

An Bord Pleanála Oral Hearing

Case reference: PL06F.301908

Submission by

Sabrina Joyce-Kemper

Tuesday 26th March 2019

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1. My name is Sabrina Joyce-Kemper. I am a Portmarnock local and founding member of ECHO (Environmental Conservation of Habitats Organisation) which is a voluntary organisation. I am a Consultant with 23 years expertise in EU Legislation in the areas of Customs, Trade, and Agriculture.
2. Today I will represent myself as a Portmarnock resident and I am also here representing residents in a number of communities in Clonsaugh, Baldoyle, Blanchardstown, Malahide, Howth and Kilshane.
3. In my submission today I will highlight flaws in the ASA assessment, and discuss impacts on protected sites and species that were not raised during the application process.

ASA Site Selection issues.

4. Throughout the Alternative Site Assessment Process there were flaws in the methodology that was used to screen out potential sites. One of the major concerns in both the ASA process and the current application is the belief, by the applicant, that the utilisation of trench-less tunnelling under Baldoyle Estuary constitutes an avoidance measure, resulting in no impacts to the SAC/ SPA at Baldoyle Bay. This was too broad an assumption at so early a stage in the selection process. It was also decided early on in table 4.2 of ASA2 that as Ireland's eye SAC was "designated of coastal and not marine habitats. There is no hydrological link and no open pathway of effect, thus no real possibility of LSE's" which I believe is incorrect and should be addressed.
5. This outlook of tunnelling under the SAC means no impact, led to a deficit of assessment for these two SAC's, which is apparent as early as stage two of the ASA process by virtue of the fact that in the **ASA Preliminary Screening Outcomes Report**, during ecological constraint mapping, Baldoyle SAC and Ireland's Eye SAC were consistently left off constraints maps and therefore left out of consideration when it came to analysing constraints. One such example is the ecological constraints map (figure 1). In addition, Baldoyle Estuary SAC SPA and Ireland's Eye SAC was also not identified on the **protected water bodies and areas at risk of flooding** map.
6. The methodology for the site selection stated that at an early stage, ecological constraints such as SAC's/ SPA's, Ramsar Sites, Nature Reserves, National Heritage areas (all of which apply to Baldoyle Estuary) would be screened out of the selection process. However this was only

applied to the land parcels and not the outfall sites. Land Parcels with outfalls traversing protected areas should have been screened out as per the methodology statement.

7. Due to the fact that only article 6.3 OR 6.4 of the Habitats directive can be invoked when dealing with Impacts on SAC's and their qualifying interests, it is important that un-assessed "mitigation measures" which negate all impacts on an SAC in one fell swoop are not relied upon to keep a site in play during the ASA process. This appears to have been the case in the site selection outcome for the Greater Dublin Drainage project. Applying all encompassing mitigation early in the process may have resulted in the three sites that were chosen as preferred sites not actually being the best three options in terms of having the least ecological constraints, due to adaptive mitigation strategies, which were not applied across the board but only to the sites that were partnered with the Southern Outfall. .
8. The comparison of the Ecological constraints of the Northern and Southern outfall routes was not balanced. The Study area for the Northern outfall was substantially bigger than the constricted area of the Southern outfall. The Northern outfall contained far more constraints by virtue of the fact that it was at least 6 times larger than the study area of the southern outfall. This imbalance directed the selection process to incorrectly find land parcels associated with the southern outfall as the least ecologically constrained as only four SAC's were identified in the near/ far field for the southern outfall as opposed to seven for the Northern outfall. (Figure 2)
9. COUNCIL DIRECTIVE 2008/114/EC deals with critical infrastructure and under Article 1(6) of this legislation *"The primary and ultimate responsibility for protecting European Critical Infrastructures (ECIs) falls on the Member States and the owners/operators of such infrastructures."* The legislation was enacted so that member states would identify and classify risks, threats and vulnerabilities to infrastructure assets. While planning constraint and development documents from 2012 do identify possible risks from aircraft accidents with Clonsaugh being in the public safety zone in relation to Dublin Airport, there is no assessment of deliberate terrorist threats either physical or cyber and the impact that such attacks may have for each of the potential sites.
10. The Clonsaugh site is under the flight path for Dublin airport and is adjacent to major motorway infrastructure. Of all the land parcels identified, it has the highest concentration of residential areas including its nearest neighbour, a 490 bed hotel. Each of the land parcels should have been assessed in terms of how they performed in worst case threat scenarios, in

terms of Natural Disaster, Cyber Attack and Terror threat. The ASA should also have examined how each site would interact with other such Critical Infrastructure in the event of a major incident. e.g. would an explosion or fire at Clonshaugh interfere with visibility in the skies and result in the grounding or diverting of aircraft at Dublin airport causing passenger and cargo delays? Would the proximity of population and the higher potential for mortality and injury put the Emergency services under pressure? In the case of a cyber attack would prolonged pumping of untreated effluent into the sea have a higher public health impact closer to Dublin city than in a more northern outfall point?

11. EU legislation requires the following cross cutting criteria to be assessed for all European Critical Infrastructure; The cross-cutting criteria are developed on the basis of the severity of the disruption or destruction of the Critical Infrastructure. The severity of the consequences of the disruption or destruction of a particular infrastructure should be assessed on the basis, where possible, of:

- a. Public effect (number of population affected);
- b. Economic effect (significance of economic loss and/or degradation of products or services);
- c. Environmental effect;
- d. Political effects;
- e. Psychological effects

It would perhaps have been prudent to assess this at a point when it could be taken into consideration at ASA stage, rather than when the plant is already built in the most built up area in terms of population and infrastructure, compared to the other eight potential sites.

12. The issue of Environmental effect to be assessed under this Critical Infrastructure legislation is an interesting one. At no stage in the application is the issue of compensation in the event of a major environment disaster discussed, during the construction or operation phase. Directive 2004/35/EC of the European Parliament on environmental liability with regard to the prevention and remedying of environmental damage (ELD), establishes a framework based on the polluter pays principle, to prevent and remedy environmental damage. The polluter pays-principle is set out in the Treaty on the Functioning of the European Union (Article 191(2) TFEU). As the Environmental Liability Directive deals with the "pure ecological damage", it is based on the powers and duties of public authorities ("administrative approach") as distinct from a civil liability system for "traditional damage" (damage to property, economic loss, personal injury).

13. The Directive defines "environmental damage" as damage to protected species and natural habitats, damage to water and damage to soil. Operators carrying out dangerous activities listed in Annex III of the Directive fall under strict liability (no need to prove fault). Operators carrying out other occupational activities than those listed in Annex III are liable for fault-based damage to protected species or natural habitats. The establishment of a causal link between the activity and the damage is always required. Affected natural or legal persons and environmental NGOs have the right to request the competent authority to take remedial action if they deem it necessary.
14. In light of the recent discharge from Ringsend into the UNESCO biosphere it is highly likely that a discharge directly into the Rockabill SAC will occur, either due to overloading, mechanical failure or the normal operation of CSO (combined sewer overflows) or SWO's (Storm water overflows) in heavy rainfall. We will ensure that Irish Water are held legally and financially to account for any breaches of legislation that may occur, but have they accounted for the economic liability that pollution episodes will incur if this project goes ahead. This environmental liability risk will continue for the full operational period of the design horizon of the Waste Water Treatment Plant and beyond. As the State and therefore the Taxpayer is financially tied to Irish Water this liability needs to be risk assessed and quantified as an actual economic cost of going ahead with the project. It may not be financially viable for the project to be built at this site with so many environmentally sensitive sites adjacent to the outfall, and transited by the pipeline. Will Irish Water be able to secure Insurance to cover Environmental Liability on a Waste Water Treatment Plant of this size? Perhaps a risk assessor should be engaged to confirm the level of Environmental Liability risk for both build and operation of the plant and quantify potential costs to Irish Water or their insurance company.
15. If Insurance for Environmental Liability will not be covered by a third party insurer then an analysis of what Financial provision for environmental liability will be made between Irish Water and the EPA, should be presented as part of the application now, before any pollution incidents occur and so it can be made a condition of any planning application, that a bond for liability is in place before any construction begins.

Unassessed Impacts

16. The EIAR traffic assessment does not mention and therefore mitigate against, the danger to pedestrians and wildlife on the Golf links road approach to the construction compound 10 entrance. The road is extremely narrow with raised bank along part of the road; there is no pedestrian path on either side of the road. (Figure 3) It is an access road for one housing estate, at which point the majority of vehicles turn off the road. The remaining stretch of road gives access to the Golf club and a beach car park and has minimal traffic movements. Two cars can barely pass each other at some sections of the road. A HGV truck and car may have great difficulty doing so.
17. The turning circle required to access and egress the entrance to compound 10 with a HGV would not be accommodated by the current road layout and no alternative layout has been proposed or tracking of the turn diagrammed. The traffic movement chart (Figure 4) Shows the incredibly high number of car and HGV movements down this road. It is a local walking route and many pedestrians walk here in family groups, with children on scooters, and with their dogs. There is a very real risk of injury to walkers due to the high HGV movements and the valley effect with nowhere to step off the road safely to avoid construction traffic and loads. This road surface would also suffer from so many fully laden HGV vehicles carrying constructional materials and plant equipment onto the site.

Legislative context: Under Section 191 subsection 1(e) of the Planning and Development Act 2000 it states a reason for refusal of permission on the following grounds: (e) any existing deficiency in the road network serving the area of the proposed development, including considerations of capacity, width, alignment, or the surface or structural condition of the pavement, which would render that network, or any part of it, unsuitable to carry the increased road traffic likely to result from the development,

1.2 Under section 191 subsection 4 of the Planning and Development Act 2000 it states a reason for refusal of permission on the following grounds: "The proposed development would endanger public safety by reason of traffic hazard or obstruction of road users or otherwise."

18. There is also a high risk that walkers with their dogs who usually use the road to walk to the beach will be forced over the steep raised bank which acts as a natural shield, to the Estuary side which is within the SAC, thus creating unacceptable disturbance to the birdlife who feed and roost in this area. One of the highest negative impacts on this estuary is recognised as dogs. A study of disturbance of waterbirds in South Dublin Bay found that birds on the beaches (and coastal grassland) were largely habituated to people and their dogs moving predictably along paths and these activities caused very little disturbance (Phalan and Nairn 2007). Most of the 138 disturbance events recorded in 28 hours of observation were caused by dogs and people leaving the paths to go onto the beach or fields used by the birds. Dogs were implicated in 69% of all disturbance events observed and in 76% of events causing ten or more birds to take flight.
19. Table 4.1 of the Natura Impact Statement states the following: *Construction traffic associated with the micro tunnelling compounds will utilise existing roads (R106) and will therefore not result in displacement or disturbance to feature species of European sites.* The NIS does not refer to the Golf Links Road and the issue of no paths and construction traffic pushing dog walkers onto the Actual SAC. Therefore, Appropriate Assessment criterion has not been met.

Tunnel Boring Construction Phase.

20. The lack of detail around the Tunnel boring stage of construction is completely insufficient as is the assessment of Impacts of same in the NIS and EIAR. This type of construction is extremely hazardous and machinery breakdowns and accidents do occur. In 2013 a 26-year-old German technician was killed in the Corrib pipeline tunnel boring machine when a pipe carrying bentonite slurry buckled and disconnected striking him at the back of his head causing catastrophic fatal head injury. The Machine should have been stopped for intervention maintenance but was not. Just two months earlier the Minister for Natural resource Pat Rabbitte released a statement to clarify issues surrounding shifting sediments during Tunnel Boring. He said "*Corrib gas developers had notified his department about depressions in Sruwaddacon Bay, where the final section of the pipeline was being laid. These depressions "are caused by air escaping during tunnel boring machine 'intervention' maintenance".*
21. These actual occurrences are contrary to ascertain in the EIAR and NIS that such events are "highly unlikely". They are in fact very likely and any alteration to the mudflats and sediments that may be caused by depressions, may increase suspended sediments or changes to the

direction of the flow of the channel. This would absolutely significantly impact on Baldoyle SAC and the conservation objectives and targets including Conservation of the following community types in a natural condition: Fine sand dominated by *Angulus tenuis* community complex; and Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex. The NIS is vague about the impact on sediments in relation to shifting substrates caused by regular maintenance on the Machine. The NIS states:

"The proposed Tunnel Boring Machine (TBM) to be used in the micro-tunnelling is expected to be 2m In diameter with a standard arrangement employed in the construction of this tunnel. As compressed air is used within the TBM to maintain an slight positive pressure, this can occasionally escape to the surface through trickle of air bubbles and create a small areas of surface sediment loss through liquefaction and winnowing of fines in prevailing marine currents. Whilst this does not have a chemical impact on the surrounding sediments, this can create a small area of physical impact to the SAC and qualifying interests of shallow sand and mudflats habitat (1140) in the form of a small pock mark or shallow crater. This may have a very localised impact on the sediments, particularly where they have limited cohesion (i.e. sands and silts making up the main part of the estuary). The statement goes on to say "The pathway of possible discharges described above would be directly beneath these qualifying interests, but the permanent habitat area is stable or increasing, subject to natural processes and the natural condition will not be impacted by this unlikely event."

The above statement used the same language "in the unlikely event" and "imperceptible" that was used in the Corrib Pipeline NIS and yet the events deemed unlikely did occur more than once and set a precedence for this type of tunnel boring project.

22. Neither the EIAR or EIS assesses the impact on Baldoyle Estuary SAC in the event of TBM failure that necessitates the use of an intervention pit, dug into the Estuary to retrieve or repair the cutting face of the machine or remove unforeseen obstacles if it encounters difficulties. Thus the appropriate assessment criterion has not been met.

23. The Trenchless tunnelling process being utilised by Irish Water should have been discussed in more detail, particularly in light of the fact that the launch and receiving construction compounds are on lands that contribute to the cohesion of the Baldoyle SAC protected site. Only one diagram of a compound is supplied as per (Figure 5) . This is indicative of the compound but has no identifying labels of features and is in 2D format. This basic drawing gives no indication of how the visual impact of the compounds will affect the local birdlife and sensitive receptors nearby. I have attached a diagram (Figure 6) for another project showing a 3D version of a compound for a somewhat larger project but the plant machinery required would be the same for this one. Some of the plant machinery and silos are quite tall and so have a very strong visual imprint that will do little to minimise the impact of. This plant machinery complete with lighting will be operational 24-7 .
24. Irish water does not provide a detailed description of the Slurry TBM methodology. There is no breakdown of below ground operations details, for example, summaries of soil excavation, tunnel lining, soil transport and separation, projected percentage slurry losses, handling of TBM obstructions and breakdowns, information regarding control of bentonite flow, controlling and monitoring of the excavation process, TBM guidance system, pipeline installation and reinstatement. There is no breakdown of above ground operations, slurry treatment plant processes and slurry treatment plant layout. As yet Irish water have not identified what machinery will be used above and below ground and are leaving these details to the contractor whom they are currently trying to engage via tender process.
25. At present Irish water are putting forward a slurry TBM as the machine that will be used for construction of the outfall. However, selection of the Tunnel Boring Machine (TBM) would depend on the Contactor's views on how to best to overcome the variable ground conditions and meet programme requirements. This could result in an alternative choice to that of the envisaged Slurry TBM method, it cannot be ruled out that an Earth Pressure Balance Tunnel Boring Machine or a multi-mode TBM may be selected by the expert contractor. As the TBM and slurry plant machinery choice is not definitive, It is impossible to accurately asses possible tunnelling issues or in the case of compound equipment, airborne noise impacts on the surrounding environment as the Decibel levels of the machines can not be conclusively addressed as being either within limits or in breach of acceptable levels particularly in accumulation with one another. They expect the diameter of the machine to be 2 metres but this is not confirmed it may be larger. As this detailed information is not contained in the current application Appropriate Assessment criterion has not been met.

26. Irish water does not have actual scientific information regarding the geology directly under Baldoyle Estuary where the Tunnel boring will actually take place. Borehole samples were taken each side of the estuary on dry land but none were taken within the estuary itself due to its strict protected status. The NIS states the following: *"The risk of a surface breakout by bentonite drilling fluid cannot be negated completely due to variability in the underlying geology. 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."*
27. As Irish water and their eventual contractor are flying blind in terms of the actual geology under the Estuary itself there is a very real risk of bentonite breakout or substrate modification that would have a substantial negative impact on the qualifying interests of Baldoyle SAC namely Mudflats and sand flats not covered by seawater at low tide, Salicornia and other annuals colonizing mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritima*), Mediterranean salt meadows (*Juncetalia maritimi*).

Legislative context: *According to settled case-law, the appropriate assessment of the implications for the site that must be carried out pursuant to Article 6(3) implies that all the aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field (see, to that effect, judgments in Commission v France, C-241/08, EU:C:2010:114, paragraph 69; Commission v Spain, C-404/09, EU:C:2011:768, paragraph 99, and Nomarchiaki Aftodioikisi Aitolokarnanias and Others, C-43/10, EU:C:2012:560, paragraphs 112 and 113).*

i). The assessment carried out under Article 6(3) of the Habitats Directive may not have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned (judgment in Briel and Others, C-521/12, EU:C:2014:330, point 27).

ii). 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 Solvay and Others, paragraph 67).

iii). 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)."

28. In relation to the Tunnel Boring process, Irish water is expecting the An Bord Pleanla Inspector and the Board to attempt to assess this stage of the project with little or no verified engineering information. If Irish Water were to go to their insurance company with such a lack of detail the underwriter would refuse to quote for insurance until further information was provided that would allow appropriate risk assessment of the project. An Board Pleanla are entitled to the same chance to appropriately assess this stage of the plan. As all aspects of the plan or project have not been identified due to a number of decisions regarding methodology of construction and plant equipment being he to eventual primary contractor and sub contractors, authorisation cannot be given as per conditions of the Habitats directive 6(3).

29. A major impact of the Tunnel boring process omitted from the NIS and EIAR which has not been assessed is the impact of the vibrations from the TBMs progress on foraging wetland birds. Some wading birds utilise Herbst corpuscles in their beaks to locate food sources cms under the sands/ sediment surface in wetland foraging sites. Godwit, curlew, snipe, redshank and knot utilise this feeding technique which may be affected by vibratory impact from the tunnel boring or piling process. Benthic prey being the food source of the SPA wading birds, are affected by vibrations caused by piling and tunnel boring in the estuary substrate. Such vibrational stimuli may lead to avoidance of areas within a distance of the piling in compounds or drilling under the estuary, further fragmenting the SAC by creating non benthic zones resulting in waders expending more energy looking for food. The fact that the TBM will run 24/7 means that when waders who exhibit site fidelity when foraging, are attempting to feed at low tide, depletion in food sources with no recovery time for the benthos will result in additional energy expenditure for waders trying to find food, energy depletion due to less food sources available in expected areas which in turn can impact on breeding and general health.

Habitat Loss Site compounds 9 & 10.

30. In order to construct the trench-less outfall section of the pipeline, Irish water propose commandeering and developing a sizable area of grassland bird habit 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 a designated Ex Situ feeding site for Brent Geese and compound 10 will occupy a roosting and feeding site for a variety of birdlife reliant on the Baldoyle Estuary SPA. While we have an indicative layout for the receiving compound 10 there are no diagrams or drawing of the site layout or the Slurry Treatment layout for compound 9, which is to be built on a foraging site for Brent Geese.
31. 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-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).*

32. 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.

33. The Portmarnock South Lap NIS 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.*

34. 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 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.

35. 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 Estuary 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.
36. The fields adjacent to Baldoyle Estuary 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.
37. The ex situ site that compound nine will replace 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 Erins isle GAA Finglas and Scoil Earcain Finglas will increase pressures on the remaining terrestrial feeding sites in Dublin.
38. The importance of the site is confirmed in the Wintering bird survey of the lands surrounding the Baldoyle 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 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.

39. 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."

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.

40. A recent An Bord Pleanla 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 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."

Mitigation versus compensation.

41. 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 re-instated 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 ten. 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.
42. 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).
43. There are no mitigation measures for the compounds in that the land that they will occupy will be lost for a substantial and 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 24-7. This constant disturbance will most certainly contribute to fragmentation of the SAC from the area south of the 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).
44. 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 WWTP 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. I ask that the inspector raise this issue when submitting her report to the board and request that they seek legal clarification on same.

UV Treatment:

45. The lack of time to properly consider UV Treatment is concerning. While the Irish water team replied directly to some of the negative aspects raised, it was a knee jerk reaction report and just provided info on the bare minimum requested by Bette Browne. There is no comprehensive reference to other issues such as dark repair by organisms/ pathogens while the sewage is in the pipeline for 4 hours.
46. So this is an example of a situation where the goalposts have been changed at the last minute and Irish Water are expecting the Board to make a decision on UV treatment with no research into the kind of system that will be used and no validation or certification as to whether it will in fact be able to disinfect the effluent to the standard required by shellfish waters. They are suggesting a technology that they don't even know can be carried out on the kind of industrial and pharmaceutical heavy effluent that will be treated by this plant.
47. Other issues relating to water quality that have not been addressed sufficiently relate to the High percentage of industrial load that the plant will cater for. Inorganic substances will not be treated by UV treatment. Industrial load includes Leachate from landfill sites and waste water from heavy industry. Ringsends 2017 treated water quality tests indicated effluent content exceeded safe levels in a number of substances including Glyphosate a herbicide, Lead, Arsenic, Copper which are metals and drop to the seabed polluting the substrate in the immediate area, Chromium 6 we all know from Erin Brockovich fame as being cancerous, barium, Trichloromethane which the EU is currently taking Irish water to task over as its in our potable water as well . Finally Phenols and metaphynols which are known to be toxic and inflict both severe and long lasting effects on both humans and animals. They act as carcinogens and cause damage to the red blood cells and the liver, even at low concentrations. Interaction of these compounds with microorganisms, inorganic and other organic compounds in water can produce compounds or other moieties, which may be as toxic as the original phenolic compounds.
48. Anku et al 2017 – Phenolic compounds in water: sources, reactivity, toxicity and treatment methods state: *Phenolic compounds have been enlisted by the United States Environmental Protection Agency (USEPA) and the European Union (EU) as pollutants of priority concern. This enlistment is due to the fact that these chemicals are noted to be toxic and have severe short- and long-term effects on humans and animals [5]. The occurrence of phenolic compounds in the aquatic environment is therefore not only objectionable and undesirable but*

also poses a danger as far as human health and wildlife are concerned. As a result, a number of wastewater treatment techniques have been developed and used for the removal of phenolic compounds from industrial, domestic and municipal wastewaters prior to their disposal into water bodies so as to minimise the devastating effects of these chemicals on human and aquatic lives. Some of these techniques include extraction, polymerisation, electro-Fenton process, photocatalytic degradation and so on.

49. Can Irish water confirm to An Bord Pleanála if any of these treatment techniques have been considered in the design of the Plant. In light of the ecological constraints in the area in particular the two designated bathing sites at Portmarnock beach some sort of risk assessment should be carried out on the level of inorganic substances such as phenols that can be expected in the discharged effluent.
50. Appropriate assessment is the cornerstone of environmental protection and law. This project has been in the pipeline for 14 years and in that time the core design is the same as it was in 2005. One giant Waste Water Treatment Plant an orbital pipeline and an outfall to Irish Coastal waters. In 14 years there has been no attempt to come up with a more environmentally sustainable, carbon neutral design, perhaps incorporating smaller localised plants with constructed wetlands to act as filtration systems, releasing high quality treated water into local aqua systems. The added bonus is that constructed wetlands create habitats instead of destroying them. Once again the only consideration is for the most obviously cost effective option. But what is the cost to our own habitat. We swim in these waters, we harvest food in these waters, we sail in these waters. They are our habitat as much as they are the qualifying species that they are protected under. When we hear about the destruction of the rainforest we donate to the rainforest alliance and WWF and decry the third world mentality, of these countries destroying disappearing habits. But what about our own backyard the one we live in, do our protected habitats not warrant the same concern as those on the other side of the world? We need to do better. Irish water need to do better.

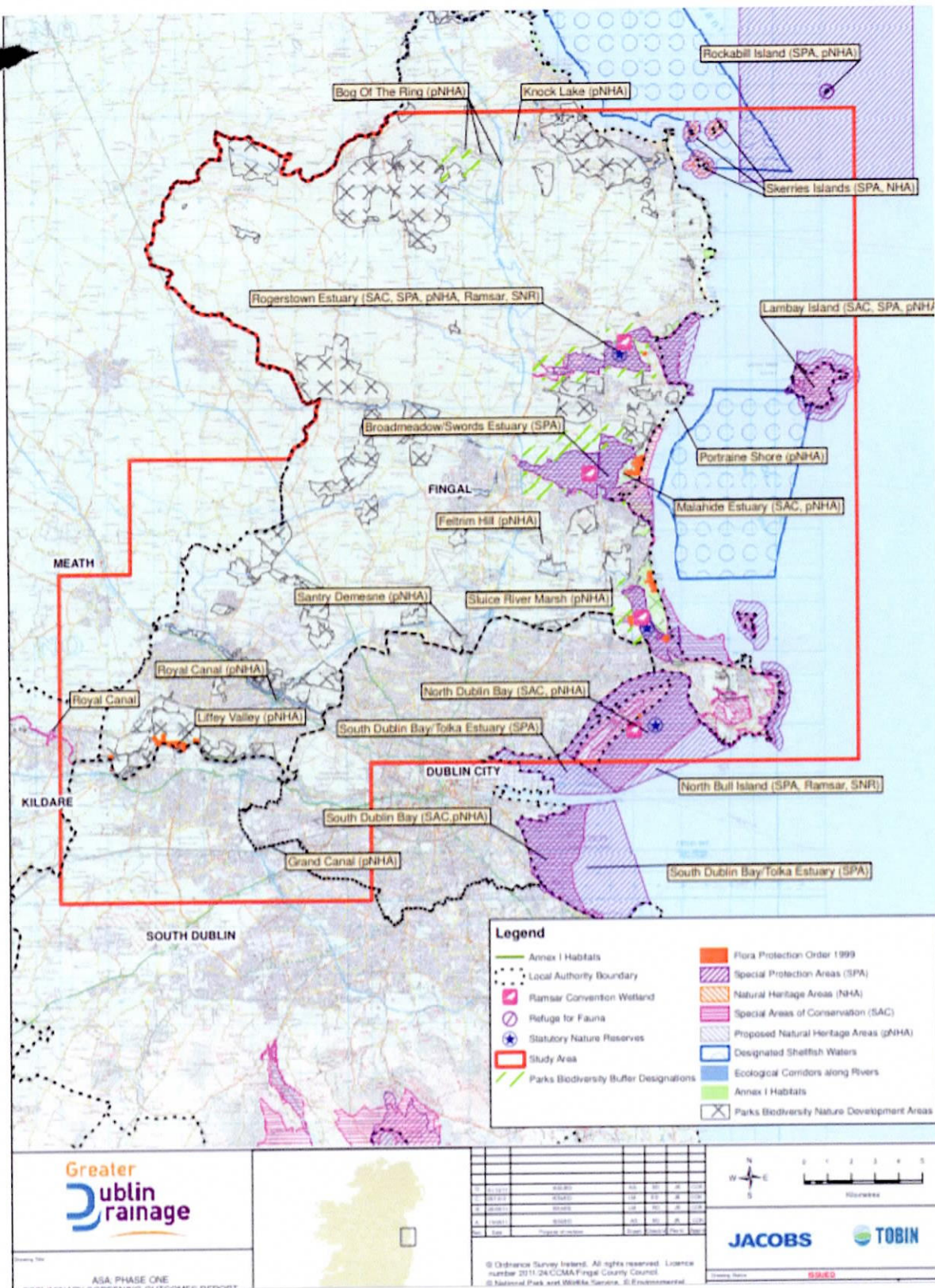


Figure 1: Phase two Ecological constraints Map – missing identifying Baldoyle Estuary SAC/ SPA and Irelands Eye SAC/ SPA

Table 13.2: Trip Generation for the Proposed Project

Proposed Element of Proposed Project	Entire Construction Traffic (Two-Way Vehicle Movements)		Weekly Construction Traffic (Two-Way Vehicle Movements) for Phase 5	
	Cars	HGV	Cars	HGV
Proposed WwTP	341,000	54,301	2,750	438
Proposed NFS diversion sewer	3,300	1,952	330	196
Proposed outfall pipeline route (land based section)	33,000	19,261	330	193
Proposed orbital sewer from Abbotstown pumping station to proposed WwTP	25,410	34,614	330	450
Access shaft (section of proposed outfall pipeline route (marine section))	42,840	3,838	2,520	226
Tunnel (section of proposed outfall pipeline route (marine section))	36,960	2,313	840	53
Subsea (section of proposed outfall pipeline route (marine section))	29,040	1,049	330	12
Proposed Abbotstown pumping station	10,560	2,392	220	50

Figure 4: traffic counts relating to outfall construction. The road that access the compound 10 is not structurally able for this level of HGV traffic. See fig 3.

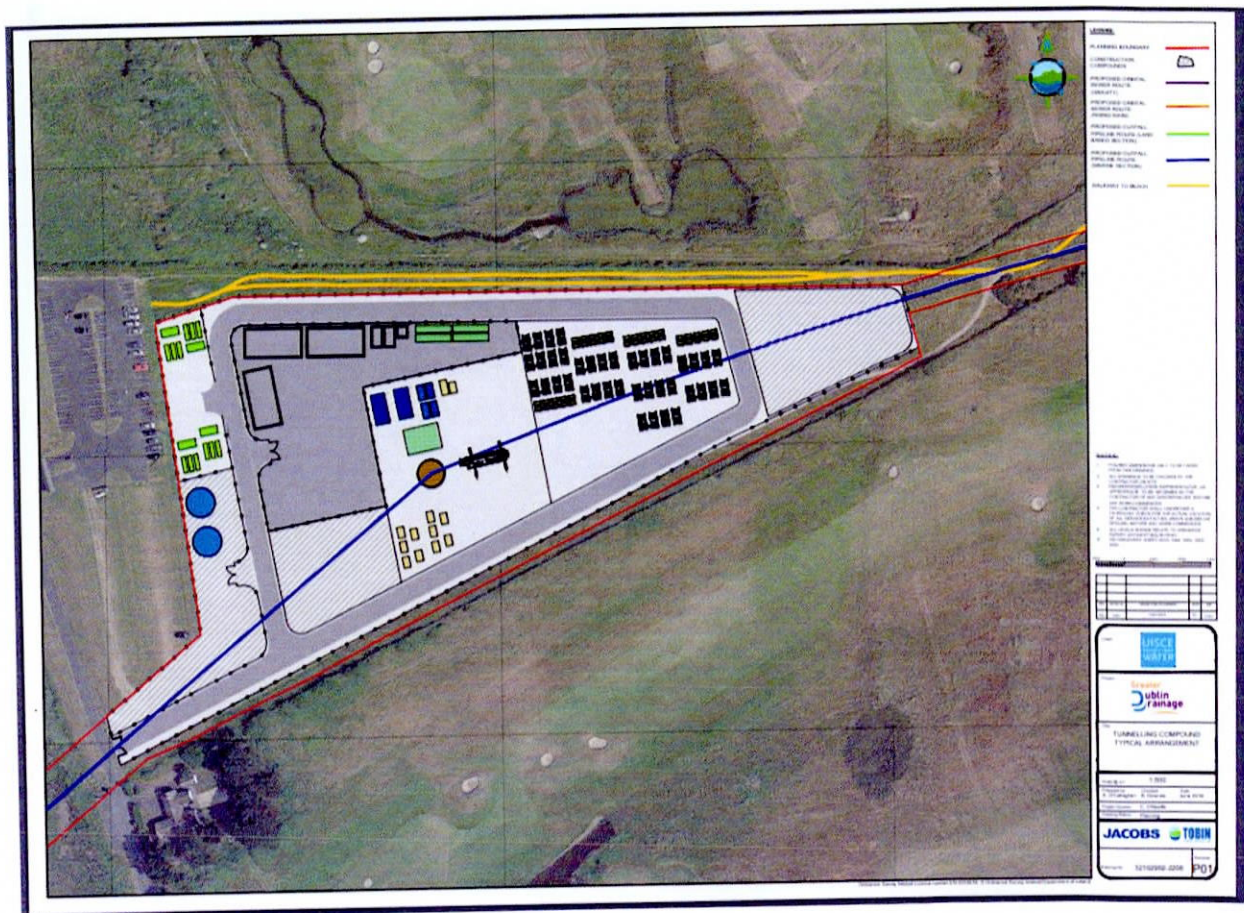


Figure 5: indicative arrangement of compound 10 provided with the application, note there is no description of the areas or items within the compound.

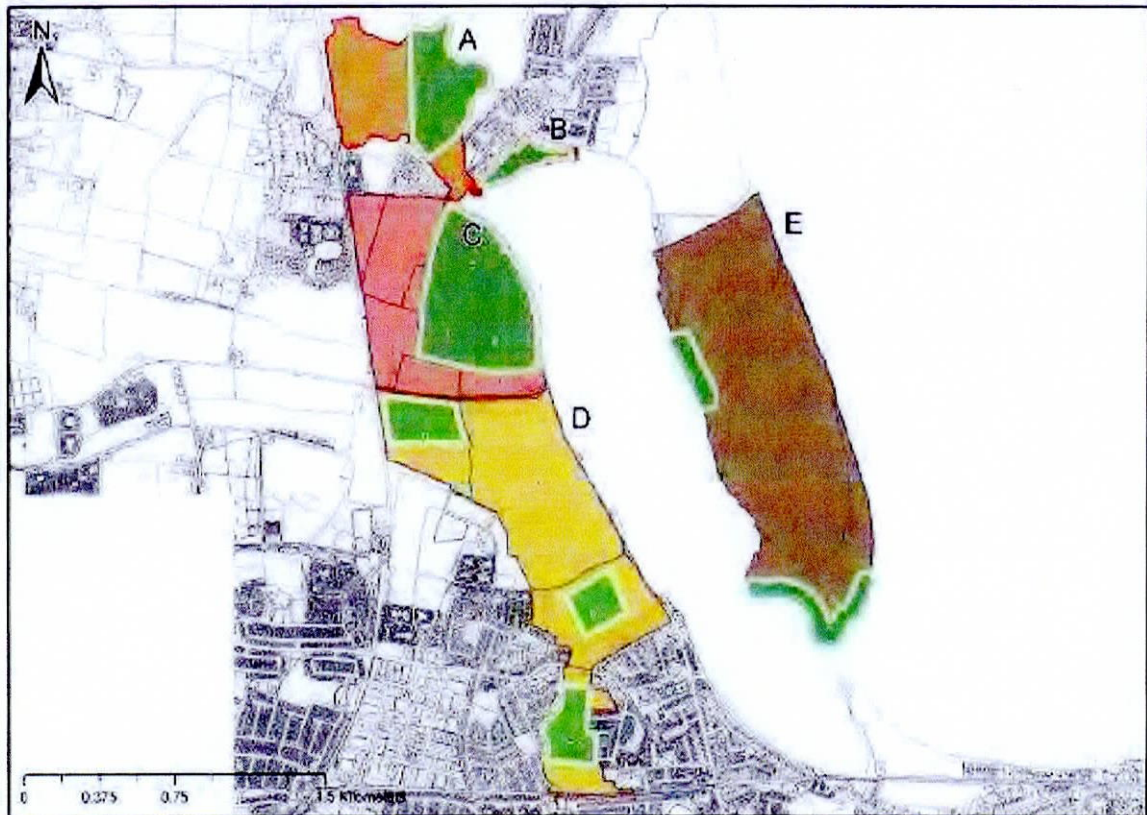


Figure 10: Map with key areas for migratory birds around the Baldoye Estuary

Figure 8: Birdwatch Ireland wintering birds study 2011/2012 for Portmarnock south LAP