.0.3. Legislative and Policy Considerations

10.3.1. European Legislation and Policy

10.3.2. In terms of improving water quality, the outcome would be a higher standard of final effluent discharge and an overall improvement in the quality of the receiving waters. This would be consistent with the aims of the WFD which seek to protect, enhance and restore the status of all bodies of water with the aim of achieving at least 'good status'. In the case of the receiving waters in Dublin Bay, the target date was extended from 2015 originally to 2027 due to Dublin Bay's location at the bottom of the catchments for the Rivers Liffey, Dodder and Tolka. The development proposed would assist in ensuring that Ireland improves it's compliance with the WFD.

10.3.3. This positive outcome would also be consistent with the Bathing Water Directive which requires a minimum target of 'sufficient' required to be achieved for all bathing waters. The ratings are based on the amount of colony forming units of microbiological parameters E.coli and Intestinal Enterococci within a sample.

10.3.4. As is evident in consideration of the principle of the development outlined above, improvement would significantly assist Ireland in complying with its obligations under the UWWTD through the higher standard of effluent treatment proposed and subsequent improved quality of water to be discharged to the receiving water environment.

10.3.5. The provision of the RBSF would assist in delivering the aims of the Sewage Sludge Directive which seeks to encourage the use of sewage sludge in agriculture while regulating its use to prevent harmful effects on soil, vegetation and man. It would also assist in achieving compliance with the EU Nitrates Directive by allowing biosolids to be stored when application of fertilisers of land is prohibited and hence preventing nitrates from agricultural sources polluting ground and surface waters.

10.3.6. National Policy Framework

10.3.7. Strategic Outcome 9 of the NPF (Water) envisages the implementation of the GDSDS, through enlarging capacity in existing wastewater treatment plants including Ringsend and providing a new treatment plant in North County Dublin (GDD Project).

In terms of effective waste management, this Strategic Outcome also requires a standardised approach to managing wastewater sludge. The proposed development is clearly consistent with this strategic outcome.

10.3.8. Under Strategic Investment Priorities, The National Development Plan 2018-2027 makes specific reference to the Ringsend WwTP as a project proposed to provide further capacity to support development in the Greater Dublin region. It also includes provision for waste management and resource efficiency to achieve a circular economy and meet climate change objectives. The implementation of the proposed development is clearly in line with the strategic outcome and if permitted would support the growth of Dublin as the capital city of Ireland and its surrounding region.

10.3.9. Under the River Basin Management Plan for Ireland 2018-2021 (RBMPI), Ringsend WwTP is identified as the single largest wastewater treatment plant in the country, accounting for some 41% of the total wastewater load. The proposed upgrade to the Ringsend WwTP is identified in this plan.

10.3.10. In 2017, Irish Water carried out an internal review of the GDSDS and the findings are set out in a document – Greater Dublin Drainage Strategy Overview & Future Strategic Needs Asset Planning (May 2018). This review sets out the need for the Ringsend WwTP project. The plant capacity is designed to cater for 1.65m PE and is currently experiencing 1.9m PE, resulting in breaches of both the EPA discharge licence and the UWWTD.

10.3.11. Irish Water's WSSP sets out its priority for compliance with the UWWTD and highlights the need for upgrading of wastewater infrastructure. It is noted that the Ringsend WwTP upgrade forms a crucial part of this compliance and would facilitate the delivery of objectives set out in the WSSP.

10.3.12. The NWSMP, published by Irish Water in 2016, identifies the reuse of treated wastewater sludges (biosolids) on agricultural land under nutrient management plans as the current preferred option in the short to medium term. The NMSMP contains a recommendation for the development of regional facilities for the storage of biosolids. The RBSF would be strategically located to serve the Ringsend WwTP and also the GDD project (if permitted).

10.3.13. Overall, having regard to the above, I am satisfied that the proposed development including the Ringsend WwTP and the RBSF components align with applicable national policy. The development would assist Ireland in meeting its obligations under the aforementioned EU Directives and related national legislation. It would undoubtedly be pivotal in enabling sustainable urban growth by providing such crucial wastewater treatment and would address the current environmental risk posed by non-compliances at the existing WwTP. The proposed RBSF would support the overall development for the reasons outlined above.

10.3.14. **Regional Planning Policy**

10.3.15. While under review, the RPGs for the GDA 2010-2020 remain the appropriate regional policy framework document until such time the RSES for the EMRA are finalised and adopted. In terms of the RPGs, strategic investment priorities in relation to wastewater infrastructure are identified in Table 11 of the Guidelines. The expansion of the Ringsend WwTP to its ultimate capacity is listed as a critical strategic project.

10.3.16. The Draft RSES for the EMRA identifies both the Ringsend WwTP and the GDD projects as wastewater infrastructure projects which are ongoing to deliver capacity at a large scale to the metropolitan area. Regional Policy Objectives include RPO 10.5 (Support Irish Water and Authorities in planning growth and increasing compliance with the UWWTD) and RPO 10.6 (Delivery of infrastructure including Ringsend WwTP project).

10.3.17. The Eastern-Midlands Region Waste Management Plan 2015 – 2021 sets out policies for the management and re-use of what would otherwise be waste. Of relevance to the proposed RBSF development, Section 7.4.7 sets out that the management of sludge would be co-ordinated between Local Authorities and Irish Water. Policy H1 seeks to 'work with relevant stakeholders and take measures to ensure systems and facilities are in place for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) generated in the region having due regard to environmental legislation and prevailing national guidance documents, particularly in relation to the EU Habitats and Birds Directive'.

10.3.18. It is evident that the proposed development is supported by and would comply with

applicable regional policies and would provide improved infrastructural benefits for the existing and future GDA growth while improving the receiving water environment.

10.3.19. **Local Planning Policy - Ringsend WWTP**

10.3.20. At a local level, the development is supported by a host of policies and objectives set out in the Dublin City Development Plan 2016-2022. The Development Plan identifies the efficient and timely delivery of necessary infrastructure capacity as necessary for successful urban development. Ensuring the delivery of infrastructure in a sustainable manner is recognised as being crucial to support the sustainable growth of the city. The Development plan references the expansion and upgrading of the Ringsend WwTP as an urgent priority for Irish Water.

10.3.21. Policies of specific relevance include: SI1 (support provision of water, conservation and wastewater systems), SI2 (support and facilitate Irish Water to ensure upgrading of wastewater infrastructure, including Ringsend WwTP) and GI17 (develop and protect coastal, estuarine, canal and riverine recreational amenities).

10.3.22. Objectives include: SIO1 (support Irish Water in the implementation of the 'Water Services Strategic Plan'), SIO2 (work closely with Irish Water for delivery of water services), GIO17 (seek improvement of water quality, bathing facilities and recreational opportunities) and GIO19 (maintain beaches to a high standard).

10.3.23. In terms of zoning, the Ringsend WwTP facility spans across the two areas divided by Pigeon House Road. The majority of the site is zoned 'Z7' with a corresponding objective 'To provide for the protection and creation of industrial uses and facilitate opportunities for employment creation'. Public service installations are permissible uses in this zoning category (Appendix 21 of Volume 2 of the Dublin City Development Plan). I am satisfied that the upgrade of the wastewater treatment plant at Ringsend readily fits this category of development.

10.3.24. The area proposed to be used as construction compound C1 is primarily zoned 'Z14' with an objective 'To seek the social, economic and physical development and/or rejuvenation of an area with mixed use of which residential and 'Z6' would be the predominant use'. Public service installations are a permissible use within this zoning category. The remainder of C1 is zoned 'Z9' with an objective 'to preserve, provide

and improve recreational amenity and open space and green networks'. Permissible uses include 'public service installations which would not be detrimental to the amenity of Z9 zoned lands'. It is acknowledged that a note accompanying the Z9 zoning states: - 'Generally, the only new development allowed in these areas, other than the amenity/recreational uses, are those associated with the open space use'. C1 lands recently received permission for use as a temporary compound (ABP Ref: 29N.YM0004, January 2018). In the current development proposal, it is stated that the compound would be maintained in its existing use as a car park facility, storage area and site offices. For clarity, based on an examination of the drawings and aerial photography and site visit, it is evident that the lands which form part of the C1 compound and which are governed by the 'Z9' zoning do not extend into the Irishtown Nature Reserve.

10.3.25. The site area proposed to be occupied by construction compound C2 is primarily zoned 'Z7' with a small portion to the east zoned 'Z9'. The temporary use of the portion of the construction compound sites C1 and C2 in this instance would in my view not be detrimental to the planned use of the lands in the longer term.

10.3.26. Compound C3 is zoned 'Z14' where public service installations are permissible uses. A small set down area associated with the storm tanks to the north is also zoned 'Z9'. No development is proposed at this location and as stated above, the use of C3 does not form part of the current application.

10.3.27. In October 2017, Dublin City Council adopted the Poolbeg West SDZ planning scheme over an area of 34ha immediately adjoining the Ringsend WwTP site to the south and west. At the date of my assessment, following an appeal to the Board, the Planning Scheme (PL29S.ZD2013) is under consideration. The location of the Ringsend WwTP site lies largely outside of this SDZ area. However, the greater part of the C1 construction compound is located within the area of the SDZ on lands which are denoted 'Mixed Use' which includes uses such as commercial, creative industries, industrial (including port related activities). Concerns were raised by elected members of the city council that the use of this section of land as a temporary construction compound for 10 years may effectively sterilise the lands and request that no decision would be taken on the current application until such time as the outcome of the Poolbeg West SDZ application is decided on. Through written

correspondence set out in the Chief Executive's report, Dublin City Council have stated their view that the use of this land as a temporary construction compound would be compatible with the zoning.

10.3.28. While I note that 10 years is not a short timeframe, nonetheless, I am satisfied that the use of C1 lands as a construction compound would not conflict with or prevent the eventual delivery of the Poolbeg West SDZ. The DCC SDZ team noted this area shown to be occupied by construction compound C1 is likely to be used for cargo storage in the long term and the use of the lands as temporary storage would be consistent with the zoning. I revisit this point below under consideration of the Dublin Port Masterplan. The Dublin City Council SDZ team also stated that the overall SDZ lands would, to some extent, be dependent on the WWTP upgrade. In addition, they stated their requirement that Irish Water would liaise with Dublin City Council with regard to the delivery of Dublin District Heating requirements, where a backup boiler may be required in the vicinity of C1, to ensure minimal impacts on this project.

10.3.29. The planned Eastern Bypass protected corridor runs through the C1 lands. DCC require that the proposals for the use of this land would not interfere with the timely delivery of the Bypass. TII require that no permanent development would occur within the corridor. In response, the applicant stated that no permanent development is in fact proposed in the reserved corridor and that it is the intention to liaise with DCC and the landowner, Dublin Port company, regarding the use of the lands. I have had regard to the study entitled Dublin Eastern Bypass Corridor Protection Study prepared on behalf of NRA/TII in 2014. C1 area is shown within a protected corridor in this study and the delivery of the Eastern Bypass is stated to be a medium to long term objective of the NRA/TII.

10.3.30. The duration for the use of the construction compound C1 would be for a temporary period, albeit for up to 10 years and I am satisfied that its location for the construction stage would not jeopardise the eventual delivery of the future Eastern Bypass or form a reason to withhold permission. For similar reasons, I am satisfied that the Dublin District heating system can also be delivered.

10.3.31. The Ringsend WwTP site is located c.1km north-east of the Sandymount Village and Environs Architectural Conservation Area (ACA) and given the existing brownfield

nature of the site and the separation distance of the site from the ACA, it would not negatively impact on the architectural conservation status or characteristics of the ACA or of associated policies and objectives. Neither would it be prejudicial to the delivery of the aims set out in the Sandymount Village Architectural Conservation Area report, 2013 or the principles set out in the Village Design Statement, Sandymount, 2011.

10.3.32. Outside of the current Dublin City Development Plan, I have examined the Dublin Port Masterplan 2040 (as reviewed in 2018) prepared by Dublin Port. This is a non-statutory framework document which sets out the intended activities and development options for the Dublin Port area up to 2040. C1 lands lie within the ownership of Dublin Port and are shown planned to provide land capacity for the throughput of a new 600m long container terminal quay further east along the River Liffey in front of the ESB's Poolbeg Power Station. As no permanent development is planned in this area, the expansion of Dublin Port or related port activity development would not be prejudiced.

10.3.33. The proposed development is strongly supported in local planning policy terms and would be generally compatible with the land use zoning objectives assigned to the site. As stated above, the development is pivotal to the realisation of multiple policies and objectives relating to the development and sustainable growth of the city and surrounding region in addition to the protection of the environment.

10.3.34. **Local Planning Policy - RBSF**

10.3.35. At a local level, FCC, through its development plan sets out its strategic policy to 'work with Irish Water to secure timely provision of water supply and drainage infrastructure necessary to end polluting discharges to waterbodies, comply with existing licences and Irish and EU law, and facilitate the sustainable development of the County and the Region'. Objective WT03 of the Plan seeks to facilitate the provision of appropriately sized and located wastewater treatment plants and networks including a new regional wastewater treatment plant and the implementation of other recommendations of the GDSDS.

10.3.36. The proposed RBSF would lie on lands zoned 'HI' – Heavy Industry, the objective of which is: - 'Provide for heavy industry'. 'A Waste Disposal and Recovery facility (High

Impact)' is a permissible use within this zoning designation. The RBSF can readily be considered as aligning with the land use zoning objective. Objective WM15 supports the provision of facilities for the safe and sustainable management of sludges. Local Objective 78 (development of infrastructure for waste management), attributed to the site, also supports the development proposal.

10.3.37. The RBSF site falls within the Outer Airport Noise Zone and outside the Inner Airport Noise Zone. It falls outside the Outer Public Safety Zone and is therefore also outside the Inner Public Safety Zone. It also falls outside the flight path to the existing east-west runway. Given the modest nature of the development, I am satisfied that it can proceed without conflicting with aviation objectives including Objective DA10 (restrict inappropriate development which would give rise to conflicts with aircraft movements).

10.3.38. Overall, I am satisfied that the RBSF would form a key element of the overall proposal for which development is sought and is strongly supported by local planning policy.

10.4. Seveso Considerations

10.4.1. Ringsend WwTP

10.4.2. The existing Ringsend WwTP is not an establishment within the meaning of the Directive 2012/18 EU ("Seveso III") which was transposed into Irish law under the European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (COMAH Regulations). However, there are seven 'Upper Tier' Seveso establishments within the general vicinity of the plant, including Dublin Waste to Energy Ltd. facility and the National Oil Reserves Agency facilities. There are also eight 'Lower Tier' Seveso Establishments within the vicinity including two proximate to Ringsend WwTP including Synergen Power Plant and ESB Poolbeg Power Station both which are sited along Pigeon House Road. The existing relationships between the Ringsend WwTP and the Seveso establishments would not change as a result of the development.

10.4.3. As the competent Authority, the HSA were consulted in relation to the Seveso establishments within the consultation distance which is set at 300m from Seveso

sites most proximate to the Ringsend WwTP. Specifically, the HSA was a consultee during the EIA scoping stage and as part of the statutory public consultation in which they were provided a copy of the planning application documentation. No response was received from the HSA and accordingly it can be concluded that the authority does not object to the Ringsend WwTP component in the context of the Seveso Directive. I am satisfied that the Seveso / COMAH context is well understood and would not constitute a reason to withhold permission.

10.4.4. **RBSF**

10.4.5. There are four 'Upper Tier' establishments and four 'Lower Tier' establishments in Fingal. The proposed site for the RBSF is within the Seveso consultation distance (300m) for the Huntstown Power Station, a 'Lower Tier' establishment for the purposes of the Seveso Directive. Specifically, the northern perimeter of the Huntstown Power Station is located approximately 100m from the southern boundary of the proposed RBSF site. The structures themselves would lie just outside of the 300m consultation distance.

10.4.6. As stated above, the HSA were consulted during the scoping stage of the EIA process and during the SID planning application process and as no response was received, it can be concluded that the HSA do not object to the RBSF component of the proposed development.

10.4.7. For similar reasons outlined under my consideration of the Ringsend WwTP, I am satisfied that the Seveso context is well understood and should not form a reason to withhold permission for the RBSF component.

10.5. **Flood Risk**

10.5.1. **Ringsend WwTP**

10.5.2. The application was accompanied by a Flood Risk Assessment (FRA) which followed the methodology laid down in 'The Planning System and Flood Risk Management' (FRA) Guidelines for Planning Authorities 2009 (DoEHLG and OPW). The FRA Guidelines refers to Draft Flood Risk Management Plans (FRMPs). More recently, the OPW has developed a new website (www.floodinfo.ie) which provides

access to plans and maps focussing on areas of significant risk throughout the county.

10.5.3. Based on the mapping information on the above website, the proposed development site including the site compounds lie outside of the 0.1% fluvial Annual Exceedance Probability (AEP)[4] event and is therefore located within Fluvial Flood Zone C where risk of flooding is considered to be low.

10.5.4. The portion of the site where the primary development is proposed lies outside of the 0.1% Tidal AEP event and is therefore located within Coastal Flood Zone C, with a corresponding low risk of flooding. By reference to the matrix of vulnerability versus Flood Zone (Table 3.2 of the FRA Guidelines), the proposed WwTP development, considered to be a highly vulnerable development, is deemed appropriate in an area categorised as 'Flood Zone C'. The northern portion of the site which contains the storm water tanks lies partially within the 0.1% and 0.5% Tidal AEP flood event, however, I note that there is no development proposed as part of this current application at this location. Site Compound C2 lies within the 0.1% AEP tidal event and is therefore within Coastal Flood Zone B. Referring to the vulnerability matrix, and noting that the construction compound development is classified as less vulnerable, this type of development is appropriate in Flood Zone B.

10.5.5. As shown on a map entitled Dublin City – Pluvial Flood Extent Map, dated August 2016, (www.floodinfo.ie), Pluvial Flooding is associated with the site. The Dublin City Strategic Flood Risk Assessment (SFRA) Pluvial Flood Hazard Map indicates the site has for the most part a low flood hazard. Pluvial flood risk is therefore not considered to be significant. I note that the site is by its nature, a brownfield site and it is not intended to have add any significant additional impermeable area and surface water is proposed to be managed by appropriate SuDS measures. Therefore, no significant additional surface water runoff is likely. Any build-up of groundwater would discharge to the drainage system or to Dublin Bay, therefore

[4] The term 'Annual Exceedance Probability' or 'AEP' is used to describe the probability of a flood event of this severity, or greater, occurring in any given year. A 0.1% AEP flood event has a 0.1% or 1 in a 1000 chance of occurring in any given year. A 0.5% AEP flood event has a 0.5% or (1 in 200) chance of occurring in any given year.

groundwater risk is not considered to be significant.

10.5.6. The design finished floor levels (FFLs) of +4.46m OD would cater for future flood risk including an allowance for climate change and freeboard. Some existing buildings would have FFLs below the +4.46 OD design level, however, I am satisfied that it is not a requirement to retrospectively apply this level to existing buildings, particularly as the site is in Flood Zone C where a low risk of flood occurrence is expected.

10.5.7. I note the applicant's point that development proposed for the construction stage (i.e. compound areas) should be set above the 0.5% AEP current scenario of +3.11m OD given the duration of the construction stage would be deemed short term in the context of climate change. This is reasonable.

10.5.8. Overall, I am satisfied that following assessment, it has been demonstrated that subject to commitments around FFLs and SuDS measures, the Ringsend WwTP component would not have any noticeable impact on the existing flood regime.

10.5.9. **RBSF**

10.5.10. The RBSF site is not covered in the flood maps produced under the CFRAM study to date. The PFRA flood extent map and Fingal County Council Strategic Flood Risk Assessment flood zone map both indicate that the existing site lies outside of the 1% and 0.1% AEP fluvial flood extents and as such it can be considered as within Flood Zone C where the probability of flooding is lowest. Based on the Matrix of Vulnerability versus Flood Zone set out in the aforementioned guidelines, 'highly vulnerable development including essential infrastructure' is considered appropriate in a site categorised as 'Flood Zone C' and while the RBSF is categorised as a highly vulnerable development, no justification test is required to be applied.

10.5.11. Groundwater risk is not considered to be significant as there is no historical evidence of groundwater flooding at the site and the available PFRA map indicates that no groundwater flood risk exists near the proposed development site.

10.5.12. OPW do not have historical records of any previous flood related occurrences at the site (www.floodmaps.ie). One such occurrence has been recorded just north of the site at Kilshane cross in November 2002 stated to be as a result of surface water

runoff. A report from FCC in 2005 identified that drainage works were undertaken to alleviate any flooding issues.

10.5.13. The available Preliminary Flood Risk Assessment (PFRA) maps indicate pluvial flood risk associated with an area of the site, predominately along the south east /east boundary. The drainage design is stated to include attenuation and SuDS measures sufficient to ensure there would be no increase in the risk of pluvial flooding as a result of the development at this site.

10.5.14. Overall, I am satisfied that the risk of flooding has been adequately addressed in respect of the RBSF site and it can be concluded that no increased risk of flooding is likely to result because of the development.

10.6. Traffic

10.6.1. Ringsend WwTP

10.6.2. The applicant's EIAR (Volume 3) sets out it's consideration of traffic under Section 13. I deal with this issue of traffic below as part of my planning assessment. Separately I have considered the road network as a material asset within the EIA section of this report. In terms of assessing traffic, the methodology used by the applicant is based on published guidance as referenced in Section 13.10 of the EIAR, primarily TII 'Traffic and Transport Assessment Guidelines' May 2014. Criteria used in the assessment of traffic include Ratio of Flow to Capacity (RFC), queue delay and maximum queue length.

10.6.3. The extent of the study area determined by the applicant was agreed in consultation with Dublin City Council's Road and Traffic Department and includes nine sections of roads which are illustrated in Figure 13-1 of Section 13 of the EIAR – Volume 3.

10.6.4. Overall the site is well served in terms of road infrastructure and the surrounding road network currently accommodates large volumes of traffic. It is served by local roads including Pigeon House road, Whitebank road and South Bank road. South Bank road connects with the R131 regional road at a roundabout intersection with the Seán Moore road. The R131 then continues northwards across the East Link toll bridge and connects with the North Quays port tunnel and M50.

10.6.5. There are five existing access points serving the WwTP site, including three located off Pigeon House road. These are intended to continue in use as part of the current proposals. An entrance c.250m east of the main site entrance which it is stated was used in 2005 during construction at the site is proposed to be re-opened and used as an entrance for both construction and operational phases. A new temporary pedestrian access is also proposed from construction compound C1.

10.6.6. It is anticipated that there would be 240 HGV trips daily and 396 cars/light vehicles during 2020 peak construction year with approximately one third of the HGV trips occurring during night-time. During the operation of the proposed WwTP component, an increase in HGV trips from the current average of 22 to 100 trips per day, comprising 50 deliveries and 50 departures are anticipated to result.

10.6.7. Traffic count surveys were carried out at seven locations along the surrounding road network and information gathered from these surveys was used to ascertain the 2017 AM and PM peak baseline situation which in turn fed into traffic modelling. Baseline Annual Average Daily Traffic (AADT) flows for the surrounding roads are presented in Table 13-9 within Section 13 (Traffic) of the EIAR (Volume 3).

10.6.8. The Point Depot junction, Seán Moore junction and Whitebank junctions were examined for 2020 (peak construction) and 2027 (final year of construction) in both the 'with' and 'without' development scenarios. Dublin City Council intend to upgrade The Point Depot junction to a signalised junction by 2020, however it was examined in its current configuration in the 2020 scenario which it is suggested gives a more conservative assessment. In the analysis, it was assumed that the planned Point Depot Improvement scheme would be complete by 2028. It was also assumed that the Poolbeg SDZ would be in place in 2028. Traffic analysis also considered the impacts on the road network in the 2028 (Year of opening) and 2035 (Design year).

10.6.9. Overall it is submitted that the proposed WwTP component would result in a slight negative short-term impact during 2020 peak construction year and 2028 final year of construction. It is also predicted that the slight negative long-term impacts would arise during the 2028 year of opening and 2025 design years.

10.6.10. It is submitted that as the Ringsend WwTP itself is located off the public road network, it would have an imperceptible impact on road safety during the

construction or operational phases. Noting the increase in traffic which would result, in particular the increase in number of HGV trips to and from the site, in the absence of mitigation, I consider the impact on road safety would result in a 'slight' impact.

10.6.11. Mitigation measures proposed include the preparation of a traffic management plan, adherence to good traffic management and adopting best practice during the construction phase. The HGV cordon which operates in the city centre would prohibit HGV traffic associated with the development entering the city centre and therefore all traffic from the site would be required to access the M50 via the Port Tunnel. An application for an Abnormal Load permit would be a requirement and abnormal load movements are stated to be limited to evening and night periods in order to minimise traffic disruption and delays during business hours. No mitigation is considered necessary or proposed during the operational phase.

10.6.12. Notwithstanding the mitigation measures proposed, residual impacts are anticipated to the traffic flows on the adjoining road network resulting in a slight negative long-term residual impact during the 2020 peak construction year and 2028 final year of construction in AM and PM periods. Residual traffic impacts have also been assessed as resulting in a slight negative long-term impact in the AM and PM periods during operation including 2028 year of opening and 2035 design year.

10.6.13. Post mitigation, no negative residual impacts are predicted on the safety of the road network as a result of construction or operation of the WwTP component.

10.6.14. The Roads and Transport Division of DCC have examined the proposals and stated their satisfaction with the substance and level of detail submitted as part of the EIAR. No objection was raised regarding the access arrangements including proposals to use a previously permitted temporary access off Pigeon House road on a permanent basis. DCC require that no local roads would be used as part of the haul route. Overall, the Roads and Traffic Division have expressed their support for the proposal.

10.6.15. Traffic flow and vehicle queue lengths at the Seán Moore Junction and the Point Depot junction are proposed to be monitored as part of the Traffic Management Plan and restrictions are proposed to be put in place on the movement of construction related traffic if deemed necessary by DCC and/or An Garda Síochána.

10.6.16. Based on the information contained in the EIAR, which I consider represents a realistic analysis of the traffic likely to be generated, I am satisfied that the proposed development would give rise to slight negative short term (construction) impacts and long term (operation) traffic impacts. These relate to traffic flow, capacity and vehicle queues. Given the benefits for the delivery of improved wastewater treatment, slight negative impacts are not unacceptable and would not constitute reasonable grounds for refusal. While road safety is always a priority, it is reasonable to conclude that once the traffic management plan is implemented and noting that all road users including those travelling to and from the site would be required to adhere to road safety legislation, no unacceptable impact on road safety is likely to arise during construction or operation as a result of the proposed development. It is important to note that because the proposal no longer requires the construction of the tunnel element, the volume of HGVs would significantly reduce during construction. An estimated 70,000 HGV movements carrying spoil and rock from the tunnel site over an 18-month period are no longer required. The elimination of these tunnel related trips would be significantly positive on traffic and the surrounding road network.

10.6.17. **RBSF**

10.6.18. The R135 regional road lies to the east of the RBSF site and provides access to the site. The regional road connects with Kilshane cross north of the site and the N2 is located to the east of the R135. The site is located c. 1.6km north of the M50 Junction 5 and lies c.1.5 km west of Dublin airport.

.6.19. Access to the site is currently provided via an existing entrance off the R135. Visibility available is above 90m in each direction which is the desirable minimum sight distance for a road with a 60 kph speed limit. The access would be upgraded and the details would be agreed with the Transportation Department of FCC.

10.6.20. It is anticipated that the proposed RBSF component would be constructed over two phases in 2020-2021 and 2024-2025. The assessment assumes that all the surrounding lands comprising 182 ha zoned for warehousing and distribution and general employment would be developed by 2040 with associated increase in traffic volumes. Results of traffic surveys undertaken at five locations are presented in Section 13 (Traffic) of the EIAR – Volume 4. AADT flows were derived based on

traffic count data obtained from these surveys.

10.6.21. Traffic analysis focused on 2020 (Phase 1 construction year) and 2024 (Phase 2 construction year). Kilshane Cross, R135 Signalised junction, Elm Road Roundabout junction and N2 Northbound Slip Road were examined in 2020 and 2024 in both the 'with' and 'without' project scenarios.

10.6.22. It is anticipated that there would be 25 HGVs arrivals and departures and 70 cars/light vehicles arrival and departures daily during each of 2020 and 2024 construction years. In 2024 there are also 30 HGVs and 10 cars/light vehicles predicted to arrive and depart the site associated with the operation of the facility. In 2040, 70 HGV arrivals and departures and 10 car/light vehicle arrivals and departures daily are predicted to arise during operation.

10.6.23. Based on the assessment of RFC and associated queue delay and queuing length, it has been assessed that the proposed RBSF component would likely result in a slight-negative short-term impact during the 2020 and 2024 construction years at AM and PM peak periods. Post construction, the proposed RBSF would result in an imperceptible negative long-term impact in both the AM and PM peak hours.

10.6.24. In the 2020 and 2024 construction years and in the 2025 (year of opening) and 2040 (design year) scenarios, Kilshane Cross is anticipated to operate above the design threshold and theoretical capacity in both the AM and PM scenarios. The N2 northbound slip road junction would be approaching usual design thresholds in AM and PM scenario 'without' project and marginally above the usual design threshold 'with' project scenario. However, in comparing the 'with' and 'without' project scenario, only marginal reductions in capacity and increase in queue lengths at these junctions are anticipated as a result of the project.

10.6.25. It is assessed that the proposed development would cause an imperceptible impact on road safety during the construction or operational phases. Noting the increase in traffic which would result in increased vehicular and HGV movements in and out of the site, I am of the opinion that, in the absence of mitigation, the impact on road safety during construction would be rated as 'slight' reducing to 'imperceptible' during operation.

10.6.26. Mitigation measures proposed include the preparation of a traffic management plan and adherence to good traffic management and best practice during the construction phase. An application is proposed to be made for Abnormal Load permit and abnormal load movements would be restricted to evening and night to minimise disruption to traffic during business hours. No mitigation is considered necessary or proposed during the operational phase.

10.6.27. Post mitigation and based on the assessment of RFC, queue delay and queue length it has been determined that the proposed RBSF component would likely result in a slight negative long-term residual impact during the construction phase and an imperceptible negative long-term residual impact during the operational phase.

10.6.28. No residual impacts to the safety of the road network are anticipated as a result of the construction or operational phases of the Proposed RBSF Component. Similar to my considerations of the Ringsend WwTP, while road safety is always a priority, it is reasonable to conclude that once the traffic management plan is in place and noting that all road users including those travelling to and from the site would be required to adhere to workplace safety and road safety legislation, no residual impact on road safety is likely to arise during construction or operation phases as a result of the proposed development.

10.6.29. Traffic flow and vehicle queue lengths at the N2 Northbound slip road Junction are proposed to be monitored as part of the detailed traffic management process and restrictions would be placed on the movement of construction related traffic if deemed necessary by FCC and/or An Garda Síochána.

10.6.30. FCC's Transport Department was generally satisfied with the proposal subject to conditions including the attachment of a special contribution to improve the upgrade of the R135 and N2 north bound slip priority junction to a signalised junction.

10.6.31. **Concluding Comments on Traffic**

10.6.32. Having regard to the information contained in the EIAR and the wider application documents, in respect of the Ringsend WwTP or RBSF components, I am satisfied that the proposed development would not give rise to levels of traffic which would result in unacceptable congestion on the strategic road network or compromise road

safety for road users.

10.7. **Design and Amenity**

10.7.1. **Ringsend WwTP**

10.7.2. In relation to the Ringsend WwTP component, it is stated to have been designed to reflect the function of the WwTP within an established industrial / utility area. Some elements would undoubtable be prominent when viewed outside of the site, however, given their location in an established industrial site and the adjoining area which is characterised by industrial development, views of additional structures can be readily assimilated into an industrial/utility context. Landscape and visual impacts are considered in further detail in assessing significant effects on the environment in which it is concluded that post mitigation, the landscape and visual impact resulting from the proposed development would be imperceptible and acceptable.

10.7.3. DCC have expressed some concern with the proposal to use C1 and C2 construction compounds for up to 10 years and considers that this might give rise to impacts to heritage and visual amenity. To that end, DCC considers their use should directly relate to the construction phase and decommissioning should follow in a short timeframe thereafter. In response, the applicant states that the duration of the use of the compounds would be limited to the construction phase and the decommissioning would occur at that point. DCC Parks and Landscape Services Division were generally satisfied with landscape proposals including site perimeter planting to assist in screening the development and recommends further planting along the southern boundary. The Division also seek the removal of temporary works and full restoration of these areas. I am satisfied that this matter can be dealt with by attachment of an appropriate planning condition.

10.7.4. Given that the closest residential dwelling is c.950m away from the Ringsend WwTP and houses proposed on the Poolbeg West SDZ would be separated c.975m, no direct impacts on residential amenity arise. In the longer term, the proposed development would result in enhanced water quality which would be of significant benefit to the amenities of the area including bathers and those who are actively involved in water sports in the Bay.

. . ./.5. Overall, having regard to the above and subject to appropriate conditions around noise, odour and landscaping, it is clear that the benefits associated with the development over the long-term would far outweigh any temporary adverse impact on the amenities of the area and as such any impact on the amenities would not constitute reasonable grounds for refusal in my opinion. Impacts on other related environmental factors are dealt with in the EIA section of this report and traffic impacts are dealt with above under the heading of traffic.

10.7.6. **RBSF**

10.7.7. The rationale for the architectural design of the RBSF is set out in an 'Architectural Concept Statement' which was included with the application. Each of the two storage buildings are proposed to be 105m long and 50m wide internally and would be laid out in bays to facilitate segregation of material. As presented, the buildings would read as typical industrial steel framed structures finished with insulated metal cladding panels, grey and silver in colour. The design incorporates a curved roof which gives a lighter ridge line and a more sympathetic visual presence. The RBSF building design is stated to also have been informed by fire safety requirements. A PV solar array of 1,545 square metres is proposed to be placed on one of the buildings which is stated would contribute upwards of 40% of the sites annual energy load by means of renewable solar energy.

10.7.8. The administration and welfare building is presented as a single storey building 10m wide and 13m long with a 4.1m ridge height. Similar to the main buildings proposed, it would also incorporate a curved roof. Its design is complimentary to the main storage buildings. A new substation would be constructed to ESB Networks requirements. A number of smaller structures on site are proposed to be demolished.

10.7.9. An odour control system has been incorporated to ensure that odour would not give rise to any nuisance beyond the boundary of the RBSF site. The system would involve extracting air from within the storage buildings on a continuous basis as well as sub-dividing each building into two zones so that they could be independently operated fast-action doors would be fitted to control and minimise the time that these doors would be open. Assessment of odour is given further consideration under the assessment of likely significant effects of the environment below. The preparation of

an Operation Environmental Management Plan (OEMP) is proposed and operations staff would be required to ensure that the conditions attached to the required certificate of registration including those which may relate to odour would be adhered to. DAA require that no organic matter such that would attract bird activity on site would be allowed to be present in the open on the site. It is planned that the biosolids would be stored indoors only and therefore no bird hazard on air safety should arise.

10.7.10. A 'Glint and Glare' assessment concludes that the photovoltaic solar array proposed would not result in any nuisance or hazard effect upon local residences or on routes running through the study area including the N2 and airport approach routes. In this regard, I note that the solar arrays which are proposed to be mounted on the roof of the northern building would be partially screened by the adjacent second storage building. Any glare experienced by road users along the northbound carriageway would be limited, occurring through a gap in the vegetation and which I am satisfied would not result in any safety hazard or similar nuisance to motorists. It is also concluded that any glare predicted for the southbound carriageway of the N2 would fall outside of the field of view of motorists and would not present any nuisance effect. Any glare likely to be experienced on approach paths into Dublin Airport is predicted to be of an intensity within acceptable Federal Aviation Administration (FAA) Irish Aviation Authorities (IAA) standards. Having examined the Glint and Glare assessment, the conclusions which I have highlighted above, I am satisfied that Glint and Glare would not present any adverse impacts overall.

10.7.11. Having regard to the above and subject to appropriate conditions, the development of the RBSF should not be withheld on the grounds of design and amenity.

10.8. Community Gain

10.8.1. The issue of community gain has arisen in the consideration of the RBSF component. Meakstown Community Council requested that the applicant would be required to consult with the community council regarding job vacancies and seeks that a community fund would be set up to support facilities or services in the area that would benefit the community.

10.8.2. Under section 37G(7)(d) of the Act, the Board can attach a condition requiring the construction or financing (in whole or part) of the construction of a facility or the financing or provision of a service in the area of the development, if they were of the view that it would constitute a substantial gain to the community. In this instance, the overall development comprises alterations and improvements to the existing Ringsend WwTP component and the development of a new RBSF at Newtown. It is the latter component that is of interest to the Meakstown Community Council.

10.8.3. Key issues of public concern raised through the applicant's public consultation and open days have been considered in the EIAR and I have considered these environmental topics in my assessment. Post adoption of appropriate mitigation measures, no adverse significant effects are likely to arise on the communities surrounding the RBSF.

10.8.4. The applicant has stated their intention to include social clauses as a performance condition of contracts to leverage employment opportunities for the local communities and to work closely with local employment services to fill employment positions. They also set out their intention to provide improvements to the R135 along the road frontage to the RBSF site. Beyond this, no community fund is proposed.

10.8.5. Given the nature of the development and measures proposed by the applicant and that no adverse impacts are likely to result on the local communities, I do not recommend the attachment of a community gain condition.

10.9. Other consents

10.9.1. It is of relevance to note that outside of the assessment of the planning application, both components would require separate consents as appropriate, including but not limited to those listed under.

- In accordance with the requirements of the Waste Water Discharge (Authorisation) Regulations 2007, as amended, (S.I. No 684 of 2007) Ringsend WwTP would be subject to a review of the existing Wastewater Discharge Licence from the EPA. Under this authorisation process the EPA can regulate wastewater discharge to ensure the potential effects on the

receiving water are controlled. In deciding on an application and in the event of a grant of permission, the Board can attach conditions relating to emissions other than those associated with the actual wastewater discharge as beyond controlling wastewater discharge, other emissions do not come within the scope of the Wastewater Discharge Authorisation regulations or the associated licencing regime.

- The RBSF would be subject to regulation by the local authority under the Waste Management (Registration of Sewage Sludge Facility) Regulations 2010. The local authority can issue a certificate of registration (COR) and in doing so can attach conditions on matters concerning types and quantities of sludge to be stored, reception and entry/exist areas, control of odours, integrity of all storage tanks and bays, maintenance and records and requirements concerning environmental pollution. The Waste Permit and the Certificate of Registration database register for waste facility permits and certificates of registration issued by local authorities are held by the National Waste Collection Permit Office (NWCPO).

- Both the Ringsend WwTP and the RBSF components would be required to comply with the requirements set out under the Building Control Acts 1990 - 2007 and the associated Building Control Regulations 1997-2018, including seeking such consents (e.g. Fire Safety certificate and Disability Access certificate) for buildings as may be appropriate.

10.9.2. The information presented with the application states that all of the biosolids generated and stored would be used in agriculture and it is also stated that a certificate of registration is required for the facility. To this end, I note that under Section 51(2) of the Waste Management Act 1996, as amended, a waste licence is not required for the recovery of sludge for use in agriculture. Notwithstanding this, in the event that the facility would require any other consent or waste licence, either now or in the future, this would be a matter for the applicant to ensure such consent is obtained.

,0.10. Conclusion on Planning Assessment

10.10.1. The benefits of the proposed development are considered to be overwhelmingly positive. It's delivery would assist Ireland in meeting obligations set down under EU Directives, national legislation and planning policy expressed through the hierarchy plans which regulate development at a national, regional and local level. The development would enable sustainable residential and economic growth through the delivery of increased wastewater treatment capacity while protecting the environment through improving the quality of effluent discharged to the receiving water environment. It has been demonstrated in the application that the improvement envisaged in final effluent quality can be achieved at the existing Ringsend Wastewater treatment plant by the incorporation of scientifically proven aerobic granular sludge technology into the treatment process together with associated nitrogen and phosphorous removal. When compared to the previously permitted and proposed long sea outfall (in tunnel) option, the current proposal has significant advantages and would be less intrusive on the receiving environment. The regional biosolids storage facility would assist in meeting the aims of the Sewage Sludge Directive, regulating the use of sewage sludge in agriculture to prevent harmful effects. Outside of matters considered above, environmental impact assessment and appropriate assessment are considered in the following sections of my assessment set out below. Subject to consideration of these matters, it can be concluded that the proposed development is in accordance with the proper planning and sustainable development of the area.

11.0 Environmental Impact Assessment

11.1. Introduction

11.1.1. This section of the report comprises an assessment of the likely significant effects of the overall project, referred to by the applicant as the 'proposed upgrade project' which includes the proposed development which is the subject matter of the current SID application in combination with the elements of the 2012 Approval which are also being progressed. A number of the matters to be considered have already been addressed in the Planning Assessment above. This section of the report should therefore be read, where necessary, in conjunction with the relevant sections of the

Planning Assessment. As the application is being made under Section 37E of the Act, it is required to be accompanied by an environmental impact assessment report. With a design capacity for 2.4 million PE, it also falls within and exceeds the thresholds (150,000 PE) of Class 13 of Part 1 of the fifth schedule of the regulations.

11.1.2. The application was submitted after 16th May 2017, the date for transposition of Directive 2014/52/EU amending the 2011 EIA Directive. The application is therefore supported by an EIAR. The Directive was transposed into Irish legislation on September 1st of 2018 under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018, after the application was received.

11.1.3. The Department of Housing, Planning and Local Government (DHPLG) issued Guidelines entitled – Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018). These provide guidance in relation to various sections of the Act arising from the transposition of the Directive. I have noted the above and I have also had regard to other guidance documents including: Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports, EPA and European Commission guidance documents on the implementation of the EIA Directive (Directive 2011/92/EU as amended by 2014/52/EU) and also the Board's internal guidance on EIA.

11.2. **Compliance with Legislation**

11.2.1. The EIAR addresses the overall 'proposed upgrade project', which as I have outlined above is meant to include elements of the previous 2012 Approval being progressed together with the development for which permission is currently sought and which includes both the WwTP component at Ringsend and the RBSF at Newtown.

11.2.2. It comprises five volumes, grouped as follows:

- Volume I: EIAR Non-Technical Summary,
- Volume 2: Introduction (Part A – Report and Part B – Appendices),

- Volume 3: Ringsend Wastewater Treatment Plant (Part A: Report and Part B: Appendices),
- Volume 4: Regional Biosolids Storage Facility (Part A: Report and Part B: Appendices),
- Drawings (Part A: Ringsend Wastewater Treatment Plant Upgrade and Part B: Regional Biosolids Storage Facility).

11.2.3. In total, each of Volumes 3 and 4 of the EIAR contains 19 chapters which are entitled 'Sections'.

11.2.4. As is required under Article 3(1) of the EIA Directive, the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors: (a) population and human health; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape and it equally considers the interaction between the factors referred to in points (a) to (d).

11.2.5. In accordance with Article 5 and Annex IV, the EIAR provides a description of the project comprising information on the site, design, size, characteristics and other relevant features of the project. It also provides a description of the likely significant effects of the project on the environment and a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.

11.2.6. The EIAR includes a non-technical summary of the information referred to in Article 5 (a) to (d) and additional information specified in Annex IV relevant to the specific characteristics of the overall project and project type and to the environmental features likely to be affected. In this regard, the EIAR provides a description of the evidence used to identify and assess the significant effects on the environment. The EIAR provides an adequate description of forecasting methods/ evidence used to identify and assess the significant effects on the environment. Any difficulties which were encountered in compiling the required information are set out under the respective environmental topics which were individually assessed.

11.2.7. The features of the project and/or mitigation measures envisaged to avoid or prevent what might otherwise be significant adverse effects on the environment are set out under each environmental topic considered. The potential impacts and mitigation measures are summarised under Section 17 and a summary of residual impacts is set out within Section 18 of Volumes 3 (Ringsend WwTP) and 4 (RBSF) of the EIAR. Where proposed, monitoring arrangements are also outlined. Environmental interactions and cumulative impacts are also addressed. Consultation undertaken by the applicant meets with the statutory requirements listed under Article 6 of the EIA Directive.

11.2.8. I am satisfied that the information provided in the EIAR is sufficiently complete and up to date. It is of a high level of quality, containing comprehensive studies and scientific analyses which are evidently prepared by qualified and competent experts. In this regard, I note that the qualifications and expertise listed and demonstrated by the experts involved in the preparation of the EIAR. I am also satisfied that the participation of the public has been effective and the application has been made accessible to the public by electronic and hard copy means with adequate timelines afforded for submissions.

11.2.9. My assessment is based on the information provided by the applicant, including the EIAR, the reports and submissions made in the course of the application by Planning Authorities, prescribed bodies and observers and the applicant's response to reports and submissions.

11.3. Alternatives

11.3.1. Alternatives which were studied are addressed within Volume 2 of the EIAR in respect to both project components. In respect of the Ringsend WwTP proposals, it is outlined that the GDSDS recommended the Ringsend WwTP should be maximised within the confines of its current location and that a new wastewater treatment facility would be sited in north County Dublin (the Greater Dublin Drainage Project). It also references that the GDSDS was the subject of a Strategic Environmental Assessment (SEA) and that the process considered a comprehensive assessment of alternative locations for the additional wastewater treatment required for the region and concluded that the Ringsend WwTP was the optimum location. In

addition, the current EIA considered alternative technologies which could potentially be employed. These include the following:

1. Sequencing Batch Reactors (SBR) and Capacity Upgrade (SBR + CU) continuing to use the Long Sea Outfall Tunnel (LSOT);
2. Deep Shaft Aeration (DSA) with SBR discharging to the Lower Liffey Estuary;
3. Integrated Fixed-Film Activated Sludge (IFAS) discharging to the Lower Liffey Estuary;
4. Membrane Bioreactor (MBR) discharging to the Lower Liffey Estuary and;
5. Aerated Granular Sludge (AGS) discharging to the Lower Liffey Estuary.

11.3.2. The options were scored against 15 parameters following which a conclusion was reached that the preferred option based on technical, environmental and cost grounds would be the use of AGS treatment on site to improve effluent quality discharging into the Lower Liffey Estuary at its existing outfall. A comparison was then presented between the AGS and LSOT (permitted under the 2012 Approval) options and the AGS option was considered as being more favourable at the end of the process.

11.3.3. In relation to the RBSF, five alternative locations were shortlisted and assessed against four criteria (Environmental, Economic & Engineering, Planning and Social & Community). At the end of this process, the current site at Newtown emerged as the preferred site.

11.3.4. For both the Ringsend WwTP and the RBSF components, the 'do-nothing' option was also considered and ruled out as not being a suitable option in each case.

11.3.5. Overall, a description of the reasonable alternatives studied by the developer, which are relevant to the proposed project and its specific characteristics have been clearly presented, together with an indication of the main reasons for selecting the chosen option for each of the Ringsend WwTP and RBSF components, taking into account the effects on the environment.

11.4. Conclusion on EIAR Compliance with Legislation

11.4.1. I am satisfied that the information provided in the EIAR is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment to be incorporated into its decision on the planning application. I am also satisfied that the information contained in the EIAR complies with the provisions of Article 3, 5 and Annex (IV) of EU Directive 2014/52/EU amending Directive 2011/92/EU.

12.0 Likely Significant Effects on the Environment

12.1. Introduction

12.1.1. In this section of my assessment, I consider the direct and indirect significant effects of the development against the factors set out under Article 3(1) of the EIA Directive 2014/52/EU, which include:

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

12.1.2. My assessment is structured to follow items (a) to (e) directly above in respect of each of the two project components. I have dealt with noise and odour under the heading of c) land, soil, water, air and climate. I have considered all of the documentation lodged with the EIAR and all of the documents and drawings on the planning application file, including written submissions.

12.2. Population and Human Health

12.2.1. Population and Human Health – Ringsend WwTP component

Introduction and Existing Environment

12.2.2. In terms of population, the EIAR provides details of the resident population, working

population and the visiting community, including recreational amenities. The local area comprising electoral divisions Pembroke East A, Pembroke East B and Pembroke East C is identified as the area which would be most likely to experience local impacts arising from the Proposed WwTP component.

12.2.3. The closest residential dwellings are located c. 950m to the south-west of the proposed WwTP, along Beach road/Strand road. Dwellings are also located c.975m west of this site along Pigeon House road. Poolbeg West, located to the south west of the Ringsend WwTP site, has been designated as a Strategic Development Zone (SDZ), which is earmarked to deliver approximately 3,500 homes and other commercial and mixed uses.

2.4. In terms of the working population, employment is concentrated in Dublin city centre, which forms a large proportion of the c.750,000 working population in the GDA as a whole. According to the 16th Issue of Dublin Economic Monitor published in February 2019, the latest unemployment figures for Dublin is 5.3% (Q4 2018). The unemployment rate for the State is 5.3% (CSO Jan 2019). The Ringsend WwTP facility currently provides employment for c. 40 full time employees.

12.2.5. Regarding the visiting population, there are multiple visitor attractions and leisure and recreational amenities, sporting facilities and clubs, recreational walks, parks and hotels, bars and restaurants in the local and regional area. The local coastal walkway extends from the Merrion Gates to the Great South Wall. The Aviva stadium, hosting sporting and other events is located c. 2km to the south west of the site. Under the Quality of Bathing Waters Regulations 2008, as amended, four stretches of Beach (Dollymount Strand, Sandymount Strand, Merrion Strand and Seapoint) have been designated as bathing waters and are used as a recreational amenity by the local and visiting population.

12.2.6. The EIAR provides information on the general Health Status of persons from the CSO 2016 census across local EDs (Pembroke East A, Pembroke East B and Pembroke C). Sensitive receptors within the local area are identified as including: Irishtown Health Centre, St. Patrick's Boys National School, Cambridge Road, St. Patrick's Girls National School, Ringsend College / Coláiste na Rinne and Ringsend Community Centre, all of which are located in the Dublin 4 area.

Potential Impacts

12.2.7. The assessment concludes that the proposed Ringsend WwTP component would not give rise to significant adverse effects on the local or wider population. If permitted and implemented, the development would give rise to employment for c.150 construction workers (at peak) and 15 new employment positions during operation, resulting in positive impacts through economic benefits. Once complete and operational, the Ringsend WwTP would have increased capacity for wastewater treatment and would be pivotal in supporting planned residential growth aligned with the growth of the economy in Dublin city and region which it serves.

12.2.8. In considering human health impacts, the DPHLG guidance states that the 'notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive'. The delivery of the Ringsend WwTP upgrade would result in a higher standard of wastewater treatment. Effluent discharged to Dublin bay would comply with the Water Framework Directive (WFD), the Urban Waste Water Treatment Directive (UWWTD) and the Bathing Water Directive (BWD).

12.2.9. Slight adverse impacts are predicted to arise because of an increase in traffic on the road network during the construction and operation phases. Further details on traffic impacts including road safety are considered under the heading of Traffic, as set out under the Planning Assessment section of this report.

12.2.10. Concerns were raised regarding human health during the applicant's initial consultation with the public prior to lodging the application. Potential impacts identified include concerns that pollution might cause a deterioration in water quality. It is of relevance to note that Dublin Bay waters are not used as a resource for drinking water, but parts of the bay are used as a recreation area for swimming and other activities and it is stated that the bay is a resource for fish and shellfish intended for human consumption. It is stated under Section 5.5.3.1 of Volume 3 of the EIAR that no shellfish are collected within the inner part of Dublin Bay. It has been determined in the assessment of the water environment that, for the most part, the construction phase would not result in impacts on designated bathing waters and as such would not give rise to effects on human health. It is acknowledged however that there would be a deterioration of bathing water quality in 2019/2020, due to

decommissioning of aspects of the WwTP in advance of new phases being added. As is stated in the EIAR, this would lead to a 'slight' negative indirect impact for the bathing population and others undertaking water-based activities, removing their enjoyment and use of this amenity for the stated period. While accepting this impact would be short term in duration, I would be more inclined to conclude that this impact would be 'moderate' rather than 'slight' in terms of significance for the community that use the bay for recreation. This is particularly so as it is stated in the EIAR under the heading of Population and Human Health that the impact would be largely dependent on overall water quality in the area at the time and whether the current bathing restrictions in place would continue to remain in place over that time.

12.11. Concerns have also been raised during the course of the application concerning impacts on air quality and dust, noise, odour, traffic and impacts as a result of rodents (as potential vectors of disease), management of sludge and safe disposal of hazardous material. These impacts have been considered in detail in the EIAR by the appropriate specialists, which I deal with under the assessment of the respective environmental factors. However, insofar as they relate to human health, I have considered the mitigation measures proposed and residual impacts likely to arise post implementation of mitigation, as set out below.

Mitigation Measures

12.2.12. There are no specific mitigation measures proposed in relation to population or human health during construction or operational phases beyond those proposed to address other environmental impacts. The overarching design measures proposed for the construction stage centre around the preparation and adherence to the CEMP and a traffic management plan.

12.2.13. Regarding deterioration in water quality during the period of decommissioning of aspects of the WwTP, these works are proposed to be carried out during the winter of 2019/2020 when recreational swimmers and water based sports activities are at seasonally low levels and as set out in Section 4 of the EIAR, this impact is not anticipated to result in an overall deterioration in bathing water quality at the designated bathing areas.

12.2.14. Dust would be controlled by applying the German air pollution control limit, known as

the TA Luft limit of 350 mg/m^2/day (averaged over a one-year period) for receptors outside the site boundary. At this level, no unacceptable dust that would give rise to adverse impact on population or human health or on the enjoyment of amenities in the vicinity of the proposed WwTP component are anticipated.

12.2.15. Air quality dispersion modelling found that during the construction phase, there would be no impact greater than imperceptible for receptors as a result of traffic emissions and, as such, there is no likelihood of adverse effects on human health in this regard.

12.2.16. The noise and vibration assessment concludes that once best practice measures are employed during construction and operation, noise and vibration generated would fall within acceptable limits.

12.2.17. Regarding odour, it is intended that the predicted odour concentrations at all areas of long-term public exposure and potential areas of future residential use, including the Poolbeg West SDZ, would be below the adopted odour criterion of 3 ou_E/m^3 as the 98th percentile (hourly average) limit and hence no negative impacts are predicted on population or human health from odour as a result of the proposed development at Ringsend WwTP component. During construction, this criteria of 3 ou_E/m^3 would be met apart from where there is the temporary shut-down of existing odour control units to facilitate new connections, though during this time, no perceptible change in odour concentrations outside of the site is predicted.

12.2.18. With the implementation of good traffic management, apart from slight impacts due to traffic delays, no adverse effects on population or human health are likely to arise as a result of traffic during the construction or operational phases. It is proposed that the local community would be kept informed of developments, including any traffic diversions, through a dedicated point of contact.

12.2.19. A rodent and pest control plan is proposed to be prepared and implemented to prevent impacts that could occur from the spread of pathogens from rodents that might be disturbed during construction.

12.2.20. Hazardous materials that may be encountered would be required to be handled and appropriately governed by comprehensive waste management legislation. This is

dealt with in greater detail under the heading of Land and Soils in this assessment.

12.2.21. Sludge generated would be treated at the existing facility to form biosolids and the biosolids would be transported to the RBSF for storage prior to it's use as a fertiliser on land. I revisit this matter in greater detail as part of my assessment of the RBSF component.

Residual Impacts

12.2.22. It is clear that residual impacts on population and human health would be broadly positive as a result of providing improved wastewater treatment quality and an increase in capacity to cater for sustainable residential and economic growth, as well as safeguarding health and the environment.

12.2.23. During construction, there would inevitably be some nuisance associated with construction activity, detracting from the amenity value of public walkways close to the Ringsend WwTP site and resulting in a slight negative impact for the visiting population. Alterations to the boundary treatment along the southern and eastern boundaries of the WwTP are predicted to also result in impacts, which are slight/neutral significant in the longer-term operational phase along this section.

12.2.24. There is potential for short-term residual moderate impact on bathers and participants in other water sporting or recreational activities during the expected deterioration of water quality during 2019/2020, as tanks are taken off-line on a phased basis while being upgraded, as dealt with above. I am satisfied that the duration of this impact would be short-term in duration and given the overall long-term benefits that would result, this is acceptable.

12.2.25. Overall, I am satisfied that mitigation measures identified throughout the EIAR are sufficient to ensure that no unacceptable residual impacts or effects on population or human health are likely to arise during construction or operation.

Monitoring

12.2.26. No monitoring specific to population or human health is proposed. Monitoring is proposed in relation to other environmental factors which I have considered and referenced as relevant under specific sections of my assessment.

12.2.27. **Population and Human Health - RBSF Component**

Introduction and Existing Environment

12.2.28. The population of the EDs Ward and Dubber are identified as those which would be most likely to be aware of or be impacted by the development of the proposed RBSF component. The larger residential areas are concentrated within two and three kilometres from the RBSF site, separated by employment and industrial uses. There is a detached house at the eastern boundary of the site. A development of up to eight residential units is under construction on a site of two former houses, located c.25m from the eastern site boundary. In line with Dublin and the State there is a downward trend in unemployment.

12.2.29. In terms of the visiting population, recreational facilities and amenities within the immediate area include the Ward River, golf clubs and St. Margaret's GAA club. The Tolka Valley Regional Park is located 4.1 km to the south and west.

12.2.30. The EIAR provides information on the health status of the population from CSO 2016 census across local EDs (Dubber and The Ward). Sensitive receptors are identified as including: Charlestown medical and dental centre, St. Margaret's Primary and St. Luke's Primary school, Le Chéile secondary school and Tyrellstown community centre.

Potential Impacts

12.2.31. The construction and/or operation phases could potentially give rise to impacts on population / human health, including air quality and dust, noise, sludge storage and management, odour, traffic and pest control.

12.2.32. These impacts have been considered in detail in the EIAR by the appropriate specialists and I have dealt with these also under the assessment of the respective environmental factors. However, insofar as they overlap with human health, I have considered the mitigation measures proposed, as set out below, together with the residual impacts likely to arise post implementation of mitigation.

12.2.33. If permitted and implemented, the development would give rise to employment for c.70 construction workers and 10 new employment positions during operation,

resulting in positive impacts through economic benefits.

12.2.34. At a wider scale, positive indirect benefits would result for population and human health in supporting improved water treatment and providing a regional facility for the sustainable management of biosolids generated at the Ringsend WwTP and GDD Plant (if permitted).

Mitigation Measures

12.2.35. There are no specific mitigation measures proposed in relation to the resident, working or visiting population during construction or operational phases beyond those proposed under other specific environmental headings. The overarching design measure proposed for the construction stage centres around the preparation and adherence to the CEMP and a traffic management plan.

12.2.36. Air quality dispersion modelling found that in relation to traffic emissions during the construction phase, there would be no impact greater than imperceptible for receptors as a result of traffic emissions and, as such, there is no likelihood of adverse effects on human health arising out of air quality.

12.2.37. With employment of best practice, construction and operation noise is expected to fall within acceptable noise limits and, as such, would not give rise to negative impacts on human health.

12.2.38. With the implementation of good traffic management, no adverse effects on population or human health are likely to arise as a result of traffic during either the operational or construction phases. It is proposed that the local community would be kept informed of developments through a dedicated point of contact, including any traffic diversions.

12.2.39. In relation to odour, given that the treated biosolids would generate low odours and they are proposed to be stored indoors in a specially-designed building where odour control features are proposed to be employed, I am satisfied that significant effects on human health as a result of odour would not likely arise.

12.2.40. A rodent and pest control plan is proposed to be prepared and if implemented, this would prevent impacts to human health which could arise from the spread of

pathogens from rodents potentially disturbed during construction.

Residual Impacts

12.2.41. I would agree with the conclusion that the proposed RBSF component would result in slight negative short-term impacts on the local population during construction and no impacts would remain during the operation phase. Positive short-term impacts would also occur as a result of employment for 70 construction workers during this construction phase and opportunities for an additional 10 employees would arise in the operational phase.

Monitoring

12.2.42. No specific monitoring in relation to Population or Human Health is proposed. Specific monitoring relating to other environmental factors, as relevant are outlined under each specific Section of the EIAR.

12.2.43. **Conclusion on Population and Human Health**

12.2.43.1. Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and measures within suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on **Population and Human Health**.

12.3. **Biodiversity**

12.3.1. **Marine Biodiversity - Ringsend WwTP component**

Introduction and Existing Environment

12.3.2. The site associated with the Ringsend WwTP, including the existing outfall is located outside but adjacent to the boundaries of eight European sites. These are listed under the heading of Terrestrial Biodiversity – Ringsend WwTP and are considered also under the heading of Appropriate Assessment.

12.3.3. The current status of the Liffey Estuary Lower (2015) remains 'moderate' and the coastal waters of Dublin Bay have a 'good' ecological status (Ref: Coastal Water

Quality Status 2010-2015 available on www.catchments.ie). The most recent Trophic Status Assessment (EPA, 2015) indicated that waters in the Lower Liffey Estuary and Dublin Bay can be regarded as 'Unpolluted', while the Upper Liffey Estuary is regarded as 'Eutrophic' and Tolka Estuary as 'Potentially Eutrophic'.

12.3.4. It is submitted in Section 5 of Volume 3 (Biodiversity - Marine) of the applicant's EIAR, that in the existing baseline scenario, the River Liffey and, to a lesser extent, the Tolka River, account for most of the total oxidised nitrogen (TON) input to Dublin Bay, while the WwTP is responsible for most of the phosphates and ammonia that are released into the bay. In this section, information is also provided about details of the intertidal marine benthic collection, marine mammals and fisheries together with results obtained from intertidal benthic surveys carried out in September 2015 and analyses of those results. Waterbirds are dealt with in my assessment under the heading of Biodiversity – Terrestrial.

12.3.5. In considering the marine environment, the area of the zone of influence of the effluent from the Proposed Ringsend WwTP component is presented in Figure 5-16 of Volume 3 of the EIAR and is stated to be based on the predicted modelled output for the winter depth averaged 50 percentile for Dissolved Inorganic Nitrogen (DIN). The zone broadly comprises the sea water inside the retaining walls, an area of the bay west of Bull Island and a small section to the south east of Bull Island.

12.3.6. Intertidal habitats of Dublin Bay include sandflats of fine to very fine sand and areas of soft muddy sand. The marine species recorded in Dublin Bay included anemone, worm types, crabs, shrimps, prawns, mussels, cockles, snails and fish. Marine mammals recorded in proximity to Dublin Bay included Minke Whale, Humpback Whale, Killer Whales, Harbour Porpoise, Bottlenose Dolphin, Common Seal and Grey Seal. Fish species recorded in the mouth of the River Liffey included: Trout, Bass, Sand Smelt, Common Goby, Mullet, Plaice, Nilsson's Pipefish, Sea Scorpion, Lemon Sole, Pollock, Spratt, Lesser Sand Eel, Eel, Flounder and Shore Rockling. Other species stated to be known to occur in the area include Salmon, Lamprey and Mackerel.

Potential Impacts

12.3.7. The Ringsend WwTP is currently not capable of achieving the necessary nutrient

reduction to meet the standards set out under the EPA Wastewater Discharge Licence and the UWWTD. It is expected that, in the absence of the proposed WwTP component, i.e. in the 'do-nothing/baseline' scenario, water quality in the receiving environment in the inner bay would likely deteriorate even further as wastewater volume / loading increase, leading to an increase in organic enrichment, oversupply of DIN to the area impacted by the existing outfall and a consequential decline in biodiversity in the Tolka Estuary and North Bull Island in particular. In this 'do nothing/baseline' scenario, the outer and south bays have been assessed as being unaffected by nutrient inputs from the WwTP at Ringsend. Notwithstanding this finding, it has been assessed that while localised impacts could occur, these would not be to a scale that could pose a threat to shellfish, fish or marine mammal populations in the Dublin Bay area.

12.3.8. During construction, the undersea tunnel / LSOT would not form part of the development and, as such, no direct physical disturbance of the seabed would occur. Therefore, Dublin Bay would not experience any negative impact including habitat destruction and/or changes in the nature or quantity of species. During the construction phase, there would be some reduction in effluent quality for a nine-month period in the winter of 2019/2020 during construction of the AGS structures and the SBR retrofit. There would also be an increase in the number of stormwater overflows from c.1.2% to between 2.5% and 3.3% of influent. It is submitted that the impact on marine aquatic and benthic ecology would not be discernible for this temporary period.

12.3.9. During the operation phase, the main impact on the marine biodiversity environment is predicted to be positive, due to improved water quality and decrease in nutrient loading in the treated effluent, leading to an increase in oxygen availability in Dublin Bay and, consequently, a substitution of algae and other microorganisms for a more biologically-diverse species. Such positive impacts are assessed as being limited to the species in the Tolka Estuary and the lagoons in the intertidal mudflats of North Bull Island. The changes/improvements are predicted as slow, as the areas of the bay would continue to be influenced by nutrient loads from the Liffey and Tolka rivers.

12.3.10. No significant adverse impacts on marine mammals or fisheries are predicted and

any changes to a richer fauna community is expected to be slow for the same reasons outlined. It has been assessed that seals may benefit from an increase in fish life in the inner part of Dublin Bay, as a result of improved water quality.

Mitigation Measures

12.3.11. Given that the proposed Ringsend WwTP component would lead to an improvement of water quality in Dublin Bay and a predicted corresponding improvement to the marine biodiversity environment, no mitigation measures are deemed to be required. Works throughout the construction phase would be required to comply with statutory requirements and adhere to the CEMP and best practice measures embedded into the design.

Residual Impacts

12.3.12. The assessment concludes that the proposed Ringsend WwTP component would give rise to an improvement in water quality status and positive impacts in the parts of inner Dublin Bay (the mouth of the Liffey, the Tolka estuary and the lagoons off North Bull island) resulting in increased diversity of benthic macroinvertebrates. Areas and habitats beyond these areas are considered to experience negligible changes as a result of the proposed WwTP component. It is also assessed that birds and marine mammals that forage within Dublin Bay would likely experience positive impacts because of the substitution of algae and other microorganisms for a more biologically-diverse species, though this impact is anticipated to be slow to occur. Residual impacts for the outer bay, sandflats off Bull Island and areas south of the South Great Wall have been assessed as negligible with habitats remaining unaffected by the proposed WwTP. I am satisfied with the conclusion that construction impacts would be no greater than indiscernible.

Monitoring

12.3.13. Monitoring of macroinvertebrate communities is proposed to detect any changes in the nature and abundance of the constituent taxa and post-construction water quality surveys are proposed to validate the mathematical results from modelling.

12.3.14. **Marine Biodiversity - RBSF component**

Residual Impacts

12.3.15. The assessment concludes that the proposed RBSF Component would not have any negative impacts on **Marine Biodiversity**, due to its large separation distance from the sea. I am satisfied that this is the case and that no further assessment is required.

12.3.16. **Terrestrial Biodiversity - Ringsend WwTP component**

Introduction and Existing Environment

12.3.17. It is submitted that the effluent from Ringsend WwTP cannot be detected outside of Dublin Bay, and therefore the assessment is confined to those European sites within the area of the bay along the seaward limit, which extends from Baily Lighthouse to Dalkey Island, as presented on Figures 6-1 (SAC European sites in Dublin Bay) and 6-2 (SPA European sites in Dublin Bay) of Section 6 in Volume 3 to the EIAR.

12.3.18. Accordingly, there are eight European sites identified as having potential to be adversely affected by the proposed Ringsend WwTP component. These are presented in Figures 6.1 and 6.2 of Section 6 of the EIAR (Volume 3) and are listed under as follows:

- South Dublin Bay and River Tolka Estuary SPA (site code 004024);
- South Dublin Bay cSAC (site code 000210);
- North Bull Island SPA (site code 004006);
- North Dublin Bay cSAC (site code 000206);
- Howth Head Coast SPA (site code 004113);
- Howth Head cSAC (site code 000202);
- Dalkey Islands SPA (site code 004172) and
- Rockabill to Dalkey Island cSAC (site code 003000).

12.3.19. As the Proposed WwTP Component could potentially result in significant effects on the designated European Sites within Dublin Bay and the immediate vicinity, having regard to the sites conservation objectives, a Natura Impact Statement is included

with the application and I consider this aspect under the heading of Appropriate Assessment below. These European sites are described in the Natura Impact Statement that accompanies this Planning Application.

12.3.20. The following proposed NHAs lie within Dublin Bay and the surrounding environment:

- South Dublin Bay pNHA (site code 000201);
- North Bull Island pNHA (site code 000206);
- Howth Head pNHA (site code 000202);
- Grand Canal pNHA (site code 002104);
- Royal Canal pNHA (site code 002103) and
- Dalkey Coastal Zone & Killiney Hill pNHA (site code 002106).

12.3.21. Intertidal areas support large waterbird populations. Terrestrial habitats include coarse grassland outside of the WwTP and a bund to the east which contains an area of immature woodland and ornamental shrub which I am satisfied is of low conservation value. The eastern bund also contains invasive plant species (Japanese Knotweed). Irishtown Nature reserve to the south and this is used by wintering waterbirds. It is stated in the EIAR that it was originally provided as a winter feeding area for light-bellied Brent Geese. Waterbird numbers were drawn from monitoring surveys carried out as a condition attached to the adjoining Waste to Energy plant and surveys carried out by Birdwatch Ireland. Brent Geese were evidently recorded on this grassland from November to April each year varying between 34 and 411 over the eight winters 2007/08 to 2014/15. The grassland is stated to be also used by waders, with peak counts in winter 2014/2015 of 44 Oystercatcher, 3 Black-tailed Godwit, 1 Curlew, 2 Redshank and 3 Black-headed Gull (Mayes, 2015). Occasionally large flocks of Black-headed Gulls and Herring Gulls are stated to have also been recorded on the grassland.

12.3.22. At a wider level, Dublin Bay hosts internationally important bird species including: Light-bellied Brent Goose, Knot, Black-tailed Godwit and Bar-tailed Godwit, as well as 19 other species in nationally important numbers. Both Common Tern and Arctic Tern breed in Dublin Port. In late summer and autumn, large numbers of post-

breeding terns congregate in South Dublin Bay, originating from a wide area throughout Ireland. The terns forage in Dublin Bay, including the area potentially affected by the effluent arising from the Ringsend WwTP.

12.3.23. A colony of Black Guillemots is also known to breed in the quayside areas of Dublin Port and in the tidal stretches of the River Liffey. These birds forage in Dublin Bay, including the area potentially affected by the effluent arising from the Ringsend WwTP.

Potential Impacts

12.3.24. In the 'baseline/without project' scenario, invasive species (Japanese Knotweed) would spread further on the eastern boundary of the site. In addition, the nutrient outputs from the WwTP due to operational overload and stormwater discharges could result in a decline in the biodiversity of invertebrate communities in the Tolka Estuary and the North Bull Island channel, though it is stated to be unlikely that this scenario would have any significant impact on the waterbird populations that forage in Dublin Bay.

12.3.25. The removal of the bund at the eastern end of the WwTP site would involve the removal of recently planted trees and shrubs which would lead to a loss of habitats of low biodiversity value. Connection of a high-voltage ESB cable is a requirement and during construction of this element, this could lead to temporary impacts on the terrestrial biodiversity environment, as the work would occur in an area within South Dublin Bay and River Tolka SPA.

12.3.26. It is submitted in the EIAR that there is potential for indirect visual disturbance to Brent Geese and other waterbirds using this amenity grassland immediately south of the WwTP, arising from construction activity and movement of construction workers. I note however that the waterbirds would be accustomed to visual interaction with similar type of activities during the current operation of the plant and adjoining industrial maintenance and operation activities, which leads me to conclude that this impact would not likely be significant.

12.3.27. It is submitted that construction noise would not result in significant impacts on both wintering and summering waterbirds in Dublin Bay, as these waterbirds are

habituated to noise from similar construction and industrial activities in the surrounding environment and, therefore, construction is not considered to be threatening to waterbirds and terns which are qualifying interests of the European sites in Dublin Bay. It is also submitted that the noise levels which the tern colony would generate, stated to be up to 70 to 80 dB(A) would far exceed the level of construction noise. While that may be so, noise associated with construction activities would be of a different type than noise type generated by the waterbirds or tern colonies themselves. However, given the nature of the area which is predominately characterised by heavy industry and similar activity whereby construction and maintenance are not new features, I accept that the waterbird populations would be accustomed to such noise and that there would be no significant impacts likely on waterbirds or terns in the absence of mitigation. By way of comparison, it is stated that during the construction of the sewage treatment plant at Mutton Island in Inner Galway Bay, numbers and diversity of wader species roosting close to the construction site remained stable or slightly increased (Nairn, 2005).

12.3.28. It is stated that effects of dust deposition on flora or fauna would be imperceptible as the levels would not be high enough such as to cause any adverse impacts on flora or fauna. In addition, waterbird species are not sensitive to NOx concentrations contained in air emissions which could occur during construction and operation phases.

3.29. During operational phases, the potential indirect impacts on intertidal habitats in Dublin Bay would be neutral or somewhat positive in the vicinity of the existing discharge location or in the wider coastal and marine area.

12.3.30. The EIAR addresses concerns that an improvement in water quality and biological status of estuaries through the project delivery and a reduction in nutrient loads could have a knock-on effect on the trophic food chain and consequently waterbird populations. While some changes are expected to occur, particularly to algal blooms which are a source of organic matter to the benthic ecosystems, it is submitted that this would be limited to the northern sections of Dublin Bay. It is submitted that the proposed WwTP component would not have any detrimental impacts on the aquatic food chain in the bay and that as a result of the proposed WwTP component, benthic

macroinvertebrates are assessed as likely to become more diverse and phytoplankton is unlikely to become less abundant, but rather more diverse and such changes would likely be slow to occur. It is stated that the Tolka Estuary would continue to be affected by some level of organic enrichment from the Liffey and Tolka rivers. The conclusion reached, based on previous scientific studies and results from surveys is that the bird populations, whether dependent on aquatic plants or infaunal macroinvertebrates are not being likely to be impacted by the proposed WwTP component. I am satisfied based on the scientific information submitted that the proposed WwTP component would not lead to any detrimental impacts in the bay and the bird populations would not be negatively impacted on.

Mitigation Measures

12.3.31. Solid screening is proposed to be erected prior to construction to reduce or eliminate any visual disturbance from construction activities to Brent Geese and other waterbirds using the amenity grassland to the south. I note that this is already in place, stated to be part of a works contract and I assume would also serve to secure the construction site.

12.3.32. No mitigation is considered to be required in relation to noise impacts on waterbirds or nesting terns, as these species are accustomed to traffic and machinery noise in the area.

12.3.33. An Invasive Species management plan is proposed to be prepared and implemented as a control measure to prevent the spread of Japanese Knotweed. A dust management plan is proposed to be implemented during construction. No dust mitigation measures are stated to be required or proposed during operation.

12.3.34. The required connection to the ESB high voltage cable would be carried out in the period between 1st May and 31st August (when the Brent Geese are absent from the SPA) and the construction area would be fully reinstated by backfilling with the original soil and laying of grass turves in their original position. The grassland is proposed to be fully reinstated in time for the return of the geese in September/October.

Residual Impacts

12.3.35. The assessment concludes that with mitigation in place, no negative impacts are predicted on terrestrial biodiversity (including flora and fauna) during either the construction or operation phases, as a result of the Ringsend WwTP component. Based on scientific information presented in the EIAR, there is no evidence to suggest that the anticipated reduction in nutrient loading would give rise to adverse impacts on the trophic food chain and consequently waterbird populations.

12.3.36. The Parks and Landscape Services Division of Dublin City Council state their requirement that all invasive species are removed entirely from the Ringsend WwTP site and they request that a condition be attached seeking proposals to be submitted in this regard. No submission was received from the Department of Culture, Heritage and the Gaeltacht / National Parks and Wildlife Service (NPWS) addressing biodiversity.

Monitoring

12.3.37. It is stated that monitoring of waterbirds on the grassland would take place during construction and for a year after to establish the efficacy of the mitigation measures on potential disturbance. A comprehensive monitoring programme currently being undertaken by Birdwatch Ireland for all of Dublin Bay, is also proposed to be used to inform the assessment of the efficacy of potential changes in waterbird populations related to effluent discharge.

3.38. Annual monitoring to determine the efficacy of measures used to control the spread of invasive species is also proposed.

12.3.39. **RBSF component**

Introduction and existing environment

12.3.40. The site comprises mainly open areas of grassland, with dry meadow and grassy verges and areas are being grazed by horses. It is not covered by any nature conservation designations.

12.3.41. There are three European designated sites within 10 km radius of the site: Malahide Estuary cSAC (site code 000205), Malahide Estuary SPA (site code 004025) and

South Dublin Bay and River Tolka Estuary SPA (site code 004024).

12.3.42. Two pNHAs are also located within a 5km radius: Royal Canal pNHA (site code 002103) and Santry Demesne pNHA (site code 000178). There are no ecological pathways between these pNHAs and the RBSF component and I am therefore satisfied that no impacts would arise on these pNHAs.

12.3.43. A drainage ditch runs along the western perimeter of the site. It is submitted to be of negligible biological value due to it having a silty substrate and very slow flow. It flows into the Huntstown stream which is a tributary of the Ward River, c.5km from the site. As informed by IFI, the Ward River is an important salmonid system, having resident salmon and sea trout populations. The river enters the Broadmeadow River north of Swords and ultimately discharges into the Malahide Estuary cSAC.

12.3.44. Bird species recorded on the site are common in farmlands with one species, Robin, amber-listed (medium conservation concern) in the 'Birds of Conservation Concern in Ireland' (Colhoun and Cummins, 2013). No larger mammals were observed on site. Badger foraging and commuting signs were found on the site. Five bat species were recorded on the site, largely associated with Leisler's bat, with some activity of Common pipistrelle, and low numbers recorded for other species (Soprano pipistrelle, unidentified Myotis species and unidentified Pipistrellus species). Trees and structures on site are not considered suitable for roosting of bats.

12.3.45. Overall, I would accept the applicant's conclusion that the site is of local importance in terms of terrestrial biodiversity.

Potential Impacts

12.3.46. In terms of terrestrial biodiversity, dry meadow and grass habitats would invariably be lost as a result of the development. No hedgerows or treelines are proposed to be removed as part of the proposed RBSF component and breeding birds would not be adversely impacted during construction.

12.3.47. Bats would be able to continue to feed in remaining grassland areas and along field boundaries. As approximately half of the grassland would remain undeveloped, adequate area would remain for foraging by badgers.

12.3.48. Impacts would be no greater than imperceptible and negative in the long-term / operational phase.

Mitigation Measures

12.3.49. During construction, no vegetation would be cleared from the site during the bird breeding season (between 1st March to 21st August) to avoid disturbance to nests, subject to results of a breeding bird survey, prior to construction. If no breeding birds are observed during the survey, it is stated that this mitigation measure would not be required. I consider this approach to be reasonable. Noting observations of badger usage of the site for foraging, confirmatory surveys for badgers are proposed prior to construction and, if required, appropriate mitigation measures would be put in place. Stormwater would be attenuated and discharged at greenfield runoff rate. Petrol and oil interceptors would be used to remove any potential contaminants from run-off from the site. Any run-off with potential for containing biosolids would be collected and discharged to a public wastewater sewer.

12.3.50. During the operation phase the northern site area would be planted with deciduous trees to mitigate loss of foraging areas for bats. Floodlighting would be directed downwards to avoid light spread to cover this proposed planting. As part of the design, during operation, wastewater and run-off within the buildings and any run-off with potential for containing biosolids would be collected and pumped to a public sewer.

Residual Impacts

12.3.51. I would agree with the conclusion arrived at, that with mitigation in place, no negative impacts are predicted on the terrestrial biodiversity environment beyond neutral and imperceptible, as a result of the RBSF component.

Monitoring

12.3.52. No monitoring is proposed, which is acceptable.

12.3.53. **Conclusion on Biodiversity**

12.3.54. Having regard to the above, I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed

development, proposed mitigation measures and measures within suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable significant direct, indirect or cumulative impacts on **Biodiversity.**

12.4. **Land, Soil, Water, Air and Climate**

12.4.1. **Land and Soil - Ringsend WwTP Component**

Introduction and Existing Environment

12.4.2. Subsurface information from geotechnical investigation and published data indicates that the site comprises a minimum of 6.3m of made ground on marine sediments to depths of up to 14.5m below ground level (bgl). During investigations, glacio-marine deposits were encountered below this layer to depths of up to 22.8m bgl. Bedrock comprising weathered limestone with interbedded siltstone and mudstone was encountered at levels between 41.3m and 47.1m bgl.

12.4.3. The made ground encountered on site comprises predominately sand, clay and gravel. It is stated that large proportions of manmade waste material were observed in the geotechnical investigations, containing building waste, tyres, metal, cinders and some hazardous material including asbestos.

12.4.4. No geological heritage sites are located within the proposed WwTP site. Two such areas, North Bull Island and Bottle Quay, are located relatively close.

12.4.5. In terms of hydrogeology, the aquifer classification for the Calp Limestone formation by the Geological Survey of Ireland (GSI) is locally important (Li). There is no detailed vulnerability classification on the GSI database from the site, however, by applying GSI guidance, the vulnerability of the shallow groundwater is assessed as 'high' and the deeper aquifer is assessed as 'low'. Groundwater underlying the site is hydraulically connected to Dublin Bay and responds to tidal changes. It is saline in nature and not considered a suitable groundwater resource. Results for permeability coefficient (k) within the made ground were quite variable, ranging from 1.5×10^{-9} m/s to 2.4×10^{-2} m/s (Causeway, 2012 and 2016).

Potential Impacts

12.4.6. Spoil from excavation works within made ground would comprise an estimated 2,030