Our Case Number: ABP-312131-21

An Bord Pleanála

Sabrina Joyce-Kemper
23 Portmarnock Cresent
Portmarnock
Co. Dublin

Date: 03 October 2022

Re: Greater Dublin Drainage Project consisting of a new wastewater treatment plant, sludge hub centre, orbital sewer, outfall pipeline and regional biosolids storage facility
Townlands of Clonshagh, Dubber and Newtown, County Fingal and Dublin City

Dear Sir / Madam,

An Bord Pleanála has received your submission in relation to the above mentioned proposed development and will take it into consideration in its determination of the matter.

The Board will revert to you in due course in respect of this matter.

Please be advised that copies of all submissions / observations received in relation to the application will be made available for public inspection at the offices of Fingal County Council and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: www.pleanala.ie.

If you have any queries in the meantime please contact the undersigned officer of the Board. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Eimear Reilly
Executive Officer
Direct Line: 01-8737184

PA09

Teil	**Tel**	(01) 858 8100
Glao Áitiúil	**LoCall**	1890 275 175
Facs	**Fax**	(01) 872 2684
Láithreán Gréasáin	**Website**	www.pleanala.ie
Ríomhphost	**Email**	bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

PLANNING SUBMISSION - 312131

Observer Name(s):	Sabrina Joyce-Kemper
Address:	C/O 23 Portmarnock Crescent, Portmarnock, Co. Dublin
Date:	29th September 2022
Planning Authority:	Fingal County Council (FCC)/ Dublin City Council (DCC)/ Kildare County Council (KCC)/ Meath County Council (MCC).
Planning Reference:	SID Development – ABP-312131-21 (reactivation of ABP-301908-18)
Development Description:	Greater Dublin Drainage Project consisting of a new wastewater treatment plant, sludge hub centre, orbital sewer, outfall pipeline and regional biosolids storage facility

Introduction.

I Sabrina Joyce-Kemper wish to reiterate my objection to this SID development application. I have taken an active role as observer on this application in its previous iteration (301908), making written observations and taking part in the oral hearing. I also judicially reviewed certain legislative issues with the previous ABP decision resulting in the quashing of the file and this remittal and reactivation of the application. Since the judicial review, I and my steering committee have continued our research into the development. We represent the public concerned in communities in Howth, Sutton, Baldoyle, Portmarnock, Malahide, Kinsealy, Balgriffin, Coolock, Clonshaugh, Baleskin, Sillogue, Kilshane and Blanchardstown. Via FOI and AIE requests with Irish Water and different Ministerial Departments and state bodies we have become aware of some concerning issues regarding this application that must be addressed.

While we could not afford to retain the services of experts for expert reports we have attempted to give as much technical detail as we can, and ask that the Board consult fully with prescribed bodies such as the EPA, HSA, HSE, Marine Institute, Inland Fisheries Ireland, NPWS, OPW, SFPA, BIM, ASCOBAN and MARA when it is established in relation to these issues. We also ask that if the Board does not have the expertise to assess the application that it retains the services of appropriate and independent experts in terms of Ecology, Environmental Law, Marine modelling etc. It is imperative when making any future decisions that the Board comply with the Habitats Directive, EIA Directive and all other legislation that calls legally for compliance.

In the intervening time I have attained a Diploma in Planning and Environmental Law from Kings Inn and have raised legal issues in this objection which I feel I can now claim to have some expertise in. I am also acutely aware that Minister Peter Burke and the Attorney General are overhauling the Planning Act and associated legislation with potential changes coming in December. In light of this I would raise the issue of additional public consultation if any of this legislation is enacted before the board make a decision on this SID reactivated case, in the interest of Justice.

I would like to thank the Board for allowing us the opportunity to make further submission on this reactivated case, it however as suggested by the Board in their letter, a "general submission" as solicited.

Once Irish Water and prescribed bodies have submitted updated information and the application is legally complaint with requirements to be up to date we hope to make another submission on the significant additional information submitted. We respectfully suggest that if the additional information required to make the application valid, is substantial, that it is submitted as new stand alone application so that there is now confusion between what was submitted in the past and what is actually applicable now. This will save the board having to specify details that make up the consent in any decision they may make. We also call for another oral hearing. I have attched letter of Solicitation.

1. Project History:

This project was born of the Greater Dublin Strategic Drainage Study (GDSDS) 2005, initially it was referred to as the Greater Dublin Drainage Scheme (GDDS) when it was managed by Fingal County Council (FCC) during years approx 2009 - 2014 and its current iteration the Greater Dublin Drainage Project (GDDP) which was taken over by Irish Water soon to be Uisce Éireann (UE) when the Water Services responsibilities of all Planning authorities were transferred to the State Utility which up until next year is a subsidiary of Ervia.

The Board must be cognisant of any legal implications of a name change and separation from ERVIA. The project began as an 720,000 – 850,000 population equivalent (PE) Waste water treatment plant (WWTP) , 3 Pumping stations (PS) and orbital sewer, and tunnelled outfall, which was reduced to a 750,000 Plant and finally to the 500,000 PE WWTP, 2 pumping stations a Sludge Hub Centre (SHC and Regional Biosolids Storage Facility (RSBF). The basic plan that was put forward in 2005 nearly twenty years ago of a single large WWTP, Orbital Sewer and pipeline has not changed much since 2005 despite serious advancements in Waste Water treatment technology and methodology.

2. Outdated application:

The application is now over 4 years out of date. Surveys, Cumulative impacts of new planning application that interact with this development and updated costs assessment must be provided. Irish Water have also applied to the CRU to use the moneys ring-fenced for the GDD project on other areas of Irish Water Expenditure due to an unprotected deficit in budget for RCU 3. As such the CRU has confirmed that the moneys have been reluctantly released. Therefore we must ask the question if the GDD no longer has the regulators clearance to invest capital expenditure in the GDD this revenue control cycle 2021-2024, how does Irish Water propose to progress the application, or development when it is no longer funded for expenditure on the project (consultants/ design/ surveys/ planning and legal fees etc). In light of this is this application premature?

2.1 Surveys:

The original application was lodged in June 2018. Over four years ago. Even at that stage many of the surveys were dated with a good portion being carried out during the years Fingal County Council were managing the project from 2009-2014. Some of the dye and drogue studies for instance date back to 2012/, nearly ten years ago. Many Surveys of flora and fauna were from 2015-2017. Attached at Appendix A1 . Please find an advice note ***on the lifespan of ecological reports and surveys*** from the Chartered Institute of Ecology and Environmental Management (CIEEM). The advice clearly states that reports over three years cannot be relied upon and gives examples of what time frames are acceptable and why Ecological reports may become outdated and why they must be recent to be relevant. As such in order for the application to legally comply with the EIA Directive and Habitats Directive all surveys and reports must be brought up to date.

2.2 Legislation:

A great deal has happened on the legislative landscape both Nationally, at EU Level and Internationally.
The original application did not include assessments under legislation such as the Environmental Liability Directive, and new EIA transcriptions to include the EIA portal requirements and details of experts listed in EIAR etc. Guidelines in EIA for An Bord Pleanála Aug 2018 from Department of Housing state the Requirement that the EIAR must be prepared by competent experts and for the competent authority to have, or have access to, sufficient expertise to examine the EIAR. An EIAR must include a list of the experts who have contributed to its preparation, identifying, for each expert, the part or parts of the report for which he or she is responsible/has contributed to, his or her competence and experience, including qualifications where relevant, and any other information demonstrating the contributor's competence. The list of experts need to be submitted.

It is also apparent that a dredging licence and dumping at sea licence consent are required, as the excavated substrate will not all fit back in the tranche and so must be appropriate disposed of. There may be dual assessment element here.

There is also a substantial amount of new legislation that may not have transitional arrangements for a remitted file such as the new Foreshore regulations. The GDD was not listed as a specified project that could be fast tracked and legally it is unclear if the Foreshore element must now be carried out by ABP or wait for the setting up of MARA the new maritime agency. The Foreshore application for this GDD Project is currently on hold and had not yet gone out to public consultation. There are elements of a foreshore licence that would not be generally assessed in normal planning appeal such as impediments to navigation, soil liqufaction, full hydro morphology surveys and modelling, marine traffic,

All legislation that has been enacted or updated since June 2018 that relates to this planning file must be included and assessed against compliance of this development in an updated application.

2.3 Cumulative impacts:

All planning applications since the GDD application was made, or amendments to earlier identified planning consents that interact with project route need to be listed and assessed for cumulative impacts or for additional constraints to the GDD Project application and CPO. For example the Hole in the wall upgrade in Portmarnock / Baldoyle has been completed but now blocks the original access route to one of the GDD project compounds. Heavy machinery would now also have to cross a pedestrian and cycleway to access the site. It appears that part of the proposed Compound has actually been used for this development. So the CPO may no longer be valid and drawings may have to be reconfigured.

There are a number of new planning applications in the immediate vicinity of the WWTP including:
- New Data centres,
- Eirgrid cable crossings,
Statkraft Electricity infrastructure,

- Belcamp SHD,
- New Airport Runway,
- Huntstown Power Gas station,
- New Hotels (holiday Inn)
- New Petrol Station Clonshaugh Road
- Airport Fuel pipeline
- Wastewater infrastructural work with DAA
- Change to night flight conditions at Dublin airport,
- widening of rail line at Maynetown as part of the Dart Expansion
- New residential developments such as Portmarnock South Phase 1D etc.,

Then at the outfall examples such as:
-Copenhagen Energy/ Sunrise wind farm cable connector,
- Howth Pier redevelopment
- Howth Harbour dredging application
- Dublin Array Wind Farm.
- Dublin Port Dredging and Dumping at sea licences.

Also Brexit and the issues surrounding waste water discharge legislation and regulation in the UK which are resulting in devastating raw sewage discharges to the Irish sea from UK waste water treatment plants must be assessed.

Cumulative impacts need to be assessed on all such planning applications and projects that now interact with the GDD route.

2.4 Paucity of Data in application to date

We have identified a number of issues with the efficacy of some of the surveys that have been carried out in the application in particular in relation to for example the Dye and drogue surveys which we have listed these issues in Appendix A2

Sediment transport and geomorphological assessment.

An issue we believe was never adequately assessed was sediment build up, and erosion/ scour impacts from the dredging/ trenching of the outfall for nearly 6 km from the shore. The sediment modelling was only based on an average trenching depth of 5 metres when at the interface the trench may need to be 11 metres deep.

There are protected reefs less than 1 km from the outfall route and the interface location of the dredging starts just 100 or so metres from a special area of conservation for sediment benthic species. The modelling took account of sediment in the water column but not where it would deposit. They also only modelled for a single port diffuser when the actual development is for a multiport diffuser over 100 metres at the end of the pipeline.

We believe additional modelling should include bedload transits and destinations, water column suspended sediments can go anywhere as they are dispersed and the modelling to be valid should include the exact type of outfall configuration. As the dredging and trenching will take place at the mouth of an estuary precise sediment modelling is paramount.

Although hydrodynamic modelling was carried the results were not fully calibrated although no explanation is given why. The modelling CORMEX and MIKE 2 did not appear to include wave action and were modelled during summer conditions only; they also took place in one case nearly a decade before the planning application between 2010 -2015. In winter our beach can empty of sand right down to the bare underlying rock and then after a storm the whole seabed will deposit up on the strand again as you can see by the sand levels.

It is our contention that wave impacts will be important, depending on the depth of the outfall, but more importantly about where the sediment will end up within the bay, modelling should include at least a year and include winter effects, the data run as it stands is totally inadequate Further, that this is data that is 10yrs old is also a grave concern as wave activity and extremes are on the increase due to climate change, as is sea level rise (now increasing faster so that waves will impact at a higher level on the intertidal). The sea level rise issue is relevant to the outfall location. In the Bathymetry map of the area there can be seen a natural underground trench locally called the long hole that causes a very unpredictable tidal gyre like movement that re circulates waters between Ireland's eye and Portmarnock. It is an interesting coastal area and has proven sediment issues, with Howth Harbour requiring urgent dredging works in the next year or two due to elevated siltation. The channel in and out of the Baldoyle Estuary (a special conservation area) is also interesting and has changed direction of the last few centuries (originally it was a navigable channel which hugged the coastline, before sediments built up and altered the direction. You can view different maps of the coastline at: http://geohive.maps.arcgis.com/apps/webappviewer/index.html?id=9def898f708b47f19a8d8b7088a100c4

Nearshore tidal gyres (bu Irelands Eye) will alter with sea level rise and so we must be clear of what assessment of the effect of changing sea level over the life of this development has been undertaken, is it future proofed against sea level rises and associated impacts for the next 30 years? A report tracking maps (GIS) of changes that have occurred in the positions of MHWS and MLWS since 1890s to date and the vegetation edge and those expected in the future, to if erosion patterns are to be identified. This data should be combined with potential scour and soil liquefaction from the operational phase of the development to try and assess if the outfall pipe could contribute to a loss of sediment via scour leading to erosion or if it could cause a build-up of sedimentation leading to changes in the current topography of the seabed north or south of the pipeline.

It is also imperative that a full hydromorphological/ geomorphological survey of the area is carried out to inform accurate models. It is also a requirement for legal assessment of a water body under the Water Framework Directive. Our Portmarnock Community Association have scientists on the committee and for a number of years they have been monitoring and recording and levels on the beach. It is our belief that the dredging and pipe line will result in geomorphic effects on the highly protected estuary (SAC/ SPA/ RAMSAR pNHA) area in terms scour and deposition which may cause sediment built up on one side of the trench and scour that will erode into the protected and rare dune peninsula on the other. For this reason we reiterate that a geomorphological study of Portmarnock to Howh coast should be carried out.

Evidence of such potential of such an occurrence can be found at Sutton Creek which was drastically modified after the Sutton to Ringsend subsea pipeline was constructed. As per Appendix A3. the channel

was so changed that Sutton dingey club were forced to change their launch location. Such a channel change at the mouth to Baldoyle estuary could have serious implications for the SACs and Portmarnock Spit NHA and must be assessed.

Design drawings. At present in our opinion, this application should be considered an outline permission. Nearly all drawings are indicative, the are no subsurface engineering drawings for the WWTP and Pumping Stations. There are three possible WWTP processes but only one has been subject to assessment with no proof of whether the process is a worst case assessment. Essentially the whole project is being left over to a detailed design at a post consent stage which does not constitute a design envelope and is contrary to the EIA and Habitats Directive, calling for precise and definitive information.

2.5 Alternative Site Assessment (ASA).

The initial ASA process took place when the site required for the WWTP had to accommodate a 750,000 PE Plant 3 pumping stations (with an option to utilise the Grange tanks, build a Grange pumping station at Stapolin/ Baldoyle and have the possibility to reverse the flow from Ringsend via Sutton pumping station to bring effluent from Ringsend to the GDD plant. There was a suggestion to tunnel a pipeline from Sutton Pumping station to the proposed GDDS Grange PS to take flows from Sutton Pumping Station and the North Dublin Drainage Scheme (NDDS) catchment pipe but the project team identified Baldoyle Bay SAC as being ***too sensitive a site*** to tunnel under, so that option appeared to have been rejected on that basis.

See section 8.4 of the Assessment of Domestic and non Domestic load on proposed regional WwTP appendix A3.1 GDD EIAR Vol 2 part B of 6 which states:

Diversion of this (NDDS) Catchment is dependent on the diversion of the entire NFS (North Fringe Sewer) catchment as it is not considered feasible of divert the NDDS sewer until the NFS catchment (including Portmarnock and Baldoyle) is diverted for the following reason.

"a new pipe would have to be constructed from Sutton pumping station to the new Regional WwTP. Routing of this pipeline would be difficult as a land based route is not available and a sea raute would take take the pipe under the dort rail line and through the environmentally sensitive Baldoyle Estuary"

We have concerns that the chosen site will not be acheivebale due to constarins imposed by the new Fingal Development Plan.

Dalata Submission

The Inspector makes reference to the Dalata submission in her report but mentions all issues raised BAR the issue of revisiting the ASA process for the development in its amended form. Happily the Irish Water Response to to submissions goes into detail on the Dalata Submission. Dalata hotel group via Coakley O'Neill Town Planning, raised the issue in their original submission (page 5) very clearly:

"the second paint to make here is that the site selection is based on a process that began, after the SEA, in 2011 and concluded in 2013. The applicant advises that:

A review of the ASA reports carried out by the project team in 2017 found that the assumptions and data supporting the ASA findings and recommendations have not changed significantly in the intervening years and concluded that the proposed site at Clonshaugh remoined the 'most favourable' site for the proposed WwTP"

Therefore no new site selection assessment was undertoken for the proposed development. The approach consists of a re-evaluation on the initial site selection process carried out between 2011-2013. Since then, a new Development Plan has been adopted and several planning permissions have been granted in the immediate area for the new commercial and residential uses. Our view is that the noture and character of the area has changed to such a degree that it is reasonable to require that a more detailed evaluation of the changes should have formed part of the applicants study of alternative sites.

The Delata submission continues:
On this basis we submit that that there is significant information deficit in relation to site selection and consideration of olternative sites and an absence of a more up to date robust evaluation in that regard.
With the final Final Paragraph stating: *In conclusion while the need for the proposed greater Dublin Drainage project is acknowledged we submit that the proposed Regional Wastewater Treatment Plant ond Sludge Hub Centre ot Clonshaugh are not in accordance with the proper planning and sustainable development of the immediate area for reasons that they*

In their reply to the Dalata submission Irish water in their response to submissions January 2019 summarise the Dalata submission as follows at section 80 :
80. The Dolata submission considers that no new site selection assessment was undertaken for the Proposed Project, and that the approach consists of re-evaluation of the initial site selection process (carried out between 2011-2013). The submission suggests thot the nature and charocter of the area has changed to such a degree since original site selection assessment, that it is reasonable to require that a more detoiled evaluation of the changes should have formed part of the study of alternative sites. In this regard, it is stated that there is a significant information deficit in relation to site selection and consideration of alternative sites.

At section 17 and 212: IW stated in their response:
A review of the ASA/Route Selection Report was undertaken by the Project team in December 2017. The purpose of this review was to examine eoch element of the Proposed Project against the findings of each Phase of the ASA/Route Selection in light of the development of the Proposed Project since the final ASA/Route Selection Report was published in 2013 to ossess whether the recommendations of the ASA/Route Selection Report remained valid. This review concluded that the methodology, findings and recommendations of the ASA/Route Selection process remain valid.

Therefore the DEVELOPER did consider the new version of the plant 500,000 in the context of alternatives in December 2017 in the response to submissions. In fact they rely on the review to reply to observers who raise the issue of the previous ASA process not being relevant to this application (which includes a 500,000PE plant). They just failed to give a detailed evaluation or written copy of their review that could be scrutinised by The Inspector/ Board and the Public. As this information in the form of observations and the above reply was before the inspector and the board they should have had regard to the issue and requested

further details of the evaluation of alternatives by the developer in light of the current application. It can therefore be proven that the developer studied the alternative but did not provide any information on these feasible alternatives that he considered.

3. Marja Aberson Advice

In his brief of evidence at the oral hearing , Ciaran O'Keefe announced that UV treatment would be applied. He stated; *"Subsequent to the Response and having regard to the submissions made by Fingal County Council and members of the public including fishermen, Irish Water asked us to carry out some further analysis, which my colleague Marja Aberson, who is a marine ecologist specialising in shellfish, completed. Her advice was to the effect that as an abundance of caution to ensure the protection of the shellfish,* ***additional treatment should be applied to the effluent****. Irish Water has determined that it will apply UV treatment to all effluent discharges.* ***The utilisation of UV treatment does not require any additional structures or changes to planned structures."*** however no report containing the summary of advice from Ms Aberson nor the data it was based on was submitted to inspector or the application.

We obtained a copy of the Dr. Aberson's summary of advice (See appendix A4) in a report which was not compiled until June 2019 in or about the time we requested a copy of her evidence from Dan at the GDD application team. When we received a copy of the report from the GDD, we established that nowhere in that summary of advice does Dr. Aberson suggest that additional treatment should be applied to the effluent. In fact, the complete absence of any recommendation by Dr. Aberson of a treatment that could ensure safe levels of E.coli was indicative that there was no additional treatment that could be recommended. She also indicated that a safe level of E.coli for razor clam (the closest shellfish species area to the outfall) could not be determined due to lack of data.

What Dr Aberson actually did appear say in paragraphs 15 and 16 of her report was: *"15. A review by Cefas (2014) has ottempted to assess the evidence for potential use of indicator species to classify shellfish production areas. It was concluded that the mussel Mytilus spp. may be used as an indicator in many situations, but an indicator approach may not be recommended at this stage for representation of Ensis spp. due to no supporting data available.****Due to the paucity of data, it will be imprudent to estimate a potential accumulation factor in the tissues of razor clams as current work has shown a wide range of uptake rates and maximum concentrations between bivalve species, and with spatial-temporal differences also expected.****"*

"16. In consideration of the proximity of the proposed outfall pipe from the Proposed Project to the receiving shellfish woters, the current classification of A and the scarcity of data on Ensis spp., ***a precautionary principle should be applied for assessing the risk to the Malahide razor clam fishery.*** *It is therefore recommended that Irish Water should seek to meet the Cefas indicative threshold value for 'all species throughout the shellfishery (Table 3, Appendix 2)."*

Based on Dr. Abersons actual verbatim report it would appear that the material facts of the issues relating to potential ecoli contamination of shellfish and the implications of UV treatment and its efficacy at this stage were not presented in full to the Inspector and therefore the Board. The Applicants by appearing to present their own solution (UV Treatment) as Dr. Abersons and by failing to raise issues relating to safe levels of ecoli in Razor Clams, did not give the inspector and and Board Pleanála the opportunity for robust assessment.

We decided to request further information via FOI/AIE on the data that supported the Marja Aberson report. The information we received back is greatly concerning. The information contained a number of

AS Bundle 1
AS Bundle 2

email correspondence (Appendix)in relation to what Ms Aberson had advised and how it was to be presented to the oral hearing. She repeatedly suggested that she was not comfortable putting forward a definitive expert opinion as the paucity of data available would not support an opinion either way. It also transpite that she was presnt in the Hotal at the oral hearing but was not presented to give her own evidence which was submitted by Ciaran O'Keefe instead as part of his evidence. It is our understanduing that an Inspector can only accept evidence from an expert if they themselves read it into the record. As such the reliance on that section of Mr O'Keefes evidence may not be legally sound.

Contained in the FOI was also some correspondence and reports which relate to the modelling on ecoli levels and uptake in Oysters/ mussel and "all species" which is the category that Ms Arbeson suggested the Razor Clam must fall into. The modelling was carried out on the Malahide Shellfish monitoring point just at the mouth of Malahide estuary. However more importantly and contrary to all other modelling presented with this application, which we believe just referenced and gave impacts at this this monitoring point, this report (which was not presented to the board despite being available some days before the oral hearing and requiring legal advice from ALG) modelled monitoring points of the Designated shellfish areas closet to the outfall discharge point. The results as Alan berry states to Ciaran O'Keefe in his email are ***"not good".*** The modelling shows breaches of save levels of ecoli in the razor clam that would impact the class of the shellfish area and commercial fishing and export market to China of Razor clams. The reasons for not submitting this information (unless we missed it) and the obvious requirement that all modelling now take account of the closest points of the designated shellfish areas must be fully addressed in this remitted application. We have attached the report, email correspondence and our own maps to aid the inspector/ board at Appendix bundle A6

4. Shellfish Waters:

Malahide shellfish waters were Designated Class A at the time of the decision but since then also hold a B classification during outside of the seasonal months. Class A is the highest standard achievable, and the main species harvested is Razor Clam. Inland Fisheries Ireland (IFI) were consulted on this issue but unfortunately their submission was only two paragraphs, that indicated that the Shellfish Directive and Bathing water quality Directive would need to be adhered to in relation to this high capacity sewage outfall. The Sea Fisheries Protection Authority in Howth were not consulted post application which is unfortunate as they are the notification authority for any potential pollution contamination to the Malahide shellfish waters. If they had been consulted they could have provided a map of the Razor clam conservation area for the east coast **(Attached)** APPENDIX A6 which shows that while the area where the pipeline is trenched and the outfall operates is not a designated class A area it is nonetheless a specified zone for razor Clam conservation and is also fished by fishers commercially.

I was able to obtain a relevant observation by the SFPA (attached see page 7 of Appendix A7 in relation to the Portmarnock South Phase 1 B development, which would construct a much smaller wetlands treated SUDS water outfall into Baldoyle Estuary. This observation would be extremely relevant in this case Their response which stated the following;

2. Baldoyle Estuary feeds directly into the southern end of the Malahide shellfish production area. Malahide is classified as A which permits the direct consumption of razor clams without any depuration or further processing. The Classified status of A affords the Irish Sea razor clam fleet and associated processors direct

access to the Asian seafood market worth in excess of 8.5 million Euro at first sale. Live razor clams are harvested on a year-round basis and arrive in the Asian seafood markets within 48 hours of harvesting.

*3. **Any deterioration in the water quality to the Malahide shellfish production** are will remove direct access to the Asian live razor clam market by the Irish fleet and processors. The Malahide shellfish production has a number of existing outfalls feeding into it from the surrounding areas which add to any risk of a reduction in water quality.*

4. There is the potential for serious risks on food safety if system failure permits untreated sewage into the receiving waters of Malahide Shellfish production area. A robust system must be in place for the early detection and notification to prevent contaminated shellfish reaching consumers and the negative effects on the market.

5. All failures in the system in Mayne Road and Portmarnock bridge stations must be notified to bath the SFPA HQ and the local SFPA Howth office so immediate measures can be put in place to ensure that contaminated shellfish does not enter the food chain.

The SFPA's above observation, combined with the summary advice of Ms. Maria Aberson in Irish Waters original report, combined with the (we believe) unsubmitted "All Species" modelling that was "not good", raises a very clear question regarding whether the 300 million litres of sewage effluent discharged into the receiving waters containing Malahide shellfish production beds will impact on the quality of the shellfish waters thus contravening S.I. No. 268/2006 - European Communities (Quality of Shellfish Waters) Regulations 2006, As required by Article 5 of the Shellfish Water Directive 2006/113/EC.

There were some import documents contained in the literature review that Marja Aberson and the Irish Water team referred to. We have attached these CFAS reports at Appendix A8 .

Turbidity Modelling Report:

Techworks have indicated on their webpage and in case studies that they carried out comprehensive Turbidity modelling for the GDDP using Sentinel 2 satellite monitoring amongst other methods , however we cannot locate a copy of the actual report in the application, just references to it. Due to the ability of sediment and high turbidity levels to restrict solar penetration in the water column and impact on ecoli levels and lifespan at the seabed, we would request that this report be made available by Irish Water and entered into the application. We would also ask that they confirm if the results of the turbidity modelling were inputted into the parameters for ecolii modelling? Below is an except from the draft literature review memo from Marja Arbenson hich is attached.

The concentration of the bacteria E. coli within crude sewage itself will not exhibit a clear normal distribution pattern (curve) with often skewed abundances as bacteria often occurs in clumps. Following dilution with the receiving waters, the distribution curve of bacteria will be expected to flatten across its range of concentrations, thereby also increasing its variation in levels (Cefas, 2013). The fate and transport of faecal bacterial once released into ambient waters will be influenced by a number of complex and interacting processes where concentrations may be further affected by temperature, salinity, tidal conditions, current velocities and geomorphological features of the water body itself. Discharges into shallow tidal inlets with constricted entrances may create complex tidal currents and flow patterns restricting the potential mixing and dilution of any contaminants in the water column (e.g. Portsmouth Harbour, UK (Cefas, 2012a)). Discharges into an open coastal system subject to strong tidal currents may promote rapid diffusion and dilution of faecal bacteria levels in the plume. Hydrodynamic modelling of the narrow, Dart Estuary (Devon, UK) were simulated across five days in January for a sewage overflow of untreated sewage discharge of 200 m3 (Garcia et al., 2018). It was computed that overall, the largest area of E. coli contamination (>10 cfu/100ml) occurred during periods of neap tides and low river discharges, but also with a maximum value obtained during neap tide and high river discharges; these both representing the worse-case scenarios. The

exponential decay (die-off) rates of E. coli in the environment will be a function of natural factors including temperate, salinity and irradiation (Garcia et al., 2018). A review by Craig et al., (2004) concludes that in general, within the water column, there is a positive relationship with rates of decay and temperature and sunlight. ***However, an increase in turbidity of the water may restrict any solar penetration through the water column.*** *An in-situ study by Craig et al, (2004), further showed that E. coli can persist in coastal sediments even after any rapid decline of levels in the overlying water. Within contaminated sediments, particle size has also been shown to be important factor with an increase in E. coli decay rates in those sediments comprised of larger particles and containing low organic carbon. It may be that increased nutrient availability in those finer sediment may provide an important food source for bacteria.* Emphasis added.

6. Section 50 Consent required.

This application requires the construction or redesign of a number of culverts. It also requires physical alterations to riverbanks. These activities require consent from the Office of Public Works (OPW) also referred to as "The Commission" in Irish legislation. According to the OPW Section 50 consent information booklet; The construction, replacement or alteration of a bridge or culvert has the potential to change the hydraulic characteristics of a watercourse. If significant, this change may result in:- *"Flood levels upstream of the bridge being increased due to the creation of a restriction in the watercourse. - Flood levels downstream of the bridge being increased due to the removal of a beneficial restriction from the watercourse. - Erosion of the watercourse and/or floodplain being initiated or accelerated due to the restriction increasing flow velocities and turbulence. - Deposition of material in the watercourse or on the floodplain due to a change in flow velocities and turbulence. - Overland flow paths on the adjacent floodplain being blocked or diverted due to the construction of bridge approaches. The above changes to the hydraulic characteristics of a watercourse or floodplain may impact on local flood risk management plans. The OPW has a broader interest in ensuring that the adverse hydraulic effects created by new or existing bridges and culverts are avoided."*

In a similar way to the EPA is the state authority for Waste Water Discharge Licence consent, the OPW are the state authority on flood risk and the designated designated body to be consulted in relation to flood works under Section 50(1) of the Arterial Drainage Act 1945 which states *"Restrictions on the construction or alteration of bridges. 50. (1) No person, including a body corporate, shall construct any new bridge or alter, reconstruct, or restore any existing bridge over any watercourse without the consent of the Commissioners or otherwise than in accordance with plans previously approved of by the Commissioners."*

While there appears to be no direct or specific provision made in national legislation for compulsory consultation by local authority's or The Board with the OPW in terms of developments subject to Section 50 consent, In light of legislative precedence set by similar issue in relation to Waste water discharge licences and dual assessment, it would follow that the same arguments and judicial determinations could be applied to the OPW and Section 50 Consents. Happily though there is a provision in EU law that does provide a requirement for the OPW to at least be notified as a prescribed body in such a situation. Directive 2011/92/EU legislate for the precautionary principle and that Effects on the environment should be taken into account at the earliest possible stage in all the technical planning and decision-making processes.

Article 6 (a) of Directive 2011/92/EU as amended by 2014/52/EU which states; *1. Member States shall take the measures necessary to ensure that the authorities likely to be concerned by the project by reason of their specific environmental responsibilities or local and regional competences*

are given on opportunity to express their opinion on the information supplied by the developer and on the request for development consent, taking into account, where appropriate, the cases referred to in Article 8a(3). To that end, Member States shall designate the authorities to be consulted, either in general terms or on a case-by-case basis. The information gathered pursuant to Article 5 shall be forwarded to those authorities. Detailed arrangements for consultation shall be laid down by the Member States.';

The Board failed to prescribe the OPW as a notifiable body for this application, The Board failed to consult with the Office of Public Works (OPW) in relation to the requirement of a Section 50 Consent for a number of culverts and River Bank works required by this development. The OPW or Commissioners for the purposes of Irish statutes are the only body that can give approval to plans to construct, alter, reconstruct or restore any new or existing bridge, culvert or riverbank in Ireland. Yet the Board without any consultation with the OPW as state appointed technical experts, directed through Condition 13(c) that the culvert should be extended to provide for the full with of the future north south link road, which meant widening the Culvert to 25 metres. In doing so the Board conditioned the building of a new road / culvert combination which at 25 metres would equate to a four-lane road/ bridge. The Board did so without first assessing the potential flood risk that such a long culvert might attract upstream or downstream nor assessing the impact of that potential flood impact on the environment, riverbank or river species, or protected species in Special Areas of Conservation downstream of the works. At the very least they should have requested additional information with regards to the impact the extension of the culvert might have on the Environmental habitats and Natura Sites connected hydrologically to the Mayne river.

In a recent planning Decision F19A/0458, on page 19 of the Chief Executives Order, the Fingal Water services section make comments that supports the argument of OPW consultation at planning stage as follows; "*Any proposed river channel widening will require consultation with both the OPW and Inland Fisheries. The Applicant shall note the requirements of Section 50 of the EU regulations SI 122 of 20110 (assessment and management of flood risks) and Section 50 of the Arterial Drainage Act of 1945. It is noted that this issue was raised in the submissions received. It is questioned if the layout would be required to be altered following consultation with the OPW. On consultation with the Water services Planning Section, it is submitted that the layout would unlikely be changed but would require consultation with the OPW to ensure the sizing of the culverts are correct.*"

As the Board failed to direct the Applicant to consult the OPW as a prescribed body under the precautionary principle and Directive 2011/92/EU as amended by Directive 2014/52EU in the first instance and as they themselves failed to consult the OPW when making a direction to substantially alter a culvert by way of condition in the second instance, there is not sufficient information to assess the. impact of the culverts from the development on the watercourses they traverse.

7. EIAR Portal.

Due the observation of Fingal Couny Councillors when commenting on the initial application for the GDD development, it became apparent that the applicant failed to submit the full EIAR on the 20th of June 2018 to the Board with its application. As such the Board exercised its powers under section 37F of the Planning

Act 2000 and directed that a further notification period, an additional consultation with the public would be required. The Board also directed the Applicant to *"notify the same prescribed bodies as per the original planning application"*. This supplemental planning application was in addition to (in the boards own words) "the original application" and was dated the 13th of September in the newspaper articles. As the supplementary application is dated the 13th of September it was subject to S.I. No. 296/2018 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 in relation to the lodgement of an EIAR to the EIA Portal. The Board under the same statutory instrument should not process an application that is subject to an EIA and the submission of an EIAR without a confirmation notice of acceptance of application onto EIA portal. As no confirmation notice has been lodged this application is invalid. As the EIAR is now out of date and requires all surveys, reports etc to be updated this should be done via a new and valid application fro SID planning consent.

8. Further consultation with prescribed bodies addendum:

A number of prescribed bodies including councils were not given their statutory opportunity to comment or vote on the addendum. There were also major inconsistencies in the information in the reports given to councillors to comment and vote on see appndix A9. We have also have serious concerns about the deficiency in data relating the the Material contravention of the Fingal Development Plan in relation to Greenbelt zonng and the Waste recover facility of the Sludge Hub Centre (SHC) . In FCC Chief Executives report to the Board as a prescribed body to the application the material contravention is dealt with as follows:

> Planner's Note: During the presentation of the Chief Executive's report to the Elected Members, attention was drawn to the consideration of the Sludge Hub Centre (SHC) as an integral part of the Waste Water Treatment Plant (WWTP) and assessment of the SHC as 'Utility Installations' along with the WWTP as a consequence. The presentation can be viewed under Item 21 at:-
>
> https://fingalcoco.public-i.tv/core/portal/webcast_interactive/369680

The indication is that the SHC was fully explained to the councillors. The webcast was not available online but I received a copy and can confirm that it is our belief that in fact the issue was barely address or flagged with councillor and that in effect they were not informed or briefed on this serious issue. A copy of the meeting recording is available on USB by request . It is our belief that a legal consultation with elected councillors relating to the material contravention of a waste recovery facility with biogas storage on a greenbelt site has not been carried out.

7. Wetlands and Waterbirds:

One of the Special Conservation Interests (SCI) for Baldoyle Bay SPA include SCI Code "A999 Wetlands & Waterbirds". However, the applicant transcribed this code incorrectly as "A999 Wetlands" in the Natura Impact Statement and therefore did not fully assess the "waterbirds" feature of the SCI. Thus, in turn the Inspector and the Board only assessed the Wetland feature of this SCI. This became apparent in the Inspectors report published with the Order, with just a small paragraph given over to the assessment of wetlands and none to any of the other 50 water bird species that use this SPA and RAMSAR site and are dependent on the wetland habitat. Therefore, no stage two assessment was completed for the Waterbirds Interest of SCI code A999.

The importance of assessing impacts on waterbirds is identified in Baldoyle Bay SPA Conservation Interest supporting document – by the NPWS which discusses water birds in detail and lists a number of water bird species. Section 5.4.1 (page 33) states

"At site level, the concept of 'favourable status' is referred to os 'conservation condition.' This can relate not only to species numbers, but importantly, to factors that influence a species abundance and distribution at a site. The identification of activities and events that occur at a designated site is therefore important, os is an ossessment of how these might impact upon the water bird species and their habitats, and thus influence the achievement of favouroble condition. Site-based management ond the control of factors that impact upon species or habitats of conservation importance are fundamental to the achievement of site conservation objectives.

Page 44 of the same document also states: "*The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservotion interest for the following species: Light-bellied Brent Gaose, Shelduck, Ringed Plover, Golden Plover, Grey Plover and Bar-tailed Godwit. The E.U. Birds Directive pays particular ottention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds*"

CJEU case law very clearly states that "*Article 5(1) and (3) of, and Annex IV to, Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the ossessment of the effects of certain public ond private projects on the environment, must be interpreted as meoning that the developer is obliged to supply information that expressly oddresses the significant effects of its project on all species identified in the statement that is supplied pursuant to those provisions".* As both the developer and the Board have omitted and therefore failed to assess part of Special Conservation Interest A999 Wetlands and Water birds, appropriate assessment has not been fulfilled and the Order must be quashed.

The list A and B of waterbirds to be assessed under "A999 Wetlands and waterbirds" can be found here. **https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004016**

8. Sillogue Nature Development Site.

Sillogue Nature Development Site (Northpoint NCT Site). During the oral hearing a submission by Michael Keating was submitted with surveys of this site by Rob Gandola the Senior Science Officer with the Herpetological Society of Ireland, Mr. Gandola was working with South Dublin County Council surveying at the time , that Sean Walsh Parks bio diverse habitat (a site similar in biodiversity to the Sillogue site) was erroneously destroyed. He is an expert in his field and is regularly consulted with by Local Authorities.

Mr. Gandola's report identified frog species listed on Annex V of the Habitats Directive and protected from unauthorised killing by Article 15 and of the Habitats Directive. The Applicant had completely missed this protected species on their surveys of the site. The report also identifies the Sillogue site as an important frog spawning ground and a rare self contained biodiverse community that should be afforded protection. After accepting the importance of this new information the Inspector and The Board did not seek additional information in relation to potential impacts or mitigation of same impacts, of the project on the site. Instead they against all protocols in Environmental Impact Assessment and Appropriate Assessment the now quashed decision inserted Condition 14(b) and 14(c) which respectively stated:

(b) Prior to commencement of the relevant phase of the proposed development, the developer shall submit for the written agreement of the planning authorities full details of all measures to protect badgers, bats, smooth newt and common frog, which shall be based on follow-on surveys, where necessary, and which shall incorporate ony requirements from licences obtained from the National Parks and Wildlife Service (NPWS).
(c) Habitat restoration at construction compounds 9 and 10 and at Sillogue Nature Development Area shall be in accordance with the requirements of the relevant plonning outhority.

In the quashed decision The Board conditioned a survey to take place post consent to identify the extent of protected species not identified in the EIAR and NIS. They also conditioned the identifying of mitigation protection measures and restoration measures for Habitats Directive protected species to a post consent stage without the Board as the competent authority performing a stage two assessment of same. It is impossible to reasonably ascertain if the project will have any significant negative impacts on these Annex V species without these surveys and mitigation proposals assessed before consent is given. Therefore, at this point in time a decision caannot be madr as the Board do not have sufficient information before them to make such a determination. If the EIAR/ NIS are not up to date and are not supplemented before the Board make a decision then the board should refuse permission due to lacunae in the application.

Very recently as confirmed by Experts in Dublin City Council and Fingal County Council an extremely rare species of Tollypella Intricata has been discovered by Michael Keating see appendix AD 1/2/3 within the route of the pipeline in an area due to be fully excavated by the Orbital Pipeline route. The species is completely dependant on the exact environmental and ecological conditions of the site in

inhabits. There are currently ongoing talks about how to protect the rare species with Fingal County Council and the information is so sensitive that it cannot be put in the public domain but we will provide Irish Water Experts and ABP with the information and location of the rare species in order for the need for further avoidance/ mitigation of the route of the development to take place.

we have attached Biodivesity Report on location at Appendix A10

9. Ireland's Eye SAC:

In their NIS the Applicant screened out Ireland's Eye Special Area of Conservation despite it being the second closest SAC to the outfall discharge point and trenched pipeline route (approximately a kilometre away) after the Rockabill to Dalkey SAC. The Applicant claim this was because the qualifying interests were terrestrial and above the waterline and as the outfall was in the marine environment there was no pathway receptor. Fingal County Council's submission raised concern about this omission in the application. The Applicant put forward the argument that because the Island, surrounded by water, is itself terrestrial there would be no significant impact and therefore Ireland's Eye SAC could be screened out. Incredibly on page 247 of her report the Inspector agrees with The Applicant where she states. *"Regarding Ireland's Eye SAC, which is 1km south of the marine outfall the applicant's submission is that this site is designated for coastal and not marine habitats. There is no hydrological link and no open pathway of effect, thus there is no real possibility of LSE's.*

On page 248 the Inspector states. "Based *on this statement and the available information presented in the EIAR, the NIS and the background studies and the oral hearing discussion I am satisfied that the evidence firmly discounts any likely significant effect an the habitats which are qualifying interests. I consider that there is sufficient objective information to enable the Board to conclude that Ireland's Eye SAC can be screened out from further consideration."* In this statement the Inspector confirms that she relies solely on The Applicant's evidence and yet also states that this information is objective which we believe to be irrational and contradictory.

In their mitigation suggestion for the disposal of Dredge material the applicant suggest that spoil will be released only on the flooding tide to avoid impacts on sensitive locations around ire lands eye for which there is a pathway receptor which appears to contradict the previous reasons for screening, out.

In relation to the screening out of Ireland's Eye SAC, at the oral hearing I raised the potential of Algal blooms and sewage pollution (e.g. microplastics) via marine inundation to impact significantly on the Islands Special Conservation Interests of vegetated stony banks and lower areas of vegetated sea cliff where the land meets the water during high tide and storm events. In the document Conservation objectives supporting document- Coastal habitats by the NPWS there is reference made to communities and species whose cliff habitat are within the splash zone. In relation to Vegetated stony bank the supporting document states the following in relation to conserving the habitat type. *"The health and on-going development of this habitat relies on a continuing supply of shingle sediment. This may occur sporadically as a response to storm events rather than continuously. Interference with the natural coastal processes, through offshore extraction or coastal*

defence structures in particular, can interrupt the supply of sediment and lead to beach starvation." Harmful Algal Blooms (HABs) could have an irreversible impact on this SAC.

Attached at Appendix A11 please find a report by Seastainablity which identifies microplastic and marine litter which regularly washes up on Ireland's eye within the high tidal zones and splash zones, including SCI's for Ireland's Eye SAC. The microplastics have been found collected in birds nests. It is not enough for Irish Water to assess only microbeads they MUST also access the impact of microplastic and be cognisant of legislation at EU level in relation to same.

Elevated levels of two species of *Pseudo-nitzschia and of Azadinium/heteracapsa spp* have been recorded in multiple samples taken by the Marine Institute in the last years in Malahide shellfish waters. These species are toxic algal blooms which can have serious impacts on shorelines, and shellfish in the aquatic environment. Warm summers as a result of climate change, in addition to increase in Nitrogen and Phosphorous that the sewage effluent will discharge, gives an elevated risk to these shallow transitional waters of Hazardous Algal Blooms. Algal blooms could decimate Ireland's Eye's SCI's of **vegetated stony banks** if they wash up on the shore, in addition to causing toxic pollution of the shellfish harvest in the area. This issue was raised by myself at the oral hearing and by observers in earlier written submissions, something the Inspector made no note of in her report. It is irrational of The Board not to apply the precautionary principle in relation to Ireland's Eye SAC. A thorough assessment with no lacunae must be carried out.

Another concerning aspect in relation to the Board screening out Ireland's Eye SAC was it also means that the impact of the construction phase and operational phase of the marine based outfall on protected species for which Ireland's Eye SAC is their Habitat. Unlike the Special Conservation Interest these protected species which include the Grey Seal and Harbour Seal would be severely impacted by the project as their habitat consists of terrestrial habitat on the Island and Marine habitat in the waters surrounding the Island. Ireland's Eye supports 50% of the population of grey seals in Dublin Bay and the pups will be learning to swim in the waters surrounding the outfall during late Autumn early Winter months when inundation levels are at their highest. Grey seals also breed on the East of the Island which is the side of the island closet to the pipeline, outfall and diffuser. During the operational phase the release of sewage effluent within 1km of their breeding grounds will affect visibility and introduce pathogens, microplastics and long-term bioaccumulation of persistent toxins, which as a marine mammal is a serious health issue issue for the species.

10. Seals and Seal Sactuary

The Irish Seal Sanctuary are particularly concerned about this, and have issued a commentary report ATTACHMENT A12 to my submission to that effect. The Applicant stated that they had consulted with the Irish Seal Sanctuary but they failed to discuss in their EIAR any of the objections that the Irish Seal Sanctuary raised at that meeting and in a subsequent email. They also refused the Irish Seal Sanctuary's offer of trained staff for the survey element of the project. Seals as marine mammals bioaccumulate toxic substances such as PCBs , POPs and CECs and digest micro plastics that will be contained in the effluent that will issue from the outfall. As such the impact of the discharge on these sea mammals must be appropriately assessed in both the NIS and EIAR.
Seal Survey for Dublin 2018 also attached at A12

In relation to the Screening out of Ireland's Eye and therefore the protected species that make it home, at the oral hearing I raised the issue of the large aforementioned breeding seal colony on Ireland's Eye and the fact that it had not been assessed in terms of impacts. Later in drawing her conclusions the Inspector stated *"In relation to the stated growing importance of Ireland's Eye for seals based on recent surveys reported to the hearing by Ms Joyce Kemper, these may be part of the Lambay Island population. The mitigation proposed would be equally effective at preventing adverse effects to seals using Ireland's Eye. I consider that it can be concluded with certainty that the conservation objectives for the qualifying interests of Lambay Island SAC would not be compromised as a result of underwater noise and disturbance."* Equating the same impacts and mitigation measures in terms of noise in relation to the seals on Lambay Island which is 15-20km away with those on Ireland's Eye 1 km away from the piling and drilling flies in the face of common sense. The impacts are incomparable and have to be assessed individually. The same can be said of the operational sewage effluent plume. The Irish Seal Sanctuary report confirms that Ireland's Eye is a colony in its own right and direct and indirect impacts in terms of Ireland's Eye as a SAC should be assessed.

In terms of the Inspectors reference to Lambay Islands seal colony, the data used to assess the seal population was ridiculously out of date in terms of scientific methodology (populations quoted in NIS and EIAR related to Island surveys from 2003 and 2005) and the Irish Seal Sanctuary could have supplied up to date figures if Jacobs Tobin would have consulted with them. I have also been party to email correspondence with the Baring family who are the owners and conservation custodians of Lambay Island. My group first made contact with them just before the oral hearing at which point, they informed us that they were completely unaware of the Greater Dublin Drainage Project planning application as no one had been in touch with them as a priority stakeholder. Due to the fact that the Island is cut off from the mainland, they are relatively limited on postal and other Communication (access to newspapers/ Site Notices etc.) The Baring family and the experts in their employment could also have informed the Jacobs Tobin survey team of the actual current population of Seals and Birdlife on Lambay Island if they had have been consulted. They are after all the custodians and the sole conservation management team for the Lambay Special Area of Conservation, no one can land on the island without their permission and it was never requested according to the Baring family. This is a further indicator that the EIAR and NIS in relation to Lambay Island SPA and SAC was not robust and was lacking in up to date surveys and information.

In screening out Ireland's Eye SAC its qualifying interests which are terrestrial but subject to marine impacts and also therefore hazardous polluting substances within the marine environment The Board have failed to carry out a stage two assessment in its entirety. The Board has failed to appropriately assess a Special Area of Conservation and all of its protected species, which are in close proximity to the marine outfall, for construction and operational impacts. Under the precautionary principle, the Inspector in the first instance and The Board in the second instance should have insisted on assessment of Ireland's Eye SAC under the Habitat's Directive. In case C461/17 Holohan and Others v An Bord Pleanála, the court deemed that an appropriate assessment undertaken under the Habitats Directive must catalogue all habitats and species for which a European protected site is designated. The appropriate assessment must identify and examine the implications of the project for the species present on the site, including those which do not relate to

a site's designation. Implications for habitat types and species found outside the boundaries of the designated site should also be included, provided the implications are liable to affect the conservation objectives of the site. This judgement would indicate that the Board did not apply the precautionary principle and in screening out Ireland's Eye SAC, failed to undertake appropriate assessment as required by the Habitats Directive.

11. European Eel:

The European Eel (Anguilla anguilla) is a critically endangered species on the IUCN red list. The EU has taken measures to ban fishing of the Eel for periods in 2019-2021. On page 67 of Environmental Impact Assessment Report: Volume 3 Part A of 6 Chapter 11 Biodiversity (Terrestrial and Freshwater Aquatic) the applicant refers to the presence of European Eel in the Mayne and Cuckoo rivers. The only pathway for glass eels (juvenile form of European Eel) to reach these rivers would have been via Baldoyle Bay Estuary. Despite this, the Applicant failed to assess the impact of the project on European Eel in terms of dredging and micro tunnelling. The issue was raised in public consultation / scoping regarding Baldoyle Bay being a migratory estuary for European Eel. The Applicant referred to 2016 surveys by Inland Fisheries Ireland for the Mayne but failed to mention the survey completed in the same year in the Sluice river which also identified European Eel had migrated upriver to spawn. The European Eel is affected by substrate vibration and auditory damage which would be caused by construction, piling, and heavy machinery at compounds 9 and 10, at the interface , Cable crossing and outfall and by vibration of tunnel boring machine. The tunnel route bisects the migratory path of glass eels to the Sluice River and therefore would create a vibration barrier that the eels would not cross due to avoidance measures. Due to the Tunnel route and Construction compound 9's proximity to the Mayne river mouth, the European Eels migration up this river may also be affected. This was not assessed in the EIAR. The Board members in not engaging their Ecologist to review the EIAR and NIS failed in determining if the EIAR was robust enough and did not have lacunae, in particular on this issue.

12. Doldrum bay and cumulative discharges:

Cumulative impacts were not accessed from Doldrum Bay raw sewage discharge. In the oral hearing I raised the fact that The Applicant had failed to include the raw sewage discharge from Doldrum bay in Howth Co. Dublin, as a cumulative impact. The Applicant stated that they would have this raw sewage connection diverted by 2021 before the plant is operational and therefore should not have to asses it as a cumulative impact. The discharge has not yet been diverted yet which hs now been delayed since 2012 and no guarantee to meet future proposed deadlines. Planning is only due to be submitted Q4 2022 with the construction not nearing completion until 2024. The Board should insist that the Doldrum bay discharges be included in assessment of cumulative impacts as

Applicants cannot rely on future mitigation to screen out significant impacts. The Applicant has already made commitments to cease discharging raw sewage from Doldrum bay when applying for a discharge licence for Ringsend in 2010. The discharge licence given to the Ringsend treatment plant in 2010 required that the Doldrum Bay discharge be ended by December 2011. The applicant also made representations to the EU commission that they would cease the discharge of raw sewage at Doldrum Bay Howth. Neither of the written commitments to cease the discharge of raw sewage at Doldrum bay has been kept. The applicant's failure to meet its obligations not just once but twice means that they cannot be relied upon to do so on this occasion, and as there can be no guarantee that they will do so by 2024, the raw sewage outfall should be assessed as a cumulative impact and the Board should uphold this request. Case law states that mitigation measures can not be used to screen out an impact before appropriate assessment and as there is any doubt as to whether this future mitigation can be relied upon under the precautionary principle,.

12. Sutton creek discharges.

We were a[approached by number of observers to the GDD project regarding the discharge of raw sewage in Sutton strand by St Dominics High school. We investigated and it appear that there is a historical mis-connection from a housing estate in the vicinity of st Dominic's high school that results in a raw sewage discharge to the beach via surface water overflow. We witnessed faecal matter, sanitary products and wipes at the location. This may be an issue similar to Doldrum bay and may warrant. Th issue was actually raised at a recent consultation of the Doldrum bay outfall by a completely unrelated third party and Irish Water said they would investigate.

13. Portmarnock Pumping Station:

Cumulative impacts not assessed - Portmarnock Pumping station and associated North Fringe Sewer connection: In August 2019 The Applicant Irish Water lodged a planning application Reg Ref: F21A/0398 with Fingal County Council. The project description is as follows. *New wastewater pumping station on an approximately 0.5ha site and associated network infrastructure to include gravity sewer and rising main connections. The proposed wastewater pumping station compaund, within the townland of Maynetown, will be approximately 115m x 62m and the pumping station will comprise of: below ground pumping station structures, connection pipeline from the pumping station of approximately 1.95km in length which will connect with the North Fringe Sewer in the townland of Stapolin.* A Natura Impact Statement was also prepared to accompany this application. Having researched the project online, I discovered that Irish Water had commissioned Mott McDonald to prepare a draft AA Screening report in 2017 for Portmarnock Foul Water Pumping Station. So they were aware of the upcoming project well before they lodged the application for the Greater Dublin Drainage Project in June 2018.

The Portmarnock Pumping Station project will require wayleaves, manholes and trenches in the exact same area of Maynetown that compound nine and its associated pipeline corridor will require. It will also traverse and require trenching within the Light Bellied Brent Geese and Lapwing quiet zones that the Greater Dublin Drainage Project also does, and so the Portmarnock Pumping Station project will also result in permanent habitat loss of a protected site for its rising main

pipeline infrastructure. There is also possible interaction here in terms of project splitting which needs to be identified as the applicant never answered questions raised by representatives for Gannon homes during the oral hearing as to how the Sewage in the North Fringe Sewer below the Clonshaugh diversion would be pumped back up to Clonshaugh. The New Portmarnock Pump house may be the answer they did not want to provide due to project splitting concerns.

Fingal County Council granted permission to F21A/0389 but it was appealed to An Board Pleanla for a number of reasons the most serious of which is that Irish Water appear to have already built part of the rising main without planning consent or an AA. Close to compound nine of the GDD development. This unauthorised development was intalled under contract by Fingal County Councils contrcator for the Baldoyle to Portmarnock Cycleway. We believe Fingal CC should have refused to accept the planning application under section 34(12) of th planning and devlopment and it is one of the basis of our appeal to ABP. However the fact that part of the rising main that is to traverse Compund 9 of this development which is also a protected quiet zone for brent geese means that robust AA must be carried out by the board on this cumlative impact. Cognisance of Irish Waters decison to build a rising main without development consent when requireing an AA and the legal implications of this must also be borne in mind.

14. Regional Biosolids Storage Facility:

We were concerned when we heard that the RSBF in Kilshane is being constructed. We were under the impression due to representations made by Irish Water to ABP during the planning process and in pre planning meetings, that planning consents for the Ringsend Extension application and the GDDP planning application were required to progress the RSBF. The RSBF is proposed to hold 3.6 million PE of biosolids 2.4 million of which will be from Ringsend and th balance from the Greater Dublin Drainage Project WwTP. Early on it was agreed that the RSBF would be included in both planning application with the second grant of permission for GDDP referencing to the conditions and grant in the Ringsend grant of planning to allow the development to proceed. The drawings and environmental impacts for the RSBF featured in both planning applications and indeed Irish water drew up separate EIAR (not sure about NIS) for this purpose. As it is a shared feature for both applications it requires grants of planning from both applications to proceed. The fact that works have already started, such works could be identified as unauthorised development. The board need to take legal advice on this issue before making a decision and if a decision is made show a clear process of decision in their reasons and considerations.

When drafting their now quashed order Order for 30190B, The Board added Condition 12. This condition requests that design details of the Regional Biosolids Storage Facility (RBSF), plus a risk assessment report be submitted to the planning authority, Fingal County Council, in order to prevent environmental pollution in the event of a fire occurrence. This is yet another example of The Board not identifying direct or indirect impacts on the environment as a result of this project and again the impact and mitigation of a Fire event at the RBSF must be assessed pre consent not left to a post consent condition. Particularly in light of the Water Framework Directive requirements and the current status of the ward river which is linked by a tributory that runs along the boundary of the RBSF site.

15. Phasing of the Waste Water Treatment Plant at Clonshaugh:

During the Oral Hearing a number of observers including Terri Gray, made reference to zones for expansion being included in all of the Clonshaugh Wastewater Treatment Plant Drawings. I reviewed the planning application and also requested to view the Pre-Planning Application file in An Bord Pleanala Offices. Based on the minutes of the meetings in the Pre Planning Application File PC152 it became clear that when the pre planning application process began, the final design of the plant was to be for 750,000 PE. At these meetings The Applicant indicated that the project would be completed over two phases. Phase one would be for 450,000PE capacity with the infrastructure for a 750,000PE pipeline put in place during this phase. Phase two was for project infrastructure for an additional 350,000PE capacity. This would be in line with the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS) which said that the capacity that would be required in order to meet the needs of future loading to the Greater Dublin Area would have to be for a 750,000 PE to 850,000 PE Wastewater Treatment Plant.

However, The Board in a subsequent meeting informed The Applicant that phasing would constitute project splitting and that under Appropriate Assessment protocol The Board would have to assess the whole project in one application and therefore the first application. They confirm that an EIAR and NIS should represent the entirety of the project i.e. 750,000 PE plant and cautioned against relying on putting in infrastructure for the full capacity but only preparing an EIAR and NIS for the first phase capacity. At its next meeting with The Board, The Applicant announced that they would only be making an application for a 500,000PE wastewater treatment plant. This was a surprising announcement as it meant that the proposed project no longer met the needs of the Greater Dublin area as confirmed by the Greater Dublin Strategic Drainage Strategy which informed the capacity required for the plant. In substantially cutting the capacity of the Clonshaugh plant and Irish Water were ignoring the recommendations of the GDSDS. Based on the comprehensive loading forecasts by the GDSDS it meant that the Clonshaugh Plant would be under capacity from the day that it was commissioned. This would make the project unsustainable and not fit for purpose.

Once the actual application was submitted under case reference PL.06.301908, it transpired that all of the indicative plans which would be more in line with an application for outline permission than full permission, for the wastewater treatment plant in Clonshaugh have earmarked areas for later expansion of the plant. The reports on flow rates of effluent within the pipe network and at the outfall also mention a rate of 3.6 litres per second for current operations and 5.6 litres per second for future flows. In addition, I have obtained the tender documents for the Design Build Operate contract (Attachment A13 XX) and in it they refer to the project design being extended to 800,000PE. But most imprtantly that they will be building infrastructute dor 800,000 capacity IN THIS PHASE. And that the current planning and tender will include infrastructure capable of 800,000PE. The diameter of the pipe of 2 meter internal would also be indicative of catering to larger flows consistent with a Full Flow Treatment (FFT) for 800,000 PE. IF only 500,000 PE is to be built then the choice of a smaller land parcel and pipe diameter should reflect that, and alternative options and

sites revisited. When the size of the plant was reduced the ASA process was not revisited as it legally should have been.

The Inspector referenced future expansion of the Clonshaugh Wastewater Treatment Plant in her report on page159 where she states: *"The GDD is to be developed in a single phase and there is no indication of plons to develop further phases at this time, although previous proposals were for a higher PE level and the project incorporates space for expansion should thot be required. There is no requirement for the Board to assess any future phases"* . We believe the Inspector is completely incorrect to come to this conclusion when all indications in design plans and reports are that future expansion is being incorporated into the planning application and there for the consent if it is granted. The tender document exhibited now provides proof or indication of this. Case law is very clear on this point. Particularly in light of statements made by the applicants which she also includes in her report most notably on page 62. *"As Mr O'Keeffe indicated to the hearing the provision of headroom constitutes a new practice. By maintaining tight control on the connections policy Irish Water will be in a position to foresee upcoming capacity constraints and to oddress any issues in a timely fashion before any overloading arises. If a major mobile international industry was required to be served then the capacity would be in place in the eorly years when the full 500,000 P.E. of the plant will not be needed. A further application for expansion might then be needed earlier than currently envisaged. (Day 6,15.15)."* The use of the term "currently envisaged" is a clear indication that expansion is planned at this point in time. In addition there is no way to stop a plant at 500,000PE exactly. As we can see from the Ringsend plant that is granted planning for 1.6 Million PE but is currently overloaded processing up to 2.1 million PE according to the 2020 Ringsend Annual Environmental report. This is despite it original planning stating that it would not exceed its designed PE. Under a precautionary principle worst case senario if the design currently designed for (2 metre internal pipes) has built in expansion and is at all capable of processing more than 500,000PE then this should be addressed in the EIA and AA.

In light of the fact that the plans that consent has been applied for and the usual condition no 1 of all ABP grants of planning usually direct consents be carried out and completed in accordance with the submitted plans, this would then include expansion. As such the EIAR and NIS should include the expanded capacity. The Board failed to have cognisance of and implement case law in relation to project splitting most notably C-392/96 which states; *"The purpose of the EIA Directive cannot be circumvented by the splitting of projects and the failure to take account of the cumulative effect of several projects must not meon in practice that they all escape the obligation to carry out an assessment when, taken together, they are likely to have significant effects on the environment within the meaning of Article 2(1) of the EIA Directive."*(C-392/96, Commission v. Ireland, paragraphs, 76, 82; C-142/07, Ecologists en AcciónCODA, paragraph 44 ; C-205/08, Umweltanwalt von Kärnten, paragraph 53; Abraham and Others, paragraph 27; C-275/09, Brussels Hoofdstedelijk Gewest and Others, paragraph 36)

In relation to the phasing we now have additional evidence that Irish Water considered the communications impact of including the phase two development of the GDD in the initial planning application. We have attached the relevant report entitled Assessment *of timing/ phasing of North Fringe sewer to GDD* at appendix A14 It appears Irish Water considered the positive and negative impacts of omitting the phase two development on page 17 of the report entitle communication risks. In the negative assessment it states

" The inclusion of NFS in the GDD project necessitates upgrading the WWTP at Clonshaugh from a 420,000 PE plant to a c.a. 600,000PE plant. To date all communication associated with a new plant at Clonshaugh has been based on a 420,000 PE plant. An increase in plant capacity runs the risk of heightening objections and fuelling the argument that the plant is not serving the immediate locality but is in fact serving communities from much further afield."

16. Blanchardstown Regional Sewerage scheme.

During the Oral hearing Irish Water made the statement that in the event of a 3 day plant failure there would be enough capacity in the sewer network, Abbotstown and Ballymun pumping stations to cater for a 3 day load of sewage. We had an engineer do some quick calculations and according to his figures the capacity of the network to hold untreated sewage is severely deficient contrary to Mr. O'Keeffe's assurances. No actual figures that identified the proposed capacity in a quantifiable amount was produced. No calculations of the actual quantifiable amount of sewerage that would need to be held was produced. If the the two pumping stations stop then the sewerage up network of both those pumping stations would overflow into the water bodies that the SCA and SWO are designed to discharge into. This include the Tolks which is a direct pathway receptor to the Tolka Estuary SPA and Bull Island SAC/ SPA.

The GDD project is design to connect with the 9C sewer at Blanchardstown where currently there are storage tanks being completed to store the overflows produced by the 9C sewer at this moment in time. It is likely that the GDD intend to use these storm tanks to store its network overflows as referred to by Mr. O'Keeffe but there is no evidence that there is enough capacity in the Blanchardstown tanks which were primarily designed for just the 9 C sewer network. Once connected to the GDD these tanks will have to potentially take the surcharge in the network for the North Fringe Sewer and the 9C network. I say again there is no quantifiable evidence before the board that there is capcity in the network to deal with a 1 day process failure never mind a 3 day failure.

As a result of this lack of capacity it appears that the holding tanks at Blanchardstown will be forced to release raw sewage through its emergency outfall to the Tolka River. The load released in a 3 day event would be environmentally catastrophic to the river. Nowhere in the EIAR or the NIS for the Greater Dublin Drainage Project was an assessment of large amounts of raw sewage entering the Tolka as a result of a failure at the Clonshaugh plant assessed. This is due to another form of Project splitting. The Blanchardstown tanks were submitted on a separate and now granted planning application. The inspector said that she could not have regard for the observers who made excellent comments on impacts caused by the raw sewage in the Blanchardstown tanks because it was part of a planning application already decided. I put it too the board that similar to the RSBF appearing on two planning applications for Ringsend and for the Greater Dublin Drainage application, then so too should the Blanchardstown planning application have been assessed with the GDD application as its infrastructure is integral to this applications mitigation measures and environmental impacts. We have attached the technical amendment to the Ringsend WWTP Discharge Licence which identified the overflows and discharges from the 9C and Blanchardstown tanks. In the GDD is

connected this will increase to include NFS catchment. This application should assess these discharges to the Tolka and any other water bodies along as far as Leixlip.

The issue of project splitting with the Blanchardstown Regional Drainage Scheme has become even more apparent since we have discovered via AIE/FOI request that a section of the GDD project has already been constructed by the BRDS contractor, we beileve without planning consent. As such the Board may be forced by law to refuse to process this application, as the as built GDD Chamber is not included in either application documents but is very clearly part of the the GDD project. The section of development we believe has already been built wihout consent is the GDD reception chamber, orbital sewer connection and a section of orbital sewer pipe. Essentially [redacted] the components of the BRDS/ GDDP interface . However the infrastructure that has been build does not have planning consent. It was not part of the BRDS grant of planning. That we can see. We have attached Appendices A1 5 which show:

- Two design drawings of the GDD chamber.
-Emails showing that the GDDP team visited the BRDS site to view the chamber
-Emails reffering to the compiling of as built drawing for the GDD Team
-Photos we believe were taken by the GDDP team during the site visit of the chambers
-Current google satellite map clearly showing the unauthorised as built chambers
-Printout of Byrne Loobey website clearly showing unauthorised chamber.
-list and printout of drawings from BRDS application FW17A/0083 which do not include any design drawing for the GDD Chamber nor any reference to it that we can see.

We received this info via FOI. It shows that there appears to be a certain level of awareness of the section being design and constructed at this point in time i.e. GDD reception chamber and associated infrastructure connecting Orbital sewer. Questions must be asked regarding the consent process and overlapping of these developments. Below photo from Byrne Looby Website (see appendix A5 in a larger format.

17. Bentonite Breakout Risk.

Bentonite Breakout risk. One of the significant negative impacts that the Inspector and Board identified and discussed was that of Bentonite Breakout also known as an Inadvertent return or Bentonite spill. A section of the project involves tunnel boring under Baldoyle Bay Estuary which is a Special Protection Area, Special Conservation Area, a RAMSAR protected site and a National Heritage Area. The project NIS lists a bentonite leak as being a likely significant effect *"Possible deterioration of water quality of estuarine habitats due to pollution events or suspended sediment plumes during construction of marine project elements including bentonite blowout or surface venting."* The NIS also states; *"6.2.1.3.3 Bentonite Release. The risk of a surface breakout by bentonite drilling fluid* ***cannot be negated completely due to variability in the underlying geology.*** *Bentonite is used during the drilling operation to lubricate during micro-tunnelling or TBM progress during construction and is pumped into the cuttings annulus during operations at the ambient pressure at the rock face. A detailed geophysical survey has been carried out along the proposed route in order to anticipate the risk of weak formations and possible faults that may increase the risk of a bentonite breakout. However, should the TBM encounter voids within the formation (such as a fissure or weathered area of rock), and then material can be forced to the surface under pressure to create a breakout. In the littoral and sub-littoral environments, the presence of bentonite at the surface can have a notable impact on sediment turbidity and suspended load. This increase in turbidity could result in increased siltation and the smothering of sediments and organisms accompanied by a reduction in the light available to the seabed for photosynthesis."*

The mitigation measures in the case of a breakout according to the NIS are as follows: *"The control and management of pressures during the micro tunnelling processes is undertaken to prevent air and bentonite breakouts. However, in the unlikely event of a bentonite breakout occurring, which results in a salt-marsh area high up on the foreshore being covered, intervention will be required. Intervention will involve washing the vegetation using a seawater pump and spray. Typically, this would be carried out during a high-water period where washings can disperse out of the estuary naturally. Sites will only be accessed by foot (without the use of plant). Should bentonite breakout in a salt-marsh area lower down on the shoreline in areas routinely covered by seawater, this will be left to disperse naturally over the tidal cycle."*

The mitigation measures outlined above are remediation measures and cannot be considered mitigation. Once a spill occurs the damage is immediate and there is no time to mitigate. Bentonite although not toxic will sink and create a sediment layer over the estuary and its qualifying interests (mudflats/ salt-marsh etc.) and smother and kill any aquatic life that cannot avoid the spill. This would include smaller fish and invertebrates. Depending on the level of breakout, oxygen levels in the water will also deplete to the point of killing marine life. It would not be possible to immediately clear the breakout to prevent the loss of aquatic life. "Mitigation" would merely involve a remediation operation by trying to clear/ collect the bentonite. Such a remediation operation in itself would incur significant disturbance and damage to designated SCI's for Baldoyle Bay including plant, bird insect and animal life in the estuary, in addition to a depletion of food sources. Once Baldoyle Bay Estuary's ecosystem has been impacted by a bentonite pollution event it cannot be re-mediated to its baseline state. In fact depending on the extent of the bentonite pollution event it could take years for the Conservation area to return to its baseline state naturally. Therefore when a bentonite spill occurs in the mitigation hierarchy the scenario will be one of compensating measures not mitigation or "intervention" as the applicant claims.

Once compensatory measures rather than mitigation measures become the only option then under the Habitats Directive Article 6(4) is triggered. Under the IROPI a project can only be given derogation if there are no other alternatives. This application can not be granted under article 6.4 of the Habitats directive as there are alternative solutions. The Clonshaugh site for the Waste Water treatment plant as part of this application was one of three sites chosen during the Alternative Site Selection stage 4 for the Greater Dublin Drainage Project. The three sites were chosen based primarily on economic grounds. The phase 4 report on preferred site selection states: *"The ASA Phase 4 process has determined that it is technically feasible to construct all three site options. However, it was identified that all site options have, to varying degrees, 'less favourable' classification under the range of Environmental, Technical and Cost criteria considered." It further states that; "The landfall area of the northern outfall location is considered to have less ecological sensitivity in comparison to the landfall area of southern outfall location." And "Under Cost criteria preliminary cost estimates indicate that the substantially lowest and therefore 'more favourable' cost is associated with the Clonshaugh site option."* These statements confirm that this project could feasibly have been built on two other sites Annsbrook and Newtowncorduff but at a higher capital expense. Both of these sites would have used the Northern outfall and so would not have required tunnelling under Baldoyle Estuary SAC risking a bentonite pollution event.

There are a number of environmental concerns associated with the use of Bentonite as a drilling fluid. The potential impact of Bentonite pollution cannot be discounted even when a developer has all the geological surveys in place to support their application. However contrary to their assertions above regarding detailed investigative geological surveys, no bore hole samples were taken on any section of the pipeline route that spans the Estuary. This in itself casts substantial doubt on the accuracy of the information relied upon to discount the possibility of a breakout. Further risk also exists in terms of a geological fold line in close proximity to the tunnelled pipeline route under Baldoyle Estuary. A fold is a bend in the rock strata. The term fold is used in geology when one or a stack of originally flat, level surfaces, such as sedimentary strata are bent or curved as a result of pressure and high temperature. The basic cause is likely to be some aspect of plate tectonics. When two forces act towards each other from opposite sides, rock layers are bent into *folds*. An upward fold is called an anticline, while a downward fold is called a syncline.

The fold is not discussed or mentioned anywhere in the NIS or application although it does appear on map 3 of 3 in chapter 18 of the EIAR. I did raise the issue of the fold and had to hand a copy of a thesis document referenced INF-11-03-CHE funded by Infomar and available on their website which related to investigation of Dublin bays geology in order to inform the route of the Ringsend long sea outfall. Page 137 of the Document illustrates the location of the Baldoyle fold and the key for the fold line indicated that it is a strike for vertical foliations. I raised this issue at the oral hearing which the Inspector addresses as follows. On page 393 of her report: *Mr Eoin Wyse (OH-73) responded to Ms Joyce-Kemper's statement that there was inadequate information relating to the geological conditions under Baldoyle Bay. Mr Wyse noted thot ground models would alwoys be based on numerous sources and by examining existing landforms a robust model can be developed. Specific investigations undertoken were described. He also noted that the INFOMAR data set had been consulted and referring to Figure 18.2 Sheet 3 of 3 of the EIAR he noted that there is an anticlinal fold running south-east – north-east (not a fault as Ms Joyce Kemper had stated) and would not have implications for tunnelling in the area.* ***A fault would have implications.*** *Mr O'Keeffe noted that the fold can be tunnelled through. A fault does exist he stated as previously referred to and which is just west of Ireland's Eye – that foult had not been clearly defined previously but was defined in the site investigations. Mr Wyse stated that the fault was identified in the borehole and in the geophysical investigations and it lead to the avoidance of tunnelling in the areo. Mr O'Keeffe noted that the fault would extend to the north and south but not east to west. (Day 6-13.12).*

Having reviewed the documents and Report we did notice that a fault has been identified in borehole samples for the subsurface of compound 10. see Appendix drawing bundle A16
This identification of a sample that indicates a fault is particularly concerning as it does not appear to have been addressed by applicant, inspector or Board. As Mr O'Keefe said a fault would have implications for tunnelling in the area. We also note that Borehole 136 sample analysis not not appear in the reports that we can see.

As previously mentioned we pointed out the deficiency of scientific information in the form of surveys of the subsurface under Baldoyle estuary. IT appears the we were not the only people who required more information as on the 16th of January 2020 Irish Water applied for foreshore consent under application reference FS 007093 See appendix A17

This new foreshore licence was specifically to carry out "non intrusive" surveys within Baldoyle BAY SAC along the proposed pipe route. The application states that *the purpose of the marine geophysical investigation is to map the type and thickness of the sediments layers, determine sediment thickness, map the depth to bedrock, map variation in bedrock type and rok quality and determine engineering parameters survey.*

We put it to the Board and Irish Water that these surveys should be informing the EIAR and AA and associated risk assessment in terms of Tunnel Boring and bentonite breakout. No decision should be made on the potential risks to the Baldoyle Bay SAC until all precise and scientific information has been collated and assessed appropriately. In the aforementioned appendix A17 we note from the emails that Irish Water were informed that the application would have to go through a full foreshore consenting process including public consultation. It appears that upon being advised of this Irish Water decided against continuing with the application and withdrew it soon after.

> While Mr Wyse in his reply stated that the fold could be tunnelled through, he did not comment on whether the fold would complicate the tunnel boring process. In their reasons and considerations on page 11 para. 3 of the order, The Board give the opinion that, *"Air surface venting or bentonite breakout associated with tunnelling under the Baldoyle Bay Spacial Area of Conservation (site code: 000199) would impact saltmarsh on a very small area for a short duration."* They admit the impact but cannot negate it by suggesting mitigation, as there is no mitigation possible. They also imply that the impact would be small and for a short duration, which is an opinion that was based on no tangible evidence before the Board. on the part of the Board, as there is no scientific basis via modelling or reports to substantiate the Boards claim. However in my first submission I was able to give an account of a pollution event in the Marys river in the united states which took 2 weeks to remediate, but caused immediate damage to the freshwater species. Once the bentonite smothers flora and fauna there is no bringing them back from the dead via "remediation". Such communities could take years to return to the same abundance if at all. Baldoyle Bay is already under pressure in terms of losses of Eel grass (food source for Light Bellied Brent Geese) and benthic communities, and other organism that feed protected species higher up the trophic food chain. A bentonite breakout would severely hamper this and there is no evidence before the board modelling how quickly the inert substance would flush out if at all.
>
> There are numerous examples listed below of incidents that involve tunnel boring and a bentonite breakout, or indeed the other terminology for such a pollution event that at the time I was unaware of as it was not mentioned as a risk in the CEMP; inadvertent return of the Bentonite drilling fluid

where the drilling fluid under pressure finds the path of least resistance and can move in any direction usually towards a water body. The construction compounds where the tunnel boring begins and ends are less than 20 metres from the protected wetlands and compound No. 9 is on an uphill gradient from the Estuary and 30 metres from the Mayne River which feeds into Baldoyle Bay/Wetlands.

The previously mentioned Mary's River bentonite pollution event happened despite assurances at planning stage that it was an extremely unlikely event. The Environment officer for the Gas pipeline company a Mr. Hayward stated after the fact *"the pipeline route had been investigated in advonce using vertical bores to sample soil types and compaction levels"*, but he also noted *"that it was impossible to know exactly what conditions exist deep beneath the surface. In many parts of the route, the bore hole for the new 12-inch pipe is 50 to 100 feet underground."* That pipe was only 12 inches the Greater Dublin Drainage Project marine based pipeline is internally 2 metres and externally up to 2.5 metres (Irish water are not sure as the OCEMP is only outline and final details will be up to the DBO contractor).

In April 2017 while tunnelling the Rover Pipeline in Ohio, a contractor released two spills into the environment. The larger spill coated 500,000 square feet of a wetland adjacent to the Tuscarawas River in north-east Ohio with as much as 2 million gallons of bentonite mud .An additional 50,000 gallons of bentonite spilled into a wetland in Mifflin Township in Richland County. As construction progressed, small amounts of clay mud had surfaced for weeks, according to the Ohio EPA. The company had been pumping the material back into its rig until a pump failed on April 14, releasing bentonite across three-quarters of an acre of wetland. In another actual pollution event example in May 2017 the pipeline construction of Sunoco's Mariner East 2 had caused three separate releases of drilling mud in May, with two incidents resulting in a combined total of 575 gallons of bentonite clay entering Chester Creek in Brookhaven, Delaware County.

Neither The Applicant or The Board can guarantee that such an event will not take place even if they follow the OCEMP. As such under the precautionary principal the potential risk of such an event within the actual SAC area, which would result in a compensatory scenario under the article 6(4) of the Habitats Directive, would disallow granting of permission for the application. The Inspector states on page 4 of her report that even in the event of a small breakout there would be *"Minor Impact Significance due to the ecological value of the salt-marsh habitat".* The salt marsh habitat is a Special Conservation Interest of Baldoyle BAY SAC and so is of extremely high ecological value contrary to what the Inspector says. The Inspector makes a number of statements in her report on bentonite breakout and concludes as follows on page 265 *"My consideration of the matter of bentonite breakout is as follows. I accept the point that the depth of the route below the estuary further reduces the likelihood of a bentonite breakout affecting the qualifying interests. I also consider that if there is a breakout in the channel or open water the material will disperse harmlessly and if it occurred within salt morsh vegetation then mitigation as presented in the NIS (localised treatment) would be sufficient to ensure no significant adverse impacts on the salt-marsh habitat. The material is viscous and should therefore be easily contained. I concur with the conclusion in the NIS that the qualifying interest and conservation of community type in a natural condition will not be impacted by any likely pollution events including bentonite breakout"*

The inspector makes an unsupported assumption by stating that she believes a breakout will disperse harmlessly. She does not explain how she reached this conclusion after hearing from both sides of the application, that a breakout will result in damage to plant life and marine life. Localised treatment which is only described as "clean up" without any procedures involved being identified will just have further significant impacts on the protected estuary as it would involve physical human intervention. I must reiterate that this is not mitigation it is compensatory remediation and therefore cannot be considered under Article 6 of the Habitats Directive. At the time of the adoption of the decision we have a superposition of two scenarios, bentonite will blow out or won't blow out. If it doesn't, no harm done, but if it does it cannot be prevented. Under the Precautionary Principle, if there is any scientific doubt a project must be refused. In this case there is a substantial amount of scientific doubt, due to there being no geological surveys of the whole tunnel route under the Baldoyle Bay estuary combined with the unknown quantity of a geological fold caused by historical tectonic pressure, and the applicants admission in the NIS that *"the risk of a surface breakout by bentonite drilling fluid cannot be negated completely due to variability in the underlying geology."*

Reliance on future mitigation measures in order to address any potential LSE is improper: a decision is unlawful if any reasonable scientific doubt exists at the time it is made. In Commission v Portugal C-239/04 (at para. 24) the Court (again approving A. G. Kokott's Opinion) stated: *"The fact that, after its completion, the project may not have produced such effects is immaterial to that assessment. It is at the time of adoption of the decision authorising implementation of the project that there must be no reasonable scientific doubt remaining as to the absence of adverse effects on the integrity of the site in question (see, to that effect, Case C-209/02 Commission v Austria [2004] ECR I1211, paragraphs 26 and 27, and Waddenvereniging and Vogelbeschermingsvereniging, paragraphs 56 and 59)."*

Air breakout Impacts on Baldoyle Bay SAC; in addition to Bentonite pollution, depressions caused by tunnel boring will have a serious negative impact on Baldoyle Bay estuary SAC and its qualifying interests. Page 264 of Inspector's report states: *The evidence was that there were no bentonite breakouts at the Corrib tunnel which was a longer and larger structure. The observers commented on air breakouts which were recorded and the response of Irish Water referred to the greater surface area and the highly pressurised nature of the tunnel at Corrib. Depressions did occur at Corrib during tunnelling sand. There is potential for air breakout as a result of tunnelling but habitat impacts be very small. Changes to the channel are considered extremely unlikely and almost impossible and as an estuary it is constantly mobile and the ecological functions would not be changed and certainly there would not be damage to sediments so as to affect the conservation objectives."*

The Corrib pipeline was externally 4.2 metres in diameter with an internal diameter of 3.5 metres.. The Baldoyle Bay estuary marine outfall pipeline will be approximately, externally 2.4m in diameter with an internal diameter of 2 metres. The depressions that occurred in Sruwaddacon Bay, Co. Mayo were substantial but luckily the damage was minimal because they occurred in a bay in deeper waters with less sensitive habitats, not in an estuary which is also a wetland largely made up of protected mudflats, marsh and meadows with a large serpentine channel running through it.

According to the Consent Conditions Compliance Monitoring Report 17: 29th June 2013 to 6th September 2013 for the Corrib project: the first three inspected depressions *"were around 3-4m in diameter with a maximum depth of approximately 0.3m (i.e. just below the top of a Wellington boot). At the time of the site visit it was approximately 2 weeks since the last depression had been formed. Therefore, the depressions would have been washed over by a number of tides by the time of observation and it is likely that they were deeper when they first appeared. No evidence of contamination (e.g. discolouration of sand or water) was apparent. In addition to the depressions noted above, a vaguely defined linear depression was also present along the line of the tunnel about 1,000m from Aughaose (Photo 5). This was very shallow (approximately 0.05m deep), approximately 40m long and 7m wide. It is understood that this resulted from settlement of the soil above the tunnel. SEPIL has manually raked sand to form low berms (approximately 0.15m high) across the width of this feature to prevent water draining along it during an outgoing tide".Video footage of a newly formed depression taken on the 19th July 2013 (the day after ENVIRON's visit) indicates that it was in excess of 1m deep in a small area at its centre. This suggests that natural processes can infill depressions relatively rapidly after formation (i.e. decreasing the depth from 1m or more to around 0.3m within a two week period).*

The engineers for the Corrib project, Environ did not visit the site until two weeks after the air breakout caused the subsidence of the sands. Video footage shot by locals (https://www.thejournal.ie/sinkholes-mayo-shell-to-sea-993785-Jul2013/) show some of the depressions forming and the concerning sight of thousands of bubbles breaking through the surface. According to the report an air breakout occurred every time the Tunnel Boring Machine (TBM) had intervention maintenance in order to change the cutter. This was 16 times and the contractor BAM confirmed that an air breakout occurred in each case. While the report confirms that no bentonite **surface** breakout occurred it makes no comment on inadvertent returns in the substrate.

The above report confirms that there is an extreme likelihood of air breakout occurring at the marine based outfall section of the Greater Dublin Drainage Project, every time maintenance intervention is required. However, despite me providing proof that significant negative impact exists based on precedence in the Corrib case, without any scientific supporting evidence from The Applicant, the Inspector and therefore the Board accepted The Applicant Irish Waters, verbal assurances that no maintenance would be required during the 6-8 months marine based outfall tunnelling phase of the project and that air breakout would be unlikely. These assurances had no scientific basis and it is impossible to guarantee that a Tunnel Boring Machine will not require maintenance at its cutting face nor will its other mechanical parts. In fact this assertion seems to contradict all health and safety protocols for heavy machinery maintenance which is not compatible will their response, a response which was accepted by the inspector as proof of no risk and has no grounding in common sense.

In Peter Sweetman, Ireland, Attorney General, Minister for the Environment, Heritage and Local Government v An Bord Pleanála C-258/11, the correct application of the aforementioned provisions was summarised by the Court: *"40. Authorisation for a plan or project, as referred to in Article 6(3) of the Habitats Directive, may therefore be given only on condition that the competent authorities - once all aspects of the plan or project have been identified which can, by themselves or in*

combination with other plans or projects, affect the conservation objectives of the site concerned, and in the light of the best scientific knowledge in the field - are certain that the plan or project will not have lasting adverse effects on the integrity of that site. That is so where no reasonable scientific doubt remains as to the absence of such effects (see, to this effect, Case C404/09 Commission v Spain, paragraph 99, and Salvay and Others, paragraph 67).

18. Tunnell Bore Brief of evidence

At this point I would like to refer the inspector and the board to a brief of evidence that was submitted at the oral hearing although it was not put up on the stand alone website under the Oral Hearing Section. The document is entitled "brief of evidence tunnell boring by Tim Jaguttis. As the oral hearing agenda did not list this individual we decided to contact him. Mr Jaguttiss confirmed that he had never heard of the GDDP project and was not aware that his bried has been entered into evidence as part of the Planning Application for it. I have attached at appendix A18 the email thread of our correspondence in full email address redacted confirming this. As this evidence was not entered into the record by an expert at the oral hearing we ask that the reliance put on it and its contents by the Inspector and the Board who accepted the Report be disregarded.

19. Harbour Porpoise.

Rockabill to Dalkey SAC; The Greater Dublin Drainage Project (GDDP) marine based outfall discharges directly into the Rockabill to Dalkey SAC of which a Special Conservation Interest is the Harbour Porpoise *Phocoena phocoena*. The applicant's surveys identified that the most sightings of these cetaceans were in Dublin Bay just off Howth Head. The reason for this is that this area is deeper than the majority of Dublin Bay and forms a Bowl or sink like shape with sea banks on all sides. The depth of this "sink" was the reason The Applicant Irish Water chose this location for the diffuser, in order to disperse the sewage effluent in deeper waters. This decision was counter intuitive though as it effectively means that Irish Water will be pumping effluent over a sand ridge, into waters which are hemmed in on all sides by banks (Bedford Bank and the shallow Bed of Dublin Bay) forming this sink like effect, and these waters are the area where harbour porpoises are most sighted. In my first submission I raised the issue of the impact that bioaccumulation of pathogens, chemicals, toxins and hard metals would have on the harbour porpoise. I also raised my concerns again at the oral hearing. In their response to submissions dated January 2019 The Applicant did not even acknowledge my concern despite the harbour porpoise being an SCI of the Rockabill to Dalkey SAC that they will be pumping sewage effluent directly into.

I also referenced scientific data published by the Canadian government, however The Applicant made no attempt to rebut the scientific claims I put forward about pathogen/ disease infection via sewage effluent and bioaccumulation of pharmaceuticals, and hard metals in these mammals. An excerpt from my submission reads as follows: *"The final impact on the harbour porpoise will take effect during the operational phase. When the outfall pipe is pumping secondary treated effluent into unusually shallow waters off Portmarnock beach, a popular bathing spot. See Figure 10. which clearly illustrates how the depth of the area where the outfall pipe is located, only just falls into the 15-10 metre bracket just before the outfall diffusion point. Most of the area is in 5-10 metre depth and the remaining area is exposed during low tide."*

I went on to say; "Harbour porpoise are exceptionally susceptible to sewage pollution. According to research undertaken by the Canadian Federal governments environmental section, marine contamination is a serious threat to population levels; *"Contomination can occur in the form of marine debris, anthropogenic biological pollutants (e.g. sewage outflow) or via chemical contamination of habitat or prey. Harbour porpoise have been known to ingest plastic debris, and in some cases, this has resulted in death (Baird and Hooker 2000). Small cetaceans lack the metabolic capacity to degrade or excrete pollutants and thus retain high quantities in their systems (Tanabe et al. 1988). These pollutants may increase the risk of immunosuppression (Hall et al. 2005), and potentially reduce reproductive capabilities and neonate survival. The historical and emerging effects of marine contamination from polluting activities on harbour porpoise populations are uncertain, though given the likelihood of localized hotspots of contamination in harbour porpoise habitat, this threat is rated at medium to high level of concern. Regulations and monitoring of point sources of contamination can alleviate some concern for this threat; however, long-term chronic exposure to pollutants (both regulated and unregulated) creates uncertainty regarding effects to long-term reproductive health of this population. Biological pollution may occur in the form of nutrient-loading, hormones and antibiotic contamination entering the marine environment via sewage outflow, agricultural and other sources. Introduction of foreign diseases into a population of highly social cetaceans may result in disease outbreaks leading to population decline (Guimarés et al. 2007). As there is some suggestion that harbour porpoise may have a polygynandrous mating system (Grier and Burk 1992), they may be vulnerable to outbreaks of highly contagious diseases. As occurrence of disease may be the result of natural pathogens in the environment, or from anthropogenic nutrient-loading or introduction of foreign pathogens, sources of biological pollutants should be assessed and monitored to effect adequate mitigation of those anthropogenic threats. Exposures to contagions or other biological pollution may lead to negative synergistic effects with other stresses."*

In the intervening years since the application was lodged in 2018 there have been further concerning developments in relation to cetaceans. A recent scientific paper see Appendix bundle A19 attached has identified that cetaceans are succumbing to freshwater wasting disease. This causes legions on the skin which can then be infected by pollutants in the water.

As I demonstrated at submission stage, there is a massive amount of scientific research that concludes that marine mammals such as Harbour Porpoise *Phocoena phocoena* and other protected marine mammals such as Grey Seals *Halichoerus grypus* are particularly susceptible to bioaccumulation of PCBs, persistent Organic Pollutants (POPs) and hard metals in their blubber. The concentrated toxic load in their bodies has the effect of reducing reproductive capability and when young calves are born, their mothers body inadvertently detoxifies by diverting her toxins to her baby through her milk. See appendix A20 The bioaccumulation in adult porpoises occurs due to direct contact with sewage effluent in marine waters, via dredging of seabed that has accumulated metals, chemicals, and toxins in its sediments particularly near outfalls, city rivers mouths and harbours. The harbour porpoises also consume fish and invertebrates that have come into contact with PCBs and POPs through feeding at sewage outfalls or bottom feeding on seabed or on dredged suspended solids. This results in additional contamination for porpoises and seals as they are at the top of this food chain. There is an abundance of reports and information in support of my claim. Harbour porpoises as mammals are also extremely susceptible to infection from pathogens. There

has been frequent mass mortality amongst harbour seals and harbour porpoises caused by virus outbreak most notably in 2007 (*Mass martality in harbour seals and harbour porpaises caused by an unknown pathogen T. Harkonen, B. M. Bäcklin, T. Barrett, A. Bergman, M. Corteyn, R. Dietz, K. C. Harding, J. Malmsten, A. Roas, J. Teilmann*).

Due to potential conflict of interest from the IWDG we contacted ASOBANS for information on assessment of impacts on Harbour Porpoise to include:

-Virus load that could infect porpoise
-large Freshwater load containing bacteria and pathogen which could cause freshwater skin disease and associated deficiencies in in cetacean immune systems
-Temperature changes from 20 degree Celsius water in otherwise normal sea temps.
-Desalination of the habitats
-Microplastic contamination
-Bioaccumulation of PCBs which pass to young calves in milk in toxic amounts.
-Sediment dispersion disturbance

ASCOBANS sent a number of their reports (appendix Bundle A21-1-4) listed below, as examples of how a robust assessment of risk and threats to the harbour porpoise should be carried out. When Irish Water have completed a full assessment, they have agreed that I will send to them for expert comment.

Even though Ireland is not a Range State to the ASCOBANS harbour porpoise action plans, we would like to refer you to these documents in general:

The North Sea Plan, esp. Table 2 'Approximate distribution and scale of human uses in the North Sea in relation to the notional harbour porpoise sub-populations' and Table 3 'Summary of information of actual and potential threats to harbour porpoises in the North Sea area'
Jastarnia Plan, esp. section 5.1 on threats
Western Boltic Conservation Plan, esp. section 3.7 on threats

Unfortunately we were not able to compile a summary, as we are preparing for the 27th Meeting of the Advisory Committee, taking place this week.

Regarding noise impacts, the following CMS documents may be useful (Ireland is a Party to CMS):
CMS Resolution 12.14 Adverse Impacts of Anthropogenic Noise on Cetaceans and Other Migratory Species
CMS Family Guidelines on Environmental Impact Assessment for Marine Noise Generating Activities (Annex 1 to Resolution 12.14)
Technical Support Information

EVIDENCE OF RETRO FINDINGS OF Microplastics IN Harbour poirpose

20. Addition of UV treatment and Efficacy of same:

UV treatment is not 100% effective at neutralising pathogens and bacterial disease, in fact even the Environmental Protection Agency (EPA) sponsored reports put effectiveness at about 60-80% due to the numerous complications with the UV process within a wastewater treatment plant. There is also the issue that Ireland's largest wastewater treatment, the Ringsend Wastewater Treatment plant at an eventual 2.4 million PE is already discharging into the Rockabill to Dalkey SAC. Another major contributing factor is that due to the positioning of the Howth peninsula already the polluted waters of Dublin bay are prevented by tidal movements and currents from impacting on Portmarnock beach, as badly as Ringsend impacts on Dollymount Beach, which provides a rare habitat of water off Portmarnock that is at excellent quality for bathers with a blue flag status. Humans just swim in the sea recreationally, cetaceans (harbour porpoise) live in it. Putting a sewage outfall in this area with 500,000PE – 800,000PE of sewage effluent pumping into pristine waters will only degrade the harbour porpoises supporting habitats, that the Rockabill to Dalkey SAC was designated for. Ireland's two largest wastewater treatment plants will discharge into a protected habitat and UNESCO biosphere within a 20km stretch of each other. There is no doubt that there will be a further degrading of the marine environment if the second largest waste water treatment plant in the country discharges its sewage effluent in the same coastal waters as the

The impact of the sewage discharge which will contain hospital effluent, abattoir effluent and significant industrial effluent, discharging into the centre of a designated conservation area one of only three safe zones designated for the protection of harbour porpoise in Ireland, can only be substantial. As mammals Harbour porpoise will additionally be impacted by Pathogens and endocrine disrupters. Just one virus event could wipe out whole communities of porpoise due to the social nature of the species. Absolutely no assessment of this impact on the Special Conservation Interest has been carried out either by the Applicant or the Board despite Scientific proof being presented in support of the serious impacts on the species. As the Board did not discount the scientific basis of the significant impacts nor did they even acknowledge the impacts of PCBs Pathogens, Pop's and endocrine disrupters of the Harbour Porpoise appropriate assessment of this impact was not undertaken by the Board. We MUST also be cognisant of issues surround COVID, emerging virus and Zoonosis with sewage effluent containing such virus and the potential for infection of Marine Mammals with the surcharge taking place within their protected habitat.

21. Microplastics

Microplastics is a recognised and substantial current impact on the Marine environment. This impact was not assessed at all by the Applicant nor was it assessed by the Inspector and therefore the Board. The issue of microplastics which was raised at submission stage (Portmarnock Beach Committee). The Applicant Irish Water reply in their response document of January 2019 was as follows; *903. The Irish Government invited Public Consultation on the 'General Scheme of the Prohibition of Certain Products Containing Plastic Micro beads Bill 2018' in November 2018. In their submission to the invitation for public consultation the Applicant welcomed the proposals to prohibit the manufacture, import, export, supply, sale or exposure for sale of certain products that contain plastic micro beads and to provide for the safe disposol of waste products containing plastic micro beads. 904. Irish Water is supportive of the appraach to oddress the micro beads issue at source*

rather than by way of end of pipe treatment as it is neither practically nor economically feasible to remove plastic micro beads during water or waste water treatment.

The Applicant Irish Water did not actually respond to the issue of microplastics only to the issue of micro beads. However, micro plastics which are being found worldwide in the stomach and digestive tracts of fish and marine mammals are contained in all wastewater discharges and point source pollution is the main pathway receptor into the Marine Environment. As Irish Water have confirmed above microplastics cannot be removed during wastewater treatment. Two classifications of micro plastics currently exist. Primary micro plastics are any plastic fragments or particles that are already 5.0mm in size or less before entering the environment. These include microfibres from clothing, microbeads, and plastic pellets (also known as nurdles). Secondary micro plastics are micro plastics that are created from the degradation of larger plastic products once they enter the environment through natural weathering processes. Such sources of secondary micro plastics (which could be considered a cumulative impact) include water and soda bottles, fishing nets, and plastic bags. Both types are recognized to persist in the environment at high levels, particularly in aquatic and marine ecosystems. Such plastics degrade slowly, often over hundreds if not thousands of years. This increases the probability of micro plastics being ingested and incorporated into, and accumulated in, the bodies and tissues of many organisms.

One of the greatest effects of micro plastics in the marine environment is given by their bioavailability to organisms throughout the food web (Chua et al., 2014;Cole et al., 2011;Lee et al., 2019;Sun et al., 2018;Zhu et al., 2019) and, therefore, by the possible transfer of persistent organic pollutants that are retained onto their surface or to the leaching of additives already included in their manufacture process (Camacho et al., 2019;Carbery et al., 2018;Gallo et al., 2018;Rodrigues et al., 2019;Taniguchi et al., 2016;Teuten et al., 2009;Wang et al., 2018).

Plastics additives such as phthalates, UV stabilizers, colourants, brominated flame retardants, and bisphenol A are pollutants of particular concern (Thompson et al., 2009). Mato et al. (2001) reported that micro plastics are able to accumulate PAHs, PCBs, phthalates, and pesticides with a concentration factor of up to 10^6 times compared to surrounding seawater; a similar finding has been pointed out by Rodrigues et al. (2018), who have highlighted the possible transfer of pollutants to the biota. PCBs and PBDEs found in fish fed with the marine plastic than those fed with the virgin plastic (Rochman et al., 2013) indicated that plastic debris serves as a vector for the absorbed pollutants to wildlife.

A report by the World Health Organisation (WHO) found that micro plastics in wastewater networks can act as transporters of infectious disease. The documents state the following: *Although limited, current evidence suggests that micro plastics may be able to transport and disperse plastisphere communities over long distances. For example, micro plastics released from WWTPs may enable transport of sewage-related microorganisms in the effluent for long distances (McCormick et al. 2016; Oberbeckmann, Kreikemeyer, and Labrenz, 2018). Micro plastics may also serve as vectors for harmful organisms, including enteric viruses and protozoa, as these organisms can accumulate in biofilms, harbour other pathogens and remain infectious in the plastisphere (Atanasova et al., 2018; Sun et al., 2018). A study conducted in nine rivers in Illinois, USA, found higher presence of*

Pseudomonas spp., Burkholderiales incertae sedis, and Campylobacteraceae on micro plostics than on other suspended matter or in water (McCormick et al., 2016).

There is an abundance of evidence that due to their large specific surface area and hydrophobic surface, persistent organic pollutants, metals and pathogens could be easily adsorbed on the surface of micro plastics. The micro plastic remain suspended in the seawater where they have discharged where they are ingested by fish and micro sea life, who in turn are ingested by birds and marine mammals. There is Is also some discussion as to whether micro plastics interfere with the efficacy of UV treatment as they can absorb high amounts of UV radiation thus making UV treatment in drinking and wastewater treatment plants less effective.

The Applicant Identified no impact and therefore assessment of ingestion of microplastic on marine mammals including the SCIs of Rockabill to Dalkey SAC in the EIAR or NIS. Despite observers raising these issues which the Inspector notes on page XXX of her report which states *"There is also concern relating to chemicals, micro plastics, viruses and hormones."* she never assesses the impact. Therefore, it was irrational to make a determination without assessing one of the biggest current threats to marine life, particularly a Special Conservation Interest of the Rockabill to Dalkey SAC which the sewage outfall discharges directly into. We are not asking that the court assess the impacts of Microplastics on the environment, but we do ask that they quash the grant of permission so that the Board can appropriately assess this previously highlighted but ignore impact.

22. Bioaccumulation of Microplastics in Nephrops.

Sewage and its dangerous components do not magically disappear, it disperses and solids containing hard metals etc. fall to the seabed. There are also issues with the flushing out capabilities of A) Dublin Bay and B) The Irish Sea, which can take up to 600 days to flush through in parts. A seasonal anomaly called the Western Irish Sea Gyre which starts just east of Lambay Island and ends up north cause the same waters to circulate in situ.

The issue of poor circulation in the Irish sea is such a concern that authors of Marine Pollution Bulletin 2010, 60: 748-758 Dabrowski, T,Hartnett, M,Olbert, AI (2010) 'Influence of seasonal circulation on flushing of the Irish Sea'. say *t"hat due to a number of features of the western Irish sea, Irish Baroclinic circulation induced by such features may prove to have very significant effects on retention times of all pollutants and other constituents that are carried with water, indicating that careful management approach needs to be adopted".* The report also states that; *"Detailed analysis of the stratified region of the western Irish Sea revealed that intra- annual variation in the values of residence times in this region is very significant; for example, the material introduced into the region in December is likely to remain there for the time period five times greater than the material that entered the region in October. The results also indicate that the cyclonic density-driven gyre developing in the western Irish Sea over the heating season causes a two-fold increase in the value of residence time af the regian".*

This report highlights that the area where the proposed Greater Dublin Drainage Project outfall will discharge is subject to poor flushing and that the waters in this area if they contained sewage

effluent and contaminated micro plastics would have a longer circulation time than other areas along the Irish coast. The fact that the Inspector chose not to address this issue of pathogen impacts, bioaccumulation of PCBs and effects of pharmaceuticals on marine mammals defies logic and does not seem rational. Lacunae exist that were highlighted to the Inspector and were highlighted in submissions. These lacunae were not dealt with, as such The Board failed to appropriately assess the Project. The Board should not have granted permission when a significant impact identified was not assessed under stage two assessment, was not addressed in the EIAR or NIS and no response was given by either The Applicant nor the Inspector when the issue was raised in writing and verbally. Supporting Case law: Habitats directive – Lacunae ruling not definitive. Guilfoyle ruling

The western Irish Seaa Gyre also supports one of the largest production areas for Nephrophs or dublin bay prawns. This production area crosses the boarder into Northern Irish Waters. Impacts of effluent on nephrophs hormonal development, bioaccumulation of toxins and microplastics on this important commercial species must be assessed, We also belive that a trans Boundary consultation should take place on this issue due to its impact on Northern Irish Fishers and companies.

23. Light Bellied Brent Geese (LBBG):

Impacts on Baldoyle Special Area of Protection and its qualifying interests. In the Portmarnock South LAP a large area of land identified as feeding habitat for Brent Geese and other SCI's for Baldoyle SPA was rezoned for residential development. In order to mitigate (in my opinion compensate) for this impact Fingal County Council designated an area of the same tranche of land just on the opposite side of the rezoned residential land as a quiet zone for feeding and roosting wetland birds during high tide, most notably Lapwing and Light bellied Brent geese. A buffer zone along the coast road was also identified within the same lands in order to allow a transitional area for birds from the SPA to use during high tide. In the Baldoyle Bay SPA conservation objectives, one of the biggest disturbances to water birds and protected species was dogs and dog walkers to this end the quiet zone was fenced off to provide a stable and safe feeding and roosting zone.

In order to construct the trench less outfall section of the pipeline, The Applicant propose commandeering and developing a sizeable area of grassland/bird habitat on each side of the Baldoyle Estuary SAC. This habitat will be hard landscaped into construction compounds for the duration of the project. Compound 9 will occupy the already designated ex situ feeding site for Brent Geese, it will also take the arable land designated to lapwing for the access road and the trench corridor will take up the rest of the designated land. This exact site where they want to put the Tunnel Boring Machine in compound 9, has been used as mitigation for habitat loss in Natura Impact Statements attached to developments and projects not once but five times (Portmarnock South LAP, Portmarnock South Phase 1A, Phase 1B and Phase 1C and Baldoyle to Portmarnock Cycleway). So, the Maynetown area which has been identified by Dillion and Pierce as being interdependent with Baldoyle Bay SPA has had five projects / developments within the footprint of the land which all used the same mitigation in the form of the Lapwing/ Brent geese quiet zone. We are really seeing "death of a thousand cuts" in this important ex situ site.

Irish Water has tried to diminish the value of these sites in particular the Ex Situ feeding site at compound 9. These sites are interdependent with the SAC and have been for decades. On numerous NIS for nearby developments the areas around compound nine have been mapped as feeding sites for Light bellied Brent Geese. Fingal County Councils Baldoyle to Portmarnock cycle route application identifies this area as a designated feeding site for light bellied Brent geese as does the Ecological Study of the Coastal Habitats in County Fingal Phase II – Birds (Figure 7), also commissioned by Fingal County Council. Another report (Figure 8) for Portmarnock south LAP NIS also commissioned by Fingal County Council identifies the same area as a feeding site for a number of qualifying species for the SPA. The Portmarnock Lap quotes: *"Informal consultation was also undertaken with Irish Brent Goose Research Group regarding lands to the south of the LAP area (Baldoyle-Stapalin) and the Portmarnock South LAP lands. It was noted that the LAP lands used by Brent geese is dependent on whether, and where, winter cereals have been planted, with the geese being attracted to winter cereals. It was noted that this was not the case during the 2012/2013 winter, in the past large numbers (1000+) have been observed, particularly in the field which slopes up from the coast road within the east of the LAP lands. (pers. comm., Re sightings Co-ordinatar, Irish Brent Goose Research Group, 2013").*

The same report identifies main pressures and threats to Light bellied Brent geese habitats as the following: Habitat loss/degradation (human induced) – agriculture, infrastructural development, human settlement, tourism, recreation, dams, invasive species; accidental mortality – collision; persecution; pollution – global warming, sea level rise, water pollution; natural disasters – drought, storms, flooding; changes in native species dynamics – competitors, pathogens/parasites; poor regeneration, restricted range; human disturbance – recreation, transport, agricultural, industrial. Excluding dams and persecution every single one of those threats identified will be the reality if this development goes ahead.

The Portmarnock South Lap NIS in same report also states: *Bird species of Baldoyle Bay SPA, in particular Light-bellied Brent Geese are known to use lands surrounding the SPA for feeding. A section of the agricultural lands adjoining the SPA, in the vicinity of C4 were noted to be of major importance with records of between 401-1450 Light bellied Brent Geese recorded from this area (Benson, 2009). Loss of feeding habitat may result in negative impacts upon qualifying interests of the SPA."* Finally, the Portmarnock South Area Lap NIS concludes: *Once mitigation has been implemented in full, no decrease in favourable conservation status of Brent Geese are predicted and no significant impacts to Baldoyle SPA site integrity will arise as a result of loss of feeding habitat. This assessment has taken account of best available scientific informotion including a) current and historical Brent data for the fields in question, b) increasing notional ond local Brent Geese populations c) the species is not red-listed nationally, and d) taking account of mitigation measures including seasonal fencing and management measures of fields to the east and south of the LAP lands for wintering bird species including provision of a quiet zone.*

It has been ascertained that there is a wealth of documented references to the area where compound 9 is planned for, being an ex situ feeding site to not only Brent geese but qualifying species for other SAC's in Dublin. It is therefore integral to maintaining the favourable conservation

status of Baldoyle Bay SAC/ SPA in the first instance but also represents an important feeding site that contributes to maintaining a cohesive overall Natura 2000 network for the Dublin area.

The fields adjacent to Baldoyle Bay SAC constitute part of the SAC habitat by virtue of their role as an extremely important terrestrial feeding site for Light-Bellied Brent Geese. Over a thousand geese have been documented feeding here at one time according to Fingal County Council commissioned reports, that constitutes approx. 2.5% of the current population in Ireland and approx. 8.5% of the Dublin area population according to BirdWatch Ireland. The current climate of rapid development is an increasing threat to the existing suite of terrestrial foraging sites in Dublin. These sites are ex situ to the designated sites and must be considered critical to the maintenance of the Brent geese population and therefore, these sites need to be protected by the legislation designed for this purpose.

The ex situ site that will result in habitat loss in order to accommodate compound 9 is even more important in light of recent grants of planning permission for other ex situ sites despite their designation. One site is the Santa Sabina playing fields which have planning permission for 81 houses with a new application for 96 being considered. Two other sites with planning are Erin's isle GAA Finglas and Scoil Eircain Finglas. The loss of these ex situ sites as part of the Natura Network, will increase pressures on the remaining terrestrial feeding sites in Dublin. The importance of the site is confirmed in the Wintering bird survey of the lands surrounding the Baldoyle Bay / Estuary December to February 2011 – 2012 which was commissioned as part of the South Portmarnock LAP. It states; *"This winter bird survey has demonstrated that the surrounding farmlands, amenity grasslands and golf club lands are important habitats for birds linked to the Baldoyle Estuary and should be viewed as being ecologically linked and not divorced from the estuarine areas. In times of hard weather, storms, high tides and low human disturbance times e.g. dawn/ night times birds frequently move from the estuarine areas onto the surraunding lands for additional feeding or raosting needs. This valuable mix of land use together with the estuarine wetland habitats produces this diversity, if the mix stays as it is this level of diversity should continue".*

The survey has found that the surrounding arable farmland in particular is an important feeding habitat for wader species from the estuary as well as winter finches, skylark and bunting. The arable croplands location so close to the estuary allows this rich biodiversity to develop. If the surrounding arable lands are re-zoned then the diversity and numbers of the bird species that give the SPA status to the Baldoyle Bay Estuary may be affected.

Once The Applicant Irish Water have compensated for the loss of habitat by reinstating compounds 9 and 10 as per ABP condition 16(c), there will still remain permanent way leaves and built infrastructure in the form of access manholes. No impact on sewage overflows at these manholes (as has occurred a number of times to the manholes on the Sutton to Ringsend pipeline) during commissioning and operation has been discussed. Another serious issue is the fact that The Applicant Irish Water failed to add the Portmarnock Wastewater Project which consists of 1.7km of rising man going through the same Maynetown lands and also through the same designated quiet zone for Brent geese. Irish water has been aware of this project well before the Greater Dublin Drainage Project application date, based on its planning application Reg. Ref:F19A/0400 which is still pending. The fact that they want to put a rising main pipeline and more manholes and way

leaves through the protected quiet zone was never given the chance to be assessed as The Applicant withheld this information, that only they could have known about. I wish to point out at this stage that I believe there is another important issue regarding compounds 9 & 10. The NIS and EIAR state that the impact of the two compounds is a temporary impact and that the compounds will be reinstated upon finalising of the outfall a year or two later. Fingal County Council also used the term reinstatement when looking for a written guarantee regarding the reinstatement of dune habitat at compound 10.

The level of development impact at the compounds together with the length of time they will be utilised and the use of the word reinstatement, means that the act of reinstating or restoring the sites, is more a compensatory measure and not a mitigatory measure under the hierarchy of mitigation. The legislation is clear. *If the competent authority considers the mitigation measures are sufficient to avoid the adverse effects on site integrity identified in the appropriate assessment, they will become an integral part of the specification of the final plan or project or may be listed as a condition for project approval. If, however, there is still a residual adverse effect on the integrity of the site, even after the introduction of mitigation measures, then the plan or project cannot be approved (unless the conditions set out in Article 6(4) are fulfilled).*

There are no mitigation measures for compound 9 and 10, in that the land that they will occupy will be lost for a substantial and avian habit-forming period of time and therefore will impact on the qualifying species and the integrity of the site. Particularly as the positioning of the compounds on a direct line on opposite sides of the SAC, will mean noise and light pollution from both sites, and heavy construction traffic twenty-four seven. This constant disturbance will most certainly contribute to fragmentation of the SAC from the area south of the marine based outfall tunnel line to the area north of the tunnel line. Habitat fragmentation is defined as the process during which a large expanse of habitat is transformed into a number of smaller patches of smaller total area isolated from each other by a matrix of habitats unlike the original (Fahrig, 2003).

The very strong case for the restoration of the compounds being a compensatory measure means that in order for this project to go ahead it would need to fulfil the conditions laid out in Article 6 (4) of the Habitats Directive. This project cannot fulfil these conditions as reference has been made in the application to the fact that the Wastewater Treatment Plant could have been built at any of the three preferred sites (and in light of the ASA flaws probably at some of the 6 that were screened out incorrectly) and so there are multiple possible alternatives to this site. The Inspector was wrong to assess no permanent impact at compound 9 and was wrong to accept restoration as mitigation when it is clearly compensation. Particularly in light of the fact that as the site was designated specifically for the protection and integrity of SCI species attached to the Baldoyle Bay SPA, therefore is considered as protected as the SPA under the Habitats and Birds Directive. Both The Applicant and Fingal County Council tried to suggest that the Murrough spit would act as a "replacement" feeding area for the lost designated quiet zone. In making this move The Applicant and Fingal County Council have put forward a COMPENSATORY measure. I pointed out in the oral hearing that the Murrough spit cannot be considered as compensation as it is already contained within Baldoyle Bay SPA and EU case law is very clear on this point.

On page 276 of her report the Inspector states: *I consider that there are no outstanding questions regarding the impact of the development on Brent geese and am satisfied that the development would not result in* ***significant short-term (or long-term) disturbance or displacement effects*** *taking into account surveys results and measures such as use of site hoarding. There is no significant population level displacement.* During the oral hearing the Inspector requested copy of the raw data surveys for the bird counts as they were not submitted for inspection as part of the application. I got to view these reports by copying them from the ABP Inspectors file as they were not on the Greater Dublin Drainage website with the other oral hearing documents. The raw data dates corresponds with the table in the EIAR. However upon viewing the raw data I could see that, on each date a surveyor only surveyed 2 sites and with 18 sites to survey it meant that between 2014-2017 the Maynetown land sites ((sites 4,5,12,13) were only visited 5 times. of the days in question, one day had substantial rainfall and another had gale force 7 winds. That is only 1-2 visits per year with only 6 hours per year surveying each site.

In addition to the severe deficit of survey time, the methodology was also questionable. RPS carried out the surveys and their ornithologist came from Northern Ireland – Belfast. [redacted] it is presumed only works an eight-hour day so nearly all survey shifts were only 6 hours long with an hour's journey time to and from Belfast each day. Most surveys started at 8am with only one being a dawn survey and no dusk surveys on the lands. There was also no identification of whether the tide was at high or low phases with birds utilising lands in or around the Maynetown lands most during high tide. This was a glaring omission of relevant information. Absolutely no nocturnal surveys to identify roost sites were carried out. Most tellingly only 1 single visit took place between 2014-2017 in the Maynetown lands between 1st Dec and 1st of April the period when Brent Geese have migrated and make their habitat in Ireland. I put it to the Board that the Inspector should have found these surveys deficient it does not take an expert to find them lacking. Common sense would show that one visit in three years during winter to a protected quiet zone site designated for migratory wintering birds is severely deficient. We attach at Appendix A22 a copy of an affidavit by expert birder Paul Lynch in relation to his perceived deficiencies in the surveys.

In an attempt to close the gap on this deficiency Portmarnock Community Association(PCA) together with Expert Birders John Lovett, Dave Dillion and member of the community took it upon ourselves to carry out a citizens science project on the use of the Quiet Zone by Light bellied brent Geese over the wintering period of 2020. I have attached the report at Appendix A23 It is clear that there is substantial use of this area for feeding all through the winter season during high tides and when eel grass in the estuary has been depleted.

As compensation will not be in place before the habitat is lost for the compound, access and corridor and wayleaves and manholes, which will negatively impact the integrity of the site under the current mitigation measure for this application. Legislative context: S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011. Part 4 section 27 (4) Public authorities, in the exercise of their functions, insofar as the requirements of the Birds Directive and the Habitats Directive are relevant to those functions, shall (a) take the appropriate steps to avoid, in candidate Special Protection Areas, pollution and deterioration of habitats and any disturbances affecting the birds insofar as these would be significant in relation to the objectives of Article 4 of the Birds Directive, (b) outside those areas, strive to avoid pollution or deterioration of habitats,

and steps to avoid, in European Sites, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated in so far as such disturbance could be significant in relation to the objectives of the Habitats Directive.

A recent An Bord Pleanala decision- Board Direction BD-001078-18 ABP-302225-18 for a planning application by Crakav Ltd. reinforces my assertion that this development cannot be granted permission due to direct habitat loss that would result from construction of compound nine and to a lesser extend compound 10. The decision reads as follows: *"Having regard to the fact that the subject site is one of the most important exsitu feeding sites in Dublin for the Light-bellied Brent Goose, a bird species that is a qualifying interest for the North Bull Island SPA and having regard to the lack of adequate qualitative analysis and accordingly the lack of certainty thot this species would successfully relocote to other potential inland feeding sites in the wider area, as proposed as mitigation for the development of the subject site in the submitted Natura impact statement, the Board cannot be sotisfied, beyond reasonable scientific doubt, that the proposed development, either individually or in combination with other plans and projects, would not adversely affect the integrity of these European sites in view of the sites' conservation objectives."* Supporting Case Law: Briels / Case C 418/04 Commission v Ireland "The Birds Case"

As touched on the previous paragraphs there is an issue with how the Maynetown lands were rezoned in the Portmarnock south LAP and the reliance by the inspector on mitigations measure the we feel are not legally sound. Below we have laid out a history of the legal issues and the implications for this case.

1. History of zoning at Maynetown Portmarnock.

1.1 In the Portmarnock South LAP lands that were previously agricultural pre 2005 were zoned residential in Fingal Development Plan. As part of the Portmarnock South LAP, Bird Surveys were carried out to assess the use of the lands as ex situ feeding sites by qualifying interests (SCIs) of Baldoyle Bay SAC. The LAP referenced the following reports and surveys.

1.2 Fingal County Councils the Ecological Study of the Coastal Habitats in County Fingal Phase II – Birds (Figure 4 in the document, Fig 1 in this report), http://www.fingalbiodiversity.ie/resources/fingal_coast/2004%20Bird%20Habitats.pdf identified the use of the whole lands at Maynetown which was governed by Portmarnock South LAP by Brent Waders (see red squares).

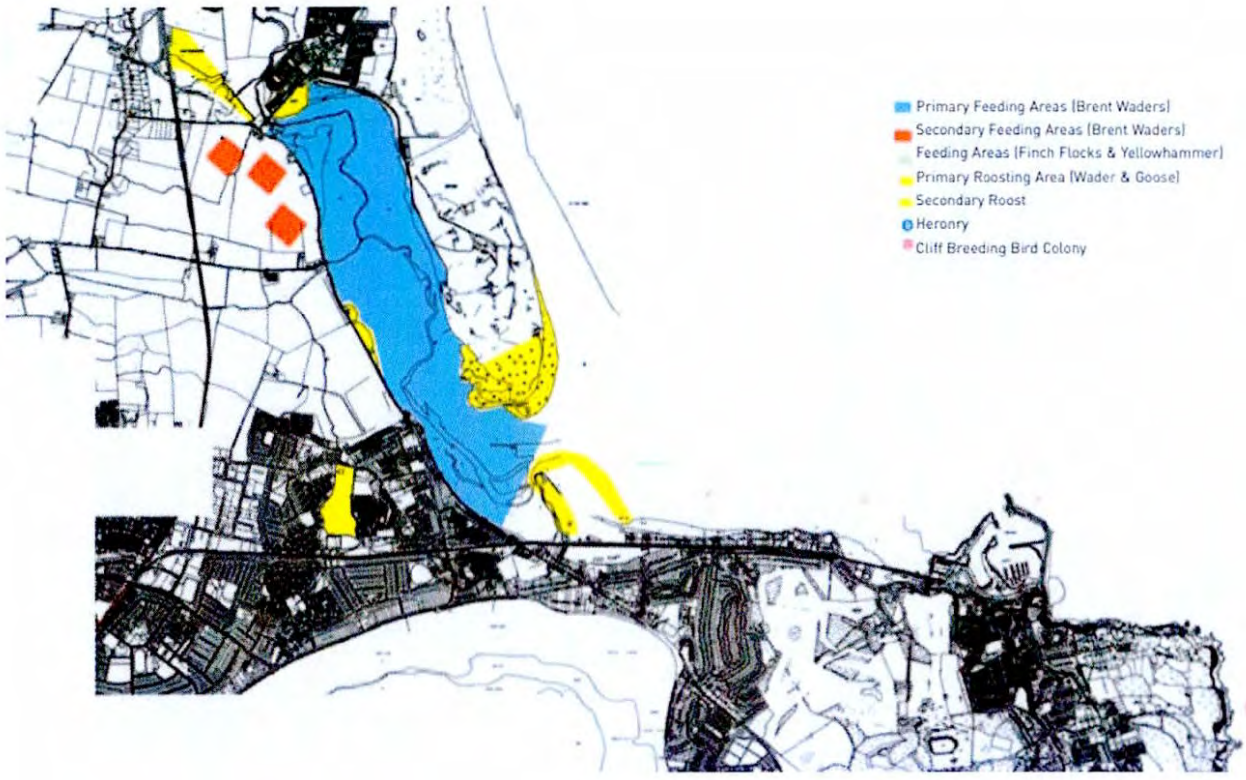


Fig 1. Use of Maynetown by Brent Geese.

1.3 Another report for Portmarnock South LAP NIS also commissioned by Fingal county council identifies the same area as a feeding site for a number of qualifying species for the SPA. The Portmarnock Lap quotes:

Informal consultation was also undertaken with Irish Brent Goose Research Group regarding lands to the south of the LAP area (Baldoyle-Stapolin) and the Portmarnock South LAP lands. It was noted that the LAP lands used by Brent geese is dependent on whether, and where, winter cereals have been planted, with the geese being attracted to winter cereals. It was noted that this was not the case during the 2012/2013 winter, in the past large numbers (1000+) have been observed, particularly in the field which slopes up from the coast road within the east of the LAP lands. (pers. comm., Resightings Co-ordinator, Irish Brent Goose Research Group, 2013).

1.4 The same report identifies main pressures and threats to light bellied Brent geese habitats as the following: Habitat loss/degradation (human induced) – agriculture, infrastructural development, human settlement, tourism, recreation, dams, invasive species; accidental mortality – collision; persecution; pollution – global warming, sea level rise, water pollution; natural disasters – drought, storms, flooding; changes in native species dynamics – competitors, pathogens/parasites; poor regeneration, restricted range; human disturbance – recreation, transport, agricultural, industrial.

1.5 The Portmarnock South Lap NIS https://www.fingal.ie/sites/default/files/2019-03/Portmarnock%20South%20LAP%20AA%20Natura%20Impact%20Report.pdf same report illustrates the use of

the lands by birds from a Pierce and Dillon 2011 survey (Fig 3 within document and Fig 2 in this report) and the report also states:

Bird species of Baldoyle Bay SPA, in particular LightBellied Brent Geese are known to use lands surrounding the SPA for feeding. A section of the agricultural lands adjoining the SPA, in the vicinity of C4 were noted to be of major importance with records of between 401-1450 Light bellied Brent Geese recorded from this area (Benson, 2009). Loss of feeding habitat may result in negative impacts upon qualifying interests of the SPA.

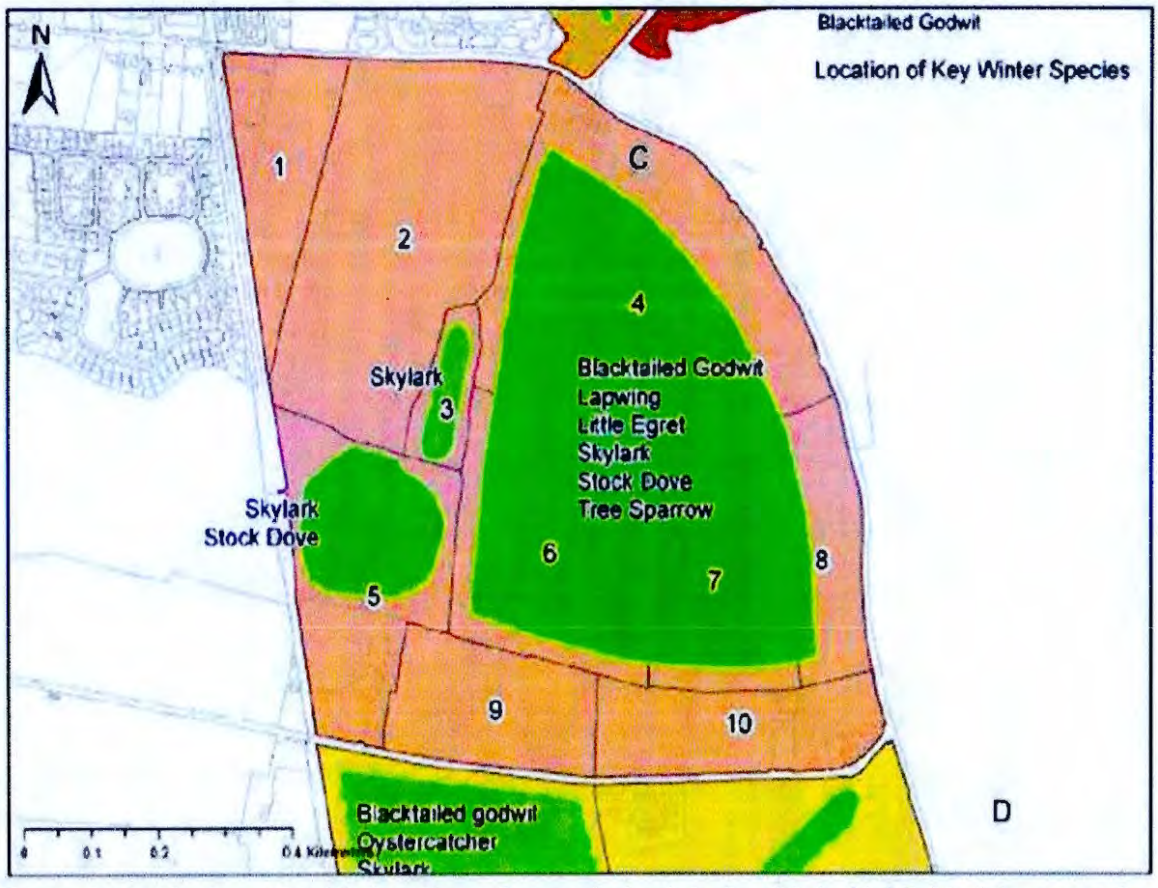


Figure 3: Study Area C with location of recorded wintering birds highlighted in green in relation to the LAP lands. (Pierce and Dillon, 2012)

FIG 2.

1.6 The importance of the site is confirmed in the Wintering bird survey of the lands surrounding the Baldoyle Estuary December to February 2011 – 2012 (report attached) which was commissioned as part of the South Portmarnock LAP. It states; "***This winter bird survey has demonstrated that the surrounding farmlands, amenity grasslands and golf club lands are important habitats for birds linked to the Baldoyle Estuary and should be viewed as being ecologically linked and not divorced from the estuarine areas.*** *In times of hard weather, storms, high tides and low human disturbance times e.g. dawn/ night times birds frequently move from the estuarine areas onto the surrounding lands for additional feeding or roosting needs. This valuable mix of land use together with the estuarine wetland habitats produces this diversity, if the mix stays as it is this level of diversity should continue. The survey has found that the surrounding arable farmland in particular is an important*

feeding habitat for wader species from the estuary as well as winter finches, skylarks and buntings. The arable croplands location so close to the estuary allows this rich biodiversity to develop. ***If the surrounding arable lands are re-zoned then the diversity and numbers of the bird species that give the SPA status to the Baldoyle Estuary may be affected."***

1.7 As is confirmed by Fingal County Council own reports , there was substantial use and reliance on the land by species protected by the designation of Baldoyle Bay SPA and that the experts deemed this ex situ feeding site as ecologically linked to Baldoyle SPA. The AA for Portmarnock South LAP identified that the plan would remove important feeding and roosting habitat, which was correct but then went on to incorrectly propose completely inadequate mitigation measures rather than what was required which was compensatory measures. The steps taken next, were then and continue to be in breach of the Habitats Directive and Birds Directive.

The Council suggested the following as mitigation (not compensation).

i). Designation of Bird Quiet Zone (see fig 3)
ii). Clearing of Murragh Spit (see fig. 5)
iii). The availability of existing sports pitches in the area for feeding.

1.8 These measure are insufficient and in breach of the Habitats Directive for the following reasons;

i) The Bird Quiet Zone was already within the area identified as a feeding area and already in use, for Brent Geese. You cannot mitigate or compensate with the same land that is being impacted by a project or plan.

ii) The Murragh spit was already within the Baldoyle Bay SPA and therefore cannot be considered as creating habitat to mitigate habitat loss. (see fig 4.)

iii). The existing sport pitches were already used by the Brent Waders for Feeding at that time see Fig 6. Benson 2005 so the availability of these pitches could not be consider as the brent wader population were already utilising these pitches in addition to Maynetown to nourish themselves at high tide and during low eelgrass production in the estuary. The removal of habitat loss at Maynetown therefore gave them less available feeding spots so the sports areas highlighted could never be considered mitigation.

Fig 3: Portmarnock South LAP Masterplan with Quiet Zone for Brent Geese and Lapwing

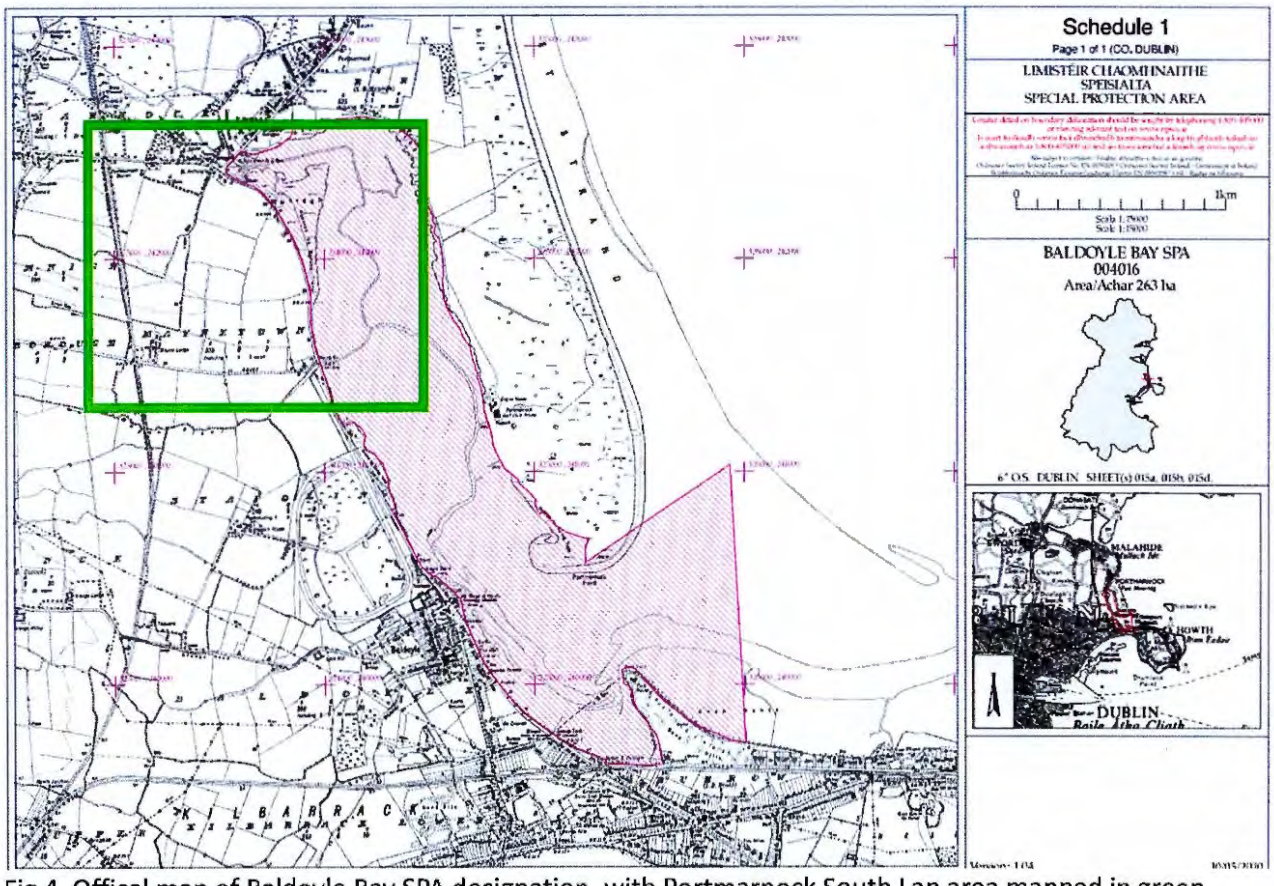


Fig 4. Offical map of Baldoyle Bay SPA designation, with Portmarnock South Lap area mapped in green.

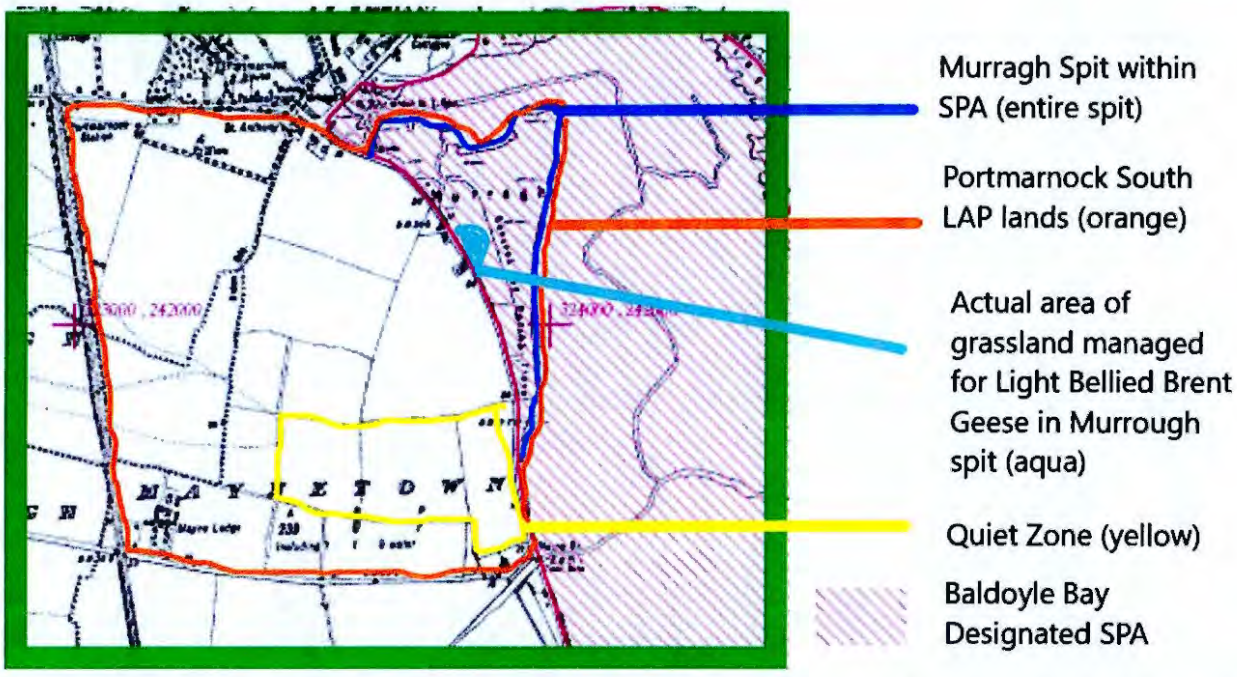


Fig 5. Detail showing inadequate mitigation measures, including the use of already designated lands with Murragh Spit.

1.8 If we were to apply what happened to the Birds habitat at Maynetown to a human scenario, it would be the equivalent of calling up to someone's house and saying we recognise that your right to use your house is protected by the constitution (Habitats Directive) and if we take away any part of it we shall supply equivalent accommodation space to compensate you for taking your house.

However after recognising that you use your whole house we are going to designate the Kitchen as your living space (the Quiet Zone) we know you already used it but now we have officially identified it as yours. We will then take the rest of your house for our own use, but you will be OK as you still have your garden (the Murragh Spit) that you already had use of and was designated for you. However we are going to regift the Garden again for our legal obligation of compensating you for commandeering the rest of your living space. You also have access to a network of restaurants that you regularly eat in that are shared by other uses and people (the existing Sports Pitches see fig 6 -L Benson illustration identifying lands already in use by LBBG for foraging), which we will take into account, in order to alleviate our legal responsibility not to reduce your eating areas. So to sum up we are taking your whole house for our purposes but you get to live in the kitchen, this is a fair and equitable arrangement.

1.9 But it is not a fair and equitable arrangement and the legislation governing this is unyielding in this regard. S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011. Part 4 section 27 (4) Public authorities, in the exercise of their functions, insofar as the requirements of the Birds Directive and the Habitats Directive are relevant to those functions, **shall** (a) take the appropriate steps to avoid, in candidate special protection areas, pollution and deterioration of habitats and any disturbances affecting the birds insofar as these would be significant in relation to the objectives of Article 4 of the Birds Directive, (b) ***outside those areas,***

strive to avoid pollution or deterioration of habitats, and steps to avoid, in European Sites, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated in so far as such disturbance could be significant in relation to the objectives of the Habitats Directive.

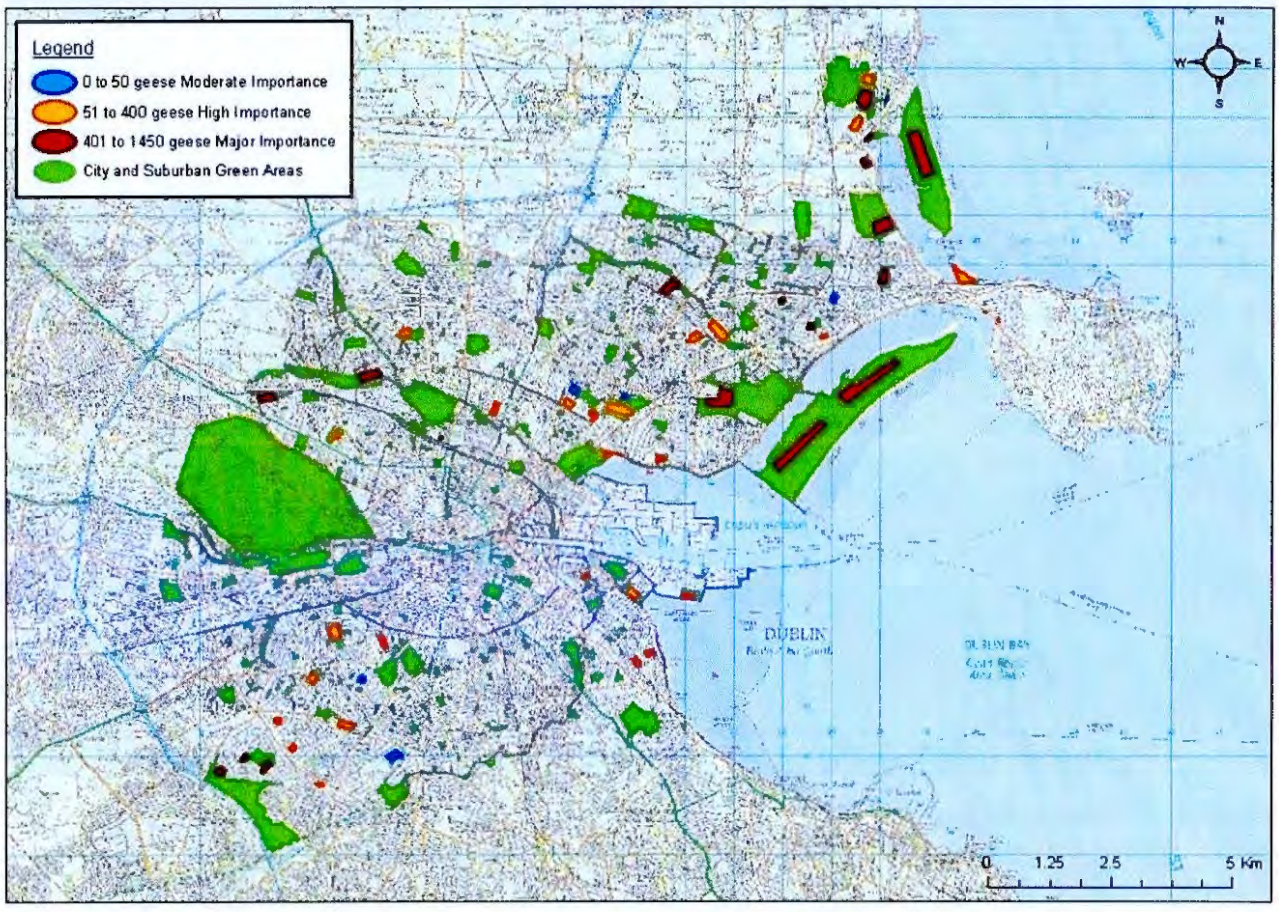


Fig. 6. L Benson 2009 identified feeding locations for Brent Geese.

1.10 An Bord Pleanála has already correctly applied this legal test in An Bord Pleanála decision- Board Direction BD- 001078-18 ABP-302225-18 for a planning application by Crekav Ltd.. This decision reinforces the proposition that this land rezoning should not have been granted permission due to direct habitat loss that would result from construction of SUDS wetland, The decision reads as follows: *"Having regard to the fact that the subject is one of the most important exsitu feeding sites in Dublin for the Light-bellied Brent Goose, a bird species that is a qualifying interest for the North Bull Island SPA and having regard to the lack of adequate qualitative analysis and accordingly the lack of certainty that this species would successfully relocate to other potential inland feeding sites in the wider area, as proposed as mitigation for the development of the subject site in the submitted Natura impact statement, the Board cannot be satisfied, beyond reasonable scientific doubt, that the proposed development, either individually or in combination with other plans and projects, would not adversely affect the integrity of these European sites in view of the sites' conservation objectives."*

1. 11 The legislation is clear. If the competent authority considers the mitigation measures are sufficient to avoid the adverse effects on site integrity identified in the appropriate assessment, they will become an integral part of the specification of the final plan or project or may be listed as a condition for project approval. If, however, there is still a residual adverse effect on the integrity of the site, even after the introduction of mitigation measures, then the plan or project cannot be approved (unless the conditions set out in Article 6(4) are fulfilled).

1.12 The test was not applied to the Maynetown lands in relation to appropriate compensation habitats when the Portmarnock South LAP was introduced and assessed. It is clear from the illustrations (fig 7) that the physical site size of feed habitat lost was not equally mitigated or compensated for by the created of equivalent sized feeding habitat on new lands not already used or designated for the protection of Special Conservation interests of Baldoyle SPA. As such the previous rezoning was illegal and must now be corrected with the AA and EIA for this Portmarnock South Phase 1D SHD, which must under law take into account the failure to actually compensate like for like for the loss of feeding and roosting habitat.

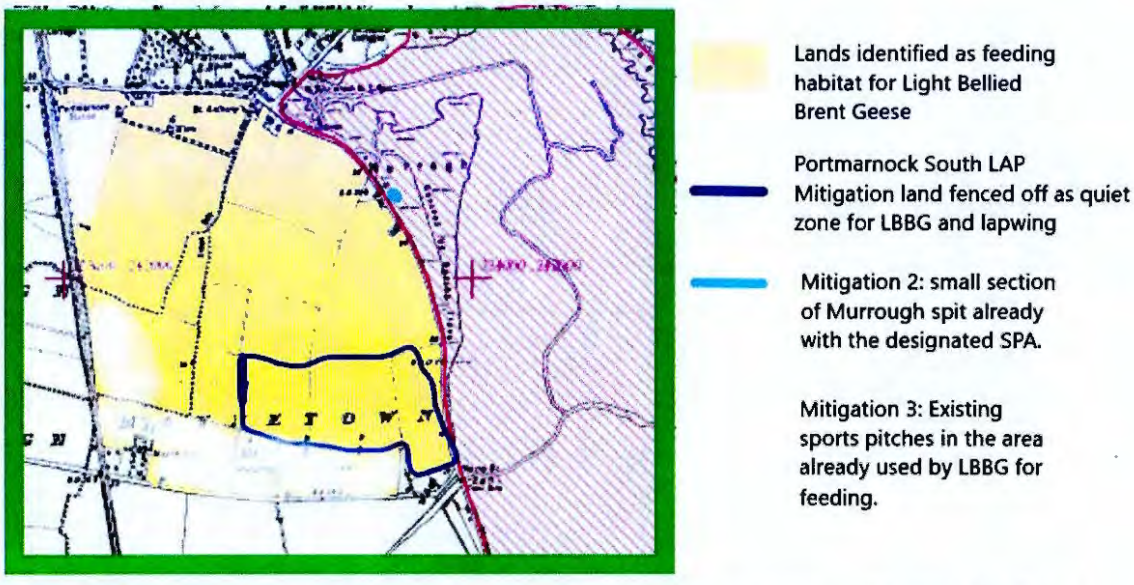


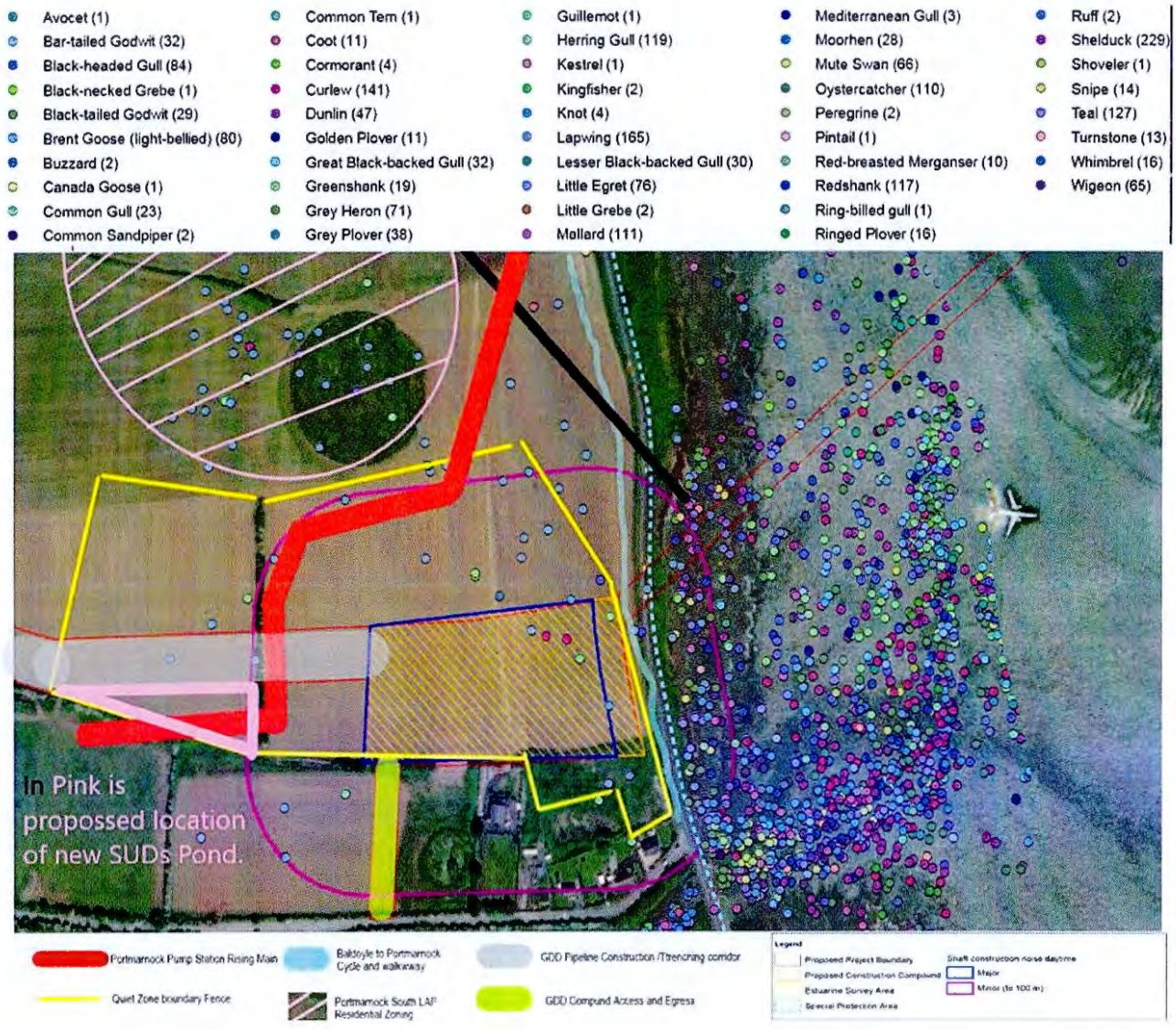
Fig. 7 – visual representation of original feeding habitat in comparison to mitigation habitat.

1.13 The Portmarnock South Area Lap NIS therefore incorrectly concluded: *"Once mitigation has been implemented in full, no decrease in favourable conservation status of Brent Geese are predicted and no significant impacts to Baldoyle SPA site integrity will arise as a result of loss of feeding habitat. This assessment has taken account of best available scientific information including a) current and historical Brent data for the fields in question, b) increasing national and local Brent Geese populations c) the species is not red-listed nationally, and d) taking account of mitigation measures including seasonal fencing and management measures of fields to the east and south of the LAP lands for wintering bird species including provision of a quiet zone."*

1.14 Attached is a copy of a citizen science survey of the Quiet Zone lands which shows the recent and indeed the continued use of lands outside of the fences quiet zone area. It is very clear from this report that compensation and mitigation is still required in relation to the land take of feeding lands for the rezoning of Maynetown for the Portmarnock South LAP. This means that the development NIS is not complete as there are still historical impacts in the continued residential zoning of this area.

1.15 Cumulative impacts:

The quiet zone will be impacted by the Portmarnock phase 1D SHD, Greater Dublin Drainage Project, The Portmarnock reinforcement project – Portmarnock pumping station and rising main (see visual representation of cumulative projects in Fig. 8) . The land will not be fully remediated as there will be permanent wayleaves for maintenance access (disturbance) to the infrastructure that will be built within the site. This includes access chambers, manholes and vents that will be built within the actual quiet zone lands (see Fig. 9 – Access chambers mapped in quiet zones for GDD project) itself as part of these projects. These projects and the permanent infrastructure they contain, will remove grassland and introduce continuous disturbance from service vehicles and Irish water staff maintaining the access chambers and vents. This is in conjunction with one developer now tacking back the quiet zone land identified in pink in Fig. 8 for use as the developments attenuation for polluted SUDS runoff. Its the perfect example of death by a 1000 cuts when combine with Irish Water Projects.


Avocet (1)
Bar-tailed Godwit (32)
Black-headed Gull (84)
Black-necked Grebe (1)
Black-tailed Godwit (29)
Brent Goose (light-bellied) (80)
Buzzard (2)
Canada Goose (1)
Common Gull (23)
Common Sandpiper (2)
Common Tern (1)
Coot (11)
Cormorant (4)
Curlew (141)
Dunlin (47)
Golden Plover (11)
Great Black-backed Gull (32)
Greenshank (19)
Grey Heron (71)
Grey Plover (38)
Guillemot (1)
Herring Gull (119)
Kestrel (1)
Kingfisher (2)
Knot (4)
Lapwing (165)
Lesser Black-backed Gull (30)
Little Egret (76)
Little Grebe (2)
Mallard (111)
Mediterranean Gull (3)
Moorhen (28)
Mute Swan (66)
Oystercatcher (110)
Peregrine (2)
Pintail (1)
Red-breasted Merganser (10)
Redshank (117)
Ring-billed gull (1)
Ringed Plover (16)
Ruff (2)
Shelduck (229)
Shoveler (1)
Snipe (14)
Teal (127)
Turnstone (13)
Whimbrel (16)
Wigeon (65)
In Pink is propossed location of new SUDs Pond.
Portmarnock Pump Station Rising Main
Baldoyle to Portmarnock Cycle and walkway
GDD Pipeline Construction /Trenching corridor
Quiet Zone boundary Fence
Portmarnock South LAP Residential Zoning
GDD Compund Access and Egress
Legend
Proposed Project Boundary
Proposed Construction Compound
Estuarine Survey Area
Special Protection Area
Shaft construction noise daytime
Major
Minor (to 100 m)

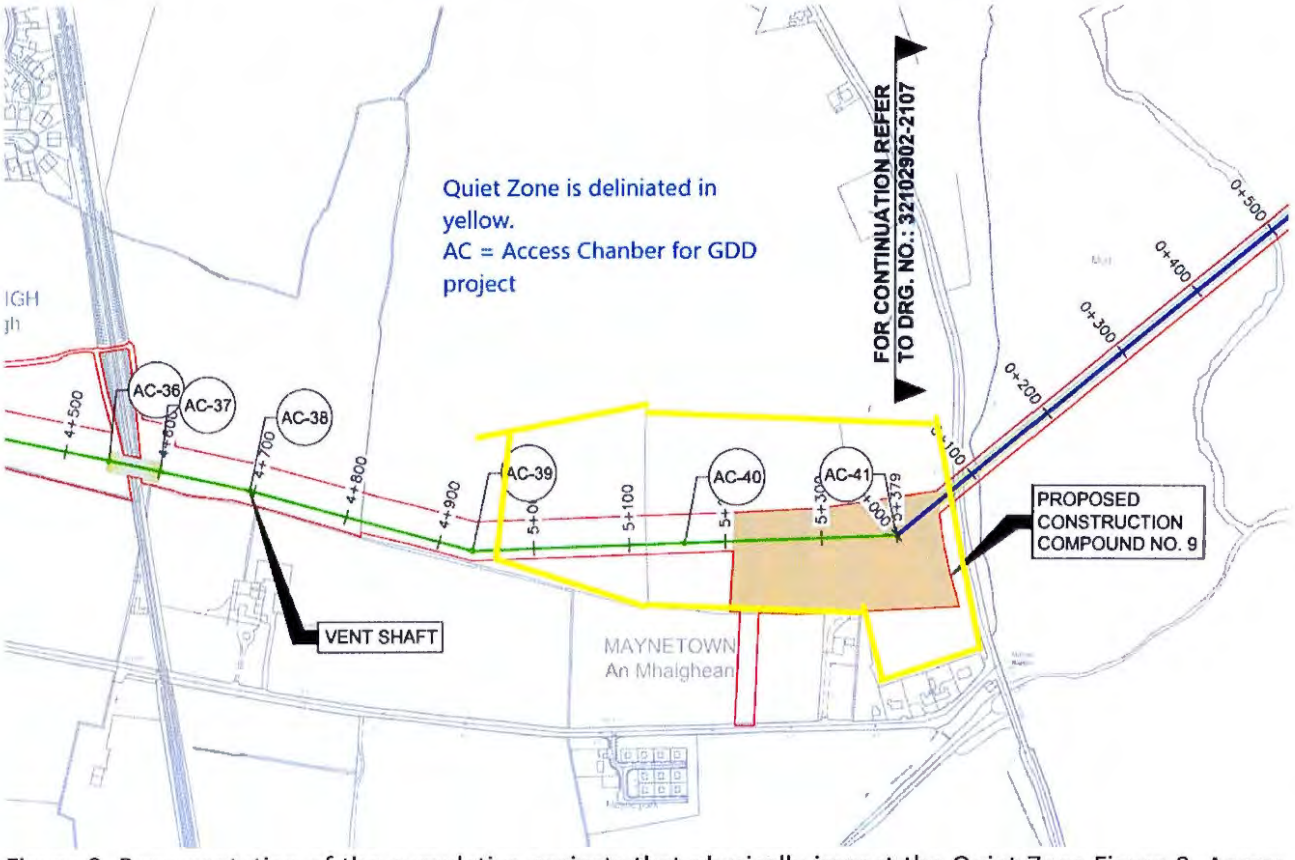


Figure 8. Representation of the cumulative projects that physically impact the Quiet Zone.Figure 9. Access Chambers(AC 40, AC41) for GDD Project within Quiet Zone protected area.

Figure 10. Satellite view of the

site with Quiet Zone and Murragh Spit Management area identified.

24. Public consultation Issues:

Aarhus Convention contravention: The introduction of UV treatment was significant additional information and a last-minute amendment to the application which the public was not informed about until the first day of the Oral Hearing on March 20th 2019. The following morning, I drafted a response which Ms. Bette Browne read out on my behalf stating that in light of the impact of the additional information that the hearing should be suspended and the public allowed to consult on the material change.

Irish water made a statement at the oral hearing the following day on behalf of Greater Dublin Drainage Project team which said the following:*7. Irish Water has provided a detailed statement on the proposed oddition of UV technology to An Bord Pleanála and to all observers as part of the statutory consultation process and has mode this information publicly available at www.gddapplication.ie. Therefore, the statutory consultation requirements under the legislative and planning regulations are met as the opportunity for the public concerned to consider and comment on the proposed enhancement is being provided while all options are open and before o decision on consent is taken by the competent authority.*

25. Aarhus convention – INTEL. In the application reference was made to a "Significant Industrial Customer" (SIC) in Kildare the customer however was never named. It became apparent during the oral hearing that there was some concern about the level of wastewater that came from this SIC but again no name was mentioned. After some research into the subject after the oral hearing closed it became apparent that the SIC was Intel in Leixlip. The difficulty with this information not being released to the public during the application process, was that INTEL discharges hazardous substances in its waste water and it is also a SEVESO site. The fact that their current wastewater, and the wastewater for the new FAB plant will be diverted to Greater Dublin Drainage project treatment plant in Clonshaugh creates a pathway receptor to Baldoyle SAC/ Rockabill SAC etc. in terms of the contents of their industrial effluent (heavy metals/ chemicals/ ammonia).

The application should have named INTEL so that their hazardous effluent components could have been addressed by the Public/ Statutory bodies and thus appropriately assessed by the Board in light of the serious impact it will have in terms of polluting the receiving waters. Intel's current waste water discharge licence is for 87'000PE. Irish water industrial load calculations, based on confidential representations made by a SIC in Kildare indicate that Intel's wish to increase their waste water load by a further 100000PE, to 187000PE, over a third of the capacity of the Greater Dublin Drainage Project wastewater treatment plant in Clonshaugh (500,000PE.). Intel effluent has a high level of nitrogen and in order to lower the limit in order to attain the required 100g/l, domestic wastewater from the Leixlip area is mixed with the Intel stream which is separate to the normal Leixlip agglomeration influent stream. According to Intel's 2018 Environmental report to the EPA, there are also high levels of ammonia, sulphates (over 6 million kgs a year), Nitrogen (over

208000 kgs a year), chloride (over 188000 kgs a year) and nitrates (over 19000 kgs a year) to name a few emitted in their waste water, which will prove detrimental to aquatic life. Baldoyle Bay is already classed as nutrient sensitive area. According to the Greater Dublin Drainage strategy – assessment of Wastewater Treatment Plants report - page 16. *"The average total nitrogen loading on the Intel stream combined with a cross flow from the main treatment stream are greater than the anticipated design loadings (i.e. average of 679 kg/day actual vs 644 kg/day design). In the sample of plant performance data evaluated, there are a number of instances where shock loadings have been encountered resulting in high BOD and N loadings to the Intel stream. The source of these shock loadings is not clear, and some further investigation is warranted."*

"The Intel plant has demonstrated a capability to deal with loadings in excess of the design loadings. The average total nitrogen removal capacity is 572 kg/day as compared to a design capacity of 419 kg/day. Notwithstanding this fact, there are occasions where the 9 mg final effluent standard has only just been achieved at figures below the average loading level" There are other issues that can be raised in terms of the future Intel wastewater loads and licensing in terms of it levels of chemicals in its industrial wastewater. No appropriate assessment has been done on this industrial wastewater and its possible impact on the shallow coastal waters off Ireland's Eye SAC and within Rockabill to Dalkey SAC. In the application the significant Industrial customer should have been named as Intel. In the oral hearing the Inspector made a pointed reference to Leixlip and its future loads which we now know after the fact to be reference Intel. The public should have had an opportunity to assess this industrial load. In addition, in light of the fact that Intel have their own wastewater discharge licence and their future FAB10 facility will also require an upgrade to that licence, there could also be an issue with project splitting as Intel will be part of the Greater Dublin Drainage Project wastewater treatment plant at Clonshaugh agglomeration. Also having looked at the NIS for Intel's new FAB development it appears that there was no was appropriate assessment on Baldoyle Bay SAC/ SPA, Ireland's Eye SAC/ SPA etc. carried out during the Intel planning application in light of the receptor pathway via the 9c to Clonshaugh and orbital sewer to outfall off Ireland's Eye.

We also note that INTEL utilise water recycling infrastructure at their other internation plants which save a massive amount of consumption of potable water and production of waste water. We ask why INTEL could not install the same Technology here as it is sue to take over a third on the capacity of the plant. The impact of the content on their effluent on the marine ecology at the outfall in terms of heavy metals, ammonia and nitrogen should be assessed.

26. Dublin Airport:

<u>Cumulative impact with Greater Dublin Drainage Project:</u>

We were extremely supervised to see that the EIAR has no actual assessment of the cumulative impact of the development with Dublin Airport (see Fig 1 for site location of GDD) , in particular the waste recovery facility (WRF) (referred to as a Sludge Hub Centre in GDD application) and biogas storage tanks that make up the part of the project see Fig 2. marked with an X for location of Biogas storage tanks. . The Biogas storage tanks in particular are on the current flight path for flights leaving the south Runway, the number of these

flights leaving in the direction of Clonshaugh appears to have increased since the opening of the North Runway based on our WEBTrack observations.

We have identified the development boundaries as they relate to the southern Runway flight path below.

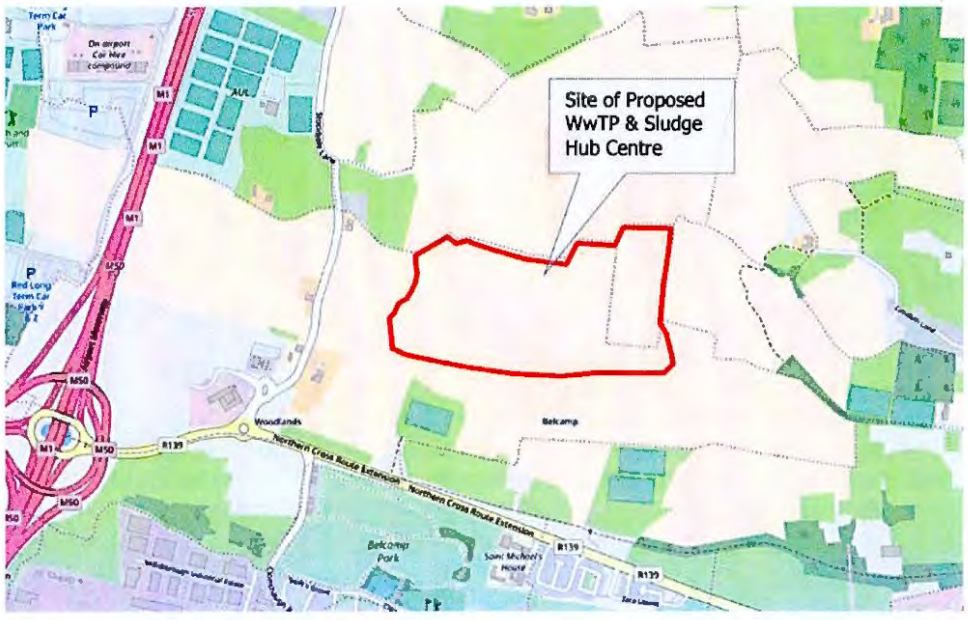


Fig 1. GDD site location map

Figure 2.2 Location & Indicative Layout of Proposed WwTP & Sludge Hub Centre Site Plan

Fig 2. GDD Clonshaugh WWTP indicative layout with red X beside biogas storage tanks.

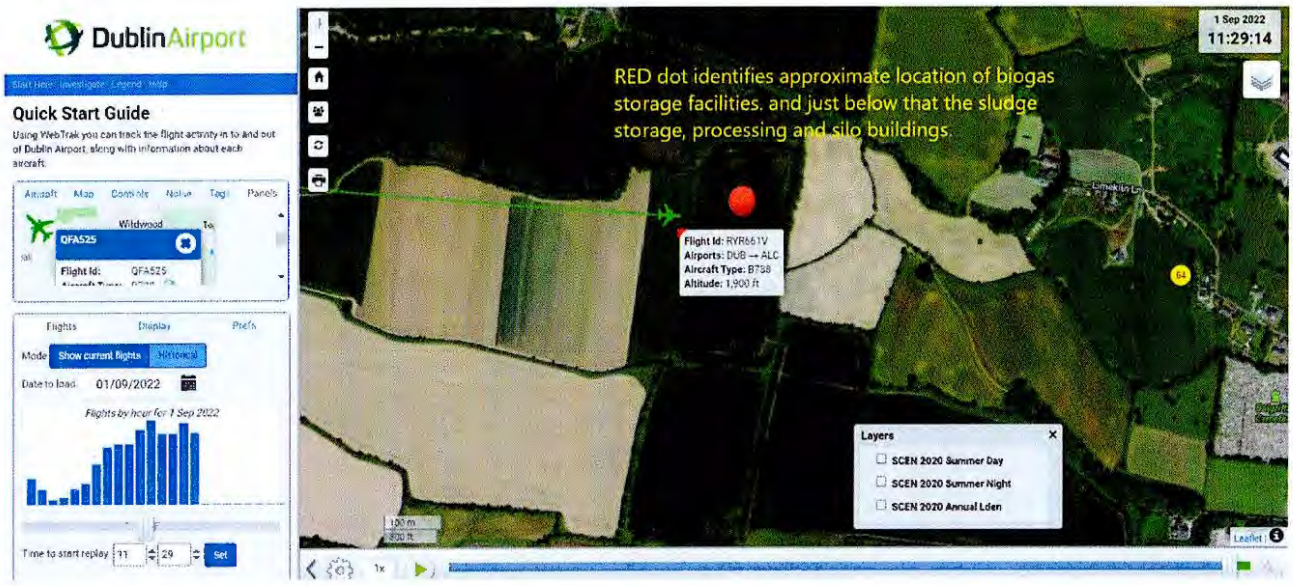


Fig 3. Site Locations overlap between flight path and GDD application site. While this flight illustrated may not be on take off or approach the site is within the Outer Public saftey zone and flights do fly over the site.

Risk of Major accidents:

Our main concern is the potential risk of having the Biogas Storage tanks from the GDD under the flight path and also so close to such a major residential development (Belcamp lands) together with the sports playing fields to be used by children immediately adjacent to the Gas storage tanks. In addition to the potential impact from the tanks and an aircraft accident a combined impact of the Biogas Storage tank explosion which would cause major smoke and incendiary events, the tanks are within the outer safety zone for the airport flight path. An explosion could increase the risk of an aircraft emergency situation. Via Versa and emergency PAN PAN event with an aircraft or potential terrorist event could involve a plane catching into the Biogas storage tanks and cause a major accident impacting on the residents and sports clubs nearby.

We also wish to draw the inspectors attention to the Avonmouth disaster that occurred in a Wessex Water sewage treatment plant and explosion in the Biogas biosolids Silo caused debris and the body of 1 of 5 victims to be thrown 500 feet. There was a fire which the emergency services brought under control. The GDD application DID NOT carry out any assessment of an explosion in the Biogas Storage area. There is no assessment of the radius of impact that such as blast could have on surrounding land or aircraft on landing/ take off just above the plant. As such a major risk of accident assessment with competent experts must be carried out. Such an explosion could impede airport operations for a significant time and force all landings and takeoff through the North Runway. This may require HSA involvement as waste recovery facility and biogas storage facility may require seveso registration. The potential proximity of a SEVESO site should be flagged as part of the EIA into this application.

Below is an article on the accident and details of what contributed to it.

https://www.sciencefocus.com/news/avonmouth-explosion-what-are-biosolids-and-did-they-cause-it/

Avonmouth explosion: What are biosolids and did they cause it?

Published: 04th December, 2020 at 09:37 by Sarah Ridley in Science Focus

Police say the explosion at a water recycling centre in Avonmouth happened in a biosolid treatment silo, though the cause of the blast is unknown. Police have said the explosion at Wessex Water's Bristol water recycling centre in Avonmouth happened in a silo used to treat biosolids, though the exact cause of the blast is still to be determined.

What are biosolids?Biosolids are "treated sludge" – a by-product of the sewage treatment process. According to Wessex Water, the sludge is treated in anaerobic digesters – oxygen-free tanks – to produce agricultural fertiliser and renewable energy.

So how does the sewage treatment process work?

Wessex Water says during the sewage treatment process debris such as rags and large objects are removed first using screens.The sewage flows into tanks where the solids sink to the bottom and are removed as sludge. The sewage is then treated biologically by passing through filters with bacteria growing on them that feed off the waste and clean the water.

Why do we use biosolids?

According to Bristol-based waste management service GENeco, biosolids provide a "cost-effective alternative to bagged fertiliser" and help improve the fertility of agricultural land."Increasing the organic matter helps improve soil structure, giving plants better roots and helping them to yield more," said Neil Sims, biosolid recycling controller.

Sean Hill, director of waste management, adds that recycling sewage sludge helps supply essential nutrients back to the soil and provides "a successful blueprint for a sustainable future" for the planet.

Are biosolids dangerous?

Biosolids can produce flammable methane gas when treated with bacteria, though police could not comment as to whether this was the cause of the explosion and said the investigation was ongoing."The substance responsible for the explosion might well have been methane which, as is well known, is formed in sewage treatment," said Professor Clifford Jones, visiting professor at the University of Chester. "Sewage at an advanced state of treatment can form sewage sludge dust, which is capable of a dust explosion."

Will there be any fallout from the explosion in Avonmouth?

Luke Gazzard, from Avon Fire and Rescue Service, said there was not thought to be any further safety concerns to people living in the nearby area following the incident. There will be an investigation into the blast involving the Health and Safety Executive and a number of agencies.

Other new articles on Avonmouth Disaster.
https://www.bbc.com/news/uk-england-bristol-55183959

https://www.mirror.co.uk/news/uk-news/avonmouth-explosion-victim-thrown-150-23114784

Aircraft Accident/ Hijacking:

An aircraft accident or a terrorist hijacking must be considered at this site as it is near to the flight path and is further exposed to risk due to the Biogas Storage tanks that make up part of the Greater Dublin Drainage Project that shares the application lands. There have been a number of incidents involving aircraft component failures, and birdstrikes at Dublin airport. One such event happened in July 2019 when a bird strike damaged the engine of an Aer lingus flight taking off at Dublin Airport. The video showing takeoff with flash of fire and transcripts of the pilot an ATC are available here https://www.youtube.com/watch?v=uUg2aeKCvf0 . The plane had time to dump its fuel load at sea before coming into land, taking the flight path just immediately north of the application lands. (see full flight path Fig 4.) . any potential for such an event needs to be assessed as part of an EIA, AA and any planning application.

Terrorist high jacking: A resent Audit by the EU Aviation Authority found Dublin Airports security systems to be dangerously deficient with a number of dangerous prohibited items passing through security without detection. This adds to the potential for Dublin Airport to be seen as a target for a terrorist attack. The proximity of Major Infrastructure such as a Waste Water Treatment Plant with hazardous gas storage also increases the potential for Dublin to be a target on approach and take off. The fact that everyone is severely restricted in what they can bring onboard an aircraft illustrates that international authorities still see aircraft hijacking as a major threat to security. The potential impact such an attack could have on such a large residential area such as the one in this application must be assessed in great detail. We ask that ABP ensure that these assessments take place as part of EIA and AA. WE aks that a full Aerodrome Assesssment be carried out.

links to further info an Aer lingus incident and Dublin Security issues below:

https://www.irishtimes.com/news/ireland/irish-news/aer-lingus-flight-makes-emergency-landing-in-dublin-after-birdstrike-1.3962890

https://extra.ie/2022/05/22/news/guns-and-bombs-passed-undetected-through-dublin-airport-security

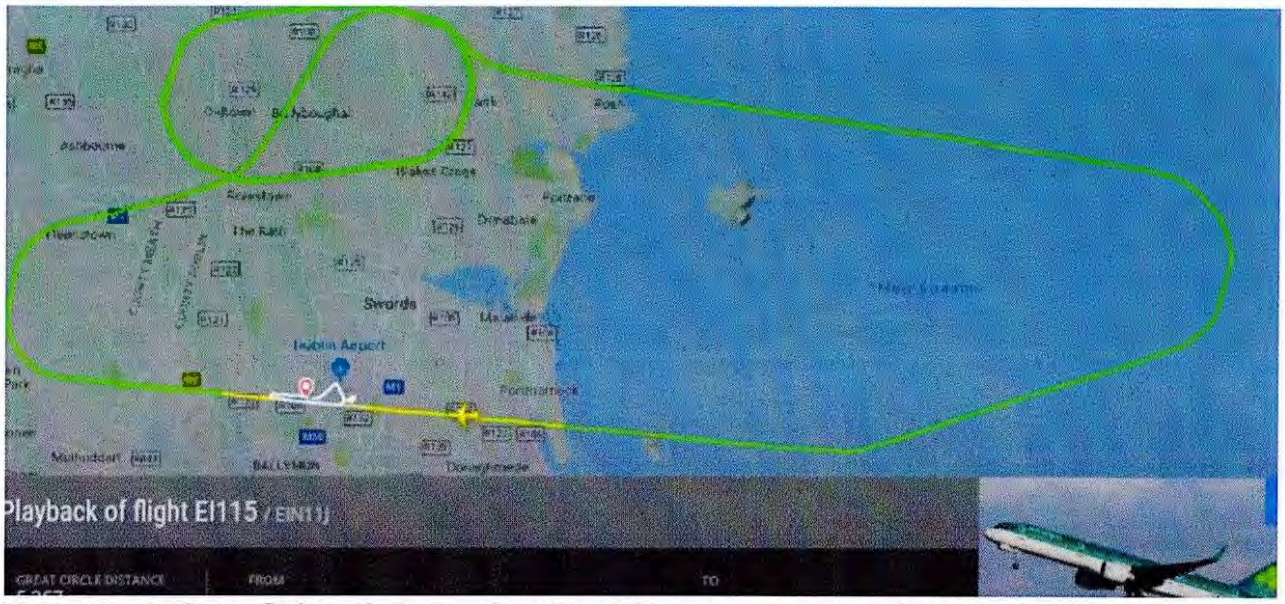


Fig 4 route Aer lingus flight with damaged engine took just over Gannon and GDD lands.

Cumulative impact of DAA Runway with GDD Project:

Below is some information of the impact of aircraft disturbance on birds. The second runway (North Runway) has now been granted and opened and the inspector indicated in her report that when it was opened that impact would have to be considered. A cumulative assessment on the North Runway and the change to night flight conditions must now be carried out and updates made to EIAR and NIS.

1 WHAT EFFECT DO AIRPLANES HAVE ON BIRDS? – A SUMMARY Norbert Kempf and Ommo Hüppop, Institute for Ornithological Research, Helgoland Ornithological Station

No one will expect this short question to produce an equally short and simple answer. The diversity of animal species and individual situations results in a wealth of barely classifiable and predictable responses. Outside in wild a lot of individual events can be observed that often appear contradictory. And opinions on the implications of a conflict between protection of birds and air traffic are correspondingly divergent. Representatives of authorities and associations nevertheless frequently expect a decision that is brief and unequivocal as possible. Attempts are often made to quantify and predict the effects of air traffic on birds in expert appraisals. The plethora of local individual situations and the different approaches to studies lead to results that are barely comparable with each other or generally capable of extrapolation. Against this background, the results widely scattered in publications and the "grey literature" (appraisals, dissertations etc.) have been compiled and their variability and identifiable universally applicable correlations have been presented. In this article, an earlier publication (Kempf & Hüppop 1998) has been partly updated and summarized on the basis of new developments and findings.

Why do birds react at all to flying objects? Almost all species of bird have to live with the threat of dangerous predators swooping on them out of the sky. The fastest possible escape flight as soon as a predator appears is the only sensible reaction in many cases. In the process, mistakes may also occur, so that birds respond to the sudden approach of animals that are essentially harmless by suddenly flying off. Airplanes can also prompt birds to take flight, even though the aircraft do not appear as predators. In experiments on birds with different dummies, it was found that escape flight reactions are the natural

response to all flying objects. Fear of dummies used many times quickly subsided, but not their attentiveness towards them. Individual features of the flying object, such as shape, size, angular speed etc., are of differing significance as trigger mechanisms. But since wild animals react to enemies according to a complex system, virtually no useful rules can be derived from this for air traffic. What kinds of reaction occur? When an airplane appears, all possible levels of excitation are described in birds, from outwardly non-visible physiological reactions to protection, ducking, increased calling activity, restless pacing back and forth, running away, flying off and returning to the same place or a place close by, flying off and leaving the area, right through to panic-like flight reactions. In addition, during the breeding period, various predatory species of bird repeatedly carry out pseudo-attacks and also genuine attacks on gliders, hang-gliders and paragliders.

Curlews sometimes launch vicious attacks on model aeroplanes that fly over their breeding 2 grounds, which can also lead to accidents. Waterfowl which take to the air because of an airplane usually stay in the air for one to three minutes, but sometimes also considerably longer. After this, it takes some time before the birds calm down again and resume their previous activity. Using modern electronic instruments, it is possible to measure the heart rate of brooding birds. Measurements show that these birds often react to the appearance of airplanes with a marked increase in heart rate, in other words they become nervous, even if no outward reaction is visible. It thus becomes clear that the loss of time immediately associated with taking flight is not the only effect of an airplane on birds which has to be taken into account. What are the effects of these reactions? A crucial question that needs to be answered is the extent to which effects can be anticipated on individual life expectancy, reproduction rate and ultimately on population size. ·

First of all, any reaction leads to changes in energy conversion. In species which fly a lot (e.g. swallows) the energy conversion during flight increases only to three times the base energy conversion, in poor flyers or at high speeds (e.g. in ducks) it sometimes increases to more than 20 times the base figure. In the case of escape and attack flights of e.g. waders of wet meadows, it has to be assumed that the energy consumption corresponds to twelve times the base energy conversion. Even when there is no outwardly visible excitation, the heart rate may show a fifteen-fold increase and energy consumption may at least treble even without physical activity. · In resting snow geese, it has been found that the time of food intake during the day may be reduced by up to 51 % if they are disturbed. Brent geese which are frightened every 30 minutes by aircraft or people must spend 30 % more time feeding compared with birds of the same species in less intensely disturbed areas. When the period of daylight and other resources are limited, it is not always possible to compensate for such loss of time. Disturbances can thus influence the time and energy budget of birds and hence, for example, the ability to lay down fat reserves for migration and breeding. In many species there is documentary evidence to indicate that breeding success depends on the available energy reserves at the start of the breeding periods. Birds try to make up for the energy deficits that come from constant disturbances by feeding at different times of the day, by feeding at the expense of other activities, e.g. preening, by increased feeding rates or by increased risk taking.

Even if it is hardly possible to provide any direct evidence in methodological terms, it becomes clear that individual life expectancy and reproductive capacity may be impaired. Disturbances can also lead directly to expulsion and thus loss of territory for certain species of bird. In geese, a rate of more than two disturbances an hour can lead to a decrease in the bird population in the area concerned. Breeding birds may for example be driven to the edge of their territory or out of their territory altogether by aircraft, which has obvious consequences for feeding and breeding success. In some cases, breeding areas are 3

abandoned altogether for this reason. Many bird species in Central Europe have been reduced to small scattered populations as the result of a deterioration and decrease in habitat. Thus even the slightest additional damage can lead to further decreases.

Which birds react to airplanes? · Most reports on disturbances by aircraft concern ducks and waders (plovers). Geese are particularly sensitive to airplanes. Aircraft disturbances are especially striking in those places where the birds gather in large swarms, in our case especially in the area of the Wadden Sea. · In the literature, negative effects of aircraft at breeding time are documented in particular for meadow-breeding waders (including curlews, godwits and lapwings) in relation to model aircraft. Flight reactions of breeding lapwings to powered airplanes have also been documented. In the case of breeding waders (Limicolae), however, air traffic with powered airplanes – in contrast to model aircraft – and low-flying ultralight aircraft (up to 1994, see UL article) – lead more rarely to visible reactions. The fact that the interests of meadow birds and air sports in particular often come into conflict is explained by their matching "habitat preferences": expansive, open and as far as possible unwooded areas that are remote from residential districts and are or can be extensively used. Apart from ducks and waders, disturbed reactions to flight activities have been reported for other waterfowl, great bustards, black grouse, various predatory birds and crows. Particular sensitivity to aircraft is shown by breeding colonies, especially those of larger bird species.

For colonies of terns, gannets, guillemots and pelicans, almost complete breeding failure has been documented following just a few aircraft fly-overs. The group of smaller song-birds has hardly been studied. Apart from in two reports on a military jet exercise and an air display, where some small birds reacted with panic-like flight movements, we did not find any reports in the literature about corresponding behavioural impairments. However, the reactions of small birds are difficult to observe. We know from our own observations that starlings at least frequently take flight in response to airplanes. In wine-growing regions, airplanes are used to drive away starlings. How do birds respond to different types of aircraft? Most studies on the effects of model aircraft are primarily concerned with meadow breeding waders during the breeding season. · In an area that has already been used by model aircraft enthusiasts for 17 years, lapwings reacted in two-thirds of fly-overs with protection-seeking behaviour (in 50 % of cases as a result of powered airplanes), and sometimes also with escape reactions. A strong reaction was found when several sources of disturbance occurred in combination. ·

A newly arrived female lapwing showed substantially greater anxiety than the well established birds. Even if the meadow birds in this study region appeared to have grown accustomed to the model aircraft to a certain extent, the flying of model aircraft still frequently led to disturbances, especially in combination with people and dogs running 4 around. · One author measured escape distances from model aircraft of 150 - 250 m for meadowbreeding waders in the breeding area, and 300 - 450 m for resting birds. On three occasions he observed that breeding lapwings were driven from their nests by model aircraft. The escape distances were in the range 130-200 m. As long as the aircraft flying continued, the birds did not return to their nests. · In studies on curlews in Southern Germany, losses of egg clutches were detected on several occasions as a result of flying model aircraft. The birds evacuated the areas completely or partly during model aircraft flying and often did not return for the whole day. Young curlews hatched more frequently in areas with no aircraft flying activity than in those where model aircraft were flown.

After a model aircraft site was set up, the curlew population in Isarmoos fell from a maximum of 15 to 3 - 4 pairs of birds. The short-eared owl, Montagu's harrier, snipe and corncrake all migrated away from the area.

Since the habitat was progressively worsening at the same time, however, it is not possible to identify the factor that was ultimately responsible for this migration. · In almost every large curlew breeding area in the southern region of the Upper Rhine there is at least one site used for flying model aircraft. The illustrates the potentially grave consequences of this type of aerial sports. · One author studied the propensity of model aircraft for perpetually frightening off birds. Remote-controlled model aircraft resulted in a marked frightening effect on almost all groups of birds. Geese reacted most strongly. It was observed that the main advantage of this frightening technique was that no acclimatization effects occurred. Other authors also assume that acclimatization to model aircraft is hardly possible. It is worth noting that hang-gliders and paragliders can induce greater anxiety in chamois goats and ibexes than other aircraft, including helicopters. In some cases, these animals respond with panic-like flight reactions and no longer appear in the same area again for the rest of the day. A corresponding effect in birds has only once been documented, and this was in black grouse. In the aerial sports regions of Oberallgäu, no decline was observed in any members of the grouse family. In the few direct encounters that were observed, black grouse did not flee. Larger predatory birds may feel disturbed in their area by hang-gliders and paragliders , and pilots even have to expect attacks. The abandonment of breeding grounds or breeding losses appear to be occurring from time to time by golden eagles as a result of disturbances by aerial sports enthusiasts, although it is difficult to provide any direct evidence of a link.

Reports on the marked negative effects of ultralight aircraft are essentially attributable to the low-flying practices (at a maximum height of 150 m) that were required by law until 1994. · There is evidence to show that, on the landing area of Reichelsheim, Hessen, a small brood of black-tailed godwits (over half the population in Hessen) and curlews died out in the 80s as a result of ultralight aircraft activities. On active flying weekends, the district hunting system of the birds broke up. The many years of air traffic with other aircraft apparently had no negative impact. · The numbers of resting and foraging Bewick's swans in an area of the Dutch delta region declined from 1400 - 4300 in the period from 1986 to 88 to a few individual 5 birds in 1989 after a take-off and landing strip for ultralight aircraft was installed nearby and had been in operation for a year. With the flying laws that have also been in place for ultralight aircraft since 1994 (e.g. minimum flying altitude of 600 m above the ground on cross country flights) and in view of the type of construction of modern ultralight aircraft, their effect on wild birds today can probably be regarded as similar to that of powered airplanes. With normal glide r operations, disturbing effects on birds are hardly to be expected: Except at take-off and landing, the thermal-dependent gliders mostly fly at a great height. In the literature there are few specific data on the reactions of birds to gliders/motor gliders. · The flight pattern of gliders with large wing-spans and a slowly gliding flight movement at what is usually a great height does however seem to fit the generalized pattern of an airborne enemy. In a study on breeding and resting birds in the Wadden Sea, the disturbing effect of motor gliders was considerably greater than that of powered airplanes. ·

The scarcity of gliders would also seem to play a role here: the only registered motor glider on the Wange raage during the period of the study triggered the strongest and longest-lasting reaction of all. As soon as the motor glider came into view, all the birds resting on the salt flats – even the usually unruffled gulls and oyster catchers – took to the air, making calling sounds as they circled the area for a long time. · In the case of black grouse in an aviary used to reintroduce birds into the wild, paniclike flight reactions were observed with the direct approach flight and fly-over of gliders and motor gliders – much more often than in the case of fly-overs by fighter jets. · Flight reactions of goats to gliders have been reported from the Alps. The effects of powered airplanes on birds have been reported in particular from the Wadden Sea. · On various

East Frisian islands, resting birds showed a reaction to direct aircraft flyovers in 50 – 90 % of cases. Resting birds reacted more by taking to the air (57 % of reactions) than breeding birds (22 %) (see "What other parameters influence the reaction?").

While there no marked differences were seen in the effects of aircraft flying at low and medium altitude, there was overall a discernible tendency for higher-flying aircraft to cause less of a disturbance than lower-flying aircraft. In a study on the impact of human disturbance on Brent geese, aircraft or helicopters were the cause of geese taking to the air in 26 % of all cases. While helicopters had the greatest impact, the reactions to airplanes were only slightly weaker. No clear difference was discernible between the impact of aircraft fly-overs at altitudes above or below 150 m. · In a study on the factors disturbing birds at a high-tide sanctuary in the Dutch Wadden Sea, airplanes and walkers were found to be by far the most importance causes of reactions. · According to a literature review on the disturbing effects on waders in the Dutch Wadden Sea, airplanes were among the most disruptive factors in the Wadden Sea.

The authors presented a model which can be used to calculate the area affected by a disruptive object. This model is based on data relating to escape flight distance, the distance within which birds interrupt their search for food, and the time it takes for the 6 various disturbing effects to disappear again. In the case of oyster catchers, the affected area for a mud-flats hiker walking at a speed of 3.6 km/h is 20 ha and for an airplane flying at an altitude of 150 m over the mud-flats 15,000 ha. This large area is produced with a 1000 m breadth of impact to the right and left, a speed of 150 km/h and a duration of 30 minutes. · A group of authors observed the flight of breeding meadow birds from powered airplanes in many cases – both at low altitudes (50 - 100 m) and also at very high altitudes (in some cases then very long protection-seeking behaviour). Powered airplanes induced protection-seeking behaviour in half of cases, and model aircraft in about two-thirds of cases. In terms of the intensity of the impact which they have on birds, powered airplanes lie between helicopters and jet fighters which are used comparatively little, if at all, in air sports. The disturbing effect of military jet fighters on birds is often less than one would expect in view of their rather unpleasant effects for humans.

By contrast, almost all authors come to the conclusion that, of all aircraft, helicopters most frequently lead to reactions in birds and at the same time to the strongest disturbance reactions. Systematic studies on the effect of free balloons on animals do not appear to have been carried out to date. In 1996, the Society of Wildlife Biology in Munich (Wildbiologische Gesellschaft München) carried out an extensive survey of experiences on this subject among balloonists, hunters, farmers, nature lovers, biologists and others. In many respects, the evaluation suggests a situation similar to that with other flying devices: most balloon rides are carried out without any discernibly negative consequences for animals. To some degree, many different species of bird and mammal show reactions of fear towards free balloons (flying at low altitude). Through a combina tion with the burner, which may ignite precisely when the animal is already in a state of nervous tension, panic flight reactions are possible with dramatic consequences for the individuals concerned. However, the effects of silent gas balloons is no less marked. The latest example of an unfortunate incident: a pair of sea eagles which had nested in the Segeberg district for the first time in 2000 suffered enormous disturbance from a landing hot-air balloon, whereupon they abandoned their brood. What other parameters influence the reaction? Since the visual faculties of birds tend to be essentially far better developed than their auditory faculties, they respond less to noise than is generally assumed. Silent flying objects can induce reactions similar in intensity to those induced by noisy aircraft. However, visually comparable loud airplanes on average induce more and stronger reactions in birds than quiet ones. ·

In breeding bald-headed eagles in North America, the parameter of noise (in contrast to distance or duration of visibility) played no role in disturbances caused by aircraft. · In a study on a colony of terns, it was not until jet noise reached 90 and 95 dB (A) that two and four percent, respectively, of the birds took to the air, and a further four percent showed a fright reaction. · With motorized model aeroplanes, it is above all the irregular changes of volume and frequency that play an important part in the disturbance effect. 7 There are more conclusive findings on the influence of flight altitude than there are on the influence of noise volume, but these findings are rarely based on measured altitude data. · In one expert appraisal on military air traffic, the altitude of helicopters was calculated from distance with reference to land markings and from the angle.

The frequency of bird reactions was clearly dependent on the altitude of the helicopters (at 50 – 80 m there was a reaction in 83 % of cases, at 120 - 150 m in 56 % and at 200 - 300 m in 27 %). But strong reactions were still induced even at greater altitudes. This is confirmed by various other authors. · Brent geese in Alaska reacted in 68 % of cases to airplanes flying at altitudes lower than 610 m and in 33 % to higher flying aircraft (altitude calculation via land markings, experimental fly-overs and listing into radio communications). · In two literature reviews for the Wadden Sea, it is concluded in the summary that effects on birds are very marked at altitudes below 500 m (1700 ft) and decrease substantially above this altitude. The disruptive effect of an airplane depends on the lateral distance of the fly-over. · In various studies, the frequency and intensity of the reaction decreased in inverse proportion to the lateral distance. From 700 to 1000 m upwards, no birds took to the air. · Geese, however, flew off up to a lateral distance of 1.5 km. The first unrest at the approach of an aircraft occurred on average at a distance of 2.6 km. In general, it can be said that an airplane travelling at high speed in a straight trajectory has less impact on birds than a slow airplane flying in a curved trajectory. A stronger reaction is often observed in combina tion with several sources of disturbance (stimulus summation). Such a situation frequently occurs precisely in those places where air sports attract spectators: flying model aircraft, flying sites for hang-gliders and paragliders and also in areas around airfields, day-tripping activities, people walking and dogs off the leash can cause additional disturbances.

The stress caused by people seeking relaxation produces stronger and longer-lasting reactions to airplanes in birds than are seen at times when there are no such leisure activities. Conversely, air traffic, even if it does not cause birds to take to the air, can lead to a substantial increase in the distance of the animals' escape flight from humans. Some stimulus-independent factors also affect the reaction of a bird. For example, breeding birds are inhibited from leaving the nest and for this reason alone react differently to disturbances. The willingness of parent birds to take risks may increase in the course of the day or with advancing incubation and rearing of chicks. Weather and season can also play a role. During the wing moulting period, when they are incapable of flight, ducks show substantially greater sensitivity in their reactions to airplanes than at other times. Birds in relatively large swarms tend more towards escape flight reactions than groups of a few individuals. In mixed groups, species may influence each other in their reactions. In the Wadden Sea, the birds are substantially more sensitive before high tide than after high tide. 8 Do birds become accustomed to air traffic?

Almost all authors report on habituation effects. It would seem that the frequency and above all the regularity with which an airplane flies past have a decisive influence on the reactions of birds. This is especially striking during military exercises or in the vicinity of airfields, where bird species that are

regarded as sensitive can also be found. · The same bird species which developed a certain tolerance to air traffic on Wadden Sea islands that have an airfield showed considerable flight reactions to comparable flyovers on Mellum, where there is no airfield in the vicinity. · Rare types of aircraft in a certain area also produce conspicuously strong reactions. These correlations provide an explanation for the different results, e.g. with regard to critical flight altitudes, in the various studies or for unusual observations that contradict the results of most other studies. But there are limits to the capacity for habituation. The uneven and unpredictable movements of model airplanes and to a certain degree also of gliders, hang gliders and low-flying trikes do not generally allow any habituation. In sensitive species (e.g. resting curlews or Brent geese) even regular air traffic does not lead to a greater degree of tolerance. At least some bird species or individuals react to heavy air traffic by leaving the area, and no habituation takes place. If only insensitive birds are then observed, there is a tendency for this to be confused with habituation. Demands of nature conservation · Many authors recommend maximum possible flight altitudes for airplanes to avoid disturbances of birds or mammals. The minimum altitude figures here range between 150 and 750 m. Most experts recommend a flight altitude of at least 500 m. · In various projects, there was also seen to be a need for an adequate lateral distance. Depending on the sensitivity of the animals studied, this minimum distance ranges from one to eight kilometres (for helicopters). · In several studies, authors demand that air traffic keep to routes and certain areas.

A separation into areas with regular traffic and areas free of air traffic on the one hand facilitate habituation and on the other effective protect the rest of the landscape. · In addition to this proposal not to fly over areas with especially sensitive and threatened species, seasonal or day-time restrictions of air traffic are recommended where there are specific or local problems. Examples of this are to set flight shows on a date in late summer or not to fly over ice-free places of refuge for waterfowl during periods of frost. The original article Kempf, N. & O. Hüppop (1998): "Wie wirken Flugzeuge auf Vögel? - Eine bewertende Übersicht" in Naturschutz und Landschaftsplanung 30, (I), pp.17 - 28, is based on a review of 161 publications and expert reports. These also list the citations of these studies, which are not given in this short summary. 9 Dr. Ommo Hüppop, 48, biologist, studied zoology, general botany, hydrobiology and fishing sciences and obtained his doctorate at the University of Hamburg. Since 1988 Director of the Island Station of the Institute or Ornithological Research, "Vogelwarte Helgoland". Main areas of work: ecology of seabirds and coastal birds, bird migration research, effects of human activities on birds {fishing, disturbances, offshore wind energy plants) Norbert Kempf, 45, biologist, worked mostly on the North Sea and Baltic Sea since 1983. Main areas of work: ornithological studies, effects of human activities on animals, aerial registration of animal populations, appraisal of nature conservation conflicts

full online version here. https://www.fai.org/sites/default/files/documents/ln_3-1_aircraft_effects_on_birds.pdf

26. Belcamp SHD- Cumaltive impact

Lands at Belcamp Hall (Protected Structure), Malahide Road (R107), the R107/R123 junction, Carr's Lane, and R139 Road, Belcamp, Dublin 17. (www.belcampshd.ie)

The Gannon Belcamp SHD is currently Live with ABP. There are potentially concerning interaction with Biogas storage of the GDD project (see Fig 1 for site location of GDD) , in particular the waste recovery facility (WRF) (referred to as a Sludge Hub Centre in GDD application) and biogas storage tanks that make up the part of the project see Fig 2. marked with an X for location of Biogas storage tanks. . The Biogas storage tanks in particular are on the side closest to the Belcamp SHD applications lands. The application for **Belcamp SHD** also appears to overlap with the application site for the GDD which we have attempted to illustrate by lining up each site location map on one picture (fig 3). as per Gannons application they also own the land on the western edge of the GDD site.

The information on GDD which is a live An Bord Pleanála case (Board's Decision 301908 quashed by Order of the High Court (Perfected on the 16th July, 2021 New Case Number ABP-312131-21.) can be found at GDDapplication.ie with the planning report for GDD at https://www.gddapplication.ie/planning-sites/greater-dublin-drainage/docs/planning-documents/planning-reports/SID-Planning-Report.pdf

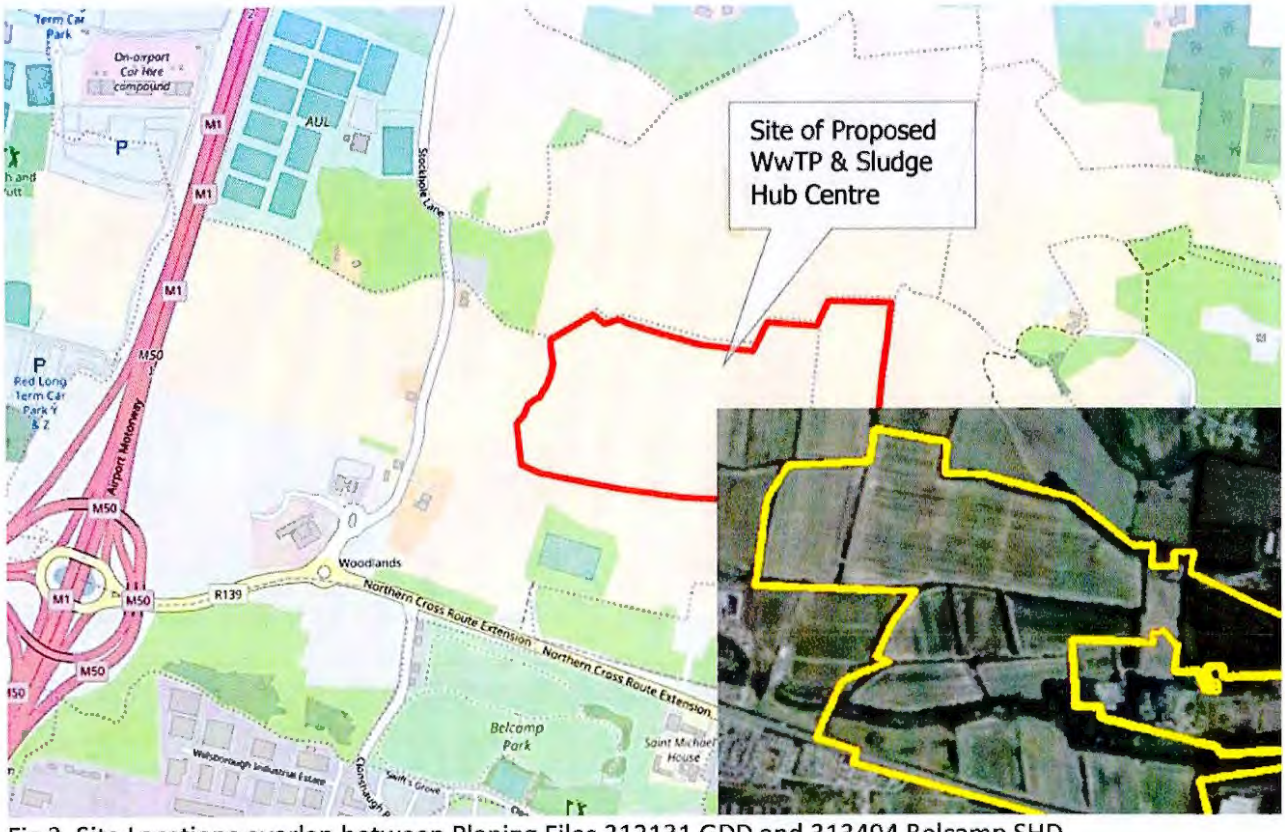


Fig 3. Site Locations overlap between Planing Files 312131 GDD and 313494 Belcamp SHD.

Risk of Major accidents:

Our aim concern is the potential risk of having the Biogas Storage tanks from the GDD so close to such a major residential development together with the sports playing fields to be used by children immediately adjacent to the Gas storage tanks. In addition to the potential impact from the tanks a combined impact of the Biogas Storage tank explosion which would cause major smoke and incendiary events, the tanks are within the outer safety zone for the airport flight path. An explosion could increase the risk of an aircraft emergency situation. Via Versa and emergency PAN PAN event with an aircraft or potential terrorist event could involve a plane catching into the Biogas storage tanks and cause a major accident impacting on the residents and sports clubs included in this application.

we wish to draw the inspectors attention to the Avonmouth disaster that occurred in a Wessex Water sewage treatment plant and explosion in the Biosolids biogas Silo caused debris and the body of 1 of 5 victims to be thrown 500 feet. There was a fire which the emergency services brought under control. The GDD application DID NOT carry out any assessment of an explosion in the Biogas Storage area. There is no assessment of the radius of impact that such as blast could have on surrounding land or aircraft on landing/ take off just above the plant. The application gives no indication of the holding capacity of the tanks and therefore the blast radius. As such a major risk of accident assessment with competent experts must be carried out. This may require HSA involvement as waste recovery facility and biogas storage facility may require SEVESO registration. The potential proximity of a SEVESO site should be flagged as part of the EIA into this application.

27. Sludge Hub Centre:
The Regional SHC is of not small scale and therefore cannot be considered as ancillary to the WWTP and as such can be assimilated into the larger project as being also a utility development in order to sidestep material contravention of zoning. We believe it is not ancillary for the following reasons.

-The WWTP treats 500,000 PE of sewage the Regional SHB treats 750,000 PE of sewage
-The WWTP requires the Regional SHC centre to treat its by-product of sewage sludge
-The WWTP Plant requires the Regional SHC to provide Biogas for energy to run the plant
-The SHC could use Biogas to run itself
-The SHC treats by-product not related to the WWTP
-The Regional Sludge Hub Centre is required under national plans whether or not the WWTP is built.
-The Regional SHC could perform as a stand alone development without the WWTP
-The WWTP could not perform as a Stand Alone development without the Regional SHC

another way of lookinf at this issue is due to the fact that the Regional SHC processes/ services a larger volume of Sewage than the WWTP and the fact that the SHC could function as a stand alone development whereas the WWTP cannot function without the SHC as a stand alone development, it is the SHC that is the larger treatment facility by scale of use/ treatment process and therefore it is the WWTP that is subservient to the Regional Sludge Hub Centre. If you were to apply the argument that the smaller scale , dependant/ subservient development should be assimilated into the larger scale development then by the respondents/ notice party's averments the WWTP should be considered part of a Waste Recovery Development rather than the other way round.

This would mean the whole development contravenes the development plan by being sited in a greenbelt zone. And the whole development would require SEVESO registration.

We also bring to the Bords attention that as the WWTP treats the concentrated dewatered Sludge run-off of from the SHC which has been decalred as being up to 250,000 PE, the project could be considered as actually treating effluent up to 750,000 pE (500,00PE running through main plant and up to 250,000 PE from SHC dewatered sludge) as such all Environmental impact assessments should be for a 750,000 PE equivalent WWTP.

The Sludge Hub Centre is a REGIONAL Sludge Hub centre and is Co-located at the site. It is located in the same curtilage but is not incidental to the plant. In planning law an ancillary development (say within the curtilage of a residential dwelling) still requires planning permission and assessment on the merits on its use in its own rights and if it has a use other than as an "ancillary use to the dwelling" then it must be assessed in the context of that use (home office / is it rateable or allowed in a zoning context.) same argument as Regional SHC must be assessed on the basis of the Waste recovery facility as it serves that function outside of the GDD WWTP. In a simplified argument a couple who co-habituate are still required by revenue to complete individual tax assessments.

28. Other issues to be addressed:

- New Critical Infrastructure Bill
- Ability of Irish Water to CPO Land – See appendix A24 on this matter. – we respectfully Suggest ABP take legal Advice.

2 more addition payes. to follow.

-No Internal Drawings of Buildings
- No assessment of Piling at outfall or cable crossing (risk assessment to damage of cable).
- Community Gain – Educational facility is a Material Contravention of the Fingal Development plan in relation to Public Safety Zone – not valid
-Circular economy legislation – reuse of Water in wastewater now compulsory.
-why no solar, rainwater harvesting etc included in development.
-Lack of Electricity capacity with WWTP being one of the highest electricity users.
-No assessment of freshwater impacts/ temperature impact of discharge on marine ecology. Eg Saline loving species etc.
-Why no tertiary treatment Nitrogen removal/ phosphorous recovery/ not BAT
- Need to be aware that as the development will not happen until 2024 the new Fingal Development Plan will be in place and the development should adhere to the provisions of the plan. If the plan constrains the development to the point of making it unviable at the site then It may be that this application is premature.
- Avian Flu issue and they crossing over ogf the virus to marine mammals
-New ICUN reports must be considered as populations further under threat and new species red listed.
-An insect survey of compound 10 is required due to rare beetles previously recorded.
-National Monuments have recorded a new monument directly in the path of the Pipeline trenching corridor at Maynetown by compound 9. New updated assessment is required.
-No management plans for Ireland's EYE SAC/ SPA, Baldoyle BAY SAC/ SPA, Rockabill to Dalkey SAC and others with 15km of outfall route may preclude the board from being able to assess impacts under the habitats Directive.
-There was a number of unassigned water bodies under the Water Framework Directive when the last decision was made . The EPA have carried our a form of Grouping analysis to apply status in the intervening time but we believe that this method is not legally sound particularly for Natura 2000 sites. In any cases further assessment under water framework should be carried our and allowed public consultation as additional information.
-Drinking water directive – contamination of rivers that are used for drinking water by wastewater discharges – does it apply in the GDD / 9C/ Leixlip network?
-CENSUS data – update all reports to 2022 CENSUS data currently using 2016
-Section 4 discharges in Tolka and rivers connected to Ballymun PS must be modelled in addition to WWDL overflows.
-No overflows identified on drawing for Orbital Sewer Why not
- Law regarding insore fishing by large vessels has been overturned – cumulative impact and foreshore licenceing issues.
-cognisance of Council regulation 575/2010 on persistent organic pollutants
-Will leachate be received at the GDD WWTP?
-Portmarnock South Bathing waters is currently undergoing redesignation as bathing water via Fingal County Council and will require excellent water status. This change must be addressed in updated EIAR.
-Why no AGS treatment – alternatives?
-BAT mining of sewage sludge for metals – Circular economy
-Process failure only addresses electrical failure, not any other equipment failures no actual process failure modelling for discharges to rivers upstream of GDD PLANT..
-no SWOs are monitored In Fingal and parts of DCC lack of overflow data may inhibit ability to modell discharges so worst case senario of Full Flow overflows must be applied.

Construction Methodology for Arklow WWTP application contradicts evidence in GDDP in relation to safe depth for trenching. In Arklow IW Expert says its not safe below 5 metres in GDDP it appears to be ok. Can Irish Water Clarify. (see Appendix 26

Appendix A27
Scientific Report on persistent pollutants in Northern Gannet Morus bassanus eggs in Ireland.

Our Case Number: ABP-312131-21

An Bord Pleanál

Sabrina Joyce Kemper
23 Portmarnock Cresent
Portmarnock

Date: 26 August 2022

Re: Greater Dublin Drainage Project consisting of a new wastewater treatment plant, sludge hub centr
orbital sewer, outfall pipeline and regional biosolids storage facility
Townlands of Clonshagh, Dubber and Newtown, County Fingal and Dublin City

Dear Sir / Madam,

I have been asked by An Bord Pleanála to refer to the above-mentioned development bearing referenc number ABP-312131-21.

An Bord Pleanála had previously made a decision on this application by Order dated 11th November 2019, and under reference number ABP-301908-18. That decision was quashed by Order of the High Court and the case was remitted by that Court back to the Board for determination. A copy of the High Court Order is attached to this letter for your information.

Please note that this application has now been reactivated under the above new reference. Having regard to the High Court Order quashing the previous An Bord Pleanála decision, the Board considers that it is appropriate in the interests of justice to now request you under section 37F(1)(c) of the Planning and Development Act 2000, as amended to make any further general submissions/observations you may have on the planning application.

Any such submission that you may have in response to this notice must be received by An Bord Pleanála no later than **5:30pm on the 30th September 2022**. Please quote the above-mentioned reference number in any further correspondence with the Board.

Yours faithfully,

P.P.

Eimear Reilly
Executive Officer
Direct Line: 01-8737184

Teil	**Tel**	(01) 858 8100
Glao Áitiúil	**LoCall**	1890 275 175
Facs	**Fax**	(01) 872 2684
Láithreán Gréasáin	**Website**	www.pleanala.ie
Ríomhphost	**Email**	bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Stree
Dublin
D01 V90