **key objective is to serve the north-west quadrant** of the catchment which currently drains to Ringsend WwTP. He noted that the diversion of load from the 9C sewer and the North Fringe Sewer to the GDD **will also reduce the load onto Ringsend**, which even with the planned upgrade is predicted to run out of capacity by 2024.

Mr Downes confirmed **that attempts were made to acquire the necessary interest over the land required by agreement** and that this was not possible. He referred to paragraphs 33 to 35 of the Engineer's Report.

He stated that the **project is required for Irish Water to fulfil its duties and functions, the land is suitable, and the project constitutes sustainable development, supports sustainable development in the GDA, and is in the community interest and for the common good.**

Regarding the lands, permanent wayleave and temporary working area and permanent rights of way Mr Downes confirmed that the plots are suitable and necessary for the purposes of the GDD.

Irish Water selected the site for the WwTP site and the pipeline route associated with that site based on the 4 stage ASA. Following phase 4 of the ASA process and the identification of the preferred WwTP site and associated pipeline and outfall a round **of consultations were undertaken with individual landowners affected.** The **route shown is the one which causes the least amount of disruption** taking into account the constraints.

He referred to the typical cross section of a wayleave and the typical cross section as shown in the drawings. **He referred to the typical 40m construction corridor and the need for construction compounds.** He referred to the need for trenchless techniques crossing at some locations and described what would be involved noting the need for extra temporary lands to accommodate the plant and so on. He referred to access chambers, manholes, and air valves, scour valves, and vent stacks. He noted that manholes or access chambers would be raised 600m above the surrounding ground which reduces the risk of damage by agricultural machinery by rendering them more visible. These will need to be accessed about every three years and it is not practical to bury them as any inspection or maintenance would then require bringing in heavy machinery. The location of chambers and vent shafts may be subject to change during detailed design. Insofar as possible they are located close to field boundaries.