Greater Dublin Drainage

Alternative Sites Assessment and Route Selection Report (Phase 4):
Final Preferred Site and Routes

Appendix 4
Consultation Response

June 2013

.

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List of Acronyms

AA	Appropriate Assessment
ARC	Activity requiring consent
ASA	Alternative Sites Assessment
BIM	Bord Iascaigh Mhara
CSO	Central Statistics Office
DAA	Dublin Airport Authority
DCC	Dublin City Council
EIS	Environmental Impact Statement
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
FCC	Fingal County Council
GDA	Greater Dublin Area
GDD	Greater Dublin Drainage
GDSDS	Greater Dublin Strategic Drainage Study
GLC	Ground Level Concentration
HGV	Heavy Goods Vehicle
HISA	Health Screening Impact Assessment
IAA	Irish Aviation Authority
IFI	Inland Fisheries Ireland
NPWS	National Parks and Wildlife Service
PE	Population Equivalent
PR	Preliminary Report
RPG	Regional Planning Guidelines
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SMP	Sludge Management Plan
SFPA	Sea Fisheries Protection Authority
SPA	Special Protection Area
WwTP	Wastewater Treatment Plant

1 Introduction

1.1 Introduction

The official name of the project is *Greater Dublin Drainage – Regional Wastewater Treatment Plant, Marine Outfall & Orbital Drainage System*

1.2 Client

The Client is Fingal County Council (FCC) as the Contracting Authority on behalf of Meath, Kildare, Dun Laoghaire / Rathdown and South Dublin County Councils and Dublin City Council.

1.3 Project Engineering Consultant

Following a competitive tender process Jacobs Engineering Ireland Ltd. supported by TOBIN Consulting Engineers was appointed to act as Project Engineering Consultant on this project with formal signing of Contract on the 14th March 2011.

1.4 Project Communications Consultant

Following a competitive tender process RPS Project Communications was appointed by FCC to act as Project Communications Consultant on this project.

1.5 Project Stages

The Project is divided into a number of stages as follows:

- Sub-stage (a): Project Inception
- Sub-stage (b): Alternative WwTP Site Assessment (ASA) / Pipeline and Marine Outfall Route Selection Report
- Sub-stage (c): Preliminary Report (PR)
- Sub-stage (d): Environmental Impact Statement (EIS)
- Sub-stage (e): Wayleave / Land Acquisition
- Sub-stage (f): Additional Reports
- Sub-stage (g): Planning Process
- Sub-stage (h): Any Other Work

1.6 Objectives

1.6.1 Objectives of overall Scheme

The core requirement of the Greater Dublin Drainage project is to safely deliver through the entire planning process a:

- Regional Wastewater Treatment Plant (WwTP) and associated marine outfall located at a site, to be selected as part of this process, in the northern part of the Greater Dublin Area (GDA), and
- an Orbital Drainage System linking the Regional WwTP to the existing regional sewer network and to provide for future connections for identified developing areas within the catchment.

1.7 Introduction to Submissions Report

Public consultation was undertaken on the emerging preferred site options from the 14 May 2012 to 06 July 2012. The concerns and issues raised by all stakeholders during this time were reviewed and collated by the project Communications Team and documented in the *Public Consultation Report on 'Alternative Site Assessment Phase Two: Emerging Preferred Sites and Route, May 2012'.* This Submissions Report, which will be incorporated into the *Alternative Sites Assessment and Route Selection Report (Phase 4),* is intended to provide general overall responses to the submissions received at this consultation. This report follows the same layout as that of Chapter 3 of the Public Consultation Report with respect to the individual issues raised and should be read in conjunction with that report.

2 Agriculture and Horticulture

2.1 General

The importance of the Fingal region in terms of national agricultural and horticultural production is acknowledged by the project team. The appearance of the proposed Regional WwTP will be appropriately designed and screened to minimise the impact on the surrounding area. When operated in accordance with the appropriate legislation and approved licences, the proposed Regional WwTP will have no impact on the surrounding agricultural land, again ensuring there will be no impact on Fingal as an area of importance in national food production.

Potential impacts on agriculture and horticulture were identified by the Project Team as soon as the locations of the land parcels became apparent during the preliminary screening stage. As a result an Agronomist was brought into the team at this early stage. A detailed assessment was undertaken by the Agronomist as part of the ASA and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Details of this assessment, including land quality, details of crop production figures and values obtained from the relevant bodies, are provided in the ASA – Phase 2 Agronomy Assessment report included as Appendix 11 of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes*. This assessment will continue as part of the Environmental Impact Assessment on the preferred site option, once identified.

Furthermore, consultation has been ongoing throughout the process with relevant bodies including the Food Safety Authority of Ireland, Bord Bia; Teagasc and representatives of the local crop growers to ensure that there will be no impact from the GDD on the high quality agricultural and horticultural standards in Fingal.

2.2 Site Specific Issues

County Dublin has a total Utilisable Agricultural Area of 37,963 hectares (CSO Census of Agriculture, 2010). This represents approximately 0.80% of the national agricultural land area. Fingal has a total Utilisable Agricultural Area of 27,709 hectares.

The proposed Regional WwTP will occupy an area of approximately 20ha of agricultural land, which represents 0.005% of agricultural in the County.

Development of this small area will not deplete or 'destroy' the vegetable producing lands in Fingal. A WwTP, operated in compliance with all relevant legislation and licence conditions, will not have a negative impact on the horticultural industry in the area nor will it constitute a threat to the 'Fingal Brand'.

The proposed Regional WwTP, which will be designed and constructed to current best practice with all sewage tanks and treatment units covered or enclosed in buildings, and operated in compliance with all relevant legislation and licence conditions, should not be considered as 'unhygienic'. The proposed Regional WwTP designed, constructed and operated as above will not affect the high quality and reputation of

Fingal's agricultural and horticultural produce. Furthermore, when operated in accordance with the appropriate legislation and approved licences, the presence of the WwTP will not affect the organic status of existing farms in the area.

The impact of the proposed Regional WwTP upon natural habitats of honey bees within the area will be negligible. Depending on the size of the plant, any existing drone congregation area (DCA) is likely to continue with the proposed Regional WwTP in place as insects are extremely adaptable to human influence. Honeybees and other insects have been observed feeding on nectar from plants at WwTPs and landfill sites. Honey bees generally forage over a 4km radius from their hives and have been shown to forage up to an 8km radius.

The proposed Regional WwTP could be considered as a number of smaller plants on the same site with a common inlet pipe and a common outlet pipe as it will be designed with parallel process streams. This concept will also encompass the concept of 'redundancy' in its design. This implies that spare capacity will be provided to allow unit processes to be taken off line for planned maintenance or in the case of a breakdown in an element of the plant. It also implies a 'looped' supply for electricity, and full standby generators in the event of power failure. Furthermore the potential for leakage from the pipelines will be considered in detail and mitigated through design and construction methods.

Construction activities will be restricted by appropriate mitigation measures to limit any potential impact from dust on adjacent crops during this period. Such measures may include but not be limited to:

a. Preparation and implementation of a dust management plan
b. Timing restrictions on aspects and methodologies of construction
c. Stripping of topsoil and subsoil excavation at limited time periods
d. Management of spoil heaps
e. Physical barriers at appropriate locations
f. Sprinkler/water spray systems
g. Appropriate construction of haul routes
h. Site traffic control
i. Hauled materials management
j. Site access/exit controls

In addition a programme of dust monitoring will be implemented which will include, pre- during- and post-construction.

The proposed Regional WwTP will be operated in accordance with current planning and licensing requirements, designed to protect public safety and public health. This includes the need to comply with the Urban Wastewater Directive, the Fingal County Council Odour Control Policy (March 2007) and the requirement to operate within standard EPA air quality and noise limits.

Since 2007 all discharges from sewerage systems of the size proposed that are owned, controlled or used by water service authorities, require a waste water discharge licence from the EPA. The authorisation process provides for the EPA to place conditions on the operation of discharges and to set emission limit values for the

discharges to achieve good surface water status and good groundwater status as is required by the Water Framework Directive. Waste water discharge authorisations also require monitoring and reporting of discharges and thus allow a comprehensive assessment of the environmental performance of plants.

No spillages will occur at the plant. Overflow tanks will be included as part of the plant construction, in additional to further overflow tanks in the upstream catchments which will be brought into use on occasions of storm conditions or in case of any fault in the system. In the case of emergency, any overflow will be discharged to the marine environment or to appropriate watercourses in the upstream catchment. Additionally, an on-site emergency plan would be required for the proposed Regional WwTP, prior to plant operation, to establish procedures for any spill or plant emergency.

3 Climate Change

3.1 Climate Change

The potential impacts of Climate Change are being considered during the design process. These impacts generally relate to consideration of rainfall events of higher intensity, typically in the range of 10% - 20% increase, and greater frequency of occurrence, and also to consideration of rise in sea levels.

These considerations inform the design of the orbital sewers, outfall pipe and any requirements for the provision and sizing of stormwater storage facilities, both on the site of the propsoed Regional WwTP and upstream in the relevant catchments. It is acknowledged that stormwater storage facilities are typically designed to retain up to and including the surface runoff from a storm / rainfall event having a recurrence of 1 in 5 years. Stored volumes will then be passed through the treatment processes once the storm event has abated. Runoff in excess of the stormwater storage facility's capacity will overflow to adjacent waterbodies.

The predicted rise in sea levels around the Irish coast as a result of Climate change is an important consideration in the design of the outfall pipe to ensure that the discharge of treated effluent from the proposed Regional WwTP is achieved under all conditions.

The Greater Dublin Strategic Drainage Study (GDSDS) undertook a review of local authority drainage practices in regards to Climate Change. Volume 5 of the GDSDS Regional Drainage Policies Technical Document includes a technical overview of the policies recommended for addressing climate change including the impacts of rainfall and sea level rise. Consideration to the policies recommended in this document will be given during the development of the proposed Regional WwTP.

3.2 Carbon Footprint

An initial high level carbon footprint assessment was undertaken for each of the site options as part of the Phase 2 Alternative Sites Assessment (ASA) and Route Selection stage. This assessment concentrated primarily on the transfer pipelines as the carbon footprint for the proposed Regional WwTP will be relatively similar for all sites. Details were provided in Appendix 16 of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes.*

As previously noted, energy conservation and minimisation of carbon emissions are two key considerations which will be investigated as part of the preliminary design of the proposed Regional WwTP, orbital sewer and outfall pipeline route and marine outfall.

4 Community Impact, Community Burden / Overburden

4.1 Community Impact

The potential for impact on people and communities has been considered specifically under the People and Communities criteria in the ASA Phase 2 assessment. More significantly, impact is intrinsically considered by each of the individual environmental and technical criteria e.g. Air and Odour is considered with respect to adjacent sensitive receptors; Traffic is considered with respect to the impact to the surrounding road network which arises as a result of considerations to the impact to road users etc. In addition to the impacts on identified amenities, impacts upon agricultural land, recreation, property values, community burden, livelihoods, and other general socio-economic considerations are also discussed in sections 4.1.1 - 4.6.

The option of having a number of smaller wastewater treatment plants, rather than one regional plant, was given significant consideration as far back as 2005, as part of the GDSDS. The issue was considered again in 2008 when the Strategic Environment Assessment (SEA) report was published.

Both the GDSDS and the SEA reports confirm that one large regional plant will have a lesser impact on the environment than a large number of smaller plants discharging to ground/surface waters across the GDA and the decision was made to progress the scheme based on one Regional WwTP.

The local rivers and streams across the GDA are too small to be able to absorb the cumulative impacts of treated effluent from a large number of smaller plants. The predicted impacts of climate change and the possibility of stricter surface or ground water legislation in the future also rules out a number of small local plants and confirms the need for the one regional plant to augment existing wastewater treatment capabilities within the GDA.

Furthermore, capital cost estimates for all the scenarios considered in the GDSDS are included in the Fingal Strategy Report. Economic factors were also considered on a relative basis in the SEA. It was determined that the most cost-effective option was a single regional WwTP.

It is acknowledged that there may be some disruption to local residents during the construction period; however this will be mitigated through implementation and enforcement of appropriate environmental management measures. During the Operational phase of the plant, the use of appropriate architectural treatments and screening techniques combined with appropriate management of the plant will ensure that any potential impacts are minimised.

4.1.1 Site Specific Issues – Clonshagh (Clonshaugh)

Submissions raised in relation to consideration of sensitive receptors within the administrative area of Dublin City Council are acknowledged. It is noted that while reference was made to Fingal and communities within Fingal, consideration was given

throughout the assessment to communities within the Dublin City Council area. This was demonstrated both previously in the *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report* which showed the identification of sensitive receptors within this administrative area and within the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* through the identification of population areas of Darndale and Belcamp which are located with the Dublin City Council area.

The community amenities identified including Craobh Ciaran Hurling Club and settled traveller communities at Caragh Park and Northern Park have been considered as sensitive receptors, in the same manner as other residential and commercial receptors, in the Alternative Sites Assessment and Route Selection to date, under the socio-economic assessment. In addition, all identified sensitive receptors are considered as part of the Air and Odour, Noise and Vibration and traffic assessment and, where relevant, in the environmental assessments including Landscape and Visual and Cultural Heritage.

4.1.2 Site Specific Issues – Northern Site Options

The agricultural nature of the area will be considered when architectural treatments and screening measures are being developed for the proposed Regional WwTP should either of the northern sites be selected as the preferred site.

There will be no visual impact from the outfall pipe once construction is completed. The hydrodynamic modelling undertaken as part of the assessment is used to identify the optimum location for the discharge point in the marine environment based on considerations of the movement and dispersion of the treated effluent as a result of tides and currents. The treated effluent will be required to comply with all relevant legislation and water quality standards including Blue flag; bathing water directive etc.

4.2 Community Overburdening and Community Burden

The premise of the Greater Dublin Drainage project is to identify a location for a Regional WwTP in the northern part of the Greater Dublin Area (GDA). This decision was made as part of the previous Greater Dublin Strategic Drainage Study (GDSDS) and its associated SEA.

The GDD is one of a number of recommendations of the GDSDS which was commissioned as a result of the broadening gap between developing load in the Greater Dublin Area (GDA) and the maximum load which can be delivered to, and treated at, the existing treatment plants in the catchment, and primarily at Ringsend WwTP. Implementation of the GDD will facilitate future growth and development within the GDA as a whole.

As the GDD is a regional project, its location and subsequent benefits must also be considered on a regional scale. The ASA and Route Selection considered the entire northern GDA (as recommended in the SEA) during the identification of the preferred site options. The presence of the plant will facilitate future growth and development within the GDA as a whole, including all areas of Fingal. Without the plant, future

development within Fingal will not be permissible, as there is no available development capacity within the existing WwTP for the county.

Furthermore, community burden / community overburdening is assessed indirectly from an environmental perspective by measuring the impact on environmental parameters such as air quality, ecology, noise etc. By ensuring the impact on these parameters is as low as possible (or mitigated when unavoidable,) any corresponding impact on the local communities is avoided or minimised.

4.2.1 Site Specific Issues – Clonshagh (Clonshaugh)

Comments raised in relation to previous undelivered development in the region is acknowledged, however it should be noted that the GDD is strategic infrastructure, is not-developer led and is necessary in order for the GDA as a whole to continue to grow and develop into the future. Restrictions will be imposed during construction of the plant and associated infrastructure in order to minimise potential impacts on the surrounding community.

The basis for the size of the proposed Regional WwTP was detailed in Chapter 2 of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* and is based on conservative growth parameters for the GDA. The decision to progress one regional plant is outlined in section 4.1 above.

The project team are aware of the area of contaminated land on the I.D.A. owned lands just north of the N32. This was taken into account when siting the WwTP site within the overall Clonshagh (Clonshaugh) land parcel.

Air Quality has been assessed as part of the ASA Phase 2 assessment previously completed. Clonshagh (Clonshaugh) was considered with respect to the existing background considerations including Dublin Airport. It was still considered appropriate to allocate a rating of imperceptible with respect to both Air Quality Construction Phase Impact and Operational Phase Impact. However, the preferred site will be subject to further air quality assessments to determine whether there will be any residual impact and if so what mitigation measures are necessary to meet legislative standards.

The proposed Regional WwTP, operated in compliance with all relevant legislation and licence requirements will not result in any hazardous or toxic impacts on the environment. Furthermore the proposed Regional WwTP will be given architectural treatment and screening appropriate to its surrounding environment and will be operated in accordance with all health and safety standards thereby eliminating any potential safety or community nuisance impacts.

4.2.2 Site Specific Issues – Northern Site Options

The cumulative environmental effects of existing projects in the area will be assessed in line with environmental impact assessment (EIA) requirements. The project team are aware of previous levels of disruption which have occurred as a result of ongoing construction projects. While it would be disingenuous to suggest that there would be no disruption to local residents during the construction period, this will be mitigated

through implementation and enforcement of appropriate environmental management measures.

The GDSDS was funded under the National Development Fund 2000 – 2006 and Dublin City Council were appointed as the contracting authority with input from the other local authorities within the GDA. The GDD is being managed by FCC on behalf of Meath, Kildare, Dun Laoghaire Rathdown and South Dublin County Councils and Dublin City Council. Therefore the location of the proposed plant within the North Fingal area is as a result of significant studies over a long time period with input from all of the affected Local Authorities within the region and not just Fingal County Council.

The GDSDS recommended the provision of additional treatment capacity within the Greater Dublin Area (GDA) to meet the broadening gap between developing load in the GDA and the maximum load which can be delivered to, and treated at, the existing treatment plants in the GDA, and primarily at Ringsend WwTP. It recommended that this additional treatment capacity be provided by upsizing the existing WwTPs in the GDA to their maximum ultimate capacity and construction of a new Regional WwTP. On foot of these recommendations the WwTP at Barnageeragh, serving Balbriggan and Skerries, has already been upgraded. A new WwTP at Portrane, which will serve Portrane, Donabate, Rush and Lusk, has recently been constructed. Plans are well advanced to upgrade the WwTPs at Swords, Leixlip and Osberstown. The propsoed Regional WwTP will provide the balance of treatment capacity required in the GDA to design year 2040. On completion of these projects modern wastewater treatment facilities will be provided to the benefit of communities in the GDA.

Restrictions will be imposed during construction of the plant and associated infrastructure in order to minimise potential impacts on the surrounding community.

4.3 Livelihood

Implementation of the GDD will facilitate future growth and development across the entire GDA.

Impact on individual agricultural holdings was addressed as part of the Agronomy assessment completed as part of the ASA Phase 2 assessment. Commercial properties were also considered as sensitive receptors in the initial Phase 1 - Preliminary Screening assessment and again as part of the Socio – Economic assessment at ASA Phase 2.

The impact of the proposed development (at both construction and operational phases) on commercial activity in the vicinity of the plant, including tourism/amenity sector activities, fishing and sensitive agriculture sectors such as horticulture, will be further explored as part of the dedicated socio-economic assessment of the Environmental Impact Assessment (EIA).

The treated effluent to be discharged from the proposed Regional WwTP to the marine environment off the coast of North County Dublin will have to comply with the wastewater discharge licence to be granted by the EPA. It will also have to comply with all relevant legislation and water quality standards. As such it will not impact on the local fishing industry.

The operation of the plant will facilitate future development and growth within the GDA which will consequently provide benefits to the development and commercial entities within Fingal.

4.4 Property Devaluation

Comments raised in relation to property devaluation in the vicinity of the plant are acknowledged. During the next phase of the socio-economic assessment, consideration will be given to the potential impact on property valuations in the vicinity of the preferred site for the proposed Regional WwTP.

4.5 Recreation and Amenity

The proposed Regional WwTP will require a waste water discharge licence to be granted by the EPA under the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I No. 684 of 2007) prior to commissioning of the treatment plant. This licence will set emission discharge limits for a range of parameters, which the treated effluent discharge will be required to comply with.

Within the coastal zone of the study area there are many designated bathing waters, some with 'Blue Flag' status, as well as designated shellfish waters, SPA's and SAC's all of which set additional water quality standards which will also apply to the discharge from the proposed Regional WwTP and include:

- Quality of Shellfish Waters Regulations (S.I. No 200 of 1994) as amended;
- European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. No 272 of 2009);
- Quality of Bathing Waters Regulations (S.I. No 155 of 1992) as amended; and
- The water quality standards required by the Blue Flag Beach Programme.

Hydrodynamic modelling of the discharge point will be undertaken to access the impact of the treated effluent discharge on the receiving waters outside the limits of the discharge mixing zone and to access the implications for compliance with these Directives / Regulations.

The final location of the marine outfall will be based on the hydrodynamic model to ensure the maximum dilution and minimum impact to the surrounding water quality and receiving environment. The discharge from the plant will be required to satisfy the relevant legislative and licensing conditions, including bathing water and shell fish regulations, thereby ensuring that when correctly operated there will be no impact on the Fingal coastline.

4.6 Socio-economic Issues

The potential for impact on people and communities has been considered specifically under the People and Communities criteria at the ASA Phase 2 assessment. An in-depth socio-economic assessment will be undertaken on the preferred site option as part of the EIA. Sections 4.3, 4.4, 17.1, and 19.3 of this document also discuss socio-economic considerations.

5 Consultation

5.1 General

The non-statutory consultation held to date for the GDD project was with respect to the provision of a Regional WwTP in the northern part of the Greater Dublin Area (GDA). The consultations held as part of the GDD were to gather information and detail on the potential constraints to the siting of such a plant in this area.

As a result of the submissions received during the initial consultation period we have engaged a number of specialists, including Agronomists earlier than had previously been considered appropriate. We have also identified and met with local groups and organisations including local fishermen and fruit and vegetable growers.

The assessments, including GDSDS, SEA and ASA Phase 2, undertaken to date and their associated costs were necessary to ensure that the best location for the proposed Regional WwTP is identified. While the overall load comes from the GDA, the specific load centres discharging to the proposed Regional WwTP were dependent on existing and future treatment capacities within the region. Detailed consideration of load projections was therefore necessary to identify the most appropriate loads for diversion. While there were general restrictions on the location of the outflow pipe i.e. shellfish waters, the specific location is dependent not just on the plant location and load centres but also on the ground and hydrodynamic conditions in the marine environment.

All of the above studies have associated costs and are vital to ensure that the project progresses with consideration for all environmental and technical aspects associated with the siting of a regional WwTP.

5.2 Site Specific Issues – Clonshagh (Clonshaugh)

Greater Dublin Drainage is a Fingal County Council initiative on behalf of the other relevant local authorities, including Dublin City Council, within the GDA. Dublin City Council have been involved in the project from the outset through inclusion on the Project Steering Committee.

In order to provide accessibility to all, it was deemed appropriate to hold all Open Days at FCC headquarters in Swords, however as part of the consultation a full project awareness campaign across all regional areas was implemented. This campaign included advertising in national newspapers, press releases, online media, elected members engagement, posters and meetings with stakeholders.

5.3 Site Specific Issues – Northern Site Options

The GDD project team have shown a willingness to meet with any community group or organisation who have made such a request. Fingal County Council has endeavoured from the start of this project to have an accessible, meaningful and accountable public consultation. One of the elements of accessibility is to ensure that all stakeholders

have the opportunity to engage with the Project team. Our Open Day meetings were held, therefore, at the headquarters of Fingal County Council in Swords as the atrium there has space which is convenient for public engagement and the area is central, fully accessible and with easy options for transport access.

6 Cultural Heritage and Archaeology

6.1 Site Specific Issues – Clonshagh (Clonshaugh)

All designated cultural heritage or archaeological sites within the study area were identified at the Phase 1 - Preliminary Screening assessment and were avoided in the identification of the original land parcels. Cultural Heritage and Archaeological potential on all of the sites, including Clonshagh (Clonshaugh), were considered as part of the ASA Phase 2 assessment. Based on the specialist assessment, there is no potential for direct or indirect impact on any National Monuments at the Clonshagh (Clonshaugh) site. There is potential for indirect imperceptible negative impacts on a number of designated sites and also an indirect moderate negative and indirect slight negative impact on previously unrecorded sites. These potential indirect impacts were accounted for in the ASA matrix assessment documented in the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes.*

Geophysical assessment will be undertaken on the emerging preferred sites prior to identification of the preferred site in order to provide further data on the potential for unknown archaeological sites to be discovered.

The potential for impact on marine cultural heritage and archaeology was also considered as part of the ASA Phase 2 assessment and is also documented in the above report.

6.2 Site Specific Issues – Northern Site Options

As above, all designated cultural heritage or archaeological sites within the study area were identified at the Phase 1 - Preliminary Screening assessment and were avoided in the identification of the original land parcels. Cultural Heritage and Archaeological potential on all of the sites were considered as part of the ASA Phase 2 assessment.

The Project Team are aware of the ongoing work of the Discovery Programme, have met with the team and have taken the knowledge provided into account in identification of the refined pipeline route.

Geophysical assessment will be undertaken on the emerging preferred sites prior to identification of the preferred site in order to provide further data on the potential for unknown archaeological sites to be discovered. It is likely that additional geophysical assessment will be required at a later date on the pipeline routes to provide similar confirmation prior to the commencement of any construction works.

7 Ecology and Environment

7.1 General

As outlined previously, the proposed Regional WwTP will require a waste water discharge licence to be granted by the EPA under the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I No. 684 of 2007) prior to commissioning of the treatment plant. This licence will set emission discharge limits for a range of parameters, which the treated effluent discharge will be required to comply with. Effluent treated to these standards will have no negative impact on the marine eco-system. It should be noted that consultations have been ongoing with relevant marine bodies and the local fishermen.

Legislatively designated areas (SACs and SPAs) were identified at the Phase 1 - Preliminary Screening assessment and avoided in the identification of the land parcels. Such designated areas were also avoided where possible in the development of the pipeline route. Consultations have been ongoing with NPWS with respect to any potential impacts on these designated areas. Furthermore, following identification of the preferred site and routes, an Appropriate Assessment (AA) in accordance with the Habitats Directive will be carried out to determine whether the project may have any impact on any designated areas and whether proposed mitigation measures will be sufficient to facilitate development of that particular site option.

It is acknowledged that the Rockabill to Dalkey Island cSAC (site code 003000) has subsequently been designated along the North Fingal Coast for the protection of the harbour porpoise. As noted, consultation was ongoing with NPWS and the project team were aware of the potential for such a designation. Furthermore, the harbour porpoise is a protected species and had to be accounted for irrespective of any designation. Therefore this cSAC has been considered during the Alternative Sites Assessment and Route Selection undertaken to date.

Hydrodynamic modelling of the discharge point will be undertaken to access the impact of the treated effluent discharge on the receiving waters outside the limits of the discharge mixing zone and on the marine designations. The final location of the marine outfall will be such that, during normal operations, there will be no impact on any designated areas.

7.2 Site Specific Issues – Clonshaugh (Clonshaugh)

As part of the EIA, ecological surveys will be undertaken along the length of the final pipeline routes and on the final site, which will include consideration of any protected flora.

While all protected sites have been considered both as part of the Phase 1 – Preliminary Screening and the ASA Phase 2 assessment, an AA screening in accordance with the Habitats Directive will also be undertaken on the final preferred site option. This assessment will determine whether there are likely to be any

significant impacts on Natura 2000 sites and if so, the methodology for addressing this will be outlined.

The potential for ecological impact on all of the site options, including Clonshagh (Clonshaugh), was considered as part of the Phase 2 ASA stage. Based on the specialist assessment, there is a slight potential for impact on the Natura 2000 sites at Baldoyle Bay and this was accounted for within the ASA matrix assessment. Potential for impact on the Fingal Ecological Network site of the Moyne River was considered to be significant and was also accounted for within the assessment. It should be noted that within the overall Ecology criteria potential for impact on Fingal Ecological Network sites was not considered as significant as the potential for impact on Natura 2000 sites. However, should Clonshagh (Clonshaugh) be identified as the preferred site option, all impacts will have to be considered and appropriate mitigation measures developed. It will then be a consideration of An Bord Pleanála, once the planning permission is submitted, as to whether the proposed mitigation measures are sufficient.

Consultation has been ongoing with NPWS with respect to potential impacts from construction within designated sites along the proposed outfall pipeline route. It is acknowledged that the environmental designations around the Baldoyle Estuary provide significant constraints to a southern outfall unless it is feasible to tunnel under these sites to avoid significant adverse impacts. Further investigative works are ongoing to determine the feasibility of such construction methodologies.

All investigation works in or within the vicinity of any designated sites will require either an AA screening assessment for land based works or an ARC (activity requiring consent) for marine works to ensure there will be no negative impact.

7.3 Site Specific Issues – Northern Site Options

As part of the EIA, ecological surveys will be undertaken along the length of the final pipeline routes and on the final site, which will include consideration of any protected flora.

While all protected sites have been considered both as part of the Phase 1 – Preliminary Screening and the ASA Phase 2 assessment, an AA screening in accordance with the Habitats Directive will also be undertaken on the final preferred site option. This assessment will determine whether there are likely to be any significant impacts on Natura 2000 sites and if so, the methodology for addressing this will be outlined.

The presence of bee colonies within the vicinity of the northern sites has been considered following receipt of the relevant submission. Subject to the identification of the preferred site option, the breeding programme and colonies will be considered as part of the ecological assessment for the EIA.

The presence of the marine research site at Rush, Co Dublin is acknowledged. However, the proposed location of the northern marine outfall will be based on the hydrodynamic model to ensure the maximum dilution and minimum impact to the surrounding water quality and receiving environment.

Furthermore, site specific issues identified in stakeholder submissions have been raised with the relevant specialist to ensure they are fully considered as part of the EIA.

8 Fishing

8.1 General

Consultation has been ongoing with relevant bodies including Bord Iascaigh Mhara (BIM) and the Sea Fisheries Protection Authority (SFPA) in relation to the fishing industry in existence along the North Dublin Coast. Furthermore, meetings have been held with representatives of the local fishermen. As noted previously, the treated effluent will be required to comply with the licensing limits set by the EPA, in addition to a number of other water quality standards including those set by the Quality of Shellfish Waters Regulations (S.I. No 200 of 1994) as amended. The ongoing hydrodynamic modelling will also serve to ensure that the treated effluent will not impact on the shellfish within the area.

The shellfish designations at Malahide and Skerries have been implemented by the Department of the Marine and as such these marine areas are afforded legal status to ensure protection and/ or improvement of these water bodies with respect to the presence of shellfish. From information gathered at the first public consultation, the Project Team are aware of the presence of shellfish along the full length of coastline within the study area. As a result, and as noted above, the effluent discharged from the proposed Regional WwTP will be required to comply with the requirements of the relevant Quality of Shellfish Waters Regulations.

8.2 Site Specific Issues

The importance of the shell-fishing industry has been acknowledged by the project team and considered in the identification of the final marine outfall locations for both the Northern Site Options and Clonshagh (Clonshaugh).

9 Health

9.1 General

The provision of adequate and safe wastewater collection, treatment and disposal is an essential requirement for ensuring the health of communities. The GDSDS determined that wastewater treatment within the GDA is nearing its ultimate capacity in the relatively near future. Therefore while the GDD is required to permit growth and development in the region, neglecting to address the current capacity needs will also ultimately affect public health as the population continues to grow.

Modern WwTPs are operated with appropriate safeguards to ensure that there are no significant health risks to the general population.

In accordance with the EPA Guidelines for Environmental Impact Statements, human health is considered within an EIS through observance of and reliance upon recognised national and international standards.

Furthermore, while not a statutory requirement, in order to ensure all potential health issues raised by stakeholders are addressed, a Health Impact Screening Assessment (HISA) will be undertaken in advance of the EIA. Health issues, which are of local concern to the GDD project will be identified by this assessment and will be considered as part of the relevant individual assessments in the EIA.

Best practice at new and refurbished WwTPs is to cover exposed tanks and to provide odour treatment on any released gases. Such measures will limit the attraction for vermin, including flies and mosquitoes, to the site and the potential for odorous and bacterial emissions.

10 Hydrology and Hydrogeology

10.1 Site Specific Issues – Clonshagh (Clonshaugh) Site Option

Known flood locations within the study area were identified at the Phase 1 - Preliminary Screening assessment and were avoided in the identification of the original land parcels. Areas prone to flooding in the vicinity of all of the sites, including Clonshagh (Clonshaugh), were considered as part of the ASA Phase 2 assessment. Based on the specialist assessment, the potential for any impact was considered imperceptible. Any potential hydrological impacts were accounted for in the ASA matrix assessment.

Ground and soil conditions were also considered in the ASA matrix assessment under the Soils and Geology criterion.

It should be noted that only direct surface water run-off will be discharged directly from the proposed Regioanl WwTP site itself and such discharges will be attenuated to appropriate Greenfield run-off rates, in accordance with best practice guidelines including those set out in Fingal's Development Plan and treated where necessary, prior to discharge to appropriate surface water drainage or watercourses.

All tanks on the site will be sealed, therefore there is minimal risk to the water table from the potential for leakage from the site.

11 Need

11.1 General

The need for additional wastewater treatment capacity within the GDA was determined as part of the GDSDS and its associated SEA which were completed in 2005 and 2008 respectively. From the outset it has been acknowledged by the Project Team that the assessment of potential growth in the catchment would need to be reconsidered in light of current economic conditions. Such a review has been undertaken and is summarised in Chapter 2 of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes.* Further detail will be provided in the Preliminary Report for the project to be published. Furthermore, reviews of available population data will continue throughout the lifetime of the project, as more recent data becomes available in order to ensure that the scale of the proposed plant continues to be appropriate.

11.2 Cost

As noted above, it has been confirmed through previous substantial and considered studies and through updated assessments as part of this current phase of the project, that additional wastewater treatment capacity is required in order to facilitate future growth within the GDA. One of the requirements of the GDD project is to ensure that, within the already agreed parameters, the most cost effective solution is determined.

The GDSDS and SEA considered costs at a comparative level with respect to the identification of one single regional plant as being the best option for treatment within the region.

Detailed estimates for the total cost of the GDD have not been finalised at this stage and cost surrogates have been used to date in the ASA matrix assessment. Cost surrogates within the ASA matrix include length of pipeline; power requirements and number of infrastructure crossings. However, it should be noted that the overall cost of the GDD project is expected to be in the region of several hundred million. The € 2 billion figure referenced in a number of stakeholder submissions refers to all wastewater projects in the GDA identified by the GDSDS.

The inclusion of cost surrogates within the ASA matrix assessment effectively constitutes a cost comparison for the 9 site options. Preliminary cost estimates for the emerging preferred site options will be provided in the *Alternative Sites Assessment and Route Selection Report (Phase 4): Final Preferred Site and Routes.*

It is acknowledged that the northern site options include significantly greater lengths of pipeline and while this has been considered in the ASA matrix assessment as described above, there are other considerations, including pipeline construction methodologies, related to the Clonshagh (Clonshaugh) site option which may outweigh the reduced pipeline lengths. Further studies are currently ongoing as part of the next phase of the ASA in order to provide clarity on such issues.

It should be noted that while cost effectiveness is a highly relevant and significant concern, without the proposed Regional WwTP, any future growth within the GDA will be halted by approximately 2020. Furthermore, cost is just one of a number of criteria which must be considered when identifying the preferred site option as the cheapest option may not always be the most sustainable or have the least impact on the local population. The ASA Phase 2 matrix assessment considered all these factors in the identification of the emerging preferred site options.

11.3 Multiple small plants VS large regional plant

The identification of one Regional WwTP with associated works as the most appropriate option to provide a long term solution to the need for wastewater treatment capacity in the GDA was determined by the GDSDS in 2005 and confirmed by its associated SEA in 2008. The GDD project, is tasked with identifying a site for a Regional WwTP and associated marine outfall, in the northern part of the GDA. As demonstrated in the *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report,* the study area for the project was determined on this basis.

The proposed Regional WwTP will be phased in to accommodate future growth in the catchment and could be considered as a number of smaller plants with a common inlet and outlet pipe as it will be designed with parallel process streams.

Notwithstanding the above, multiple smaller plants would require the identification of multiple outfall locations within the GDA. The GDSDS considered this option, and determined that the watercourses within the GDA were not suitable for such a purpose as they are already at maximum capacity. Furthermore, multiple smaller plants increase the potential for possible failure with emergency discharges to inland waterways. The potential for long term environmental damage is significantly greater should discharges occur to inland watercourses then to the marine environment which has a much greater assimilative capacity.

11.4 Size

As noted above, a review of the population growth figures, which inform the determination of the need for and size of the proposed plant, has been undertaken as part of the GDD which indicated a growth in population that is expected to continue within the region in the future. This review included an analysis of the latest CSO population figures for 2011, details of which were provided in the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes.* The review concluded that the scale of the proposed plant was still appropriate but that the population equivalent to be treated had reduced from 880,000 PE to 740,000 PE approximately.

11.4.1 Site Specific Issues – Clonshagh (Clonshaugh)

The assessments undertaken to date, including the GDSDS and SEA have identified the need for additional treatment capacity and thoroughly examined the potential alternative. As noted above, the scale of the proposed Regional WwTP has been

reviewed as part of this phase and this project is required to provide wastewater treatment capacity for the region to 2040.

The assessments undertaken to date have all been founded on the consideration of a Regional WwTP of the scale required. As detailed in the *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report,* a WwTP of this scale requires a site of approximately 20 Ha to facilitate the required processes and allow scope for screening of the required buildings and tankage. All sites shortlisted in the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* satisfied this size requirement.

Any expansion above this size will be the subject of a separate assessment and it is not appropriate to consider potential sites on the basis of lands which may not be available at a significant future date.

As stated above, in section 4.2, a WwTP constructed and operated in accordance with relevant legislation and licensing conditions will have no adverse impact on the surrounding area.

11.4.2 Site Specific Issues – Northern Site Options

As stated above, in section 4.2, a WwTP constructed and operated in accordance with relevant legislation and licensing conditions will have no adverse impact on the surrounding area. Furthermore, section 11.4 above details the basis for the scale of the proposed plant.

The assessment of the population figures undertaken as part of the ASA included the latest figures arising from the 2011 census which would reasonably be considered to include for the worst of the economic changes which have occurred in recent years. This assessment also considered the Regional Planning Guidelines (RPGs) which set out target population figures for the country. The RPGs provide strategic policy and recommendations on the provision of adequate treatment capacity within the GDA and are a national strategy document which should be considered in the development of the GDD project.

12 Odour

12.1 General

As noted above, new and refurbished WwTPs generally incorporate covers to exposed tanks and provision of odour treatment for any released emissions. Furthermore strict odour limits will be set at the boundary of the site and it will be the responsibility of the operating contractor to meet these limits.

Prevailing winds and the potential resulting odour impacts to communities have been considered as part of the preliminary odour assessment in the ASA Phase 2 assessment. Furthermore, detailed odour modelling will be undertaken once the preferred site option has been identified and will be used to determine appropriate odour limits which will have to be achieved during the operational phase of the WwTP. Limits will be based on best practice at new and refurbished plants within Ireland.

Odour modelling will be carried out in accordance with the EPA Guidance note AG4 – Air Dispersion Modelling from Industrial Installations

12.2 Odour and Health

As noted above, a HISA will be undertaken to address the health issues raised at consultation. Any health issues of local concern related to odour which are identified as part of the HISA will be addressed in the odour assessment undertaken as part of the EIA for the preferred site option.

Consultation has been held to date with both the IAA and DAA in relation to the proposed site options for the GDD project. Odour, as with all other criteria, is considered with respect to the existing background situation which in this case includes the airport.

12.3 Odour Issues at Existing WwTP

While it is acknowledged that there have been odour issues at existing WwTPs in the past, a rigorous application of standards and retrofitting of appropriate odour collection and treatment equipment on such WwTPs continues to reduce the incidence and impact of odour. The project team has taken on board the lessons learned and solutions adopted in these situations and will be active in ensuring the appropriate limits and proposals are incorporated at the proposed Regional WwTP.

12.4 Prevailing Winds

Air dispersion models seek to simulate the dispersion of pollutants from the point of release to the point of impaction, which is generally the ground level concentration (GLC). The dispersion process is dependent on the underlying meteorological conditions, including and specifically prevailing wind directions, and ensuring that the air dispersion model includes representative meteorological data is critical.

Wind speed and direction data was obtained from the Met Eireann weather station at Dublin airport as it is the closest station to the emerging preferred sites. This information has been used to inform the preliminary Air and Odour assessment completed as part of the ASA Phase 2 assessment and will also feed into the air dispersion models which will be developed at the EIA stage.

12.5 Site Specific Issues

Full odour modelling will be undertaken for the proposed Regional WwTP once the final preferred site is identified and will include and consider the existing background conditions including the presence of other odour producing activities. Details of any known odour sources within the vicinity of the proposed WwTP will be passed to the odour modeller prior to commencement of their assessment.

Appropriate odour limits will be set at the boundary of the preferred site and the potential impact of any residual odours at residential and commercial receptors will then be assessed, including Dublin Airport. This assessment will then feed into the determination of the appropriate odour mitigation and treatment measures necessary for the proposed Regional WwTP.

It is expected that in addition to odour limits being set by the EIA for the project, these limits will also be part of the planning conditions for the plant, thereby reinforcing the requirement for the plant operator to achieve these limits.

Furthermore, an appropriately operated and maintained WwTP will not have any adverse impact on the quality of life and livelihood in the surrounding community.

13 Outfall

13.1 General

The location of the outfall discharge point has been considered from the outset of Phase 1 of the ASA. Initially, the whole of the North Dublin coastline was subjected to a detailed study. Following identification of known constraints, including the designated Shellfish Waters, this was reduced to two areas, the northern marine study area and the southern marine study area. The first stage of the proposed hydrodynamic modelling was undertaken to determine the optimal locations within these study areas for the outfall. Both current and tidal dispersion were taken into account at this stage.

Further tide and current data gathering has been completed and the data collected is currently being used to update the hydrodynamic model developed and to ensure that the potential for impact on any designated sites and amenities is minimised.

As noted above, the treated effluent will be required to meet not only the limits set by the EPA wastewater discharge licence but also the requirements of a number of relevant water quality standards, details of which are provided in section 4.5 above and include:

- Quality of Shellfish Waters Regulations (S.I. No 200 of 1994) as amended;
- European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. No 272 of 2009);
- Quality of Bathing Waters Regulations (S.I. No 155 of 1992) as amended; and
- The water quality standards required by the Blue Flag Beach Programme.

As further noted above, consultations have been ongoing with relevant bodies including representatives of the local fishermen (see section 8 above).

13.2 Site Specific Issues – Clonshagh (Clonshaugh)

The presence of numerous designations at Baldoyle Bay has been recognised from the outset. As noted above, consultation has been ongoing with NPWS with respect to environmental designations around the Baldoyle Estuary and the resulting potential constraints to a southern outfall. Investigative works are ongoing to determine the feasibility of appropriate construction methodologies which would minimise any potential impacts.

As outlined above, hydrodynamic modelling has commenced and is ongoing in order to determine the optimum location for the outfall. The modelling completed as part of the ASA and Route Selection Phase 2 considered all of the environmental designations within the area including Baldoyle Bay and adjacent bathing beaches and the potential for any negative impact from the outfall location. The outfall locations identified were those which relatively had the least impact. Further modelling is ongoing to ensure that the regulations listed above are achieved by the outfall, thereby ensuring there will be no adverse impact from the outfall during normal operating conditions.

Once the final preferred site option is identified, an Appropriate Assessment (AA), in accordance with the Habitats and Birds Directives will be undertaken and will identify whether there are any significant residual impacts on the relevant Natura 2000 sites.

13.3 Site Specific Issues – Northern Site Options

The longer length of pipeline associated with the northern site options was considered in the ASA matrix assessment. The approach and assessment undertaken to date considers a wide range of appropriate issues, including cost, and in accordance with the recommendations of the SEA on the GDSDS, does not consider one as more significant than another. The issue of cost will be considered in detail in the selection of the preferred site.

The above comments also relate to consideration of carbon footprint.

14 Planning and Development

14.1 General

A planning policy review for each of the sites was undertaken as part of the ASA Phase 2 assessment and included within the matrix assessment. The report produced was provided as Appendix 14 of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes.*

14.2 Site Specific Issues – Clonshagh (Clonshaugh)

The presence of a small portion of New Residential (RA) zoning within the 300m buffer zone of the proposed site was considered as part of the ASA matrix assessment.

As with the assessment of all other criteria, consideration of the existing situation including any other approved proposed developments will be undertaken as part of the planning assessment at EIA stage. It is noted that the proposed site does not directly infringe on the boundary of the Clongriffen – Belmayne Local Area Plan.

The area of the identified site is approximately 20 Ha with the majority identified as Greenbelt (GB) and a small area identified as High-Tech (HT). These zonings have been considered with respect to the objectives outlined in the Fingal County Council Development Plan. While GB zoning would generally be considered to be a more restrictive zoning objective than RU due to its greater sensitivity to development, in this instance, it is considered that its proximity to adjacent 'industrial' type zonings, existing urban land uses/developments within the area and the continued preservation/retention of significant and more sensitive GB zoned lands in this area allow the planning authority's vision for the area to continue to be met. As such the GB zoning does not constitute a planning policy constraint such as would preclude the proposed development. There is no Open Space (OS) zoning within the proposed site area.

The presence of the WwTP would not inhibit the implementation of a high tech hub in the area, conversely its presence would likely serve as an attraction to new industries through the adjacent availability of treatment capacity and potential re-used water source. As a result the siting of the proposed Regional WwTP in this area can only serve to increase the potential for future employment initiatives.

The adjacent facilities, including Dublin Airport, the M50 and the M1 have all been considered throughout the ASA and route selection as part of the existing conditions for the area.

An appropriately operated and maintained WwTP will have no adverse impact on the surrounding land, therefore there will be no 'sterilisation' of adjacent land, any adjacent land will continue to be available for the permitted zonings.

As outlined previously, the proposed Regional WwTP is required in order to facilitate future growth within the GDA. Without this additional wastewater treatment capacity,

there will be no future development of any type within the region as the appropriate infrastructure will not be in place.

The provision of any development, including the proposed Regional WwTP, will be required to align with other development proposed for the area. The buildings and tankage located on the site will receive architectural treatment in line with the surrounding area. In addition, screening will be implemented to minimise the potential visual impacts of the proposed WwTP. In combination with appropriate operating and maintenance procedures, the above will ensure the WwTP has no adverse impact on the surrounding community and therefore there should be no negative impact on expectations of environmental and living standards.

As noted above, comments raised in relation to previous development in the region is acknowledged, however it should be noted that the GDD is strategic infrastructure, is not-developer led and is necessary in order for the GDA as a whole to continue to grow and develop into the future. Restrictions will be imposed during construction of the plant and associated infrastructure in order to minimise potential impacts on the surrounding community.

The final preferred site has been and will be considered further at EIA stage in light of current land use zoning and local objectives identified in both the Fingal County Council Development Plan and relevant Local Area Plans.

Environmental considerations, including the presence of designations at Baldoyle Bay, have been considered elsewhere in this report under the relevant sections.

14.3 Site Specific Issues – Northern Site Options

As above, the proposed Regional WwTP will facilitate future growth and therefore new ventures beneficial to all communities throughout the region. Specifically, the presence of adjacent treatment capacity is a benefit for any commercial entities considering location of a presence in the area. Without the provision of this additional wastewater treatment capacity, it is likely that future development of any type within the region will be restricted. An appropriately operated and maintained WwTP will have no adverse impact on the surrounding land and communities.

Consideration has been given to the rural / agricultural zoning of the northern sites as part of the planning policy assessment at ASA Phase 2 and will be considered further, should one of these site be identified as the final site, as part of the EIA. The buildings and tankage located on the site will receive architectural treatment and appropriate screening in line with the surrounding area.

15 Population Density

15.1 General

As part of the initial Phase 1 - Preliminary Screening assessment, each of the 9 sites identified were at a minimum 300m from the nearest sensitive (residential and commercial) receptors. As part of the ASA Phase 2 assessment, the potential for each of the sites to impact on areas of Significant Population Densities was considered as part of the matrix assessment. However, this element cannot be considered in isolation and must be considered in conjunction with all other potential impacts included in the assessment.

Furthermore the existing background conditions were also considered throughout the ASA, including as part of the Air and Odour, Noise and Vibration and Landscape and Visual assessments and the relative impact of the siting of the plant was considered. While it is acknowledged that there are a greater number of sensitive reecptors in the area, more urbanised areas have greater capacity for assimilation of new industry / development as background conditions i.e. noise and air quality are already higher than in less densely populated area.

16 Proximity to Load Centres

16.1 General

The GDD project is required to facilitate the development of a Regional WwTP which will serve, either directly or indirectly, the entire GDA. The initial study area, was informed by the recommendations of the GDSDS and its subsequent SEA and encompassed the North County Dublin area. Further details on the development of the study area are included in the *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report.*

The GDD is one of a number of recommendations of the GDSDS which was commissioned as a result of the broadening gap between developing load in the GDA and the maximum load which can be delivered to, and treated at, the existing treatment plants in the catchment, and primarily at Ringsend WwTP.

It should be noted that there will be no flow or load discharged to the proposed Regional WwTP from County Wicklow. Furthermore, the load from County Meath is already discharging to the Ringsend WwTP and therefore is included within the current catchments being considered for diversion, as per the recommendations of the GDSDS and its SEA. Wastewater generated in County Kildare will continue to be treated within the county until the ultimate capacity of the existing treatment plants is reached. It should be noted that the capacity of the plants in Kildare is based on the assimilative capacity of the outfall location to the River Liffey.

16.2 Site Specific Issues – Clonshagh (Clonshaugh)

As the GDD is a regional project, its location and subsequent benefits must also be considered on a regional scale. The GDSDS identified that the proposed regional WwTP should be located within the Northern GDA.

The GDSDS and its associated SEA made recommendations on potential catchments which could be diverted to the proposed Regional WwTP. This was re-examined by the GDD project team both in light of development since publication of the GDSDS and the current population growth considerations. The North Dublin City catchment, which was identified at both the original GDSDS stage and when re-examined by the GDD project team, as a potential catchment for diversion to the Regional WwTP, includes a significant portion of the Dublin City Council administrative area and therefore DCC residents. Census 2011 indicates that 226,813 people currently live within the DCC administrative area in the North Dublin City catchment. Furthermore, the diversion of load from the Ringsend plant allows for additional development within the regions, including Dublin City, maintaining discharges to this plant. Therefore, Dublin city residents are gaining a vital indirect benefit from the plant and therefore it is reasonable to consider a location for the WwTP within the vicinity of this administrative area.

16.3 Site Specific Issues – Northern Site Options

The GDSDS recommended the provision of additional treatment capacity within the Greater Dublin Area (GDA) to meet the broadening gap between developing load in the GDA and the maximum load which can be delivered to, and treated at, the existing treatment plants in the GDA, and primarily at RingsendWwTP. It recommended that this additional treatment capacity be provided by upsizing the existing WwTPs in the GDA to their maximum ultimate capacity and construction of a new Regional WwTP. On foot of these recommendations the WwTP at Barnageeragh, serving Balbriggan and Skerries, has already been upgraded. A new WwTP at Portrane, which will serve Portrane, Donabate, Rush and Lusk, has recently been constructed. Plans are well advanced to upgrade the WwTPs at Swords, Leixlip and Osberstown. The new Regional WwTP will provide the balance of treatment capacity required in the GDA to design year 2040. On completion of these projects modern wastewater treatment facilities will be provided to the benefit of communities across the GDA.

Without the provision of the proposed Regional WwTP, it is likely that there will be no development permitted in the Fingal region in the near future as the available treatment capacity within the existing treatment facilities listed above will be exceeded. Therefore the provision of the additional treatment capacity provides a significant indirect benefit for the region, permitting continued development both directly in North Fingal but also within other regions of the GDA which provide services and / or employment to members of the public living in the area.

17 Proximity to Sensitive Receptors

17.1 Site Specific Issues – Clonshagh (Clonahsugh)

At Phase 1 - Preliminary Screening assessment each of the sites were identified on the basis that there were no sensitive (residential or commercial) receptors within 300m of the site boundaries. The numbers of sensitive receptors outside of this distance was then considered as part of the ASA Phase 2 matrix assessment under the socio-economic sub-criteria.

Inconsistencies in the figures provided in the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* have been reviewed and full details of any corrections required are provided in Appendix 1 of the Alternative Sites Assessment and Route Selection Report (Phase 4): Final Preferred Site and Routes. Correction of any inconsistencies, were minor and had no impact on the overall recommendation of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* that the site options of Annsbrook, Clonshagh (Clonshaugh) and Newtowncorduff be brought forward for further consideration as the emerging preferred site options. Furthermore, all corrections were incorporated in to the assessment for Phase 4.

17.2 Site Specific Issues – Northern Site Options

Sensitive (residential and commercial) receptors were considered at both Phase 1 and Phase 2 of the ASA and will be considered further as part of the EIA on the final identified preferred site. The relevant environmental specialists will be made aware of site specific references to ensure they are considered as part of the full assessment.

18 Risk and Health and Safety

18.1 General

All elements of the project will be subject to a comprehensive and thorough risk analysis to ensure that potential hazards are identified and assessed and mitigation measures adopted to minimise the risk of failure in line with best international practice.
The majority of the potential risks associated with the proposed WwTP are common to all site options and a detailed risk assessment will be undertaken once the preferred site option is identified.

18.2 Risk of Failure

There will be significant redundancies built into the plant to accommodate any potential mechanical or system failure, including additional capacity, storm water storage and shut off facilities. However, it should be noted that should any failure occur at the plant, discharges to the plant will likely be halted in the upstream catchments, where additional storage will be provided, and it is likely that any risk of overspill will occur in these catchments. Furthermore, it will be possible to bypass the treatment plant and discharge directly to the outfall as another alternative. In the case of a failure at the plant, the most significant impact is likely to be at the receiving waters either upstream in the load centre catchments or at the main plant outfall location. The potential impacts of such a failure will be considered as part of the overall risk assessment for the development to be undertaken once the preferred site option is identified.

Consultations have been held and continue to be ongoing with relevant organisations in relation to the potential impact of a failure and / or associated spillage on the shellfish waters.

The risk of flooding at the proposed Regional WwTP site is low based on the assessments undertaken to date, however even this low risk will be included as part of the risk assessment to be undertaken.
It should be noted that during periods of heavy rainfall, stormwater storage tanks both at the site and in the upstream catchments will be brought into use. Stormwater storage facilities are typically designed to retain up to and including the surface runoff from a storm / rainfall event having a recurrence of 1 in 5 years. Stored volumes will then be passed through the treatment processes once the storm event has abated. Runoff in excess of the stormwater storage facility's capacity will overflow to adjacent waterbodies.

18.2.1 Site Specific Issues – Clonshagh (Clonshaugh)

There will be no discharge, of treated or untreated effluent, to watercourses adjacent to the proposed site at any point from the WwTP. Any potential failures at the plant will be treated as described above.

Discussions have been going with the DAA and IAA in relation to the potential siting of the Regional WwTP in the vicinity of Dublin airport. The project team are aware of and

have taken on board issues raised, the most significant of which is in relation to the attraction of bird species to the area.

18.2.2 Site Specific Issues – Northern Site Options

As noted above, there will be no discharge, of treated or untreated effluent, at any stage, from the proposed WwTP to the surrounding lands or watercourses. The location of the existing gas and other infrastructure will be considered as part of the identification of the final pipeline route. Consultations have commenced with BordGais and EirGrid in relation to the presence of their infrastructure and any potential constructability issues.

18.3 Failures at other WwTP

There have been no recorded instances of significant failure at large WwTP's within Ireland.

The proposed WwTP will be required to comply with the EPA wastewater discharge licence requirements and a number of other water qualitystandards, as outlined in previous sections. Compliance with such requirements will prevent any persistent environmental pollution.

The Plant Operator will be responsible for operation and maintenance of the proposed plant for a specified period of time, typically 20 years. It will be the Plant Operators responsibility to ensure that all maintenance is carried out in a timely manner and they will also be responsible for ensuring compliance with the EPA's discharge licence conditions at all times.

18.4 Risk and Dublin Airport

As noted above, consultation is ongoing with both the DAA and IAA in relation to the location of the Regional WwTP site with respect to Dublin Airport.

Consideration was given to the airport safety zones as part of the planning policy review and was therefore incorporated into the ASA matrix assessment.

The *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes has* not made reference to other plants of a comparable nature to the proposed plant, however it should be noted that there is precedence for the siting of WwTP's adjacent to major international airports.

19 Tourism, Recreation and Amenity

19.1 General

The effluent discharged at the marine outfall location will be treated to the required standard in accordance with the EPA licence to be granted and other relevant water quality standards as detailed previously above. Furthermore, the hydrodynamic modelling undertaken will demonstrate that there will be no negative impact from the plant, when operated and maintained appropriately, on the water quality and therefore the amenities, both recreational and tourist, along the coastline.

19.2 Site Specific Issues – Clonshagh (Clonshaugh)

In addition to complying with the limits set by the EPA's wastewater discharge licence, the treated effluent will be required to comply with the requisite standards and regulations set by the:

- Quality of Shellfish Waters Regulations (S.I. No 200 of 1994) as amended;
- European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. No 272 of 2009);
- Quality of Bathing Waters Regulations (S.I. No 155 of 1992) as amended; and
- The water quality standards required by the Blue Flag Beach Programme.

By complying with the above, the WwTP will have no negative impact on the recreational amenities, for both residents and tourists, along the coastline at the southern outfall. This will be demonstrated by the final hydrodynamic modelling which is currently ongoing, the results of which are feeding into the selection of the preferred site option.

19.3 Site Specific Issues – Northern Site Options

Potential impacts on tourism have not been directly considered as a separate criterion in the assessment undertaken to date. However, potential negative impacts on the residents in an area will also impact on any potential tourists being drawn to the area i.e. air quality, traffic and in this way have indirectly been considered as part of the matrix assessment to date.

Tourism will be considered as part of the socio-economic assessment to be undertaken as part of the EIA on the final identified preferred site option.

The initial *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report* identified and avoided all known constraints and designations. The south beach at Rush is a designated bathing beach and was assessed as such. Notwithstanding the above, the impact on all beaches in the locality of the outfall will be considered by the hydrodynamic modelling currently underway.

Within the coastal zone of the study area there are many designated bathing waters, some with 'Blue Flag' status, as well as designated shellfish waters, SPA's and SAC's

all of which set additional water quality standards which will also apply to the discharge from the proposed Regional WwTP and include:

- Quality of Shellfish Waters Regulations (S.I. No 200 of 1994) as amended;
- European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. No 272 of 2009);
- Quality of Bathing Waters Regulations (S.I. No 155 of 1992) as amended; and
- The water quality standards required by the Blue Flag Beach Programme.

Fingal County Council planning objectives in the vicinity of all sites have been considered as part of the planning policy assessment undertaken as part of the ASA Phase 2 assessment and will be considered in further detail once the final preferred site option is identified.

20 Traffic and Road Infrastructure

20.1 General

It is acknowledged that there will be significant additional heavy goods traffic within the vicinity of the proposed site and the pipeline route during the construction period. Any potential impact from such increased traffic will be managed through appropriate restrictions and mitigation measures included in the Environmental Impact Statement and subsequently incorporated in to the construction contractors Environmental Management Plan.

During operation, it is expected that there will be, on average, a maximum of three Heavy Goods Vehicle's (HGVs) removing sludge from the plant per day. As indicated in the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes,* consideration is currently being given to the incorporation of a sludge hub centre, for sludges generated within the Fingal administrative area only, on the site of the proposed Regional WwTP. It is likely that as a result, the number of HGV's removing sludge from the site will increase to thirteen per day. These estimates will be confirmed by the review of the Fingal Sludge Management Plan (SMP) which is currently underway.

20.2 Site Specific Issues – Clonshagh (Clonshaugh)

Where the existing road infrastructure within the vicinity of the site is not of appropriate design or scale to facilitate either the construction or operational traffic increases associated with the proposed WwTP, improvements and / or upgrades as necessary will be implemented prior to commencement of any construction works. The ASA Phase 2 assessment considered what upgrades would likely be required to the surrounding road network to facilitate the construction and operation of the proposed plant. Existing accident data on the surrounding road network was also considered as part of the ASA matrix assessment. This will be given further detailed consideration once the final preferred site has been identified and proposals for any upgrade works will be included in the Preliminary Design Report to be completed for the project.

The project team is aware of the proposed upgrades to existing roads within the area and consideration was given to these in the assessments undertaken to date.

The reference to Stockhole Lane which should in fact be Clonshaugh Road has been checked and will be addressed in the report for the final phase of the ASA.

20.3 Site Specific Issues – Northern Site Options

As noted above, where necessary, upgrades to the surrounding road network to facilitate both the construction and operational phases of the proposed WwTP will be implemented as required. In addition, the number of HGV's likely accessing the site during the operational phase has been outlined above and will be further confirmed following the completion of the revision to the Sludge Management Plan.

As with other assessments to be undertaken as part of the EIA for the final preferred site option, the existing background situation will be accounted for, including where relevant HGV's utilising the existing surrounding road network for other developments.

21 Treatment

21.1 General

The range of treatment processes identified as capable of achieving the required effluent discharge standards for the proposed WwTP will be detailed in the Preliminary Design report to be developed for the project. The potential treatment processes identified are based on the limits imposed on the discharge from the plant by the EPA wastewater discharge licence and other relevant water quality standards.

As part of the assessment of the available treatment technologies consideration was given to new and innovative technologies, details of which will be provided in the Preliminary Design report for the project.

It is assumed that the references to costs of €7 million spent to date, relate to the GDSDS and its associated SEA which was a wider study than just the GDD project. Furthermore, as noted above, the type of treatment to be provided for the plant is dependent on the output restrictions. The necessary treatment level required to achieve these limits will be provided.

Consideration has been given to effluent re-use. However notwithstanding the clean water needs for Dublin in the future, it is not considered appropriate or cost effective on a large scale in this instance. It may be likely that some effluent re-use will be undertaken within the confines of the plant to facilitate grey water re-use etc. Further details will be provided in the Preliminary Design Report for the project.

22 Other Issues

22.1 Alternatives

As part of the Phase 1 - Preliminary Screening assessment, available sites were sought throughout the whole of the study area including at and close to the coastline. No appropriate sites, which satisfied the requirements set out at the preliminary screening stage, were available at the coastline. The length of the outfall pipe into the marine environment has been determined, and will be refined, in conjunction with the hydrodynamic modelling currently ongoing.

The Regional WwTP will be designed in a staged or modular basis to facilitate the increases in capacity as they are required. Based on the current growth predictions diversions from Swords and Malahide are not expected to be necessary until the latter end of the design like of the GDD at which time it is likely that alternative treatment technologies will be available and will be considered. However, it will be necessary to construct the pipeline to the maximum required capacity in order that there will be no further disruption or redundant work at a later date. It should be noted that, as previously stated, reviews of available population data and associated growth rates will continue throughout the lifetime of the project, as more recent data becomes available which may impact on the timing of diversions from any of the primary or secondary load centres.

22.2 Community Gain

All communities within the GDA will benefit either directly or indirectly from the construction of the proposed Regional WwTP. Once the final preferred site has been identified, detailed consideration will be given to the concept of community gain for the relevant community through the possible provision of facilities for public use.

22.3 Compensation

Compensation will be provided to landowners and those who are directly affected by the purchase of the site, acquiring the land for the road access and acquiring access for the construction and maintenance of the pipelines. Compulsory Purchase is a legislative mechanism which allows the Local Authority and relevant landowners to ensure all legal issues are met and addressed. Consultation with all relevant landowners has commenced and will be ongoing throughout the lifetime of the project.

22.4 Impact on Business

As previously noted, the GDD project is required in order to provide additional wastewater treatment capacity within the GDA which will facilitate future economic growth and development in the region. Without this critical infrastructure, development within the region would likely cease which would negatively impact on all businesses within the area.

The socio economic impacts of the proposed development (negative and positive), at both construction and operational stages will be fully assessed as part of the EIA. This assessment will consider issues such as the impact on commerical activities and employment resulting from the development.

22.5 Issues regarding the ASA P2 Report

22.5.1 Buffer Zones

Consideration of buffer zones was addressed in the *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report*. A buffer zone of 300m was considered appropriate as it is in excess of any buffers identified in the relevant guidance documents including the minimum distance of 100m set out by the Fingal County Council Development Plan (2011-2017). It should be noted that the 300m buffer was applied to the original land parcels and therefore in most instances is now a minimum distance to existing sensitive receptors for each of the sites.

22.5.2 Community Impact

Sensitive receptors within the Dublin City Council administrative area were also considered during both Phase 1 and Phase 2 of the ASA, this is evidenced both in the figures included within the *Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report* which include sensitive receptors and designations within Dublin City Council and also within the ASA Phase 2 matrix assessment where communities within Dublin City are identified i.e. Belcamp and Darndale. It is noted that there was an inconsistency in the document text which neglected to specify the inclusion of Dublin City communities where relevant.

22.5.3 Odour

Inconsistencies in the figures provided in the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* have been reviewed with respect to the final recommendations of the report. There is no impact on the recommendation that the Annsbrook, Clonshagh (Clonshaugh) and Newtowncorduff site options be brought forward for further consideration as the emerging preferred site options. Furthermore, all corrections were incorporated in to the assessment for Phase 4.

22.5.4 Population Density

As above, inconsistencies within the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* have been reviewed with respect to the final recommendations of the report. There is no impact on the recommendation that the Annsbrook, Clonshagh (Clonshaugh) and Newtowncorduff site options be brought forward for further consideration as the emerging preferred site options. Furthermore, all corrections were incorporated in to the assessment for Phase 4.

22.5.5 Prevailing Winds

Air dispersion models seek to simulate the dispersion of pollutants from the point of release to the point of impaction, which is generally the ground level concentration (GLC). The dispersion process is dependent on the underlying meteorological conditions, including and specifically prevailing wind directions, and ensuring that the air dispersion model includes representative meteorological data is critical.

Wind speed and direction data was obtained from the Met Eireann weather station at Dublin airport as it is the closest station to the emerging preferred sites. This information has been used to inform the preliminary Air and Odour assessment completed as part of the ASA Phase 2 assessment and will also feed into the air dispersion models which will be developed at the EIA stage

22.5.6 Risk of Flooding

Risk of flooding at the site was considered as part of the hydrology assessment in the Phase 2 ASA matrix assessment. It is standard practice for stormwater and balancing tanks to be provided at new WwTP's and current best practice also provides for storage tanks in the upstream catchments for plants of this scale.

The risk of flooding at the proposed Regional WwTP site is low based on the assessments undertaken to date, however even this low risk will be included as part of the risk assessment to be undertaken.

22.5.7 Shellfish Designations

The shellfish designations along the North Dublin coastline are a matter for the relevant government Department. It was determined at the outset of the GDD project that the preferred approach, as with inland designated sites, would be to avoid such designated sites in the first instance. As a result both designated shellfish areas off the North Dublin coastline were removed from further consideration as an outfall location. However, it is acknowledged that shellfish are present and fishing is ongoing in other areas along the coast and as a result the treated effluent to be discharged will be required to meet both the limits set out in the EPA discharge licence and the water quality standards as set out in the Quality of Shellfish Waters Regulations (S.I. No 200 of 1994) as amended.