

## **Appendix 2 – Public Consultation**

Public consultation on the identified land parcels ran from the 10 October 2011 to 02 December 2011. The concerns and issues raised by all stakeholders at this time were reviewed and collated by the project Communications team and documented in the *Alternative Site Assessment (ASA) Consultation Report*. This report identified 22 No. headings under which the issues raised were collected. This Appendix details, with respect to each heading, how the issues raised have been addressed and considered in the ASA stage. Where relevant reference has been made to sections of the *Alternative Sites Assessment and Route Selection Report (Phase 2): Emerging Preferred Sites and Routes* where further details are given.

### **1.0 Archaeology and Cultural Heritage**

Initially, as part of the preliminary screening stage, all recorded Cultural Heritage sites, which includes both Archaeology and Architectural Heritage sites, were mapped and areas of land where they are located were excluded from further consideration as potential sites for the WwTP. As part of this current ASA stage, a Cultural Heritage assessment was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Full details of this assessment are provided in the ASA – Phase 2 Cultural Heritage report included as Appendix 6 of this report.

Visual impact of the proposed WwTP was assessed with respect to known cultural heritage sites and the expected impact on their setting. Visual impact was further assessed from a landscape perspective, including the potential impact on protected views by the relevant specialist, details of which are included in section 9 below.

The potential for unknown archaeology to be discovered during the construction works has been assessed, in so far as possible, during this sub-stage and is based on the quantity and details of known sites and the knowledge and experience of the relevant specialist. Where available, reports produced as part of previous infrastructure projects within the county have been consulted and relevant details incorporated into this assessment.

With respect to the pipelines, these will be routed such that known cultural heritage sites will be avoided. Prior to construction a site archaeological survey will be undertaken in an effort to identify any unknown sites. Further measures in relation to the methodology for dealing with identified sites during construction works will be specified in the construction contract.

### **1.1 Site Specific Issues**

Where specific sites, locally known or otherwise, were identified in stakeholder submissions, these have been checked by the relevant specialist to ensure they have been included in their assessment. Where any listed sites have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

### **2.0 Climate Change**

As noted in a number of the submissions received, energy conservation and minimization of carbon emissions are two of the key considerations for the overall project. Such considerations are and will be considered as part of the preliminary design and development of the WwTP, pipeline routes and marine outfall, however it should be noted that such requirements must be assessed in conjunction with all other existing constraints.

As part of the preliminary screening stage, all available flood data was mapped and these areas of land were excluded from further consideration as potential sites for the WwTP. As part of this current ASA stage, a Hydrology assessment, including flood risk, was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Full details of this assessment are provided in the ASA – Phase 2 Hydrology and Hydrogeology report included as Appendix 9 of this report.

The Greater Dublin Drainage project is required to provide for wastewater and as such will not be required to deal with flood waters with the exception of instances, through out the system, where infiltration occurs. Therefore it is expected that some storm water will enter the system, in order to deal with high or extreme storms, balancing tanks and stormwater storage will be provided both at the WwTP and upstream in the individual catchments. The orbital pipelines will be sized to accommodate flows based on the population discharging to the system.

The proximity of the identified land parcels to the load centres, was considered as part of the preliminary screening stage. However, it is important and relevant to note that such a criterion can only be considered in conjunction with all other associated constraints. Therefore, the areas available for the site of the WwTP were identified and of these, those which provide the more favourable solutions with respect to proximity to load centres and outfall locations were identified for progression to the next stage of the process.

### **3.0 Community Impact**

The potential for the proposed project to impact on both Fingal as a whole and on individual communities within Fingal, has been considered under a number of the criteria included in the ASA process, including Landscape and Visual; People and Communities; Noise etc. Full details of the assessments associated with such criteria are provided in the relevant appendices of this report.

Public consultation is an important aspect of the entire site selection process. The consultations held to date aimed to ensure openness and transparency with all affected stakeholders and to demonstrate the methodologies used in the identification of the preferred site to all interested and involved parties. This process has provided invaluable feedback from local residents and stakeholders.

### **4.0 Construction**

The potential for construction impacts has been considered under the relevant criteria in the ASA and used, where the sub-criteria provide differentiating factors across the sites in the identification of the emerging preferred sites. Detailed assessment of all construction impacts will be undertaken as part of the Environmental Impact Assessment (EIA) on the preferred site once identified. Where relevant and appropriate mitigation measures and restrictions on construction methodologies will be included in the Environmental Impact Statement (EIS) and therefore compliance with such measures by the construction Contractor will be mandatory.

#### **4.1 *Existing Infrastructure within the Area***

Existing infrastructure within and in the vicinity of each of the sites has been assessed and used where differentiating factors are provided in the assessment of the sites. It should be noted that the presence of utilities can provide both a benefit where provision of those utilities is required on the site and a constraint where diversions are necessary to facilitate plant construction.

### **5.0 Ecology and Protected Habitats**

Initially, as part of the preliminary screening stage, all recorded ecological designations, were mapped and these areas of land were excluded from further consideration as potential sites for the WwTP. As part of this current ASA stage, an ecological assessment was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Full details

of this assessment are provided in the ASA – Phase 2 Ecology report included as Appendix 5 of this report.

The potential for the requirement for a Natura Impact Statement to be undertaken on this project has been acknowledged from the outset. The first stage of the natura impact assessment consists of a screening process to determine whether a full appropriate assessment is required for the project. In this instance, it was not deemed appropriate to undertake this assessment on any of the sites as all nine should be considered as having the potential to impact on such sites and are therefore, at this stage, screened in to include for the requirement to undertake an AA.

### **5.1 *Site Specific Issues***

All noted environmentally sensitive areas, species and flora referenced in the stakeholder submissions received, were checked by the Ecologist to ensure, where relevant, that they have been included in their assessment. Where noted areas or species have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

### **5.2 *Shellfish Waters***

As part of the preliminary screening stage, legislatively designated shellfish waters within the marine environment off the North Dublin coast were mapped and these areas were excluded from further consideration as potential locations for the marine outfall. As part of this current ASA stage, consultations have been ongoing with BIM, SFPA and local fishermen in relation to the shellfish waters in the marine outfall study areas. Marine modelling is being undertaken as an integral part of the identification of the marine outfall location and will continue through the EIA stage to determine the preferred location of the marine outfall and the potential impacts on the surrounding designations including both the designated shellfish waters and other fishing areas within the locality. Discharged treated effluent will be required to comply with the licensing standards set by the EPA and other legislative water quality standards.

### **6.0 *Flooding***

As noted above in section 2.0 above, available flood data was assessed initially as part of the preliminary screening stage, and known flood plains were avoided. As part of this current ASA stage, a Hydrology assessment, including flood risk, was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and is the assessment process. Full details of this assessment are provided in the ASA – Phase 2 Hydrology and Hydrogeology report included as Appendix 9 of this report.

Should a malfunction occur on the WwTP site, storage both at the site, in the orbital pipelines and in the upstream catchments will be utilised. A risk assessment will be undertaken as part of the environmental impact assessment (EIA) for the preferred site, once identified, however should a catastrophic failure occur, spillages will be to local watercourses in the upstream catchments or direct to the marine environment.

Any surface water run-off from the site will be attenuated to Greenfield levels.

### **6.1 *Site Specific Issues***

All noted flood areas referenced in the stakeholder submissions received, were checked by the Hydrologist to ensure, where relevant, that they have been included in their assessment. Where noted areas have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

## **7.0 *Geology and Soils***

Initially as part of the preliminary screening stage, all recorded Geological Heritage sites were mapped and areas of land where they are located were excluded from further consideration as potential sites for the WwTP. As part of this current ASA stage, a Soils and Geology assessment was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Full details of this assessment are provided in the ASA – Phase 2 Soils and Geology report included as Appendix 8 of this report.

### **7.1 *Site Specific Issues***

All noted geological sensitive areas referenced in the stakeholder submissions received, were checked by the relevant specialist to ensure, where relevant, that they have been included in their assessment. Where noted areas have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

Where soils and geology sub-criteria provide differentiating factors across the sites, in the opinion of the relevant specialist, these are included in the assessment.

Further detail on soils is included in section 10.0 with reference to Agronomy, Agriculture and Horticulture.

## **8.0 Health**

Modern day WwTPs are operated with appropriate safeguards to ensure that there are no significant health risks to the general population. A health impact screening assessment (HIA) will be completed as a constituent part of the environmental impact assessment to identify any potential health risks associated with the proposed development during both its commissioning and operation phases.

In recent years, best practice at new and refurbished WwTPs has been to cover all exposed tanks and to provide odour treatment on the released gases. This will further mitigate the potential for air-borne aerosols. All gases produced during the treatment processes will be treated on site before venting to the atmosphere.

The Environmental Impact Assessment and any subsequent environmental permit applications will consider the potential emissions of airborne pollutants from the site, including odours, and compare the levels with published air quality standards produced by the Environmental Protection Agency.

### **8.1 Odour**

Issues in relation to odour have been addressed in section 12 below.

### **8.2 Vermin**

Covering of the tanks will also reduce the attraction for vermin, including wild birds, and flies, to the site.

## **9.0 Landscape and Amenity**

Initially as part of the preliminary screening stage, areas of Highly Sensitive Landscape were mapped and these areas of land were excluded from further consideration as potential sites for the WwTP. As part of this current ASA stage, a Landscape and Visual assessment was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Full details of this assessment are provided in the ASA – Phase 2 Landscape and Visual report included as Appendix 7 of this report.

Impacts on the landscape of the area as a result of the pipeline and marine outfall construction will be temporary in nature and should not have significant long term effects. There will also be some temporary impact on the landscape during the construction of the WwTP and establishment of landscape screening.

During operation there will be low vehicle numbers associated with the WwTP, which will minimize impacts on the surrounding road network, however it should be noted that the surrounding road network and its potential to absorb additional vehicle movements has been included in the ASA, further details of which are provided in section 19.0 below. Issues in relation to the final architectural presentation of the buildings and tanks required as part of the WwTP, when fully constructed, will be examined further as part of the preliminary design of the scheme. It is current best practice, where practicable to develop architectural proposals which align with the existing landscape of an area.

None of the sites identified are currently zoned as High Amenity in the Fingal County Council Development Plan, however planning and zoning constraints both on the proposed sites and in the vicinity have been assessed as part of the ASA, further detail is provided in section 14.0 and included in the specialist report provided in Appendix 14 of this report.

### **9.1 *Site Specific Issues***

Where specific landscape features were identified in stakeholder submissions, these have been checked by the relevant specialist to ensure they have been included in their assessment. Where any listed features have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

## **10.0 Livelihood**

### **10.1 *Agronomy/Agriculture/Horticulture***

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 Landscape and Visual report included as Appendix 7 of this report. This assessment will continue as part of the Environmental Impact Assessment on the preferred site, once identified.

The preliminary screening methodology was agreed and progressed in a consistent manner with reference to legislative designations only. Known environmentally designated areas and sensitive receptors were mapped as potential constraints. As

potential impacts on agriculture/horticulture require specialist assessment in order to adequately determine their category of impact, it was considered more appropriate to undertake this detailed and full assessment at the ASA phase 2 stage and will continue on the preferred site, once identified, as part of the Environmental Impact Assessment.

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. It should be noted that during normal operation, there will be no physical impact from the WwTP on the surrounding agricultural land. In addition, while there will be some temporary impacts during construction along the pipeline routes, final design and construction will minimize the potential for any unknown impact along the route.

### **10.2 *Fishing and Navigation***

Consultations have been ongoing with BIM, SFPA and local fishermen, throughout the process. Furthermore, marine modeling is being undertaken as an integral part of the identification of the marine outfall location and will continue through the EIA stage. This modeling will assist in identification of potential impacts on the surrounding designations including both the designated shellfish waters and other fishing areas within the locality. Discharged treated effluent will be required to comply with the licensing standards set by the EPA and other legislative water quality standards. Therefore, there will be no impact on water quality in the vicinity of the outfall during regular operation of the WwTP.

### **10.3 *Tourism***

Data from Bord Failte has been collected and discussed in the People and Communities section of this report. Furthermore, consultations have been held with both the DAA and the IAA in relation to the proximity of the WwTP to the airport.

As noted above, it is acknowledged that there will be temporary impacts to the landscape in the area during construction. The final architectural presentation of the buildings and tanks required as part of the WwTP when fully constructed, will be examined further as part of the preliminary design of the scheme. It is current best practice, where practicable to develop architectural proposals which align with the existing landscape of an area.

### **10.4 *Site Specific Issues***

Where specific features were identified in stakeholder submissions, these have been checked by the relevant specialist to ensure they have been included in their assessment. Where any listed features have not been included, the specialist has been



required to clearly detail to the project technical team the reasons and justifications for this.

## **11.0 Need**

### **11.1 *Population Forecasts***

Population data has been reviewed from the outset in light of the current economic climate and reviews will be continued throughout the lifetime of the project as new data becomes available. This review has accounted for capacity upgrades to existing treatment facilities within the GDA. This review has indicated that while there is some reduction in the ultimate capacity requirement of the proposed Regional WwTP plant, the scale of the plant is still appropriate.

As noted there may be capacity within the existing plants for approximately 10 years, the opening year for this project is currently set at 2020 which was 9 years from the commencement date of this project (2011). This project is related to planning for the future development and growth of the Greater Dublin Area and in order to ensure we can still develop in 10 years time, the appropriate plans must be implemented.

### **11.2 *Multiple Smaller Plants versus One Large Plant***

The proposed plant is a regional plant and is being developed in order to operate in conjunction with the existing plant at Ringsend which serves a large portion of the GDA, including Fingal, at present. The concept of multiple plants serving this existing drainage network implies the retro-fit of numerous WwTPs to the various communities across the catchment. Sufficient space to construct each plant with an allowance for appropriate buffer zones would have to be located in the highly urbanised landscape. It should be noted that the treatment capacities required for some of these catchments would be as large or larger than those in existence throughout the country. For example, the PE in the Blanchardstown catchment is expected to grow to 250,000 by 2040, which is larger than the plant serving Galway City. The discharge from these plants would have to be taken to watercourses of sufficient size in terms of its ability to assimilate the treated effluent loads & flow. The rivers in Dublin (City & County) are generally small and already under pressure. Furthermore, the cumulative impact of multiple WwTPs discharging to the same watercourse has to be considered and also the potential impacts of climate change on these watercourses with possible lower river flows in summer which would reduce the ability of a watercourse to assimilate the treated effluent.

Smaller plants are also less capable for dealing with varying or 'shock' effluent loadings therefore would not be capable of providing for or re-acting to the requirements of

medium/large industries such as a Pharma company or a food processing industry with high BOD levels in their effluent. Additional issues including higher energy use and additional transport requirements associated with multiple plants reinforce the benefits of a single plant.

The GSDS Final Strategy also recommended that even with existing plants upgraded, additional treatment capacity is required within the region and that this additional capacity would best be delivered as a single regional plant located in the northern part of the Greater Dublin Area.

### **11.3 *The Greater Dublin Strategic Drainage Study (GSDS) and the Strategic Environmental Assessment***

The SEA for the GSDS was undertaken in accordance with current guidance and legislation, there is no justification for considering that the methodologies used or recommendations made in the SEA are no longer valid.

The review of population figures has indicated that while there is some reduction in the ultimate growth figure, the scale of the plant is still appropriate and therefore, the recommendations of the SEA in relation to a single plant are still valid.

The land parcels and outfalls were identified in the Preliminary Screening stage through avoidance of known designations including SACs and SPAs. The potential impact on such designations will continue to be considered as part of the EIA for the scheme.

As noted above, larger plants provide more flexibility with respect to loading, in addition the regional plant 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.

The risk and impact of ‘catastrophic failure’ is considered greater for multiple plants discharging to local watercourses than for a single regional plant discharging to the Irish Sea. The volume of untreated sewage discharging as a result of a catastrophic failure at one of the multiple plants may be smaller than the volume of untreated sewage discharging as a result of a catastrophic failure to one line of unit processes at the regional plant however the impact may be greater and last longer on the ecosystem of the small local watercourses.

### **11.4 *Proximity Principle***

The objective of the GDD is to identify a location for a regional WwTP in the northern part of the GDA. Therefore, the study area encompassed all of north county Dublin and the parcels were identified in accordance with a consistent and agreed methodology

with reference to legislative designations, full details of which are provided in the Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report.

### **11.5 Required Footprint**

The required area of 20 Ha includes for screening to minimize the impact of the WwTP and initial determination of the required area was based on plants of a similar scale.

In order to contain all the necessary unit processes for a treatment plant of the required capacity, a site of approximately 16 hectares would be required to accommodate the proposed Regional WWTP.

In order to provide:

- flexibility in the final selection of the treatment process to be utilised;
- to allow consideration of the possible integration of Fingal's Sludge Hub Centre with the Regional WWTP;
- to provide sufficient space to adequately construct and screen the site; and
- to ensure flexibility regarding purchase of the required land;

parcels of land c. 20 hectares in area were sought

The existing plant at Ringsend does not provide an appropriate comparison with respect to landtake due to the construction techniques used. These techniques resulted in double height tanks in order to achieve the required treatment capacity within a smaller site area. Additional area has been allowed for the Regional WwTP in order to provide flexibility in the choice of treatment methodologies and ensure sufficient screening can be provided to minimise visual impact.

### **11.6 Elevation**

The elevation of the land parcels was assessed as part of the preliminary screening process in order to determine the most favourable land parcels for progression to Phase 2 of the assessment. This is detailed in full in the preliminary screening report.

### **11.7 Policy Context**

Policy documents which identify the need for additional and alternative wastewater treatment within the Greater Dublin Area have been identified as follows:

- Assessment of Water and Waste Water Services for Enterprise, Forfas, September 2009

- Dublin Region Water Services Strategic Plan 2009
- Water Services Investment Programme 2010 – 2012
- Regional Planning Guidelines for the Greater Dublin Area 2012 – 2022
- Local Authority Development Plans – Fingal, Dublin City, South Dublin, Dun Laoghaire Rathdown, Kildare and Meath.

### **11.8 Cost**

Cost estimates undertaken for the GSDSDS included the proposed regional WwTP in addition to significant other water services works required within the GDA. Initial cost estimates have been determined for the site options being considered as part of the ASA. A cost benefit analysis will be undertaken on the final preferred site option, once identified, as part of the preliminary design. The CBA will include all costs associated with the project, including operational costs.

### **11.9 Energy**

Potential for a secure energy supply has been assessed at a high level as part of the ASA. A detailed assessment will be undertaken as part of the preliminary design for the preferred site, once identified. Where possible the plant will generate a portion of its power requirements with other possible renewable resources being investigated as part of the preliminary design.

### **12.0 Odour**

As noted above, best practice during design and construction of new and upgraded WwTPs currently includes covering or enclosing all tanks. This methodology will immediately mitigate the potential for odour nuisance associated with the plant. Initially in order to minimise odour impacts a minimum buffer of 300m from sensitive receptors was selected as a screening tool based on the limited available guidance and on professional judgment. This buffer assists in minimizing potential odour impacts on sensitive receptors. Furthermore, an odour limit will be set at the boundary of the plant, which the operators will be required to meet. High level odour analysis has been undertaken as part of the ASA, full details of this assessment are provided in the ASA – Phase 2 Air Quality and Odour report included as Appendix 12 of this report. As noted above, the preliminary screening stage was undertaken in accordance with an agreed and consistent methodology which did not include any odour constraints as detailed in the Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report. The assessment under People and Communities also considered the proximity of areas

of high density to the identified sites. In depth odour modeling will be undertaken on the preferred site, once identified, as part of the EIA in order to ensure appropriate odour treatment processes capable of achieving the required standards for this plant are included in the design and will incorporate a number of factors including prevailing winds. Appropriate odour standards will be set at the site boundary.

Sludge treatment on site will also be undertaken in covered tanks and buildings. Treated sludge will most likely be transported from the site to its disposal destination in covered HGV's, however it should be noted that appropriately treated sewage sludge is odourless.

### **13.0 Overburdening**

The objective of the GDD is to identify the preferred site for a regional Wastewater Treatment Plant (WwTP) in the northern part of the Greater Dublin Area (GDA) and is following the recommendations of the GDSDS and its accompanying SEA. The preliminary screening methodology was agreed and progressed in a consistent manner with reference to legislative designations only. Known environmentally designated areas (legislative or from the Fingal Development Plan) and sensitive receptors were mapped as potential constraints. The ASA process further aims to avoid and where this is not possible to mitigate against any associated impacts. A planning application for the project will be submitted to An Bord Pleanala which will make a strategic level determination as to whether the project is compliant with sustainable planning for the region.

### **14.0 Planning and Zoning**

Potential impacts on planning policies were identified by the Project Team as requiring specialist assessment at the outset of the project and in this regard a planning specialist has been incorporated into the project team. A detailed assessment was undertaken by the planner 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. Full details of this assessment are provided in the ASA – Phase 2 Planning report included as Appendix 14 of this report. The assessment includes consideration of zoning categories both on and in the vicinity of the proposed sites. This assessment will continue as part of the Environmental Impact Assessment on the preferred site, once identified.

The preliminary screening process incorporated constraints from the Fingal County Development Plan as referenced in table 2-A below

<b>Constraint</b>	<b>Detail</b>
Ecology	National Heritage Areas (NHA): proposed NHA (pNHA); Special Protection Areas (SPA); Special Areas of Conservation (SAC); candidate SAC (cSAC); RAMSAR Convention on Wetlands; designated Shellfish Waters; Nature Reserves; Annex 1 habitats; Refuge for Fauna; Tree Preservation Orders; Flora Protection Orders; Parks Biodiversity Designations/Nature Development Areas
Cultural Heritage	National Monuments; Record of Monuments and Places; Record of Protected Structures; Archaeological Inventory and Architectural Conservation Areas
Geology	Geological Heritage Sites
Water	Salmonid waters, SAC, SPA, NHA, recreational waters, designated bathing waters, designated nutrient sensitive waters, designated Shellfish Waters; extremely vulnerable aquifers; areas at risk from fluvial and tidal flooding
Landscape and Visual	Highly Sensitive Landscapes
Sensitive Receptors	Residential and commercial dwellings; schools; hospitals; nursing homes; places of worship; graveyards; prisons; education facilities; sports clubs and facilities; childcare facilities; historical sites/buildings; museums

**Table 2-A Fingal County Development Plan Constraints**

Policy documents which identify the need for additional and alternative wastewater treatment within the Greater Dublin Area have been identified in Chapter 1 of the Alternative Sites Assessment and Route Selection Report (Phase 2).

#### **14.1 Site Specific Issues**

Where references to specific sites were included in stakeholder submissions, these have been reviewed by the relevant specialist to ensure they have been included in their assessment. Where any references have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

#### **14.2 Airport and Flight Paths**

As noted in section 10.0 above, consultation has been undertaken with both the DAA and IAA in relation to the proposed scheme with particular reference to the land parcels in close proximity to the facility. Consultation will be ongoing throughout the next phase of the scheme. As noted above, best practice at new and refurbished WwTPs has been to cover all exposed tanks which will mitigate the potential attraction for wild birds to

the site. The planning permissions at the Pickardstown and Kingstown land parcels which facilitated their removal from further consideration were related to approved planning permissions at Dublin Airport and associated buffers as provided on all other receptors.

## **15.0 Property and Land Value**

The proposed plant is required to facilitate growth in the GDA. The preliminary screening methodology was agreed and progressed in a consistent manner with reference to legislative designations only. Known environmentally designated areas and sensitive receptors with a 300m buffer zone were mapped as potential constraints.

Compensation will be provided to 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. The issue of compensation for nearby communities affected by this scheme does not arise at this time.

## **16.0 Proximity to Sensitive Receptors**

Initially as part of the preliminary screening stage, a buffer zone of 300m from the centrepoint of sensitive receptors was applied. This dimension conservatively exceeds the Development Plan minimum distance requirement from the nearest receptor of 100m and is considered to meet the requirements of the guidance documents referred to in the Preliminary Screening report. The principal purpose of this buffer was to identify suitable land parcels for a potential Regional WWTP site at the greatest possible distance from sensitive receptors, thereby minimizing the potential impact on these sensitive receptors. The potential impacts considered when determining the extent of the buffer zone screening distance were odour and noise. Ultimately the potential impacts of odour and noise on surrounding sensitive receptors from the selected site will be assessed against detailed odour and noise modeling undertaken as part of the Environmental Impact Assessment for the project.

### **16.1 Noise**

The potential noise impacts on surrounding sensitive receptors has been assessed as part of the ASA, full details of this assessment are provided in the ASA – Phase 2 Noise and Vibration report included as Appendix 13 of this report. It should be noted that the plant, while operational, will be required to meet day and night time noise limits.

### **16.2 Light pollution**

The potential impacts from the introduction of new lighting areas will be assessed as part of the EIA from both a habitats (ecology) and sensitive receptor (people and communities) perspective with appropriate mitigation measures being identified and incorporated into the EIS.

### **16.3 Odour**

Potential odour impacts have been addressed in section 12.0 above.

### **16.4 Site Specific Issues**

Where references to specific receptors were included in stakeholder submissions, these have been reviewed by the relevant specialists in relation to noise, odour and people and communities to ensure they have been included in their assessments. Where any references have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

## **17.0 Public Consultation**

At all times, Fingal County Council has endeavoured to achieve an accessible, meaningful and accountable consultation. The consultation period was publicised in a number of manners including advertising; press releases, media briefings; information service; brochures; posters and open days. To ensure that all interested stakeholders have the opportunity to participate in the forthcoming consultation the following publication methods will be utilised: advertisements; posters; community update brochure; website updates; twitter; press releases; open days and email alert to mailing list.

The name for the project, Greater Dublin Drainage, is based on the definition of the pipe network which transports wastewater from source to the relevant WwTP is defined as drainage. Therefore, the name is considered to accurately reflect the nature of the project.

The consultation process undertaken to date complies with and exceeds the requirements set out in the Aarhus Convention. Article 6(3) states that the public participation process should include different phases with reasonable timeframes, allowing the public to be informed and for the public to participate effectively during the decision making process.



Any communication needs of any interested parties can be communicated to the Project Team through the information service and every effort will be made to ensure that they are met in the most appropriate manner.

## 18.0 Risk Assessment

Risk analysis has been considered in relation to the site options and will be undertaken in further detail as part of the Environmental Impact Assessment undertaken on the preferred site, once identified. The objective of the project is to identify a location for a regional WwTP in the northern part of the Greater Dublin Area. The risks identified in the stakeholder submissions are common to all site options and therefore a detailed risk assessment will be undertaken on the preferred site, once identified. Table 2-B below provides responses to specific risk items identified by stakeholders:

Identified Risk	Outline Response
Loss of capacity	The regional plant 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.
Human Health	Addressed in section 8.0 above.
Impact on receiving waters	As noted above, the impact on receiving waters is being assessed as part of the ongoing marine modelling and by individual specialists where relevant i.e. marine ecology
Risks associated with pumping sewage in a 28km orbital sewer	The potential impact should the risk be realized could be considered greater than a treated sewer if the risk being considered is associated with potential leaks. The design of the pipeline will be such that potential for leaks will be considered in detail and mitigated through design and construction methods.
Risk to food security and agricultural production	Risks to agricultural production have been addressed in section 10.0 above.
Economic Risk	The project has been reviewed with respect to the current economic climate as noted in section 11.0 above. Need to decide how we are going to reference the population and load report.

Identified Risk	Outline Response
Impact on the environment	Potential impacts on the environment have been addressed in the relevant sections above.
Security of energy supply	The requirement and potential for utilities to be provided at the plant has been acknowledged. As noted above, it is expected that the plant will generate a portion of its power requirements with other possible renewable resources being investigated as part of the preliminary design.

**Table 2-B Specific Risk Responses**

### **18.1 Experience with other Wastewater Treatment Plants**

Experience both nationally and internationally is being incorporated into the development of the scheme.

### **19.0 Road Infrastructure and Traffic**

The ability of the local road infrastructure to absorb additional traffic volumes has been assessed as part of the ASA, full details of this assessment are provided in the ASA – Phase 2 Traffic report included as Appendix 10 of this report. It is noted that there will be additional impacts during construction, however during the operational phase of the plant, it is estimated that there will be three heavy goods vehicles (HGVs) per day, on average, removing treated sludge from the proposed regional wastewater treatment plant (WwTP) when it is at its full operational capacity in 2040 (approximately 0.7 m P.E.).

Pending a review of the Fingal County Council (FCC) Sludge Management Plan, the impacts of treating wastewater sludge at the Regional WwTP from other FCC municipal WwTPs and from domestic dwellings (septic tanks) is also being examined. Should this additional use/operation occur at the Regional WwTP, it is estimated that the number of HGVs could increase to 13 per day, on average. As noted in a number of stakeholder submission, locating the Fingal sludge hub centre at the Regional WwTP would reduce the volume of traffic associated with the proposed plant.

These figures are preliminary and are based on a 260 day working year, with no HGV movements anticipated on Saturdays or Sundays. As scheme planning progresses, more precise estimates of HGV movements will be made available. A comprehensive assessment of the scheme’s impact on traffic will be provided in the Environmental Impact Statement (EIS), which must accompany the scheme’s application to An Bord Pleanála for planning approval.

Furthermore, access locations to the proposed plant have been carefully considered with respect to known accident records and the need for any localized or extended improvement along the routes in order to mitigate against any further increase in accident statistics has been identified.

## **20.0 Technologies and Treatment Levels**

A range of technology options is being considered for use in the regional WwTP and the preferred technology will only be selected after a full comparison of potential solutions. Reference is being made to technologies considered internationally including new and proprietary processes where relevant.

The level of treatment provided will be secondary treatment at a minimum sufficient to satisfy the licensing requirements imposed by the licensing authority in the discharge license. These requirements will be based on key European and National Legislation and relevant guidance which determine the appropriate discharge standards for Wastewater Treatment Plants (WwTP) in Ireland which are:

- The Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007); and
- Urban Waste Water Treatment (UWWT) Regulations; 2001 to 2010.

Furthermore, the coastal zone of North County Dublin contains many areas that are designated as environmentally sensitive with water quality standards established under various EU Directives. These water quality standards will 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.

### **20.1 Outfall**

The final location of the marine outfall within the marine environment will be determined by the marine modeling ongoing throughout the process.

## **20.2 *Distributed Treatment***

Refer to section 11.2 above on Multiple Smaller Plants versus One Large Plant.

## **20.3 *Sludge Treatment and Use***

The final disposal location of the treated sludge has not been determined at this stage. However, sludge generated will be treated to the required standard and disposal will be undertaken in accordance with current best practice, guidance and legislation.

## **21.0 *Water Quality***

As part of the preliminary screening stage, areas of known hydrology and hydrogeology constraints were mapped and these areas of land were excluded from further consideration as potential sites for the WwTP. As part of this current ASA stage, a Hydrology and Hydrogeology assessment was undertaken by the relevant specialist and relevant data has been used both in the selection of the sites within the land parcels and in the assessment process. Full details of this assessment are provided in the ASA – Phase 2 Hydrology and Hydrogeology report included as Appendix 9 of this report.

All flows and load to the Wastewater Treatment Plant (WwTP) will be transferred in sealed pipelines. Treated effluent from the WwTP will be discharged to the marine environment via a sealed pipeline. Impacts from potential pipe bursts will be addressed during a risk assessment undertaken as part of the EIS.

Storage capacity in the event of excessive storms or malfunction will be provided both on site at the WwTP and upstream in the relevant catchments. Storm flows in excess of such volumes will overflow to adjacent watercourses or directly to the marine environment.

### **21.1 *Rivers and Watercourses***

Water quality was one aspect included in the assessment undertaken by the hydrologist on the project as described above. Furthermore, all rivers and watercourses have also been assessed by the project ecologist with respect to their ecological significance and importance. Details of both assessments are included in the reports provided in the relevant Appendices of this report.

### **21.2 *Groundwater***

The hydrogeology assessment included a review of potential impacts on groundwater sources. Where references to specific sites were included in stakeholder submissions, these have been reviewed by the relevant specialists in relation to hydrogeology to

ensure they have been included in their assessments. Where any references have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

Details in relation to potential impacts on horticulture are included in section 10.0 above.

### **21.3 Coastal Waters**

Details of the assessment of potential impacts on marine water quality are included in section 5.0 and 10.0 above.

### **21.4 Tidal Flows**

The marine modeling work noted above includes consideration of existing tidal conditions, in addition data on tides and currents within the study area is currently being collected to supplement the data already available.

### **21.5 Outfall**

The final location of the marine outfall within the marine environment will be determined by the marine modeling ongoing throughout the process. The presence of ecological designations along the coastline has been included in the ecological assessment, details of which are provided in section 5.0 above, with full details included in the specialist report provided in Appendix 5.

## **22.0 Other Issues**

### **22.1 Alternatives**

A number of the alternative sites identified in the stakeholder submissions were reviewed as part of the Alternative Sites Assessment – Phase One Preliminary Screening Outcomes Report.

Tooman/Nevitt Landfill: At the preliminary screening stage, full planning permission for the landfill was still in place. However, in addition to difficulties associated with the site on this basis, the site was assessed with regard to the other constraints included in the preliminary screening process and did not satisfy the criteria on the basis that 'The elevation of the landfill site coupled with its distance from all load centres is such that significant pumping costs would be incurred should the WWTP be

located here. The site and lands surrounding the site are also located in lands considered to be a highly sensitive landscape.’ Note that the landscape constraints were not in existence in the same capacity at the time of identification of the site for the landfill.

Silloge Golf Club:	This site was screened out during the pre screening process due to buffer zones applied for sensitive receptors. The site is also a Parks Biodiversity Nature Development Area as outlined in Fingal County Development Plan 2011-2017.
Baleally Landfill:	The costs associated with rehabilitating the site suitable for the construction of the necessary buildings would be excessive and not cost effective.
Bremore Port:	The location of the port in Balbriggan is outside the study area.

## **22.2 ASA Mapping**

Where references to specific receptors perceived to be omitted from the original preliminary screening assessment were included in stakeholder submissions, these have been reviewed by the relevant specialists in relation to noise, odour and people and communities to ensure they have been included in their assessments. Where any references have not been included, the specialist has been required to clearly detail to the project technical team the reasons and justifications for this.

## **22.3 The Planning Process**

The process used in identification of the preferred site option is in line with current legislation and best practice. The consultation process complies with and exceeds the requirements set out in the Aarhus Convention. Article 6(3) states that the public participation process should include different phases with reasonable timeframes, allowing the public to be informed, and for the public to participate effectively during the decision-making process.