An Bord Pleanála

Inspector's Report ABP-300535-17

Development	Coastal erosion management works and all associated works at Carrowmore Dunes, White Strand, Doughmore Bay and Trump Intl Golf Links, Doonbeg, Co. Clare
Location	Carrowmore / Whitestrand / Doughmore, Doonbeg, Co. Clare
Planning Authority	Clare County Council
Planning Authority Reg. Ref.	P16/1012
Applicant(s)	TIGL Ireland Limited
Type of Application	Permission
Planning Authority Decision	Grant Permission
Type of Appeal	Third Party
Appellant(s)	Peter Sweetman and Associates Liam Madden Save Doughmore Doonbeg Beach Community Group Save the Waves Coalition

	An Taisce
	Friends of the Irish Environment
Observer(s)	Kevin Deering and Peter Crossan
	John Conway
	Mark Fitzsimons
	Henry Dent
	Doughmore Coastal Protection Group
	Eamon Ryan TD
	Tony Butt
	Brendan Price
	The Louth Environmental Group
Date of Site Inspection	30th and 31st December, 2018
	22nd November, 2019
Inspector	Stephen Kay

Contents

1.0 Site Location and Description

1.1. The appeal site is located in Doonbeg County Clare on the shoreline adjoining the Trump International Golf Links (TIGL) Doonbeg. At its closest point, the site is located approximately 2.5km to the north east of the centre of Doonbeg Village and the on the western side of the golf course and hotel development on the Trump International site. The general environs of the site are lowland in character with extensive low lying areas located to the east of the site including substantial areas of peat and the coastal area of which the site forms part is of high landscape value.

1.2. The site as identified in the application comprises part of White Strand beach (known locally as 'Duck More' beach) above the high water mark and running the full length of the beach. On the land side, the site extends into the dunes on the eastern side of White Strand and also encompass part of the gold course. On the eastern side, the site also encompasses the line of the existing central access to the beach which runs across the golf course via an existing right of way as well as the adjoining local resort access road that provide a connection between the site and the N67 national road which runs north south approximately 1km to the east of the beach. Leading off the access road to the TIGL site off the N67, the site also encompasses an access path that lead to a storage area connected with the maintenance of the golf course. This maintenance area and access path is included within the site boundary, with this area proposed to be used for the storage of sand to be used in the ongoing replenishment of sand stocks to the front of the defence structures.

1.3. White Strand beach runs over a length of c.2.8 km from Carrowmore Point in the north to the entrance to Skivileen River at the southern end. The beach is large and comprises an extensive width of sand at low water measuring approximately 400 metres cross shore giving a significant overall extent at low tide in excess of one square kilometre. The beach comprises an arc of radius c.1.6km and beach survey information presented with the application (EIS, Chapter 4) indicates that the slope of the lower beach area (below the MHWM) is c. 1:12 to 1:15, while that of the upper beach is c.1:40. Above the high water mark, there is an area of cobbles that extend over approximately two thirds of the beach frontage ad which forms a transition between the beach and the dunes at the back (eastern side of) of the beach. These

cobbles are located primarily at the northern and southern ends of the beach and adjoin an area of dunes that run the full length of the beach.

1.4. The height of the dunes varies over the length of the bay with the dunes at the northern end being relatively low with undulating levels. Further to the south, the height of the dunes is greater with a major extension of the dunes landwards approximately two thirds of the way south along the strand. The maximum height of these dunes is c.20 metres above OD and the depth of the dune system (east-west) is limited with a large area of modified lands to the east located beyond the dunes acting as a barrier to the extent of the dunes. In addition to the modified habitat comprising the golf links other existing and historical land uses to the east of the dune system comprise agriculture, land drainage, peat extraction and infrastructure development including roads.

1.5. White Strand is a significant amenity resource and is used for a range of leisure and recreational activities including walking, surfing and horse riding. Access to the beach is available from a number of locations. At the southern end, access is available from a local road that runs north from a junction with the N67 close to Mountrivers Bridge. This access then runs close to the east of the Skivileen River and the service access to the rear (west) of the hotel and there is a car park at this location which provides approximately 32 no. formal spaces. Approximately at the centre of the beach frontage, there is a twin pedestrian access to the beach that leads off the main vehicular access to the TIGL resort from the N67. This access is served by a small car park and is referred to as the surfer's access in the application documentation. As will be discussed later in this report, the central access from the surfer's car park crosses the golf course via a right of way and splits into two routes closer to the beach known as the northern and southern surfer's access.

1.6. White Strand beach is bounded to the north and the south by rocky outcrops (indicated on Figure 29 of Volume 1 of the EIS) and at the southern end the Skivileen River enters Doughmore Bay. Further to the south, Rinnagonnaght Strand comprises a stony beach that is of limited amenity value and further to the south again, beyond Magraths Point, is located Doonbeg Bay which has a sheltered sand beach.

1.7. The stated area of the site is 33.9 ha.

2.0 **Proposed Development**

2.1. A description of the proposed development is contained in the public notices and at Chapter 2 of the Environmental Impact Statement (EIS) submitted with the application.

2.2. The development consists of coastal protection measures designed to limit the erosion of the dunes at White Strand and to provide protection for golf course and hotel infrastructure at the Trump International site. The protection of the golf course, and specifically the most at risk areas comprising holes 1, 9 and 18, is referred to throughout the application as the primary purpose of the proposed development. The main element of the development comprises the construction of two new coastal protection structures at the strand side of the dunes, one located at the southern end of the site and a second smaller structure to be located at the northern end. The lengths of these structures are 626 metres at the southern end and 257 metres at the northern end. The two sections are separated by a distance of c.1,900 metres where no protection works are proposed to be undertaken and the extent of protection works therefore compromises approximately 32 percent of the overall beach frontage. The extent of frontage located between the two areas of protection works approximate to the extent of the Carrowmore Dunes SAC (site code 002250) with the main protection works located such that they are not within the SAC or any other European site.

2.3. Detail of the proposed structures is set out at section 2.2 of Volume 1 of the submitted EIS and at Figures 16 and 17 of the same document. The construction process is proposed to involve the removal of the beach cobbles where present at the upper part of the beach and the driving of sheet piles into the dunes '*several metres back from the dune face'*, (EIS, section 2.2, pg.11). The height of the top of these piles is indicated as being at a level of 8.0-8.5 metres above OD Malin and the piles would be driven in until they meet the bedrock. The sheet piles are proposed to be secured in place with soil nails that are approximately 15 metres in length and which would be driven into the dunes at a shallow angle to the horizontal. The sand in front of the installed sheet piles would then be excavated to the profile as indicated in the construction drawings enabling the construction of a tie in revetment at the base of the sheet piles. Excavated cobbles would be stored further down the beach

with sand to be stored in a construction compound to be situated to the east of the surfer's access to the beach and north of the surfer's car park.

2.4. The construction of the revetment comprises a geotextile layer overlaid by a layer of secondary and then primary armourstone, with the top primary layer comprising boulders of between 60 and 300kg in the case of under layer armour and two and four tonnes for the primary layer. This armour is indicated as being c. 2 metres in depth and having a slope of approximately 1 in 3. At the front of the rock armour slope a toe is proposed to extend seawards with the aim of preventing the undermining of the structure. The crest of the armour revetment is stated to be c.5.0 metres AOD Malin and the overall horizontal depth of the structure beyond the sheet piling is indicated as being approximately 12 metres. The overall footprint of the proposed revetments is c.1.05 ha.

2.5. On completion of the revetment it is proposed to be covered with sand and cobbles currently on the beach replaced as appropriate. The projected quantities to be used in the project are set out at Table 2.1 of the EIS and indicate a total of 28,000 cubic metres of rock to comprise the armour, with 12,500 cubic metres of the c.48,000 cubic metres of sand to be excavated to be reused in the development. The volume of cobbles proposed to be excavated and replaced following the completion of works is stated to be c.4,500 cubic metres.

2.6. Construction of the coastal protection works is proposed to be undertaken in a production line format with each stage of the construction being undertaken over sections of the beach. Section 2.3.1 of the EIS contains a description of this sequenced construction methodology and states that the extent of area where construction would be occurring at any one time would be c.75 metres in linear extent and extend approximately 40 metres seaward of the dune. The construction area would be located above the mean high water mark, however construction activity would be limited by the tidal cycle. Construction is stated to be undertaken between March and May with an approximately 12 week construction window and proposed construction hours of 08.00 to 22.00 hrs.

2.7. A schematic layout of the construction sequence is set out at Figure 19 of the EIS and this indicates the provision of temporary armour down the beach to protect the works areas and also the vehicle supply route.

2.8. Also included as part of the development are enabling works comprising a construction compound and construction access route from the construction compound to the beach via the surfers' access. The layout of the construction compound is indicated at Figure 20 of the submitted EIS and indicates the storage of materials at a height of up to 10 metres. The ancillary works also include the provision of additional public car parking

2.9. The temporary construction compound to accommodate materials is proposed to be created in the centre of the golf course lands and in a central location relative to the main works areas at the northern and southern ends of the beach. This compound is proposed to be located to the east of the main access road into the resort and to the north of the existing pedestrian right of way across the golf course which access the beach.

2.10. It is proposed that the construction process would involve a maximum of 40 no. deliveries per day comprising lorries of up to 20 tonnes maximum load. Longitudinal supply routes from the central beach access to the works areas are proposed to be established, and these would be marked out to provide separation from areas to which the public would have access. Outside of the site, section 3.3.1 of the EIS identifies two potential haul routes to the site from the identified material source near Ennis. The northern route option outlined in the EIS is proposed to be used and this accesses Doonbeg via Inagh, the R474, N67 and then the site via the Golf Course Links Access Road, a total distance of c.45km.

2.11. The application documents state that the design life of the project is 50 years from the construction and that the materials specification and design in the form of the structural integrity of the revetments and the ability of the structure to withstand erosion and beach lowering have been designed to have regard to this lifespan.

3.0 Planning Authority Decision

3.1. Further Information

3.1.1. Request for Further Information

The application was the subject of a request for further information issued by the Planning Authority, dated 23rd February, 2017. The content of the request was under three headings, Coastal Processes, Natura Impact Statement and Environmental Impact Statement and can be summarised as follows:

Coastal Processes

- Further justification of the contention that Doughmore Bay is a physiographic unit,
- Clarification regarding the inclusion of the existing soft engineering works in the sediment budget, the end location of the material projected in the sediment budget to be lost from the system and the apparent inconsistency between the volume of material lost from the dune (c.10 percent of total) and the extent of retreat observed.
- Assessment of impact of more intense 1 in 200 year storm event and successive storms, including on the SAC.
- Further details on end effects and how outflanking will be avoided.
- Further assessment of the long shore transport including re running the Beachplan model using the same winter storm profile as that used in the 'do nothing' scenario.
- Further justification for the use of a 0.25 metre sea level rise factor in the SWAN (wave modelling) model.
- Comment on issue that revetment may be exposed in 20 years and significantly before the 50 year design life of the model.

Natura Impact Statement

- More detailed description of the proposal and justification of development required as well as an assessment of the options and implications for the SAC. The NIS should read as a stand along document and a revised NIS is required.
- Details of construction methods and mitigation measures to be submitted including CEMP.
- Considered that full effects on the Carrowmore Dunes SAC have not been set out. How the project would impact on the various attributes for the Annex I dune habitats needs to be clarified.
- That the risk of accelerated erosion, beach draw down, and erosion have not been adequately addressed in the NIS.
- That the Fixed dune habitat and V. Angustor species rely on dynamic dune processes and on the wetland areas at the back of the dunes. Further consideration of the hydrological effects of the development on these habitats / species is required.
- Further consideration of the effects on the Mid Clare Coast SPA having regard to the conservation objectives of the site.
- Details of in combination effects and relating to the author of the NIS.

Environmental Impact Statement

- The submission of a site and project specific CEMP.
- Submission of a detailed beach monitoring programme.
- Details of the construction access ramp and haulage route to the beach at construction stage including reinstatement proposals.
- Advised to ensure that the applicant has full legal interest over the entire area required for construction.
- Further details regarding the impact of the development on material transport between the dunes to beach to water and the impact of wave refraction.

- Further information regarding the availability of sediment to enable sand to build up behind the defences.
- Further details on the conclusion that dune material is only a small element (c.10 percent) of the sediment budget and that the cessation of erosion of dunes in the defended sections will not impact on beach levels and sediment processes.
- Baseline condition survey of the haul route required and further traffic impact analysis to reflect the fact that construction activity would coincide with peak tourist traffic times but the baseline surveys were undertaken outside of these peak times (November to April).

3.1.2. **Response to Further Information**

The response to further information submitted by the applicant comprised two main elements, the first a document titled '*Partial Coastal Protection Habitats Directive Appropriate Assessment'* dated October, 2017 and the second a document titled 'Partial Coastal Protection Response to Further Information' also dated October, 2017. This second document is divided into three sections, the first responding to issues raised relating to Coastal Processes and addressed in sequence under the heading RFI-CP-xx, the second section relates to issues raised in the further information request under the heading of appropriate assessment and the NIS and are addressed in sequence under the heading RFI-NIS-xx and the third section relates to the issues raised in the further information request under the heading of EIA and are addressed in sequence under the heading of RFI-EIS-xx.

The response to further information relating to appropriate assessment should be read in conjunction with the revised Habitats Directive Appropriate Assessment document submitted, (dated October, 2017). It should also be noted that under the heading of Coastal Processes, the RFI includes a number of preambles which set out the position of the first party on a number of basic issues related to coastal

processes including survey data and information, option appraisal sediment budget, calibration of the cross shore model, short term longshore transport impacts, and the experience and knowledge applied to the site by HR Wallingford. The content of these Preambles is referenced as appropriate in the Planning Assessment, Appropriate Assessment and Environmental Impact Assessment sections of this report.

The following is a summary of some of the main issues raised and information provided in the first party response to the request for further information:

- Under the heading of ***Coastal Processes***, details provided with regard to problems in assessing / modelling the final place where the sediment lost from the system ends up.
- Details of soft engineering works undertaken at the site set out. Modelling of additional storm conditions undertaken these being a 1 in 200 year storm of 12 hours duration and the sequence of storms experienced in early 2014.
- Further details provided with regard to end effects and the design of the end structure. This states that the effects of the end design will be managed in an adaptable way to avoid impacting on the SAC, (RFI-CP-5).
- Under the heading of ***NIS***, details of the beach access ramp and works to the surfer's car park are set out at RFI-NIS-1b.
- RFI-NIS-2 sets out the stages of appropriate assessment and how the assessment of alternatives is only undertaken in the event that the proposal is considered likely to have an adverse effect on the integrity of a European site. Notwithstanding the conclusion of the AA submitted that no adverse effects on site integrity would arise, a comparative assessment of the 8 no. alternatives examined is set out.
- RFI-NIS-4 sets out the level of habitat erosion over the 1896-2016 period (8.4 ha.) and the likely loss over the 2016-2066 period in various scenarios ranging from c.9.6 ha. with protection, to c.12.0 ha. with no protection.

- RFI-NIS-5 sets out in detail the impact of the development on the three dune habitats listed at qualifying interests for the site and sets out the data quality and value of the habitats as per the Standard Data Form for the Carrowmore Dunes SAC site. Noted that the most recent assessment of the site by the NPWS dates from 2014 and while concluding that the assessment of habitat condition contained in the Coastal Monitoring Project (Ryle et al 2009) is too negative, does not identify any amended habitat assessment for the site and does not set out any amended conservation status assessment for the site. A detailed assessment of the impact of the proposed development on the conservation objectives for each of the dune habitats identified as qualifying interests is provided.
- RFI-NIS-7 identifies that groundwater drains seaward over the whole length of Doughmore beach (c.3km) and that opes will be cut in the sheet pile where groundwater can pass (100mm diameter at 1.5 metre centres). Monitoring undertaken over the 18 years since the golf course was permitted (1998-2016) does not show any correlation between groundwater levels / hydrology and V Angustor.
- RFI-NIS-8 sets out additional detail with regard to the potential impact of the proposed development on the conservation objectives of the Mid Clare Coast SPA.
- Under the heading of ***EIS***, Response RFI-EIS-1 refers to a CEMP which is provided at Appendix F and which provides details of machinery and groundworks to be employed. Stated that sheet pile to be specified having regard to 50 year design life and details of soil nails is provided.
- Clarified that the construction zone would occupy an area of c.35 metres in width seaward of the dune front. The permanent works would extend c.15.5 metres seaward of the sheet piles.
- RFI-EIS 2 refers to the *Draft Beach Management Plan* submitted at Appendix E and which details the volume, composition and potential sources of sand.

- RFI-EIS-3(b) provides further details with regard to the requirement for a foreshore lease / licence / consent and legal interest of the first party.
- RFI-EIS-5(b) provides more detail with regards to traffic impacts from the project and includes an allowance for the survey period recorded in the EIS being outside of the main holiday period. Survey data adjusted by a factor of between 1.42 and 1.63. Revised PICADY analysis produced. RFI-EIS-5(d) provides clarification regarding construction traffic volumes which peak HGV volumes of 6-7 deliveries per hour anticipated in March.
- RFI-EIS-5c provides an assessment of permitted windfarm developments in the general vicinity of the site, the stage at which these projects are at (as at October, 2017), and an assessment of the potential cumulative impact of these developments with the proposed partial protection project in terms of the impact on traffic and local roads. These impacts are concluded to be negligible.
- The revised Habitats Directive Appropriate Assessment Report concludes at the screening stage that the proposed development would have likely significant effects on two European sites, the Carrowmore Dunes SAC and the Mid Clare Coast SPA. The conclusion of a Stage 2 appropriate assessment is that the proposed development would not have an adverse effect on the integrity of any European sites having regard to their conservation objectives.
- A Draft High Level CEMP is submitted as Appendix D.
- A *Preliminary Beach Monitoring and Management Plan* is submitted as Appendix E which sets out management measures to be followed over the 50 year design life of the structures.
- Appendix G addresses the potential cumulative effects arising in the context of the requirements of Art.5(1) of the 2014 EIA Directive.

3.2. Decision

The Planning Authority issued a Notification of Decision to Grant Permission subject to 9 no. conditions.

- Condition No.2 requires that the mitigation measures set out in the EIS and NIS submitted with the application and as amended by the further plans and particulars received by the Planning Authority on 24th October, 2017.
- Condition No.3(a) requires that prior to the commencement of development the developer shall submit a finalised Beach Monitoring and Management Plan for its written agreement and approval.
- Condition No.3(b) requires the inclusion in the Plan of a protocol for the assessment of the effectiveness of the proposed works.
- Condition No.3(c) requires that a terrestrial ecologist would be retained to oversee the construction works and that this would be agreed with the Planning Authority.
- Condition No.3(d) requires that the coastal erosion structures shall be maintained in perpetuity by the owners and operators of the resort including the reinstatement of sand and the submission of annual beach / dune topographic surveys.
- Condition No.3(e) requires that a protocol for annual reports on the impact of the structures on the beach and dune system shall be submitted to and agreed with the planning authority.
- Condition No.3(f) requires that the Beach Management Plan shall be the subject of ongoing independent audit.
- Condition No.4 relates to the construction and environmental management plan and requires that requires the finalised CEMP and finalised environmental management plans to be submitted. Condition 4 also requires daily checks of compliance with the CEMP and pre and post construction baseline topographic surveys.
- Condition No.5 states that '*public access and rights of way to the beach shall not be obstructed in any way by the proposed development*'.

- Condition No.6 relates to archaeology and requires the retention of a suitably qualified archaeologist to oversee works, the licencing of all monitoring works and the involvement of the National Monuments Service in the event that material is found.
- Condition No.7 specifies that the haul route for access of construction traffic to and from the site shall be via the 'northern route' as indicated on Figure 34 as included in the revised EIS subject to an amendment to avoid construction traffic going through Miltown Malbay. Pre and post construction road condition surveys are required.
- Conditions Nos. 8 and 9 require the payment of financial contributions under s.48 and a special development contribution of €240,000 as a contribution towards roads and footpaths.

3.3. Planning Authority Reports

3.3.1. Planning Reports

The initial report of the planning officer notes the content of the third party submissions and the internal and external reports on file including that by JBA Consulting on behalf of the council. The report does not contain a detailed assessment of the issues, however a recommendation to seek further information is made that largely reflects the issues raised in the JBA Consulting report. Under the heading of Natura Impact Statement it is stated that '*the planning authority does not consider that the Natura Impact Statement (NIS) as submitted contains complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works on the adjoining European sites. In particular concerns are expressed regarding the impact of the proposal on the conservation objectives of the Carrowmore Dunes SAC'*. The submission of a revised NIS is requested.

A ***second Planning Officer report*** subsequent to the submission of a response to further information addresses the issue of the principle of development which, given the planning history of the site and the established use, is considered acceptable in principle. Noted that the submitted ***EIS*** predates the coming into effect of the 2014 directive. Additional detail regarding alternatives noted as is the fact that the chosen option is the only one which provides protection for the golf course, and option 7B carried forward as the most efficient option which minimises land take, impact on the SAC and is sustainable into the future. Noted that the applicant '*respectfully disagrees'* with the NPWS with regard to the conservation objectives supporting documentation that erosion should not be viewed negatively. Concluded that the submitted EIS *'…provides sufficient descriptions of the proposed project and mitigation measures to avoid significant adverse effects.*' Also stated that *'…the EIS as submitted together with the response to further information request, complies with the requirements of the regulations'*. With regard to ***Appropriate Assessment***, the screening out by the applicant of all sites apart from the Carrowmore Dunes SAC and the Mid Clare Coast SPA is noted and agreed with. The assessment of impact on the SAC notes, inter alia, the following:

- That there will not be any adverse impact on the ***reefs*** as they are outside of the footprint of the development and there will be only minor changes to the sediment budget.
- Regarding ***Embryonic Shifting Dunes***, while it is noted that the target and attribute includes the maintenance of the natural circulation of sediment and organic matter without any physical obstructions', it is noted that the NIS states that the Doonbeg site is not very conducive to the formation of embryonic dunes and that sediment process will continue over the unprotected areas as per the 'do nothing' scenario and that Aeolian processes will continue.
- Regarding ***Marram Dunes***, notes the reference in the NIS to 2011 EU Guidance which states that natural erosion can be considered as a negative impact on a European site. Also noted that the NIS states that the impact of the engineered solution will be limited to the areas adjoining the tie ins, will not impact on overall beach dynamics or the conservation interests of the SAC.

- Regarding the ***Narrow Mouthed Whorl Snail (Vertigo Angustior),*** the planning officer notes the NIS where it states that large areas of the snail's habitat have been destroyed in recent years due to erosion and that the main concentrations are at the dune front. On this basis, the development is stated to have a potential significant positive impact on this species.
- Regarding the ***Mid Clare Coast SPA*** stated that on the basis of the survey information presented in the NIS, the White Strand area represents a negligible proportion of the known SPA population for each of the species of conservation interest.

I note that under the heading of Appropriate Assessment, the conclusion of the assessment (contained at pg.23 of the report) uses wording that is relevant to a screening assessment rather than a Stage 2 Appropriate Assessment.

3.3.2. Other Internal Clare County Council Technical Reports

Architectural Conservation Officer / Archaeologist – Report notes the references in the EIS to a submerged pre historic woodland that may be impacted by the development. Recommended that further test trenches / investigations be required either by way of further information or condition and that site works be overseen by an archaeologist.

Area / District Engineer – Report dated subsequent to the RFI notes the reduced volume of material and a revised estimate of 4,500 loads of material as per the FI. Stated that the likelihood of damage to the R460 and L-2106 is high, and that the northern haul route is acceptable subject to Miltown Malbay being by passed. The recommended financial contribution towards the reinstatement / repair of the L-2106 is €60,000, to the R460 is €180,000 and to the N67 and N85 is €80,000. The R476 estimate is put at €20,000 giving an overall total of €400,000.

Road Design – Initial report raises a number of issues relating to safety of persons accessing the beach during construction and the proposed haul routes. Option of direct delivery to the beach is identified as preferable to the use of a compound. Estimation of delivery traffic numbers questioned (likely to be an underestimate given

the nature of material transported – rock armour). Further information on the issues raised is recommended. Second report subsequent to the response to FI recommends conditions. Stated that direct deliveries to the beach preferred and special contribution identified. An alternative northern site access route that does not pass through Miltown Malbay should be examined.

Environmental Assessment Officer – Report on file dated 21st February, 2017 states that the period of beach survey data available and on which the analysis is based is inadequate and not suitable for interpreting long term trends. Also states that the sediment budget is based on data from just 2 years and cross and longshore modelling and transport based on limited data. Concerns raised regarding conclusions on the bay being a physiographic unit, potential for outflanking of defences and impacts at the edges of defences. Noted that the options appraisal undertaken as part of the previous application indicate that softer options including beach replenishment options are shown to be highly feasible. Stated that no works should take place until such time as further monitoring is undertaken to inform the assessments.

A second report from the Environmental Assessment Officer (dated 18th December, 2017) subsequent to the receipt of further information retains a number of concerns with regard to alternatives presented, notably the 'do nothing' scenario which it is considered would not lead to the loss of the SAC with the result that the coastal protection works are not required for the protection of the dune system as contended by the applicant. Again noted that the conservation objectives for the SAC make reference to maintaining the natural circulation of sediments without any physical obstructions. Issues relating to the outflanking of defences and the impact on short term coastal process are also raised / restated. Concluded that it remains difficult for the competent authority to conclude a finding of no adverse effects on the integrity of the European sites given the level of monitoring information available, the complexity of the beach / dune system and the uncertainity relating to climate change. Also concluded that the purpose of the development is to fix the dune system and prevent future erosion and therefore wave action dynamics and that this approach is contrary to the detailed attributes that define the site specific conservation objectives for the site. No scientifically robust demonstration of the schemes ability to conserve the

natural dynamic processes was presented and this is needed to ensure compliance with the Habitats Directive in advance of a grant of permission.

3.4. External Consultant Reports

As part of the assessment process, the planning authority commissioned JBA Consulting to undertake a review of coastal processes as contained in the submitted EIS and NIS. Following the request for further information and the response of the applicant, JBA also undertook a review of the submitted information and made a recommendation and recommended conditions. The following is a summary of the main issues and conclusions raised in these reports:

JBA Consulting Report 1, dated January, 2017

- Section 2.1 notes the available beach survey data and specifically the limited time period covered and the fact that only the most recent surveys cover the entirety of the beach frontage. Reference made to the fact that this is a key limitation in the analysis and contrary to Scottish Natural Heritage guidance. Stated that 'as such it could be recommended that works are not undertaken at Doonbeg Bay until further monitoring has been undertaken'.
- That the sediment budget has been undertaken over only 2 years (2014-2016) and is significantly limited by the data available.
- Lack of information to support the statement that Doughmore Bay is a physiographic (closed) unit with little sediment exchange at its boundaries. Noted that this assumption runs through the assessment.
- Not clear whether the material indicated as being from the receding beach or the dunes is stored below the low water mark or lost from the system completely. Stated that the sediment budget has been calculated using a standard method but given the short time period for inputs care with its use is required.
- Noted that the modelling of cross shore processes has been verified using only one storm event (from 2014) as there is no other data available. This is not ideal.

- That the impact of sequential storms could have been assessed in more detail especially given the potential for undermining of the defence from beach lowering.
- That while the statements in the assessment of the beach being swash aligned (i.e. with no tendency for long term movement of sediment along the coast) and a closed system, the beach and dune system is still dynamic and with the result that there will still be some along shore and swash movement occurring within the longer term trends identified in the assessment. It may not therefore be possible to definitively state that there will be no impact on the beach adjacent to the partial defences.
- That the Beachplan model used for modelling longshore transport is appropriate for this location if the underlying assumptions and limitations are recognised.
- That the results indicate that the beach will lower in front of the defences and in the event that the project progresses a long term monitoring and maintenance plan should be put in place to ensure that impacts on the SAC are managed.
- Stated (pg.10) that allowing the centre of the bay to recede will create an unnatural profile with uncertainity as to whether this will be a sustainable profile for the future. Notwithstanding the separation of the defence structures to the SAC the structures will still impact on the beach dune system as a whole and could therefore have some indirect impact on the SAC. There is also the potential for erosion adjacent to the defences to result in them being left seaward of the general shore line and exposed to larger waves, leading to a requirement for the ongoing extension and upgrading of defences and additional works that could impact on the SAC.
- That while the use of the SWAN model for wave modelling is appropriate and suitable bathymetry data and wave buoy data is available, the use of a 3.3mOD water level and 0.25 metre climate factor / sea level rise is not adequately justified.
- That the overtopping rates used in the assessment are valid as is the 1 in 100 year wave and water level data for a 50 year design horizon. Stated that a

physical model test should be used to verify the design as with the estimated 1 metre / year erosion, the revetment would likely become exposed at its edges in approximately 20 years. The impact of successive storms on the design should also be tested.

EIS – Chapter 5

- While the EIS recognises that there is short term longshore transport on the beach, albeit that there is no net longshore transport out of the system, this does not appear to be considered when assessing the potential impacts of the scheme, including on the SAC.
- That there will be some reduction in the natural process of beach / dune material being stored offshore and returned to the beaches / dunes arising from the construction of the proposed defences.
- That while the proposed development would not have a direct impact on the SAC there is the potential for some indirect impacts.
- That the conclusion of minimal construction phase impacts on coastal processes is accepted.
- That the dynamics of the whole beach dune system could be impacted by the altering of sediment dynamics from the development. This is particularly the case with erosion in the undefended sections leading to exposure of the defended areas and is an important consideration when reviewing the potential impact on the SAC.
- Noted that climate change impacts not taken into account in the sediment modelling undertaken and that sea level rise has the potential to increase wave energy and hence erosion and beach lowering.
- While the change in erosion rates on the unprotected areas may be minor the contrast between protected and unprotected areas / shorelines will lead to issues of increased erosion at the ends of the defences and outflanking. As recognised by SNH (2010) this may necessitate ongoing extension and upgrading of the defences.
- There is inadequate information presented to indicate that there will adequate sand supply for dune build up behind the defences and that beach / dune

sand exchange will continue to occur. Further information is required to support the conclusion that the dunes only provide a small percentage of the sediment budget.

- Noted that there is no mention of future monitoring or maintenance of the defences in the EIS. A detailed beach monitoring plan is required.
- Clarification required as to what constitutes the 'slight' predicted impact on geomorphology and increased erosion in the undefended sections of the site.

Appropriate Assessment

- That the conclusion of the screening assessment that excludes the Carrowmore Point to Spanish Point SAC and the Kilkee Reefs SAC on the basis that the geomorphology assessment indicates that Doughmore Bay is a closed system is not adequately demonstrated in the AA Screening. As highlighted previously, there is still the potential for short term movement of materials within the beach dune system. The requirement to proceed to Stage 2 AA is triggered by the possibility of significant effects.
- That Chapter 16 of the EIS discusses cumulative impacts, however there is no clear identification of how these impacts were assessed or what plans / projects were considered.
- The NIS does not examine cumulative impacts and this is required for the competent authority to undertake AA.
- That there is no consideration in the NIS of the potential increased recreational pressures on the area arising from improved accessibility.
- No details provided regarding the authors of the NIS and the context and record of consultations with the NPWS not detailed.
- That the NIS indicates that the development (preferred option) is required and that it will be beneficial for nature conservation as it will halt erosion and stabilise the dunes. However, the conservation objectives of the Carrowmore Dunes SAC clearly indicate that coastal erosion and deposition are natural processes on soft coasts and that the 'do nothing' scenario is consistent with the conservation objectives of the SAC. Stated that *'It is not clear how the*

preferred option was assessed as feasible when it is contrary to the conservation objectives of the SAC'.

- That statements in the EIS such as at section 1.5.1, that the 'do nothing' scenario would have a profound negative and permanent effect on the conservation status of the SAC are contrary to the published conservation objectives for the site. Other options / alternatives are set out at Appendix 1A of the EIS however there is no clear supporting information as to how these were examined in relation to the environment and ecology.
- In terms of survey data, the NIS is not a stand alone document with clear references to other supporting data. It does not contain 'complete precise and definitive findings and there are a number of gaps (lacunae) in the information provided'. These gaps are identified as
    - No identification of survey constraints (if any), (e.g. absence of bird surveys over the winter months).
    - Limited information provided regarding bird surveys (dates / times etc.) and the number of surveys undertaken is not sufficient to draw sound conclusions.
    - That the conservation objectives for vertigo angustior are omitted from those identified in Tables 2.2 and 2.3 of the NIS and section 2.6 that describes the qualifying habitats and species.
- In conclusion, the report notes that the NIS only assesses the preferred option, however there is no clear indication as to how this option was chosen over others. While the applicant states that the chosen option provides positive impacts for the SAC, it is clearly contrary to the conservation objectives for the site. Further information is identified, however it is stressed that this is based on the applicant demonstrating sufficiently that the project is not contrary to the conservation objectives of all relevant Natura 2000 sites. By virtue of the presence of the physical structure it is unclear how the applicant can justify the project without addressing this issue. Notwithstanding the above, further information is recommended under the following broad headings:

- Details of personnel / ecologists,
- Identification of zone of influence for sediment,
- Further information on assessment of options and particularly soft options including sand beach nourishment options.
- Impact on short term sediment movements arising (less than 1 year) and the potential impacts of same.
- Impacts of outflanking of defences, particularly on the adjacent SAC.
- Proposals for monitoring and maintenance / management plan.
- Content of the NIS and ensuring that it is a stand alone document.
- Clear assessment in the context of the conservation objectives of the relevant sites.
- Construction and environmental management plan.
- In combination effects.

JBA Consulting Report 2 on Further Information Response, dated December, 2017.

It is noted that in addition to the final JBA Consulting report forwarded to the Board by the Planning Authority, the submitted information also includes a draft version of the report dated 30th November, 2017. This draft report is notated with a number of comments by the authors and the contents vary from those contained in the final report.

The following is a summary of the main conclusions of the JBA Final Report:

- Considered that the options appraisal did not provide a clear basis as to the scores attributed. In particular, the 3B and 4B options incorporating groynes would not appear to have the potential impact on the SAC cited to eliminate these options from further consideration if the longshore transport at the site is negligible as stated by the applicants. Such options would have maintenance implications however this could have been the subject of more examination. This option would have advantages in terms of the maintenance of levels

across the whole frontage and facilitating the continuation of beach and sand dune transfer.

- That the wave data has been used in an appropriate manner however the extent of data available is limited.
- That the level of information is such that full validation of the model outputs is not possible and that those using the model results must consider this when relying on the model results.
- That post construction monitoring should be undertaken to monitor the extent of the end effects and what further mitigation if any is required.
- That the zone of influence of the coastal protection works must be fully understood with the best scientific knowledge for the competent authority to agree to it. Even with the use of expert judgement this is difficult to achieve with the limited monitoring data available.
- That a clear answer as to where the material lost from the dunes ends up has not been provided in the RFI and it is not conclusive that Doughmore Bay is a physiographic unit or closed cell for the movement of material. The information submitted on this issue would indicate that the processes within the bay are not able to be fully understood at this time.
- That the requirement for replacement of sand to cover the revetment as per the Beach Management Plan will likely increase over time with climate change.
- That accretion identified at profiles 11 and 12 over the 2014-2016 period are due to the placement of c.2,100 cubic metres of sand and soil in the vicinity of the 18th tee to address erosion.
- That the model results indicate erosion occurring at the ends of the defended sections and that this erosion is likely to continue and to cut back risking outflanking. No modelling beyond the 50 year design horizon has been undertaken and it is likely that these end effects will need to be managed in the future. Noted that the *Scottish Natural Heritage Guidance on Dune Management (2010)* states that where a revetment is constructed, erosion may well continue along adjacent frontages leaving the revetment seaward of

the general shoreline and exposed to larger waves. This would lead to the need to extend and upgrade the defences which in Doughmore Bay could lead to further additional works that would impact on the SAC.

- That there are some issues with the way in which sea level rise and increased storm incidents due to climate change are addressed in the modelling.
- That given the predicted rate of sand / beach erosion, that further works are likely to be required from year 50 onwards to adapt the structure to the continuing lowering of the beach level as well as adapting to the likely outflanking of the defences as the middle section of the beach continues to erode.
- That the effect of beach lowering and sea level rise will result in a reduction in the amount of sand available for wind transport. Over time there will be potentially significant implications for beach nourishing and sustainability in terms of cost and feasibility of the nourishing works.
- Concluded that '*the data underpinning the assessments is limited (2014-2016 and 2003-2008) and further monitoring should be conducted before determining whether there will be integrity level impacts on the SAC*'.

I note that the documents submitted include a draft version of the final JBA Consulting report dated 30th November, 2017. The contents of this report are substantially the same as the final version, however in the conclusions section the draft report makes specific reference to the fact that there remains some uncertainity in the assessment and how that may impact on the integrity of the SAC and that ECJ case C-239/04 (Portugal V EC) states that where *'any reasonable scientific doubt as to the absence of adverse effects on the integrity of the site must be removed before the project is authorised'*.

3.5. Prescribed Bodies

Department of Arts Heritage Regional Rural and Gaeltacht Affairs (Development Applications Unit) – Initial report concurs with the conclusions of the EIS regarding ***archaeology*** and recommends conditions regarding monitoring to be attached in the event of a grant of permission. These include the agreement of a buffer zone to be placed around the identified submerged timbers as identified in the EIS.

Regarding ***nature conservation*** the initial submission received from the Department notes a number of aspects of the project that require agreement with the council, are unclear or are unknown. These include construction details, and details of the CEMP. Stated that the need for the project is not fully justified and that the alternatives are not adequately detailed and a robust case for the project needs to be made. Stated that the departments position is that coastal erosion and deposition are natural processes on soft coasts and that *'the do nothing scenario i.e. allowing natural processes to continue, is reflected in and is consistent with the conservation objectives of the SAC'.* The indication in the EIS of uniform coastal retreat is considered unlikely. A number of comments on the NIS which is considered to be limited in its analysis are presented. These include limited project description, lack of justification for the proposed project option chosen, limited project detail and mitigations which impacts on the ability to undertake appropriate assessment. A CEMP is required as are full details of mitigation measures rather than reliance on monitoring being agreed post construction. Inadequate identification of effects on SAC from the proposed development noted as are direct impacts on the SAC. In combination effects inadequately assessed and inadequate assessment of how the development would impact on the ability of the Annex I habitats to meet their target. Inadequate assessment of risk of increased scouring, erosion and beach draw down in the NIS and lack of scientific data to support the contention that the halting of erosion through the proposed development is beneficial in ecological terms. Stated that the NIS does not adequately address the potential hydrological effects arising from the construction of the revetments and piling. Concludes that on the basis of the limited scientific evidence presented it cannot be excluded that the proposed development would have an unfavourable effect on the conservation condition of qualifying interests of the SAC due to erosion and deposition impacts.

A second report submitted by the Development Applications Unit of the Department post the submission of further information, raises a number of issues that can be summarised as follows:

Archaeology

- That the use of an archaeologist should be someone who is licenced, has experience of underwater archaeology and that work shall be in accordance with a method statement which shall be submitted with the licence application.
- Conditions specified in the previous submission of the Department shall be complied with including the placing of an agreed buffer zone around the timbers identified in the Underwater Archaeological Impact Assessment (UAIA).

Nature Conservation

- That the key concern continues to be the implications of the proposed development for the conservation objectives and integrity of the Carrowmore Dunes SAC and for the three Annex I dune habitats that are qualifying interests of the site in particular.
- Of primary importance in the assessment of the impact on the dune qualifying interests is the attribute '*physical structure, functionality and sediment supply*' which has the measure '*presence / absence of physical barriers* ' and the target '*maintain the natural circulation of sediment and organic matter without any physical obstruction'*. The case made in the NIS relating to this attribute is noted, however it is not considered to be supported by scientific data, analysis and justification. Stated that *'in the absence of clear and precise findings in relation to this attribute, and the long term functionality and sediment supply of the dunes, including as a result of changes to patterns and rates of erosion, uncertainity remains regarding the implications for these conservation objectives and for the integrity of the site'*.
- That the access / haul route to the site passes through Annex I habitat (shifting dunes along the shore line with Ammophila Arenaria). There will therefore be a direct short to medium term effect which, while the NIS states

will be fully reversible, whether this habitat will be fully rehabilitated as dune habitat is unclear meaning that the long term effects on the SAC are uncertain.

- That the approach in the NIS is to make the case that the proposed works are required for the conservation of the SAC and stating that the 'do minimum' / 'do nothing' scenarios will frustrate the achievement of the conservation objectives. It is reiterated by the department (point made in the original submission) that the dune habitats occur in a complex mosaic in the application area and that maintaining the natural dynamism of the system is a vital part of achieving favourable conservation status. Restated that dunes are naturally dynamic systems and erosion is a natural feature and part of a process of equilibrium in the system.
- Clarified that it is the position of the Department that coastal erosion and deposition are natural processes on 'soft' coasts and that the 'do nothing' scenario is consistent with the conservation objectives for the SAC.
- Number of issues raised regarding the consideration of alternatives. These include:
    - Appears that statement in 2.10 of the NIS that footprint of all alternative options lie outside of the boundaries of the SAC is an error,
    - That the statement in the NIS (Tables 2.24 – 2.25) that all alternative options are such that they would have '*no adverse effect on the integrity of the site'* is questioned.
    - That there is no indication that an alternative access point / arrangement that did not have a direct impact on the SAC was considered.
- That there remain a number of aspects of the development that are not clear and which limit the full assessment. These include whether the final height of the sheet piling will be uniform (at 8.0m. OD) or vary with the existing dune profiles.
- Noted that the mitigation measures have been altered in the FI response leading to some uncertainity and implications for final assessment of residual

effects. In particular, the reduced role / limited function of the project ecologist and the lack of specific mitigation relating to dunes.

Department of Agriculture Food and the Marine – response stating that the Department has no observations to make on the application.

An Taisce – The following is a summary of the main issues raised in the submission dated 30th November, 2017 which was made following the submission of further information:

- That the applicant has misinterpreted the dune processes at the site and the justification for the proposed development remains flawed. Specifically the applicant's argument is based on an erroneous conflagration of the erosion occurring on the dune frontage as a result of human intervention with the natural mobility of the dunes.
- That it is the impact of the artificial development on the dunes that causes the loss of sand dune habitat as the dunes are fixed and prevented from adapting to rising sea levels and erosion.
- Significant academic sources are quoted relating to the dune mobility, 'coastal squeeze' and the impact of human interventions including coastal protection works.
- In the case of Doonbeg, the inappropriate design and management of the golf course is preventing natural coastal realignment and unless the design of the course is changed, erosion of the frontal edge and coastal squeeze will result in the loss of sand dune habitat.
- That the RFI the applicant incorrectly attributes the loss of dune habitat to natural dune processes when it is in fact caused by the location and management of the golf course, and this incorrect assumption is used as evidence that the protection works will be beneficial.
- That the statements of the applicant regarding the 'do nothing' scenario are incorrect.

- That the conservation objectives of the SAC, and the achievement of favourable conservation status, rely on dune mobility and the recognition of the fact that the dunes are a natural system.
- That the assumption of the applicant that the development will not impact on the SAC as the sections of defences are outside of the SAC boundary has not been justified in the information submitted.
- The case made by the applicant includes that any natural change in the site can be considered a deterioration if it results in a loss of habitat. This is fundamentally incorrect in the case of the SAC as the dune mobility and natural erosion involved, is a critical part of the natural functioning and therefore the conservation objectives of the SAC.
- That the statements regarding the construction phase direct impacts on the SAC are not supported by scientific information.
- That the response of the applicant fails to address the fact that the proposed coastal protection works will alter and impede the dynamic processes of the existing dune system which are critical for the maintenance of the dune wetlands. The conclusion of the RFI regarding the development having a significant positive impact on the Vertigo Angustior populations is not substantiated with scientific evidence.
- That the submitted Draft CEMP is deficient as it fails to provide surveys and assessment s that must be carried out prior to the consenting of the project. This is contrary to ECJ case C183/05.
- That the submitted information regarding assessment of alternative options and their impacts on European sites is deficient and that the submitted comparative table is inadequate and a full appropriate assessment of the alternatives should have been undertaken. Without this it cannot be concluded that the proposed solution is optimal.
- Specifically noted that the option of relocating the golf course holes which the project aims to protect has not been considered. Such a solution would be optimal, likely the most cost effective, would enable the dunes to provide

natural protection rather than the 50 year lifespan of the proposed development and would be more sustainable in the long term.

- That the source of the imported sand for the defences has not been clarified. The impact of sand importation on the source site and the Doonbeg site must be assessed.
- That the impact of the development on beach lowering and erosion on either side of the structures has not been clarified.
- In conclusion, stated that the response to FI has erroneously interpreted the relationship between the development and the normal dune dynamics and therefore not adequately scientifically justified the reasoning behind the protection works and has failed to provide the necessary information to conclude that the proposal would not have adverse impacts on the receiving environment.

3.6. Third Party Observations

A total of 44 no. parties made observations to the planning authority on the application as initially submitted. Following the submission of the response to further information, one additional party made an observation with 9 no. of the original 44 no. parties also commenting on the further information response. The following is a summary of the main issues raised in these submissions which comprise submissions both in favour and against the proposed development:

- That the existing tourism and recreational facilities have positive economic benefits for the area and the development is required to protect these facilities.
- Need to improve access to and parking facilities at the beach.
- Concerns regarding the legal interest in the area where the works are proposed and the implications of the development in terms of future maintenance requirements / liabilities.
- That the proposal is a first step in the development of a full coastal defence at this location and the incremental protection of the full bay.

- That the submitted documentation is not impartial.
- Negative impact on the existing right of way across the golf course.
- Negative visual impact if sheet piling was exposed.
- That the approach is not appropriate for a dynamic dune system and would have a negative impact on the SAC.
- That the proposed approach would result in the loss of the dynamic dune system and the attempt to maintain the existing position will not work long term. Undefended areas of the beach will be eroded at a faster rate.
- That the re design of the golf course would be a more appropriate design solution. This was discussed at the time of the oral hearing into the original proposal in 1999 where the developers stated that phased retreat of the golf course was an option and that adequate land to accommodate this option was available. Stated that it was accepted at this time that coastal protection measures were not an appropriate solution.
- Negative impacts arising from construction traffic in terms of noise, air pollution and safety.
- That consent for the development can only be given under Art. 6(3) of the directive where the competent authority is certain that there will be no lasting impacts on the integrity of the site. This is not the case with the proposed development. Under Art. 6(4) permission could only be granted for reasons of public importance and not the protection of a private asset as is the case with the proposed development.
- That the proposed defences will prevent the natural dune dynamics which are specifically referred to as a target in the conservation objectives for the Carrowmore Dunes SAC site. That the NIS uses the fossilisation of the shoreline as a justification that it would result in more stable areas of snail habitat and fixed dune, however both these habitats rely on the free / dynamic movement of sand.
- That there is no clear link between the proposed scheme and the financial viability of the golf course.

4.0 **Planning History**

There is a significant planning history to the development of the lands at Doonbeg and specifically the provision of coastal defence works at the site. The following is a summary of the most significant planning applications relating to the site and associated lands:

Clare County Council Ref. 18/930 - Permission granted by the Planning Authority for development on a site of c.9.6 ha. at the Trump International Golf Links development at Doonbeg comprising the construction of a Ballroom/Function Room building; Leisure Facility building including restaurant; 53 no dwellings to be used for short term tourist accommodation; minor alterations to Doughmore house; a gatehouse; additional car parking and cycle parking. The development will also provide for the dismantling and removal of the existing Marquee structure, all associated ground works, ancillary works and enabling works and connection to existing services and facilities.

Clare County Council Ref. 16/371 – Application to the Planning Authority for development comprising coastal zone management works at and adjacent to Carrowmore Dunes. The works included the provision of a new berm structure west of the existing dunes and the use of armourstone with cobbles. The extent of the defence is stated to extend c.2.5km from the from the northern end of the beach and at the southern end of the beach, a sheet pile backstop is proposed to be used to protect the 18th fairway and green of the golf course and extending over a length of c.350 metres. Following the issuing of a request for further information, this application was withdrawn prior to the issuing of a Notification of decision by the Planning Authority.

Clare County Council Ref 14/240 – Application for permission for development comprising coastal erosion management works at Carrowmore Dunes, White Strand, Doughmore Bay and Trump International Golf Links and Hotel, Doonbeg, Co. Clare consisting of the re-profiling of sand dune slopes and ancillary marram planting, sand trap fencing and golf course repairs at three locations within the Carrowmore Sand Dune System and having a total length of c.380 metres. Following the issuing of a request for further information, this application was withdrawn prior to the issuing of a Notification of decision by the Planning Authority.

Clare County Council Ref. 09/1097; ABP Ref. PL03.238097 – Permission granted by the Planning Authority and decision upheld by the Board for the for development comprising coastal erosion management works comprising the re-profiling of sand dune slopes, installation of concrete 'sea bee' units buried within the re-profiled dune sections, marram planting, sand trap fencing and ancillary golf course alterations all at three locations within the Carrowmore Sand Dune System and Doonbeg Golf Course as follows: at Area A in front of the 13th green and 6th tees over a length of dune of approximately 85 metres, at Area B in front of the 14th green and 5th green over a length of dune of approximately 93m, and at Works Area C in front of the 18th tees along a length of dune of approximately 161m.

Clare County Council Ref. 03/2375; ABP Ref. PL03.211963 – Permission granted by the Planning Authority and refused on appeal to the board for development comprising costal protection works including the augmentation of the existing storm beach by the placement of cobble and rock along the upper beach and in front of the existing sand dune face at the three location at three locations along White Strand at the northern end along a length of approximately 265 metres of coastline, at the central area along a length of approx. 660 metres of coastline and at the southern area of White Strand along a length of approx. 645 metres of coastline. The reason for refusal cited relates to the Board not being satisfied that the development which involves significant construction and maintenance works on lands within the SAC would not result in the accelerated erosion of the protected Dune habitat with the result that it was not satisfied that the proposed development would not adversely affect the integrity of the SAC.

The Board Direction in this case notes the comments of the Inspector with regard to a lack of clarity regarding the effects on the unprotected elements of the dune system, the need for additional analysis of these impacts and a broader examination of alternatives. The Board Direction also states that it considered that the future examination of alternatives should include the issues of a redesign of the golf course layout or a more comprehensive approach to the overall protection of White Strand.

Clare County Council Ref. P98/655; ABP Ref. PL03.109516: Permission granted by the Planning Authority and decision upheld on appeal for the construction of an 18 hole golf course and practice range, a 51 bedroom hotel in a two storey block, leisure centre with conference and catering facility, 10 no. four bedroom individual

hotel suites, 80 no. holiday homes, golf maintenance building, 368 no. car parking spaces, golf club house and shop, 4 no. lakes for surface water retention, vehicular access off the N67 and all ancillary works on a site of c.377 acres (152.5 ha.) on a site at Cloonmore, Carrowmore North, Carrowmore, Doughmore Bay, Doonbeg, Co. Clare. The most notable conditions attached to the grant of permission issued by the Board are Condition No.5 which requires the submission of a hydrological profile of the site, mitigation measures and a monitoring regime and Condition No.6 which requires the submission of a management plan for the site to include measures to ensure protection of the entire area of c.SAC, habitat of the Angustior Vertigo as well as management measures during construction and golf events.

5.0 Policy and Context

5.1. Development Plan

The relevant development plan is the *Clare County Development Plan, 2017-2023.* It should be noted that this is also the relevant development plan in place at the time of the issuing of a decision by Clare County Council. The previous *Clare County Development Plan, 2011-2017* is referenced in the submitted EIS as this was the plan in effect at the date of lodgement of the application with the Planning Authority.

The site is located outside of any identified settlement and is not the subject of zoning for any specific purpose. The following provisions of the 2017-2023 plan are noted and considered of relevance to the assessment:

Chapter 6 relates to ***economic development*** and includes among the strategic objectives the aim of maximising the economic assets of the county including the county's rural and tourist attractions. It is also an aim to maintain and promote the broad employment base of the county.

Objective CDP6.26 states that it is an objective to harness the economic potential of tourism throughout the county.

Tourism policy objective are set out at ***Chapter 9*** of the plan and include strategic aim '*to develop and enhance new and existing tourism products, attractions and tourism infrastructure'*. Other relevant strategic aims include the maximisation of

tourism as a pillar of economic growth thereby contributing to balanced economic growth of the county and to capitalise on the county's identified nodes along the Wild Atlantic Way.

Section 9.3.3 states that '*Clare county council aims to promote the development of the tourism in a manner that is compatible with the conservation and enhancement of the environment.*

Objective CDP 9.6 relate specifically to the Wild Atlantic Way and includes an objective 'to ensure the improvement and expansion of tourist services and amenities at the identified Wild Atlantic Way Signature and Discovery points in County Clare…'

Objective CDP 9.12 contains a number of objectives including '*to support proposals for tourism development in coastal areas where it can be demonstrated that there will be no negative impacts on the amenities of the area, the integrity of the natural environment or the economic value of the county's coastline and beaches.'*

Objective CDP 9.17 relates to sustainable tourism and stresses the importance of balancing the growth of tourism with the long term protection of the natural environment.

Section 9.4.5 specifically relates to tourism in west Clare and states inter alia, that 'significant potential exists to further promote key settlements such as Doonbeg, Kilrush and Kilkee from a tourism perspective, building on the existing amenities and events in these areas.

CDP 9.25 (B) states that it is an objective of the plan, '*To promote and market the area, building on the cultural amenities and entertainment facilities of Kilrush, Kilkee, and Doonbeg'*.

Chapter 12 relates to the ***marine and coastal areas*** and Objective 12.3.12 relating to coastal erosion and flooding states, inter alia, that it is an objective of the council '*to ensure full compliance with the requirements of the habitats directive with regard to developments in the coastal zone'*.

Section 12.3.14 of the plan relates to ***Coastal Squeeze*** and Objective CDP 12.13 states that it is an objective '*to ensure that coastal squeeze is taken into consideration in formulating and assessing coastal development processes'*.

12.3.15 relates to ***beaches and dunes*** and notes their importance in the attracting visitors and also as a base for a wide range of recreational activities. Objective CDP12.14 states that it is an objective of the council ‘’to prohibit development on or close to any beach ‘*where that development would significantly interfere with the recreational use or the area or would cause degradation or damage of the beaches or sand dune system’, (CDP12.14A).* It also states that it is an objective to protect dunes that include Annex I or II habitats and species and ‘*prohibit development that would damage the integrity (ecological and visual) these areas or prevent full compliance with the requirements of the Habitats and Birds Directive.’*

Chapter 13 of the Plan relates to ***landscape and visual***. The site is located within a ‘*heritage landscape’* as designated in the development plan. Within such areas developments must demonstrate how they have been selected to avoid visually prominent locations and the minimisation of visibility from scenic routes and trails. (Objective CDP 13.5).

In the landscape character assessment set out at Chapter 13 of the Plan the site of the proposed development and the environs are designated as ‘*Coastal Plains and Dunes’* and within the designation of seascape character areas, the site is in area 6 (Mutton Island and White Strand) which as per ***Objective CDP 13.6*** requires that all developments demonstrate that every effort has been made to reduce visual impact and that appropriate standards of location, siting, design, finishing and landscaping are achieved.

Chapter 14 relates to the ***environment*** and 14.3.2 relates specifically to European sites. ***Objective CDP14.2*** states that it is an objective to afford the highest level of protection to European sites. ***Objective CDP14.3*** states that it is an objective to implement Article 6(3) and where necessary Article 6(4) of the Habitats Directive and that all appropriate assessments are in compliance with the EC (Birds and Natural Habitats) Regulations, 2011. ***Objective CDP14.4*** relates to ***Natural Heritage Areas*** and states that it is an objective *‘to actively promote the conservation and protection of areas designated as an NHA (including proposed sites) and to only consider proposals for development within or affecting an NHA where it can be clearly demonstrated that the proposed development will not have a significant adverse effect on the NHA or pNHA.’*

5.2. Natural Heritage Designations

The site is adjoining and / or in close proximity to the following European sites:

Carrowmore Dunes SAC (Site Code 002250)

The Carrowmore Dunes SAC site lies to the immediate west of the appeal site and is bounded from the appeal site by the high water mark. The site extends from Doonbeg Bay to the south west of the site to Carrowmore Point to the north generally extending c.1km offshore (beyond the MHW).

The qualifying interests of this site are as follows:

- Reefs,
- Embryonic shifting dunes,
- Marram Dunes,
- Fixed Dunes
- Narrow Mouthed whorl snail

Mid Clare Coast SPA (Site Code 004182)

The Mid Clare Coast SPA bounds the appeal site to the west beyond the mean HWM, overlapping with the extent of the Carrowmore Dunes SAC. In addition, the SPA extends further from shore to a distance of c.3.5km beyond White Strand and extends north as far as Spanish Point, c.11km to the north of the appeal site.

The qualifying interests of this site are as follows:

- Cormorant,
- Barnacle goose,
- Ringed plover,
- Sanderling,
- Purple sandpiper,
- Dunlin,
- Turnstone,
- Wetlands.

Carrowmore Point To Spanish Point and Islands SAC (Site Code 001021)

The Carrowmore Point to Spanish Point and Islands SAC extends from Carrowmore Point just to the north of the appeal site and comprises a triangular shaped site that extends approximately 7km offshore at its widest point before ending just to the north of Spanish Point. The marine area identified includes Mutton Island located c.5km to the north of the appeal site and

The qualifying interests of this site are as follows:

- Coastal lagoons
- Reefs
- Perennial vegetation of stony banks
- Petrifying springs with tufa formation

5.3. EIA Screening

The form of development proposed constitutes a structure for the purposes of providing defences from coastal erosion.

Class 10(k) of Part 2 of the Fifth Schedule of the *Planning and Development Regulations, 2001* (as amended) states, under the heading of Infrastructure Development, that the following shall be development for the purposes of Part 10 of the Regulations and therefore require EIA:

> '*Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dikes, moles, jetties and other sea defence works, where the length of coastline on which works would take place would exceed 1 kilometre, but excluding the maintenance and reconstruction of such works or works required for emergency purposes.'*

In the case of the proposed development, the total linear length of defences proposed measures c.883 metres and is therefore below the threshold of 1km specified in Class 10(k) of the Fifth Schedule. The submitted EIS does not indicate the basis on which the proposed development comes within the criteria set out in Schedule 5 or the result of any assessment undertaken in accordance with the criteria set out in Schedule 2A which indicates that the project is likely to have significant effects on the environment.

In the circumstances where an EIS has been submitted it is a requirement for the Board to consider its contents and its compliance with the relevant requirements of the Planning and Development Act and Regulations. This is undertaken in Section 8.0 below.

As noted below in the assessment under the heading of EIA, the EIS submitted by the first party as part of the application documentation was submitted to the Planning Authority on 22nd day of December, 2016. The submission of the EIS to the Planning Authority therefore pre dates the 16th day of May, 2017 which was the transposition date of the 2014 EIA Directive (2014/52/EU) and, in accordance with Circular Letter 1/2017 issued by the Department of the Housing Planning Community and Local Government, the requirements of the 2011 EIA Directive will continue to apply to the process of assessment of the proposed development.

6.0 The Appeal

6.1. Grounds of Appeal

Six third party appeals have been received by the Board and the following is a summary of the main issues raised in these submissions:

An Taisce

- That based on the information submitted and the assessment undertaken by the Planning Authority and the applicant, the impact of the proposed development could not have been sufficiently quantified prior to the granting of permission.
- That the NIS submitted misinterpreted coastal erosion, natural sand dune dynamic and the SAC objectives.
- There is a failure to recognise that erosion as a result of mobility of dune systems is a natural process and entirely necessary for the maintenance and development of sand dunes.
- That the negative impact of sea defence works is recognised in the NPWS in the conservation objectives document which states that the construction of physical barriers can interrupt longshore drift leading to beach starvation and increased rates of erosion.
- That erosion as a result of dune mobility is a natural process and necessary for the maintenance and development of the dune system. The applicant's assertion that the project is required due to the impact of storms, waves and sea level rise does not recognise the dynamic state of dunes. Contended that it is in fact the construction of the golf course behind which means that the dune system cannot adapt to rising sea levels and marine erosion.
- That the proposed sea defences will result in coastal squeeze and loss of the natural dune habitat.
- The negative impact of the golf course on the natural migration of the dunes SAC is recognised in the conservation objectives document for the SAC which

states that the presence of the golf course has impacted adversely on the functioning of the dune system as an integrated system.

- Based on the above, the applicant's assessment of the 'do nothing' scenario is not accepted. The NIS does not substantiate the applicant's claims that the 'do nothing' scenario will have a detrimental effect on the dunes.
- That the submitted NIS contains limited data and there are gaps in the Stage 2 assessment undertaken. The precautionary principle should have been followed.
- That the conclusions of the appropriate assessment undertaken by the Planning Authority are based solely on the submitted EIS, NIS and further information response. The decision does not incorporate other information sources as specified in s.177(V)(2) including advice obtained by the competent authority, written submissions made to the CA and other relevant information. It has not been demonstrated that the submissions from prescribed bodies and third parties were taken into account in the decision issued and no analysis of the content of these submissions has been presented.
- That the assessment does not contain sufficient detail regarding similar projects such as the Menie Golf Course in Aberdeenshire. In this case, restriction on dune migration will potentially result in the dunes losing their environmental designation (SSSI).
- That the applicant has provided an inadequate assessment of alternatives and their environmental impacts. Specifically, the comparable table of alternatives contained in the revised NIS is not supported by scientific evidence.
- That the option of the relocation of specific holes on the golf course to other landward locations has not been considered despite being the optimal solution. This would likely be the most cost effective long term solution and the issue of coastal erosion and the future consideration of same was clearly identified as an issue in the initial application.

- That the Planning Authority did not have sufficient regard to the provisions of s.177V(2) of the Planning and Development Act, 2000 as amended as it is not evident that adequate consideration was given to issues raised by third parties.
- That issues left to subsequent agreement in the decision are central to the determination of the impact of the proposed development on the SAC. Specifically, Condition No. 2 requires monitoring that will inform future mitigation measures and has as part of the stated reason to ensure no adverse effects on the integrity of any European site.
- That the site supports a population of the narrow mouthed whorl snail and that there are wetland areas at the back of the dunes that serve as important refuges for the species. Ireland's population of this species has been identified as inadequate and declining with the loss of dune habitat identified as a reason. The proposed development will impact on the dynamic process of the existing dune system and will therefore have an adverse impact on this species.
- That the erosion of the dune front has resulted in a reduction in snail habitat, however the extent of habitat would not occur in an unaltered dune system that is in natural dynamic equilibrium.
- It is also noted that the proposed access route to the site runs directly through snail habitat for the SAC (as indicated on Map 6 of the NPWS Conservation Objectives document for the site). The impact of site access has not been adequately addressed.
- That the level of information submitted relating to potential impacts beyond the proposed revetments and the potential outflanking of defences is not adequately addressed in the application. The statement that the impacts would be restricted to 50 metres beyond the edge of the defences is not supported.
- That the level of information regarding the design is lacking as noted by the NPWS and is such that a full assessment as per the requirements of Article 6(3) of the Habitats Directive is not possible.

- That there is a lack of detail regarding imported sand to the site and the impact of such material on the habitats and dynamics of the dunes and beach.
- That the JBA Consultants report commissioned by Clare County Council identifies significant issues in the modelling undertaken and the availability of sufficient monitoring data on which to base the monitoring assessment. Similarly, a lack of information regarding the sediment budget is noted. Stated by JBA Consultants that the only mitigation to this is to undertake further monitoring as set out in the preliminary beach monitoring and management plan prepared by HR Wallingford and presented in the response to further information.
- The lack of data on which to undertake a modelling exercise / assessment is reinforced by the report of the Environmental Assessment Officer of the council which this report concludes that the lack of sufficient data to validate the model used means that all reasonable scientific doubt cannot be removed and the Competent Authority unable to conclude that there would be no significant adverse effects on the integrity of the European site.
- That based on the gaps in information and uncertainty regarding impacts the precautionary principle should have been applied and permission refused.
- That An Taisce is not satisfied that the conditions of the original permission granted by An Bord Pleanala in 1999 have been complied with.
- That the applicant contention that the proposed works would not adversely affect Annex I dune habitat in the SAC are based on incorrect assertions regarding the location of the revetments outside of the SAC and that the installation of the protection works will help achieve the conservation objectives of the SAC.
- That the normal functioning dune system in dynamic equilibrium means that habitats may move from one area to another. This does not constitute habitat loss as it is part of a normal dune process and must be maintained in order to achieve the conservation objectives.

Tony Lowes on behalf of Save the Waves Coalition

- That there are alternative solutions to accommodate coastal change that are feasible.
- That the long term impacts of the project are under stated in the application documentation (EIS and NIS). The EIS is deficient as it is not impartial and is not sufficiently robust.
- That the proposal would set a bad precedent for other similar developments and lead to the incremental development of a full sea defence. The development will lead to increased erosion in the unprotected central section of the bay.
- That sea defence structures will lead to the eventual loss of the public beach.
- That there are significant uncertainties with regard to the long term viability of the scheme. There is a 39 percent probability that a storm event equal to or greater than 1:100 year will occur over its lifespan leading to additional works likely being required.
- That the examination of alternatives in the EIS is very poor. Only engineering solutions are examined and no managed retreat / accommodation options are examined.
- That the response to further information does not present a clear unbiased assessment of the design and environmental options. Using a 1-4 scoring matrix the 'do nothing' option is the preferred option. The toe berm protection option pursued in the application is the least favoured option.
- Medium and long term impacts on both dune, beach, tidal and sub tidal areas are not adequately evaluated.
- The consultation process for the EIS was inadequate.
- That there is no substantiated link between the proposed scheme and the financial viability of the Doonbeg Golf Resort.
- There is a lack of monitoring and evaluation scheme in the EIS.
- There is a lack of data relating to the scheme.

- That no guarantees are provided with regard to the long term management of the beach front by TIGL.

Save Doughmore – Doonbeg Beach Community Group

- That the proposal is contrary to the conservation objectives for the SAC which includes *'to maintain the natural circulation of sediment and organic matter, without any physical obstructions'*. This will not be achieved as the development will restrict the ability of the dune system to move / retreat.
- The development will impact on the natural circulation of sand and sediment and organic matter, thereby changing the physical nature of the dune structure by the altering of the composition of the soil profile. Grassland habitat will become more prevalent contrary to the conservation objectives of the site.
- The decision of the council to grant permission is contrary to sections 12.2 (coastal erosion and flooding), 12.3.14 (coastal squeeze), 12.3.15 (beaches and dunes) and 12.14 (protection of beaches and sand dunes) of the *Clare County Development Plan 2017-2023*. These requirements of the Plan have not been complied with in the development.
- That the proposed development would limit public access to the beach and the structures significantly impact on the public access across the beach. There will be restricted access for emergency services to the beach as a result.
- That the importance of the Wild Atlantic Way is recognised in 12.2.15 of the development plan. The introduction of man made structures would greatly damage the natural beauty of the area and be of significant detriment to the Wild Atlantic Way, to the efforts of Failte Ireland and to the very core of tourism in the area.
- That the number of golfing tourists are significantly outnumbered by non-golfers that visit to avail of amenities such as Doughmore Bay.

- That it has been scientifically proven that hard engineering solutions such as the current proposal will have a negative impact on the dune system (Cooper and McKenna, 2008, '*Working with Natural Process, the Challenge for Coastal Protection Strategies'*). Wave reflection, beach scour and steeping will result with a reduction in existing sand levels. Similar issues resulting from coastal protection works have arisen at Lahinch, Miltown Malbay and Strandhill.
- Dooagh Beach, Achill Island is an example of a location where sand washed away in a storm has returned due to natural coastal processes.
- That soft engineering solutions, such as the planting of marram grass to bind the dune and the use of wooden sand catching fences, should be utilised. This approach could be combined with the relocation of the more vulnerable holes to a location further to the east to a more stable part of the dune system. This would be a more economic solution for the applicants, and would negate the need for hard engineering solutions.
- That it is understood that the original applicant for the golf course recognised that the golf course layout would need to alter as the dunes receded and expanded.

Liam Madden

- That there is an inherent conflict between the statements in the EIS and NIS submitted with the current application and the previous application.
- That the 'do nothing' option was not assessed fully.
- That because there has been erosion does not mean that the dunes would not regenerate in the future. One such example is Achill Island.
- That the option of purchasing land inland to relocate the course could be undertaken for a fraction of the cost of the current proposal. This option should be explored.
- That the applicant has not demonstrated legal interest in the site of the application. This issue is dismissed by the Planners report with reference to s.34(13) of the act and it is assumed that a foreshore licence will be grated.

- That High Court case Mc Nulty v Clare County Council (1326JR) determined that a Planning Authority has no competence to make a declaration as to what is or isn't a right of way. The fact that there are rights in this case is acknowledged by the Planning Authority by the attachment of a condition.
- That the Planning Authority did not take into account the assessment of the response to further information undertaken by the Department of Arts, Heritage, Gaeltacht, Rural Affairs.
- The comments of P Sweetman that the council's decision is perverse and contrary to reason and common sense are agreed with. There is doubt and uncertainity in the NIS and EIS, and these lacunae undermine the decision.

Peter Sweetman and Associates

- That the appropriate assessment of the planning officer contained on file appears to be solely based on the NIS submitted and ignores the reports and submissions on file including those of Mr Sweetman, the Department of Culture, Heritage and the Gaeltacht (NPWS) and that of the Environmental Assessment Officer of the council. No clear reasons for ignoring these submissions are presented.
- The conclusion reached by the Planning Officer regarding the potential impact on the Mid Clare Coast SPA is contrary to the position of the Department, and the conclusion reached is not backed up with supporting evidence.
- Conditions 3(a) and 4(a) relating to the submission of a Beach Monitoring and Management Plan and a Construction and Environmental Management Plan respectively indicate that the planning officer did not have before him sufficient information to eliminate all potential lacunae and make precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works on the site.
- It is submitted that An Bord Pleanala is precluded in law from granting permission for the proposed development.

Friends of the Irish Environment

- That the application has to be seen in the context of the planning history of the site. The original course designer did not foresee that coastal protection would be required (1997) however initial proposals were submitted in 2003.
- That the proposed development is the forerunner to a subsequent application to infill the gap in the sea wall. The proposal constitutes project splitting.
- That the submitted NIS displays a flawed understanding of the Habitats Directive.
- Conditions attached to the permission clearly indicate that the required conclusion under Article 6 of the directive cannot have been reached by the council.
- That the conclusion of the appropriate assessment undertaken by the Planning Officer states that third party submissions including those submitted by the NPWS were considered, however it would appear that the Planning Officer almost exclusively took into account the NIS with no reference to the specific issues raised by the prescribed bodies.
- There is no evidence on file that the council adopted the conclusions of the Planning Officer regarding appropriate assessment.
- That neither the Board nor council can be certain that proposed development will not adversely affect the integrity of the European sites (SAC and SPA). In these circumstances, the only way that planning permission can be granted is by way of use of Article 6(4). This was not pursued by the council.
- There are deficiencies in the submitted EIS, including a failure to identify, describe and assess in an appropriate manner the significant effects of the development on the environment.
- That the planning officers report does not contain any clear assessment conclusions other than a statement that the EIS together with the further information response complies with the requirements of the regulations.

6.2. Applicant Response

The first party response to the grounds of appeal is contained in two separate submissions made to the Board 13th February and 15th March, 2018 and the following is a summary of the main issues raised in these submissions:

First Response - dated 13th February, 2018

- That there is a lack of clarity regarding the party 'Peter Sweetman and Wild Ireland'. Requested that this be examined by the Board.
- That the appropriate assessment / assessment of the NIS undertaken in the report of the Planning Officer clearly states that *'…all of the above reports were considered in my assessment and the making of the request for further information*'. Subsequent to the submission of further information, a second planning officer report clearly states that additional submitted technical reports (referred to as '*these reports'*) were considered in the assessment. There is also reference to the observations / submissions received and that these were taken into account. In view of this, it is not correct to conclude that the assessment undertaken was based solely on the contents of the submitted NIS.
- The issues raised in the reports received from the National Parks and Wildlife Service and the Environmental Assessment Officer are covered in a report prepared by Creagh House Environmental Limited, (see below).
- That contrary to the statement of the appellant, Conditions 3(a) and 4(a) are not such that they indicate a lack of information available to the decision maker at the time of decision. Rather these conditions are '*simply conditions as to monitoring and management measures. They are not addressing any reported lacunae'*.

The following points relate to the report prepared by Creagh House Environmental Limited:

- Sets out a number of ***principles relating to appropriate assessment*** derived from legal precedents that are considered relevant to the subject case.
- That the Board is the decision maker regarding the presence of reasonable doubt in AA (Holohan v ABP 2017) and it is the absence of real risk with which the Board is concerned.
- That the proposed developer has no obligation to enhance or positively protect the European sites – its obligation is merely not to harm them (People Over Wind V ABP 2015).
- That the proposed developer is obliged to deploy the best scientific knowledge reasonably available, (People Over Wind V ABP, 2015).
- That the examination of alternatives is not part of appropriate assessment, (Case C441-03) Commission V Netherlands.
- That the proposed works are designed to protect the edge of the golf course and not the SAC.
- The defences are partial, are not located in areas fronting the SAC and where provided will allow for aeolian transport of sand to continue. The long term evolution of the beach is the same is the same with or without the defences.
- It is confirmed that the construction access route will be fully rehabilitated and reinstated as dune habitat following the completion of the development.
- That contrary to the statement of the NPWS, the NIS does not argue that the coastal protection works are necessary for the conservation of the SAC. It does, however point out that '*at this site, conservation of site dynamism may be at the expense of habitat loss*'.
- That ***large scale habitat loss***, even if caused by natural processes, ***is viewed as site deterioration*** and not a neutral impact (see pages 21-22 of the EC document *'The Implementation of the Birds and Habitats Directive in*

Estuaries and Coastal Zones - with particular attention to port development and dredging', (2011).

- That the conservation objectives for qualifying interest habitats within the SAC are increasing area (for embryo dunes) or stable and increasing area (for mobile and fixed dunes) subject to natural processes. The conservation objective for physical structure is to maintain the natural circulation of sediment and organic matter. Stated that the 'do nothing' scenario will definitely and without any scientific doubt lead to significant loss of area of sand dune habitat at the site (in particular the fixed dunes). Noted that the 2011 EC Guidance on Estuaries and Coastal Zones states that conservation objectives and management measures can be revisited where and when necessary on the basis of measured trends. As set out in Volume 3 of the EIS Design Reports, the current measured trend at the site is erosional and the outlook for the site is habitat erosion and loss in the 'do nothing' scenario.
- That the ***development is designed to protect the coastal edge of the golf course and not the dune faces of the SAC***. Dynamic and erosional processes will continue to operate on the SAC dune faces *'..in much the same way as per the do nothing scenario'*.
- Regarding ***concerns expressed by the NPWS*** regarding uncertainity regarding environmental mitigation measures and the role of a project ecologist, it should be noted that a detailed annual conservation report has been prepared by the applicant and submitted to the council and the department. An ecological clerk of works is proposed to be employed 'and should not be construed to suggest a reduction of the role or contribution of the project ecologist'.
- That access for nourishment of the dune face will be via the southern public access at Mountrivers and further details are provided in the CEMP.
- That contrary to the statement of the appellant (Mr Sweetman), the general comments in the submission from the NPWS regarding the basis for designation of the SPA and its conservation interest are not at variance with the statement of the planning officer regarding the limited usage of White Strand by species of qualifying interest to the SPA. This statement is based

on best available scientific information and survey data. The planner will also have noted and accounted for the construction activity being outside of the winter period.

- That the comments of the ***Environmental Assessment Officer*** regarding the availability of sufficient data to support the assessment undertaken and validate the model does not account for the model results (average recession of 0.7 metres per annum) by reference to recession rates gauged from analysis of historical mapping (preceding 11, 34 and 118 years).
- That the ***COSMOS cross shore model*** was verified by work undertaken by HR Wallingford and submitted as part of the RFI to the Planning Authority. This simulated storm conditions and the observed changes to the cross shore profile of the beach. Model sensitivity testing was included and modelled changes were compared to actual changes over a 6 month period. Also stated that the COSMOS model outputs are conservative as it assumes an entirely soft / sand profile.
- Validation of the longshore transport model was undertaken over the summer 2003 – summer 2016 period and comparison against the observed changes.
- Regarding the 'do nothing' scenario, it is not clear how the environmental assessment officer concludes that this will not result in the loss of the SAC. Survey results presented in the EIAR and NIS clearly indicate that while there are periods of accretion and erosion, the instances of accretion are short term and the clear long term trend is for erosion and that this erosion is accelerating.
- Regarding ***managed retreat*** and the assertion that there is sufficient room for the golf course layout to be adapted to accommodate the retreating shoreline, the course is enclosed by the existing lodge, cottages and permitted / planned development areas. The available area for expansion of the golf course is also constrained by the SAC areas containing the dunes, the wetland areas to the east of the northern part of the course and by the layout of access roads and presence of low lying agricultural lands to the east which flood. The potential layout of the course is also constrained by Condition No.6 of the

original grant of permission which requires a plan for the management of the Whorl Snail and the priority SAC habitat.

- Submitted that managed retreat has been considered fully in the 'do nothing' options examined and has been considered in the context of soft coastal protection, modification of golf course layout, planning applications since 2003 in support of coastal defence works and environment planning application. Some adaptation of the golf course layout has been undertaken since 2014 in recognition of the reduced the play areas of the front holes at the course. Further squeezing of the parallel hole layout at Doonbeg is not advisable for safety reasons and the limitations of Condition No.6 of the parent permission.
- That the golf course and the fenced off dune habitats are monitored closely and reported annually. The quantity of Vertigo Angustior exceeds NPWS occupancy targets for the site. Given the information available, it can be said that the temporary use of a haul route along the northern surfer's access route would have an insignificant effect on the conservation value of the sites habitat.
- That compared with the modifications to course layout, the proposed reinstatement requirements for the ***temporary haul route*** are significantly less significant. The haul route follows existing active track ways across the golf course (between holes 4 and 15) and through an existing trackway access to the beach.
- That as the dune is low at the beach access area, any widening of the existing access track will involve minimal cut into the existing dune habitat. Sods removed will be labelled, stored and then replaced on completion of works. These works would be overseen by an ecological clerk of works.
- The haul route along the shoreline in the area of mobile dune habitat would be overlaid with geotextile and annexed habitat would be appropriately reinstated with the addition of sand and re sprigged with marram.
- Regarding ***climate change impacts and end effect issues***, and the concerns raised by the Environment Assessment Officer, these impacts are likely to lead to increased storm events and increased requirements for nourishment of the installed protection. In the unprotected central areas of

the strand, climate change will result in an increased rate of erosion and these changes will not be significantly impacted by increased rates of erosion.

- That the end effects have been assessed with the longshore transport model and increases in water levels and wave conditions are not expected to significantly change the directional spread of the wave action. The spatial extent of the end effects are therefore likely to be insensitive to climate change with the result that the effects will be within the envelope of what has been predicted.
- That the protection is located outside of the SAC and so it is not correct to state that the purpose of the proposal is to fix the dune system. The impacts of the development on the SAC will not be more than the 'do nothing' scenario.
- The submission contains a number of appendices including a Draft Construction and Environmental Management Plan (CEMP).

Second Response - dated 5th March, 2018

- That the reference by An taisce to Scottish Natural Heritage does not include the sections that indicate that dune systems can be eroding as well as accreting. The indicated graphic of an eroding system is a very good example of Doughmore Bay.
- That the ***appeal site is not a normally functioning dune system*** as referenced in the appeals. It is an eroding system.
- That the appellants have not taken into account the nature of the dune systems that pertain on the west coast of Ireland.
- That the appellants do not show an appreciation of how the dune system at the appeal site is functioning and are relying on a generic concept of an accreting dune system. The dunes at Doonbeg are eroding as a result of a natural process. Nowhere in the SNH document referenced by the appellants does it indicate that an eroding dune system will naturally change to an accreting system if allowed to evolve naturally.

- That contrary to the statements of the appellants, the level of information available to inform the design and impact assessment of the proposed development is in line with that in other project applications in UK / Europe. It should also be noted that the 2009 application was successful without the benefit of the most recent beach monitoring data.
- That processes influencing dunes are different depending on location and exposure and this is clear from the SNH document. What is applicable in one setting doesn't necessarily translate to another and the reference by An Taisce to the Menie Golf course is inappropriate.
- That ***beach lowering*** will continue at the site but the proposed development will not add to this lowering effect.
- Due to ongoing frontage erosion and the fixed nature of the landward edge of the dune, there is clearly net long term erosion at the site and the generic description of a mobile dune system is not appropriate.
- That the estimates of ***end effects*** are conservative over the 50 year period given that the predictions do not include for the northern outfall, the cobbles nor the recent observations of the transport of sand onto the beach.
- That over the 50 year design period the natural effects would result in the loss of approximately 36 percent of the terrestrial dune habitat of the SAC. The end effects would result in a direct habitat loss within the SAC of c.92 sq metres in 50 years and 347 sq. metres in 100 years. Against this, c.2.4 ha. of terrestrial coastal habitat adjacent to the dune SAC will be saved from erosion with the coastal protection in place.
- That contrary to the views of the appellants, the quality of the site within the two fixed dune areas has been conserved and the quality of the areas outside this and now within the golf course improved as evidenced by the benefits to the Vertigo Angustior. Other areas have been the subject of significant sand extraction in the past (Figures 13 and 14).
- That, contrary to the statements of the appellants, there was never any statement or proposal at the time of the 1998 parent application that the golf course or associated development would move to wetland areas to the east or

be the subject of ***managed retreat***. The 1998 permission clearly provides for the management of the SAC and dunes to minimise erosion but the evidence from the last two decades shows that the ongoing erosion issues must be addressed by 'hard' measures.

- That the issue of ***alternatives*** does not arise in an appropriate assessment context. Consideration of alternatives would only be applicable in a case where the project was deemed not to meet the requirements of Article 6(3) and the determination proceeds to Stage 3 assessment (consideration of alternatives and selection of least damaging option) and following this potentially Stage 4 (IROPI considerations).
- That the issue of alternative options has been considered in detail in a number of proposals over the last 15 years at the site.
- That the application falls to be considered under the 2011 EIA Directive and the 'bar' for consideration of alternatives under EIA is therefore that the EIS would include an outline of the main alternatives and an indication of the main reasons for the choice made. This has been undertaken in the submitted EIS.
- Regarding '***Coastal Squeeze'*** the case has been made as to why the coast is suffering ongoing erosion and why retreat is not a viable option for ecological and land use reasons. Whatever the relevance of coastal squeeze and associated policies to new development, it is submitted that these provisions of the development plan may not properly be applied in a manner that assumes that existing permitted uses must, by reason of coastal squeeze policies, be left at the mercy of coastal erosion. Submitted that such an approach would be fundamentally incompatible with the constitutional property rights of landowners and ignores the fact that such developments and uses have the benefit of existing permissions.
- It is to be assumed that coastal squeeze was considered under general proper planning and sustainable development of the area in pre-existing grants of permission. Subsequent planning permissions cannot be used to retrospectively invalidate earlier planning permissions.

- Regarding ***design details***, the heights of the sheet piling are indicated at Figure 15 of the EIS for the surveyed profiles and are 8.0 metres OD at S34, S18 and S19 and 8.5 metres at the other locations. At the northern and southern ends the sheet pile will lower to the height of the armourstone over a distance of c.25 metres.
- The 5 metre wide crushed stone 'mattress' behind the sheet pile is to address residual overtopping anticipated during storm events. It is indicated in Figure 15 of the EIS and Figure 31 of the RFI and discussed at 6.2.2 of Volume 3 of the EIS (Preliminary Design Report).
- The location and design of the fuel soakaway in the compound is shown in Figure 20 of EIS and sections 2.3.1 and 2.7.
- That the SAC fence line boundary has remained the same since originally delineated in 1999. Areas inside the fence line are managed to protect the priority habitat of fixed dunes and those outside to ensure optimum habitat for Vertigo Angustior.
- That the haul route to the site follows existing track ways across the course and to the beach. This existing usage has modified these areas by usage (on the grassed course) and by addition of gravel in other areas.
- That the proposed structure will be covered by sand and marram. The stockpile of surplus sand post development is estimated to last for 18 years and additional sand will be sourced from Anthony D'Arcy Limited in County Wexford. The standard golf course sand is a close match for the type of sand at Doonbeg. No mining activity will occur at the beach.
- That the surfer's car park is proposed to be increased from 9 spaces to 20. This site is outside of the SAC, and the extension only amounts to an area of 340 sq. metres.
- That contrary to the contention of An Taisce, it is clear that the council planning officer and Director of Services did clearly have regard to all the information provided.

In response to the ***JBA Consulting Report dated December, 2017***, the following additional points are raised:

- That the JBA report acknowledges that the best available data has been incorporated in the analysis and used in an appropriate manner.
- Contended that reliable beach monitoring data as identified as required by JBA is available in a quantifiable, scientifically robust form from the OSI. This is combined with profiles of the beach available for 2003 and from 2014 onwards.
- JBA also state that the best data available relating to the sediment budget has been used. The sediment budget has been reviewed using the most recently available information and this confirms that the sediment budget used to support the impact assessment is conservative.
- Regarding concerns highlighted by JBA relating to the validation of the COSMOS model and the cross section impacts of the development and that insufficient information was available to enable a full formal verification, should be noted that the area model, BEACHPLAN, which has been calibrated and validated is used to inform the long term impact of the proposed partial defences and has been used to define the alongshore length of the proposed defences.
- That the short term longshore coastal processes are taken into account in the BEACHPLAN model (not COSMOS as stated by JBA).
- That there is an underlying trend of seaward transport of beach material and in the impact modelling it is this net seaward transport of material that results in a net lowering of the beach profile when comparing the areas of partial protection to the undefended SAC areas. It is the differential between the effective beach width in the protected and unprotected areas that leads to the predicted end effects.
- That the design and impact assessment was accompanied by the assessment of HR Wallingford which supports the conclusion that the impact assessment is conservative. It is therefore submitted that there is significant scientific

knowledge to support the conclusions reached regarding the potential impacts on the European sites.

- That more recent monitoring shows that by August 2017 there had been net accumulation of material on the beach, indicating landward cross shore movement of material. This shows that some sediment is stored nearshore and is able to return to the beach and provides a response to the question raised by JBA as to what happens to the material that is moved seaward from the beach (i.e. is it lost from the system or stored below the low water mark).
- The point made by JBA regarding the likely increase in volume of sand required for post storm reinstatement works due to climate change is accepted.
- Regarding the concerns expressed by JBA regarding the potential impacts on the shape of the bay post the 50 year design horizon and the potential future need for additional works, it should be noted that no further such works are envisaged.
- Regarding climate change impacts, there is not considered to be a clear position as to whether climate change will lead to an increase or decrease in mean significant wave heights and hence the additional 10 percent factor suggested by JBA was not adopted.
- Regarding exposure of sheet piles and the defences, JBA state a long term concern regarding the impact of ongoing beach lowering beyond the 50 year design life and that further detailed assessment and permissions will be required. Highlighted that no further works are proposed, that all conditions of the permission will be complied with and that the results of the analysis indicate that the assumed rate of beach lowering is conservative.

The submission includes ***a report by HR Wallingford on Coastal Processes and an analysis of data from ongoing beach monitoring dated February, 2018***. The following are the most significant points / conclusions presented in this report:

- Clarification regarding the available survey information that is set out at section 1.

- Section 2 sets out the methodology used in the analysis.
- Assumptions are set out at section 2.1.3 and include that the bay is considered to be a closed system. Noted that at 2.0 the report states that '*given the areas geomorphology and previous coastal reviews (HR Wallingford 2014) it is believed that Doughmore Bay is a physiographic unit and that little sediment exchange occurs at its boundaries'*.
- The budget is calculated on the basis of information gathered between 2014 and 2017. The separate budgets for sand (Figure 2.6) and cobbles (Figure 2.7) for this period are presented in the report.
- The conclusions relating to dunes indicate that they are eroding and that this erosion would appear to be constant through the years examined. The volume of material available from dune erosion is however an order of magnitude less than that made available from the beach and transported by cross shore processes. Stated that '*seasonal accretion of the dune face has been observed and there was net accretion over the year from August 2016 – August 2017 but this accretion on the dunes was removed by storm Eleanor and the associated surge at the beginning of 2018*.'
- That the conclusions relating to cobbles indicates that there has been little gain of beach material from the erosion of the dunes in this area (+3.5mOD to +5.5mOD), that the volume of cobbles has remained relatively static in the bay since the major excavation for construction use in the 1940sand 1950s. Cobbles are moved during storm events and the coverage with sand has shown variations.
- The conclusions relating to the beach shows a loss of beach material and retreat of the shoreline since 2003 apart from at one location (Profile 023). Shown that the beach is subject to seasonal and annual variability linked to storm events and accretion was observed '*between August 2016 and April 2017 and also between April 2017 and August 2017'*, with the accretion over this period '*about three times greater than the erosion that took place over the two years between July 2014 and August 2016'*. While there are not repeat surveys of the offshore area to enable verification, it would appear reasonable

that some beach material is drawn temporarily into the lower part of the beach where it is available to be mobilised and transported back in the future.

6.3. Planning Authority Response

The following is a summary of the main issues raised in the response of the Planning Authority to the grounds of appeal:

- That in making the decision regard was had to the planning history of the site and the previous applications for coastal protection works at this location, including the granting of permission by the Planning Authority and the Board for 'Sea Bee' units in the dunes, (Clare Co. Co. Ref. 09/1097).
- That the current proposal takes into account the concerns expressed with regard to previous proposal for a scheme encompassing the full protection of the beach.
- That the Planning Authority note the importance of the golf course and resort to the tourism product and economic development of West Clare. The planning authority is satisfied that the development would be acceptable on the grounds of physical planning considerations including visual amenity and traffic.
- Considered that the issues raised in the appeals relating to the EIS and NIS documents submitted have been addressed in the reports on file.
- That the development plan defines proper planning and sustainable development as balancing economic, social, environmental and cultural considerations in the interests of the common good. It is considered that the proposed development achieves this balance having regard to the established use of the site and the planning history.

6.4. Observations

The following is a summary of the main issues raised in the observations received:

- That Clare County Council previously removed crushed stone from the ends of the beach in the 1940s and 1950s. There is therefore a moral obligation on the council to grant permission.
- That the applicant does not own the site below the high water mark. No applications under the foreshore Act have been made and it would be unlawful to grant permission.
- Negative impact on the visual and recreational amenities of the area.
- The proposal is contrary to parts 12.2 (coastal erosion and flooding), 12.4 (protection of beaches and dunes) and 13.5 (heritage landscape) of the development plan.
- That the requirements of Article 6(4) of the Habitats Directive would not be met.
- That there is a lack of scientific certainty with regard to the impact of the project on the SAC and SPA sites and, having regard to the precautionary principle, permission must be refused.
- That the record of the Trump organisation on environmental compliance is such that there is not confidence that the requirements of the Habitats and Birds Directives would be met.
- That the project would be a visual eyesore and contrary to paragraph 13.5 of the development plan relating to developments in heritage landscapes.
- That the DAHRRGA opinion that coastal erosion and deposition are natural processes and that the ‘do nothing’ scenario is consistent with the conservation objectives for the SAC are noted and agreed with.
- It is also agreed with the department that the NIS fails to reach robust and scientifically based conclusions regarding the impact of the development on the SAC.

- The proposal would hasten erosion of the dune system and have a cumulative impact on the protection of designated sites.
- That the issues are primarily due to human intervention including harvesting of the natural storm beach by the local authority. A mitigation would be for the restoration of the natural storm beach.
- That the records of the 1999 application and oral hearing will show that it was accepted by all parties that the dunes were eroding and that coastal protection would not be acceptable in this location. The case was made by the applicants that sufficient lands had been acquired such that the dunes could recede and reach an equilibrium and that the golf course could move inland if required.
- That the proposal to protect the existing golf course would be better achieved by allowing the course adapt to the changing character of the dunes as was allowed for in the original course design.
- That the conservation objectives for the SAC include '*maintaining the natural circulation of sediment and organic matter without any physical obstructions'*. Submitted that the long term dynamic movement of sediment and the dune system are put at risk by the proposed development.
- As set out by Dr Evelyn Moorkens in the original submission to the Planning Authority (by Eamonn Ryan TD) the purpose of the project is to prevent wave action dynamics which is essential for a healthy dune system and is a conservation objective for the site. The project will result in the system being 'fixed' resulting in a change in the physical soils that will become compacted leading to changes in plant and animal species to those of a grassland habitat rather than active dune habitat.
- That the faster pace of dune movement, and increased storms arising from climate change, have not been adequately taken into account.
- As stated by Dr Sheehy Skeffington in the original submission to the Planning Authority by Eamonn Ryan TD, mobile sand is intrinsic to sand dunes and an ample offshore supply of sand is essential to the maintenance of a dune system and this material is washed and blown up regularly onto the beach.

Dunes may erode naturally, however if there is a sand supply available dunes will regenerate, however this may only (require to be) every 20-30 years.

- That the argument that the project will fix the dune in place and protect the dune and snail habitat is false. Both the snail species and the fixed dune priority habitat rely on free dynamic sand movement.
- That the energy input from the sea cannot be stopped by a wall and shoreline retreat will continue. The wall will result in enhanced erosion at the base of the wall and leading to loss of the beach and will accelerate the erosion at either end of the structure. The wall will eventually fail.
- Progressively bigger structures will be required in the future to protect the course from the sea.

6.5. Further Responses

6.5.1. Planning Authority and Third Party Observations on the First Party Response Submissions

Following the lifting of the interim stay imposed by the High Court on the consideration of the case by the Board, the first party responses to the appeals (dated 30th January 2018 and 5th March, 2018) were referred to other parties for comment. Submissions responding to the circulation by the Board of the first party response to the third party appeals were received from the following parties:

- Clare County Council
- Henry Dent
- Save Doughmore-Doonbeg Community Group
- Mark Fitzsimons
- John Conway
- Louth Environmental Group
- Save the Waves
- Eamon Ryan TD

- An Taisce
- Friends of the Irish Environment

The following is a summary of the main issues raised in the submissions received:

Planning Authority

- Responded to note the content of the first party submission and state that the Planning Authority have no further comments to make.

Third Parties

- That the NIS and EIS are fundamentally flawed and don't account for the possibility that the beech will start to reform by natural processes.
- That the required standard of proof / certainty set in the Sweetman v ABP case (Ref. ECJ C258-11) has not been met.
- Dr Evelyn Moorkeens states that the first party response does not adequately address the concerns expressed in the third party appeals. The first party is relying on the case that there is insufficient evidence of likely harm to the SAC, whereas under appropriate assessment, the Board can only grant permission if they have certainty that the proposal will not result in harm to the conservation objectives of the site.
- That no scientific evidence has been presented by the first party to demonstrate that the coastal processes operating on the SAC dunes will not be negatively affected.
- That the dunes are being eroded at an alarming rate and a decision needs to be taken urgently to protect the site and ensure the protection of the 300 people employed at the site.
- Investment in the site and other local projects are on hold pending the outcome of the appeal. The Board needs to make a decision urgently and approve the development.

- That the sand dunes are not an evolving system as stated by other appellants, the defences are required to prevent the one way erosion and to protect against predicted rising sea level.
- That the life expectancy of the dunes without the protection is 35-40 years and without it the area will become a ghost area. Without this development and alternative sea defence will have to be created inland to protect the N67 (Wild Atlantic Way Route).
- Friends of the Irish Environment submission refer to and recommend the expert advice provided by Save the Waves and An Taisce.
- That the distinction drawn by the applicants between accreting and eroding dune systems is valid, however the Carrowmore system is part of a naturally eroding system, albeit one that is exacerbated by the presence of the golf course.
- That Scottish Natural Heritage and HR Wallingford are the authors of '*A Guide to Managing Coastal Erosion in Beach and Dune Systems'* (2000) which questions the use of hard engineering approaches including of the form proposed in the current proposal.
- That the original appeal by An Taisce relies on information provided by the Council's Environmental Assessment Officer and JBA consulting and the issues raised are not generic in nature as contended by the first party.
- Fundamentally, insufficient data has been provided to remove all reasonable scientific doubt regarding the impacts of the development on the SAC.
- That the level of data provided by the additional studies submitted remains inadequate and only three more monitoring dates over a 10 month period have been provided.
- The use of COSMOS and Beachplan models is noted, however it remains the fact that as stated by JBA Consulting for the council the level of data for predictive purposes is limited and not sufficient to meet the standard of certainty / proof required on foot of the Sweetman v ABP case C258-11. .

- That the most recent modelling data submitted indicates accretion levels three times that of erosion which underlines the concerns expressed by third parties regarding the use of short term data.
- That there are strong parallels between the impact that have arisen to the dune system at the TIGL site in Aberdeenshire, Scotland and the subject site. The situation in Scotland where the designation of the dune system is at risk (now lost) is a warning for what can result from ill-considered coastal protection.
- That while the proposed works are located outside of the SAC, the first party fails to acknowledge that the impacts of hard coastal protection works can extend into the dune systems well beyond the revetments.
- Concerns regarding the haul route have not been adequately addressed.
- That the level of additional data supplied does not meet the legal test of being precise and definitive and capable of meeting all reasonable scientific doubt.
- That alternative approaches to accommodate coastal change are feasible yet remain ignored by the first party.
- That the response submissions do not adequately address the individual concerns raised by appellants including Save the Waves Coalition.
- The submissions on behalf of Henry Dent, Mark Fitzsimmons, John Conway and the Louth Environmental Group are submitted c/o Burns Kelly Corcoran Solicitors, state that these parties do not consider that the first party responses circulated adequately address the issues raised in their original appeals and re submits the original submissions.

6.5.2. The appeal was also referred to the ***Heritage Council, Failte Ireland and Department of Agriculture, Food and the Marine*** for comment. The following is a summary of the main issues raised in the responses received:

<u>Failte Ireland</u>

- That Doughmore Bay is a designated discovery point on the Wild Atlantic Way being one of the ‘must see’ locations along the route.

- That the matter of alternatives could be dealt with in more depth.
- It is considered that it would be helpful for an assessment of the landscape and visual and associated impacts if the development was illustrated described and assessed at various stages in its lifespan.
- That developments such as that proposed need to take a long term visual and landscape impact.
- That the assessment of the visual impact appears to take the short term impact into account more than the long term (30 plus) period when erosive effects and beach lowering will expose the structure.
- That construction related impacts can likely be mitigated.
- That it is development will facilitate the continued economic viability and use of the hotel and golf course while also facilitating access (parking) for persons engaged in water based activities and accessing the beach.
- On balance, Failte Ireland would like to see a solution which benefits all tourism amenities in the area both now and in the long term.

Department of Agriculture, Food and the Marine

- Response received stating that the Department has no observations to make.

7.0 Planning Assessment

7.1. Introduction

7.1.1. The following are considered to be the ***main issues in the assessment*** of the subject appeal:

- Principle of Development, General Policy and Legal Issues (7.2)
- Need, Form of Development and Alternatives (7.3)
- Impact on Visual Amenity and Character (7.4)
- Impact on Amenity and Recreational Activity (7.5)
- Traffic Issues (7.6)
- Geology, Geomorphology and Coastal Processes (7.7)
- Ecology (7.8)
- Other Issues (7.9)

This general planning assessment should be read in conjunction with the subsequent sections relating to Environmental Impact Assessment and Appropriate Assessment which are contained at sections 8.0 and 9.0 respectively.

7.2. Principle of Development, General Policy and Legal Issues

7.2.1. The appeal site is located outside of any identified settlement and in a rural area. The closest settlement to the site is Doonbeg village which is located c.2km to the south west of the site and the existing Trump International hotel is located to the immediate south east of the site with the existing holiday chalets located to the north east of the hotel. The site boundary overlaps with the western boundary of the existing golf course on the site and the golf course holes located in closest proximity to the development comprise the 1st and 18th at the southern end of the site and the 9th at the northern end of the site. The stated purpose of the proposed development is the protection of the existing golf course and hotel development, with the information submitted by the first party indicating that the extent of the defences has

been determined with reference to the most significant erosion issues along the coastal frontage of the site and a need to protect existing built assets in the form of the hotel and holiday properties. The site is therefore not within any area zoned for development and there is no specific local objective, or other objective, contained in the development plan that specifically relates to the development of the TIGL site.

7.2.2. In terms of the ***principle of the proposed development***, there are a number of general policies that are of relevance to the proposed development and these are primarily under the headings of ecology, tourism and rural enterprise, employment and economic development. The most significant of these policies are considered below.

7.2.3. Under the heading of ***economic development***, one of the strategic objectives set out in the plan is that of ***maximising the economic assets of the county*** including the county's rural and tourist attractions. The economic significance of the Doonbeg resort to the local economy is analysed in Chapter 13 and Appendix 9 to the submitted EIS. Under the submitted analysis, the existing resort is estimated to make a c.5.2 million euro contribution to the local economy in 2019 with full time employment varying between 58 (low season) and 200 (high season). The absence of a dedicated events centre on site that has the capacity to host meetings, conferences and other events is indicated as being a significant limiting factor on the capacity of the resort to expand further and generate additional off season employment and impact on the local economy in this off peak period. In this regard, it should be noted that permission has been granted by Clare County Council (Ref. 18/930) for a development comprising a ballroom / function Room building, leisure facility building including restaurant and 53 no dwellings to be used for short term tourist accommodation. The business that would be catered for by this recently permitted development is indicated as having an estimated value of 1.7 million euro per annum (2015) and the wider economic effect of the losses to the area from the non development of these facilities are estimated at €14.2 million over the 2011 to 2015 period. While there are a number of assumptions contained in the economic benefit analysis presented in the EIS that could change, the analysis indicates the very significant economic impact of the existing Doonbeg development and the potential for further significant positive economic impacts in the event that the proposed additional development of the complex were to proceed.

7.2.4. While the existing and proposed development on the TIGL site clearly has significant economic impacts, the degree to which the proposed development is required in order to ensure the continuation of activity at the site is disputed by the parties to the appeal. Specifically, the potential for the existing activity to be continued by the undertaking of managed retreat from the eroding coastline has been raised, as has the long term sustainability of the proposed defences at protecting the overall site given the predicted continuation of erosion in the central undefended section. These issues are discussed in more detail in the relevant sections of this assessment below. Notwithstanding these concerns, in principle the existing and permitted additional development at the TIGL site clearly has a very significant employment and economic impact on the local area, as well on the wider Clare and mid-West areas, and consistent with the strategic objective set out in Chapter 6 of maximising the economic assets of the county and Objective CDP 6.26 which states that it is an objective to harness the economic potential of tourism throughout the county.

7.2.5. Under the heading of ***tourism***, the protection of the existing tourist resource at Doonbeg has significant policy support in Chapter 9 of the development plan. Specifically, one of the strategic aims of Chapter 9 is the maximisation of tourism as a pillar of economic growth …*' and to capitalise on the county's identified nodes along the Wild Atlantic Way'* (which includes Doonbeg). Objective CDP 9.25(B) states that it is an objective of the Plan '*to promote and market the area, building on the cultural amenities and entertainment facilities of Kilrush, Kilkee and Doonbeg'*. Information presented in Chapter 13 of the EIS indicates that there are projected to be c.14,5000 paid golf course rounds in 2019, the vast majority of which (c.13,000) would be by visitors from the US. Total visitor numbers for 2019 are estimated to be c.46,000 (Table 13.27 of EIS) of which approximately half are domestic guests and half from overseas. The significant scale of the existing TIGL facility in terms of visitor numbers and economic impacts are clearly significant and, as indicated in Chapter 13 of the EIS, extend far beyond the immediate locality of the site with employment and economic benefits extending into the wider Clare and mid-west regions. The significance of the resort in terms of tourism numbers and the attractiveness of the area as a key location on the Wild Atlantic Way is noted in the submission on file from Failte Ireland.

7.2.6. Other relevant tourism objectives include ***Objective CDP 9.12*** which, inter alia, seeks to support proposals for tourism development in coastal areas and ***Objective CDP 9.17*** relating to sustainable tourism. Both of these objectives are subject to provisions relating to the protection of the natural environment and subject to the development being acceptable in environmental terms, the development is in my opinion clearly consistent with these objectives and the general aims of the development plan relating to the promotion of tourism.

7.2.7. Overall therefore, the scale of economic activity and benefits to the local economy and tourism arising from the existing TIGL facility at Doonbeg are clearly very significant and such that their loss would represent a very significant negative impact on the local and wider regional economy. The case presented by the first party regarding the need for the development, its background and the alternatives considered are set out in Chapters 1 and 2 of the EIS and Appendix 1A of Volume 2 of the EIS (Options Analysis) and the development is set in a context whereby in the absence of a solution being found to the coastal erosion problem significant doubts are raised regarding the long term viability of the site and, in the short to medium term, the development of additional facilities at the site including conference facilities and additional residential accommodation, is stated not to be viable without a solution to the existing erosion issues being approved. Therefore, while the proposed development is not in itself directly related to tourism or employment generating activity, it is presented by the first party as a development that is seen as essential to maintain both the future viability of the existing activity on site and to give the confidence to invest further in the site.

7.2.8. It should be noted, however, that a significant theme in the third party submissions received is that there are alternatives to the form of development proposed that would not have such significant ecological impacts and which may be less costly financially in the longer term. Central to these promoted alternatives is the concept of managed retreat and the facilitation of a dynamic dune system. The next section of this assessment addresses the need, form and alternatives to the proposed development and, together with the consideration of coastal processes contained at 7.7 and 9.0 (Appropriate Assessment), provides an assessment as to the requirement for the proposed development from the perspective of coastal protection. Considerations regarding the economic and tourism benefits arising from

the proposed development need to be considered in the light of the conclusions reached on these issues.

7.2.9. An issue raised in the appeal submissions received relates to the ***applicants legal interest*** in the site and to the fact that the applicant has not demonstrated proper legal interest in the site of the application. It is further contended that the area below the high watermark is not within the control of the applicant and that no application under the Foreshore Acts for such works has been made. It is contended that this issue is dismissed by the Planners report with reference to s.34(13) of the act and it is assumed that a foreshore licence will be grated. This issue is not addressed in detail in the first party responses to the grounds of appeal, however information on this issue was provided by the first party as part of the response to further information submitted to the Planning Authority (see Response to RFI-EIS 3(b)). An examination of the submitted site layout drawings indicates that the application boundary as delineated in red coincides with the mean high water mark (indicated in green on the submitted plans). It would therefore appear that the extent of the proposed works area and the proposed development itself is wholly located within the area above the high water mark and that all works are therefore located on lands that are within the control of the applicant. The first party response to further information states that while the HWM was defined by the OS in 1896 and has not been revised since, and that the actual HWM is likely now to be further landward of the marked position due to erosion and sea level rise since 1896, legally administration of the Foreshore Acts is by way of reference to the 1896 HWM. It is further stated by the first party that folio maps confirm that the first party is the owner of the beach landward of the HWM identified on OS maps, that no permanent structures requiring a foreshore lease are proposed on state owned foreshore and that the extent of temporary works requiring a licence is confined to one location and that the first party is the owner of this small area of foreshore (at the southern end of the northern structure). It is acknowledged by the first party that foreshore consent will be required for the transit of vehicles over the above area at the southern end of the northern works section and that the disturbance of beach material also requires foreshore consent. I note that the appellants have not provided any clear evidence in the form of mapping or other information to contradict these assertions and therefore, subject to the foreshore consent being provided by the department, on the

basis of the information available it is considered that the first party has sufficient legal interest to undertake the development as proposed. As noted by the Planning Authority, any permission granted would be subject to the provisions of section 34 of the Act and the developer would need to satisfy themselves that any other consents required are obtained prior to any works being undertaken.

7.2.10. The appeal submitted by Mr Liam Madden makes reference to the issue of ***right of way*** and High Court case 1326JR Mc Nulty v Clare County Council which, it is stated by the appellant, determined that a Planning Authority has no competence to make a declaration as to what is or isn't a right of way. The appellant states that the fact that there are rights in this case is acknowledged by the Planning Authority by the attachment of a condition (Condition No.5) to the Notification of decision to Grant Permission. This condition requires that '*public access and rights of way to the beach shall not be obstructed in any way by the proposed development'*. It is not clear what part of the development the appellant considers would impact negatively on existing rights of way across the TIGL lands to the beach. Information submitted with the application indicates that the existing right of way across the golf course and access to the surfer's car park will be retained during the development. It is also stated by the first party that access to the beach from the southern (Mountrivers) end would be retained during and post the development.

7.2.11. Another legal issue raised in the third party submissions received relates to the ***justification given in the report of the Planning Officer for the conclusion of no significant effects on any European sites***. Specifically, it is contended by the third parties that the Planning Authority have not satisfactorily demonstrated how the conclusion of no effects on any European sites was reached and that an excessive reliance was placed in the assessment on the contents of the submitted NIS. The comments raised on this issue are noted as are the responses submitted by the Planning Authority and by the first party who set out how the wording used makes clear that all submissions received were taken into account in the conclusions relating to appropriate assessment. This issue, and the subsequent validity of the appropriate assessment and decision issued by the Planning Authority, is the subject of ongoing legal proceedings and it is not considered appropriate to address the issue further in this assessment. At this stage of the process and pending a decision of the outstanding legal case, it is incumbent on the Board as the competent

authority to undertake its own appropriate assessment that is recorded, reasoned, based on the best available techniques and methods and which comes to a conclusion as to whether any reasonable scientific doubt remains as to the absence of adverse effects on any European sites. This assessment is contained at section 9.0 of this report.

7.2.12. A further issue raised by third parties relates to the issue of ***long term maintenance and responsibility*** for the structures and what proposals are in place for the removal of the structures at the end of their design life. The *Preliminary Beach Monitoring and Management Plan* (HR Wallingford, May 2017) submitted by the first party as part of the response to further information, sets out a schedule of maintenance and inspection activity to be undertaken each year. The works are set out in section 5 of the plan and a number of trigger levels to prompt the works are set out in section 6.0. The plan maintenance works are set out for a five year period with a review at the end of the period. It is notable that section 1.1 of the Plan makes clear that the plan sets out the proposed management approaches *'…for the next 50 years with a recommended review every 50* years'. The plan therefore coincides with the design life of the project as set out in the EIS and the associated modelling work undertaken and presented in the EIS and Response to Further Information. While the plan states that responsibility for the monitoring and maintenance programme set out lies with the operators of the golf course, no commitment is given with regard to maintenance beyond this 50 year design horizon. Similarly, no commitment is made with regard to review to be undertaken at the end of the 50 year period or commitment given to remove the structures and reinstate the site. It is also noted that while the Notification of Decision issued by Clare County Council requires the submission and agreement of a finalised beach management plan, and requires that maintenance of the structures would be in perpetuity, there is no specific requirement for agreement of this ongoing maintenance and no requirement for a financial commitment from the developer in the form of a bond to cover reinstatement of the site. In the event that permission was being granted by the Board it is recommended that the issue of the post design period (50 year) beach monitoring and management and structure maintenance issues would be addressed by way of condition. Given the nature of the proposed development and the projected design life on which the application is based, it is also considered

appropriate that a condition requiring a bond or security for the future removal of the structure and reinstatement of the site would be required.

7.2.13. With regard to ***precedent*** for the form of development proposed, I note the fact that Chapter 1 of Volume 1 (paragraph 1.2 and Table 1.1) and Appendix 2C of Volume 2 of the submitted EIS makes reference to other links golf courses in the west of Ireland which have been the subject of coastal protection works and which are located in close proximity to European sites. The first party present these examples as evidence that there is a recurring issue on the west coast of erosion of soft coastlines and that the principle of protection of amenity resources such as links courses has been accepted and been shown not to have impacted negatively on the adjacent European sites. I note the point being raised on this issue, however in situations where there is a potential impact on a European site such as in this appeal, there is an onus on the competent authority to undertake an appropriate assessment that is based solely on the particular circumstances at the site, the potential pathways and connections with the European site and the impacts on the integrity of the site having regard to its conservation objectives. Regard also has to be had to the implications for coastal processes and visual amenity which will vary with the site and exact nature of the development proposed. It is also noted that it is not evident from the information presented on these precedent cases when or how the coastal protection works were authorised. In my opinion, therefore the fact that there is a precedent for a similar form of development in another location is not a significant consideration in the assessment of this case.

7.2.14. Finally, it is noted that the first party specifically questions the ***validity of the submission made by Perter Sweetman and Associates*** on the basis that the submission refers to it being on behalf of Peter Sweetman and Associates and Wild Ireland, and that there is a lack of clarity with regard to this party, specifically with regard to their address. As per the letter to the first party on file this issue has been considered by the Board and it has been determined that the submitted appeal is valid.

7.3. Need, Form of Development and Alternatives

7.3.1. The stated ***need*** for the proposed development derives from the rate of erosion as set out in Volume 3 of the submitted EIS (Design Reports). The rate of erosion and the degree of erosion that has occurred to date is stated to be such that there are significant sections of the golf course which are not adequately protected and which will be lost if no action is undertaken. The application sets out the history of the site in terms of the previous applications, and Appendix 1 of the EIS (Volume 2) sets out the options examined. These ten options range from a 'do nothing' / 'do minimum' option (Option 1) through sand / cobble nourishment (Options 2A and 2B), the use of groynes with sand and cobbles (Options 3A and 3B), nearshore breakwater (Option 5A), Toe Berm Protection (Option 6A), Rock Revetment (Option 7A), Use of SeaBee units (Option 7C) and Option 8 which is rock augmentation.

7.3.2. Under the heading of ***need***, the application documentation including the response to further information sets out how further investment in the TIGL complex can only be justified if the future of the site is the subject of protection from erosion. As discussed above in section 7.2, the economic impacts of the site are significant in terms of employment and visitor attractiveness / tourist numbers and the relevant figures and analysis is presented in Chapter 13 and Appendix 9 of the EIS. The analysis presented provides specific information regarding the economic case for the development of the ballroom / function room building, leisure facility including restaurant; and additional dwellings to be used for short term tourist accommodation. This development has now been permitted by Clare County Council and would likely not be developed unless permission is granted for the sea defence structures.

7.3.3. Tables 4 and 5 of Appendix 1 provides an assessment of the relative merits of the ten options under a number of criteria including performance, Monitoring and Maintenance, 'Constructability', Impact on Natural processes and Impacts on Beach Users and on the basis of full beach protection (Table 4) and partial protection (Table 5). Subsequent tables in Appendix 1 evaluate the options under a range of environmental criteria which largely reflects the factors of the environment as set out in the EIA Directive. In each case a four scale rating is used corresponding to Most Preferred, Preferred, Acceptable and Least Acceptable. The assessment provided in Appendix 1 of Volume 2 is not, in my opinion very clear as to how the overall

ranking of alternatives was arrived at and appears to count up the number of preferences assigned to each option without any weighting between the criteria used. I would therefore agree with a number of the third party submissions which question the four tier ranking system and specifically what recognised methodology it complies with.

7.3.4. The '***do nothing' scenario*** is dismissed, however it is noted that the only one of the one of the 16 no. assessment criteria under which it is assigned a Least Acceptable ranking is the provision of long term protection. In 13 no. out of the 16 no. criteria listed the do nothing scenario is identified as Most Preferred and yet it is still assigned a summary ranking of Least Preferred. Similarly, under the environmental criteria (Table 7A), the do nothing option is identified as the Least Acceptable in only three of the 14 no. criteria, of which two are 'Terrestrial Habitats' and 'Vertigo Angustior'. As will be discussed in later sections of this report, it is not clear that the 'do nothing' option is not consistent with the protection of terrestrial habitats and specifically Vertigo Angustior'. Overall therefore, the methodology used in the assessment of options, while detailed, is not based on a clear transparent methodology and contains a number of apparent inconsistencies in the ranking of options and assignment of weighting between the criteria used.

7.3.5. It is noted that the further information submitted provides additional detail with regard to the consideration of alternatives. This is contained at Preamble 2 to the Response to Further Information Request and provides additional detail over that provided at Appendix 1A of Volume 2 of the EIS regarding the assessment criteria. Preamble 2 includes a table (Table 2.2) which sets out the 8 no. options under a range of criteria including Performance, Monitoring and Maintenance, Constructability, Impact on Natural resources, Impact on Beach Users and Schedule. A second assessment (Table 2.3) evaluates each option as per environmental criteria that largely follows the factors of the environment as set out in the EIA Directive. In both assessments, more detail is provided to justify the assessment criteria applied to each option, however the method of rating using a four category rating of Most preferred, Preferred, Acceptable and Least Preferable is not well defined and there does not appear to be a weighting applied to the assessment criteria despite some clearly being of more overall significance than others. In summary, while of some benefit in examining the options available to the first party

and is consistent with the requirements of the 2011 EIA Directive, in my opinion there remain issues with regard to the overall ranking of options and the justification of the option selected.

7.4. Impact on Visual Amenity and Character

7.4.1. The landscape and visual impact of the proposed development is considered at Chapter 11 of the EIS. The assessment includes detail of the methodology at section 11.2 which sets out the criteria used for assessment of landscape value, magnitude of impact and significance. These criteria are generally standard in nature and as per the provisions of the Guidelines for Landscape and Visual Impact Assessment published by the UK Landscape Institute (2013). The baseline context of the site is described at section 11.3 and section 11.3.3 sets out the visual baseline and establishes the zone of visual influence (ZVI).

7.4.2. As noted in the site description at section 1.0 above, the site is located in a lowland coastal context that is of general high visual amenity. The more proximate context of the site comprising the beach is of higher visual quality again and is a significant recreational and amenity resource to the local and wider Clare areas.

7.4.3. The appeal site is located in an area that is identified as a heritage landscape in the *Clare County Development Plan, 2017-2023*. Within such areas developments must demonstrate how they have been selected to avoid visually prominent locations and the minimisation of visibility from scenic routes and trails. (***Objective CDP 13.5***). In addition, in the landscape character assessment set out at Chapter 13 of the Plan the site of the proposed development and the environs are designated as 'Coastal Plains and Dunes' and within the designation of seascape character areas, the site is in area 6 (Mutton Island and White Strand) which as per ***Objective CDP 13.6*** requires that all developments demonstrate that every effort has been made to reduce visual impact and that appropriate standards of location, siting, design, finishing and landscaping are achieved. The site location and nature of the proposed development is such that it does not have the potential to impact on any designated scenic routes or views identified in the development plan.

7.4.4. The high visual quality and importance of the landscape from a tourism and amenity perspective is reflected in the designation of the study area as having a high value and a high landscape sensitivity. Under the heading of visual baseline (11.3.3), there is no reference to the viewpoint sensitivity as detailed at Table 11.4. The Zone of Visual Influence (ZVI) is identified and described (and viewpoint selection set out at 11.2.7 and 11.2.8 of the EIS. The selected viewpoints are considered to be representative and, on the basis of the information presented and an inspection of the site and its context, I would agree with the landscape designations assigned.

7.4.5. The main ***potential landscape and visual impacts*** arising from the proposed development can be separated into construction and post construction phase impacts. During the construction phase, the will be impacts generated by the movement of construction traffic, the fencing off of works areas and construction compound and the actual construction activity itself on the beach / dune frontage. Following completion of the works, there will be potential ongoing post construction landscape and visual impacts arising from storm events leading to the removal of sand cover from the revetment. Some slight change in the close range visual appearance of the dunes in the immediate vicinity of the proposed structures would also be evident. In addition to this periodic visual impact that would arise following storm events, there is also the potential for longer term visual impacts arising from the fixing of the shoreline at the locations of the proposed defences and the retreat of the undefended areas in between. This disparity in erosion will lead to changes in the profile of the bay and secondly to potential long term issues of outflanking of the existing defences, leading to visual impacts.

7.4.6. The assessment contained at Chapter 11 of the EIS sets out the ***anticipated*** magnitude of ***landscape effects*** at section 11.6.2. This notes that the landscape impacted is a transient one due to the effects of coastal erosion and I would agree that this is the case albeit that changes in the landscape due to natural processes will still result in a natural environment of generally high visual quality and amenity. Construction access impacts and the impact of the construction compound on landscape character are stated to be short term which is appropriate given the anticipated c.3 month construction period. No magnitude of construction impact arising from traffic accessing the site or the compound is stated in 11.6.2 of the EIS, however I would consider that this would be a short term medium negative effect,

rising to high in the environs of the work areas on the beach. Given the high sensitivity of the landscape as acknowledged in 11.6.1 of the EIS, I consider that the overall significance of the construction phase landscape effects would be medium to high with the most significant effect on the beach itself. In general terms, this is consistent with the assessment contained at 11.6.2 of the EIS where it is concluded that the construction phase impacts would be of medium significance.

7.4.7. During the ***operational phase*** of the project, the assessment contained in the EIS (11.6.2) concludes that the magnitude of landscape effects would be negligible on account of the mitigatory effects of sand and cobble build up in front of the revetments. I note the point being made by the first party, however there would appear to be potential for there to be extended periods over the winter months where it may not be possible to replenish the sand facing to the revetments due to the absence of suitable breaks in the weather to enable such works to be undertaken. In addition, the creation of a stone path at the top of the revetment may also have some slight landscape impact. The significance of the landscape impact arising from storm events is difficult to quantify, being dependant on storm events, however I consider a significance level of minor or moderate rather than imperceptible to be more appropriate, albeit that these impacts would not be permanent.

7.4.8. Regarding longer term operational phase landscape impacts, I note that Section 11.6.2 of the EIS contends that the defences will result in a reduced potential for the protected areas to vary in terms of line and profile to the same extent as the undefended areas. It is stated that , '…*it would be difficult to argue that this in itself constitutes a change in character where the protection afforded would retain the dunes and the existing character, as opposed to the effects of natural processes on the unprotected dunes that could result in the total destruction of the dune system'*. The point made regarding retention of the existing dune landscape is noted, however given the nature of the proposed development, which will result in the fixing of sections of the bay and the exposure of the rest of the coastline to predicted ongoing erosion, there is in my opinion the potential for long term significant landscape effects to arise as a result of changes in the profile of the bay and the potential long term exposure of defence structures. The analysis undertaken by the first party indicates that retreat of the existing dunes at a rate of between 0.7 and 1.0 metre per annum is anticipated. Page 66 of the EIS indicates that retreat of the existing dunes

/ shoreline by approximately 55 metres over the 50 year design life of the structure and that with the partial protection in place this rate of retreat is expected to remain as per the do nothing scenario. Therefore, even over the 50 year design horizon of the proposed development, the potential change in the existing shoreline profile is significant and such a rate of retreat is unlikely to alter significantly over subsequent years, indeed it is possible that due to climate change factors this rate of shoreline retreat would increase. Having regard to these factors, I cannot agree with an assessment of a negligible long term landscape impact arising from the proposed development and I do not agree with the statement contained at the last paragraph of section 11.6.2 that it would be difficult to argue that the landscape changes arising from the alteration of the relative rates in shoreline / dune retreat between the defended and undefended sections would be imperceptible.

7.4.9. The first party put forward the opinion that as part of the dunes would be protected by the proposed development, it follows that the existing landscape character would be defended by the proposed works. For the reasons set out above, I do not see how this is the case. Rather, it is my opinion that the uniform retreat of the dune system would maintain the existing shoreline profile and, long term, would result in a reduced negative significance of effect on landscape. A similar point was made by Failte Ireland in its submission to the Board where it is stated that the assessment of visual impact appears to take the short term (operational) impact into account more than the long term (30 plus years) and that it would have been useful for the analysis of landscape and visual effects of the development were described and assessed at a number of stages of its lifespan. The Failte Ireland submission states that *'….this (natural erosion in the unprotected areas) will have a likely negative consequent impact on the visual, scenic and tourism amenity of the beach and dunes'*. For the reasons set out above, I would agree with this statement as it relates to landscape impacts and consider that the medium to long term landscape impacts of the proposed development would clearly not be imperceptible as stated in the EIS (11.6.2). The long term effects would be dependent on long term erosion of the shoreline and especially when combined with climate change, are very difficult to assess. The first party is clear in the application and in the submissions made to the Board that it is not intended that there would be any infilling between the structures and in view of this there is, in my opinion, potential for the exposure of the structures

and the significant change in the existing natural profile of the bay over the long term and which would have a medium to high long term landscape impact that would combine with the high sensitivity of the landscape to result in an overall medium to high negative long term effect on landscape.

7.4.10. In conclusion therefore on landscape impacts, it is my opinion that when combined with the high landscape sensitivity, the potential landscape effects at the operational / post construction phase are significantly underestimated in the submitted EIS. It is also my opinion that the analysis presented focusses to an excessive degree on the immediate post construction period and that adequate consideration is not given to the long term post construction landscape impacts. The nature of the proposed development is such that it is a long term project with the potential to have landscape impacts far into the future and I do not consider that the analysis presented with the application gives sufficient regard to this long time span of potential impacts or presents these potential impacts in a clear way. It is also noted that such long term landscape impacts have clear potential negative connections with the long term attractiveness of the area from the perspective of tourism and attraction of visitors which is significant given the location of the site on the Wild Atlantic Way and the significance of the area for tourism as recognised in the submission on file from Failte Ireland.

7.4.11. With regard to ***visual effects***, the description of construction and operational phase impacts provided at Figures 50 to 57 of the main volume (Volume 1) of the EIS. In terms of construction phase impacts, Figures 50-57 do not assign a significance level but state that impacts will be short term. Impacts on Views 4, 5 and 7 which show views along the beach would in my opinion be significantly negative at certain short periods during the construction period. Similarly, the impact on Viewpoint 6 (Surfers Access) would be significantly negative during the construction phase. During the operational phase, the submitted assessment and Figures 50-57 indicate that the impact will be imperceptible on account of the mitigation comprising the covering of the structure and proposals for the restoration of the dune profile. At the initial stages post the completion of the development, I would agree that the general visual impact would be negligible though this could rise to moderate during periods following significant storm events while the replenishment of sand and covering of the defences is pending. In the longer term however, for the same reasons as

discussed above relating to landscape impacts, it is my opinion that the change in shoreline profile and potential long term exposure of the defence structures has the potential to impact negatively on views, particularly those along the beach such as Views 4, 5 and 7. These potential impacts are not the subject of any discussion in the analysis presented at Chapter 11 of the EIS and while it is acknowledged that the primary impact of such long term changes in shoreline profile and exposure of structures relate to landscape and that the timeline and likelihood of such impacts is difficult to assess given the long time period and modelling variables involved including climate change, there is in my opinion potential for long term negative visual impacts to arise.

7.5. Impact on Amenity and Recreational Activity

7.5.1. The existing beach at Doughmore Bay and adjoining dunes is a significant recreational amenity for the local and wider area. In addition to the golf course, the beach is used by walkers, surfers and kite surfers as well as for the riding of horses. The proposed development has potential implications, both positive and negative for amenity and recreational activities in the area.

7.5.2. The ***landscape and visual impacts*** of the proposed development, both during construction and operational phases of the development are discussed at 7.4 of this assessment above and will not be revisited here. These impacts are however clearly directly and closely connected to the attractiveness of the area for amenity purposes. As concluded above, in addition to relatively short term construction phase impacts, there is considered to be the potential for negative medium to long term effects on landscape character and on views arising from changes to the profile of the bay and the potential long term exposure of the partial protection structures. The following sections set out a number of other considerations of relevance to consideration of the potential impacts on amenity and recreational activity arising.

7.5.3. Firstly, with regard to the ***golf course*** and the operation of the TIGL facility at Doonbeg, the stated primary purpose of the proposed development is to stop coastal erosion and to protect significant existing assets. In particular, the partial defence is designed to provide protection for the existing hotel complex and associated

buildings and for the holes of the golf course that are most at risk from coastal erosion, these being the 1st and 18th at the southern end of the site and the 9th at the northern end. As part of the first party response to the grounds of appeal, the first party has detailed a number of reconfigurations of the existing course layout that were undertaken in recent years and which are stated to have been undertaken in consultation and agreement with Clare County Council and the National Parks and Wildlife Service. These works are indicated on Figures 29 to 37 of the HR Wallingford Report attached with the second first party response, received by the Board on 5th March, 2019. In general terms, this indicates how the layout of the course has been altered in response to the erosion of the dunes in recent years with the separation between holes and the widths of fairways reduced as far as practical. It is also noted that as part of the permission granted by the Board under Ref. PL03.238097, that permission was granted for ancillary golf course alterations including the relocation of the tee position(s) on the 6th, 14th, 15th and 18th holes. The response to third party appeals submitted provides an analysis of the restrictions on the applicant in terms of a fundamental reorganisation of the golf course layout and the pursuit of an option of managed retreat as advocated by a number of the third party appellants. This managed retreat option has been dismissed by the first party in the response to the third party grounds of appeal as unviable for reasons including land ownership, the proximity of the course to designated SACs to the north east and wetlands to the east and south east. This would appear to be at variance with comment contained at section 5.4.2 of Volume 1 of the EIS where under the heading of Preferred Design, it is stated that '*in the central section (undefended areas) golf course assets are to be moved landwards to reduce vulnerability*.'

7.5.4. The first party response to the grounds of appeal also rejects suggestions made in third party appeals that one of the original premises for the granting of permission for the golf course was that the layout of the golf course would be altered in the future to account for coastal erosion at the site. Third party submissions contend that this issue was the subject of specific discussion at the time of the oral hearing into the original development at the site. The first party states that some adaptation of the golf course layout has been undertaken since 2014 in recognition of the reduced the play areas of the front holes at the course, however it is submitted that further squeezing of the parallel hole layout at Doonbeg is not advisable for safety reasons

and the limitations of Condition No.6 of the parent permission. The first party also state that, contrary to the statements of the appellants, there was never any statement or proposal at the time of the 1998 parent application that the golf course or associated development would move to wetland areas to the east or be the subject of managed retreat. I have reviewed the EIS submitted with the original application (ABP Ref. 03.109516) and also the inspectors report on that case which includes a detailed commentary on the proceedings of the oral hearing, however I have not been able to find any specific reference to the issue of the future reorganisation of the golf course layout or adaptation of the site in the future to account for coastal erosion. In short, the option of managed retreat is one which has been rebuffed by the first party with significant information provided as to why it is not viable and has also been referenced as part of the 'do nothing' option examined as part of the consideration of alternatives presented. It is therefore considered appropriate that the assessment would proceed on the basis of the merits of the layout as indicated in the submitted plans.

7.5.5. The information presented by the first party does not elaborate on in any detail is how, given the anticipated 0.7 metre plus per annum predicted retreat of the dune system into the golf course, it is proposed that the ***layout of the golf course*** would or could be ***further adapted within the existing site constraints***. On the one hand, the first party is setting out how significant alterations to the existing holes have been undertaken and how there are restrictions on the fundamental reorganisation of the layout of the course while on the other, the modelling information presented with the applications sets out the case as to how the area has and is predicted to continue to be the subject of erosion owing to the bay being a closed unit and the predominance of cross shore sediment transport. How these two positions are proposed to be reconciled is not, in my opinion clearly detailed or addressed in the application documentation or subsequent first party submissions on file.

7.5.6. Connected to the issue of the ***long term development of the site and golf course***, a number of the submissions made to the Planning Authority and the Board contend that the proposed development is just the first phase in what will end up becoming proposals for the protection of the entire frontage. This is refuted by the first party, and has not been taken into account in the appropriate assessment undertaken

(section 9.0), however the apparent contradictions between the statement of the first party regarding the options for medium to long term adaptation of the course layout combined with the assessment of likely ongoing erosion in the central undefended areas of the bay are such that the points raised by third party objectors on this issue have not been addressed in a very coherent way. Clearly any such future coastal protection works or application for permission for the extension of the existing proposed development would have to be the subject of assessment including appropriate assessment, however the ambiguity raises issues regarding the long term plan for the development of the site and the retention of the existing amenity facilities on the site. While it is clear that the proposed defences will provide medium and long term protection to the existing hard infrastructure on the TIGL site and will also protect the golf course holes that are located in close proximity to the structure, it is unclear from the information presented how the long term future of the golf course is proposed to be protected. The first party has been definitive in its statements that it is not proposed that the subject application for a partial coastal defence is a first step in a full defence of the bay frontage. Given these circumstances, it is considered that the overall impact of the proposed development on the recreational amenity in the form of the golf course is uncertain, particularly in the longer term.

7.5.7. With regard to the implications of the development for ***recreational activity and users of the beach***, there are a number of factors that are considered relevant. Firstly, the proposed development would result in improvements to the existing beach access and car parking arrangements. Specifically, the proposed development incorporates an expansion of the existing car park located to the east of the surfer's access. There is some contradictory information presented with regard to the scale of the proposed works in this area with section 3.3.4 of the EIS stating that this car park is to be increased from 10 no. spaces to 20 no. while the drawings (Fig. 07 of the EIS and Drg. 141-231-514) show an existing layout of 7 no. spaces increasing to 20 no. From an inspection of the site, it would appear to me that the additional spaces proposed would be closer to the 13 no. indicated in the drawings. The proposed development will therefore result in some additional parking provision and an overall positive impact for amenity users of the beach with the

existing Mountrivers public car park at the southern end of the beach proposed to remain unaltered in size.

7.5.8. During the construction phase of the project, there will be a short term negative impact on access for amenity users of the beach from the central surfer's access point. I note the proposals contained in the Draft Construction and Environment Management Plan submitted with the application and section 3.3.2 of the EIS which indicates that construction traffic will use the northern beach access at the surfer's access. While there is proposed to be general separation of the construction and car park / amenity access at this location during the construction period, there will be a requirement for the management of construction traffic and pedestrians with the use of a banksman. Some disruption to recreational access to the beach will be unavoidable during the works on the southern defence structure as there will be a requirement to cross the delivery route from the construction compound to the construction area. Such impacts should however be manageable and will be of relatively short duration comprising part of the overall 3 month construction period.

7.5.9. Of potentially more significance for the recreational users of the beach is the potential for the defences to result in ***beach lowering and a reduction in the available extent of beach.*** Specifically, the analysis presented in the EIS and the Coastal Process Report (HR Wallingford, 2016) indicates that the average annual rate of beach lowering would be 0.03 metre / year or 3cm a year (HRW, 2016). The EIS (pg.66, section 5.5.2) states that the overall level of beach lowering over the 50 year design period of the project is 0.6 metre and that the effect of this would be that the mean HWM would reach the defences between 23 and 28 years from the year of construction in the case of the works at the southern end of the beach and approximately 39 years into the design life in the case of the northern defences. It is not clear to me how the c.3cm per annum lowering referred to in the Coastal Processes Report translates into a 60cm lowering in the beach level over the lifetime of the project (50 years) and it would appear from the response provided to Item EIS4(a)(ii) in the response to further information, that the reference to 60cm relates to the period from when the high water mark reaches the defences to the end of the design life of the project (i.e. approximately year 25 to year 50). Overall beach lowering over the life of the project is likely to be a significant 1.2 – 1.5 metres. Allowing for the lowering to be such that the shoreline reaches the defence in c.23

years from the development, it is apparent that the extent of beach available to public access at set periods of the tidal cycle would be being reduced over time and, in the case of the southern end of the beach, that from 23 years post development there is a 'squeeze' in the period over which access to the beach would be available at high tide. Over time, the effect on beach access arising from beach lowering and the presence of the defences restricting the ability of the dune front to retreat would increase. The degree to which the extent of available beach at various times of the tide would be reduced over time and the long term implications of the development for beach access, particularly from the southern access point, is not analysed or described in the submitted information. While I accept that it will be a significant time period post development before it is likely that there would be significant impacts on public access to the beach, it is considered that this issue is a potential long term negative impact in terms of public amenity and an issue that warranted further consideration and analysis in the submitted EIS.

7.5.10. Related to consideration of public access to the shoreline and amenity impacts, I note that the first party response to the grounds of appeal contend that ***coastal squeeze policies*** should not be used against the development on the basis that such issues were taken into account in the original permission, are applicable to new developments and that such an approach would be fundamentally incompatible with the constitutional property rights of landowners and ignores the fact that such developments and uses have the benefit of existing permissions. I note the points made by the first party on this issue however, from examination of the EIS and inspectors report in respect of Ref. PL03.109516, the issue of shoreline retreat and the need for coastal defences in the future did not appear to be a significant issue in the assessment of this case. I would also question the view taken by the first party on this issue as coastal defence works to which coastal squeeze policies relate are clearly proposed to protect some form of built development or resource and I do not see how the TIGL facility is different in this regard. Consideration of the implications of the current proposal in terms of coastal squeeze and the resulting impact on amenity and amenity access are in my opinion a valid consideration in this case.

7.6. Traffic and Transportation Issues

7.6.1. The main traffic impact arising from the proposed development relate to construction phase impacts. This main construction phase is stated to be undertaken over an approximately 12 week timescale between March and May and the stated hours of construction are 08.00 to 22.00hrs. As per the assessment provided in the EIS, the materials to be delivered to the site as part of the construction activity comprise a total of c.28,000 cubic metres of armourstone and under layer together 18,000 cubic metres of geotextile and 8,000 cubic metres of sheet piles. The traffic implications of these materials are assessed as a total of 40 HGV deliveries per day assuming a 20 tonne maximum load with a maximum of 6-7 deliveries per hour at the peak period. Projected plant and construction personnel requirements are set out at Table 2.2 of the EIS.

7.6.2. The most significant features of the surrounding road network comprises the N67 national secondary road that runs to the east of the site and two local roads that connect to the public car park at the southern end of the beach (L6102) and the L61041 which provides access to the central access to the beach across the golf course (the surfers access) and which also runs to the south west providing access to the golf links access road and onwards to the southern end of the beach. To the north of the L-6104, there is an access road to the TIGL resort, the golf links access road which runs for a distance of c.2km from the junction with the N67 to the resort. This road crosses the western end of the L-6104 and the right of way central access to the beach via the surfer's access before continuing to the south through Carrowmore townland and on to the resort. The N67 connects with the R484 c.2km to the south east of the site and c.1.4km to the south of the junction of the L61041 with the N67.

7.6.3. The submitted EIS sets out two possible haul routes to the site, and both of these routes use the golf links access road from the N67. The haul route enters a construction compound located to the north of the existing entrance road to the golf course and to the east of the surfer's access. From the compound, access to the works area is proposed to be via the southern of the existing two centrally located access points onto the beach. Beyond the L61041 / N67 junction, the northern haul route option travels north on the N67 to Miltown Malbay, the route then travels east

on the R460 and then via the N85 from Inagh to Ennis. The southern option travels via the R484 and then connects with the N68 to the south of Liscasey and onwards to Ennis. The southern route option is shorter at c.37km as against the 45km for the northern route. The route options are illustrated in Figure 05 of Volume 1 of the EIS.

7.6.4. As part of the assessment undertaken by the first party traffic surveys were undertaken covering the main junctions on the proposed haul route, these being the junction of the N67 and the Golf Links access road and the N67 and R484. Surveys were undertaken in November 2016 and April, 2015 and PICADY analysis shows very low existing levels of delay and RFC figures that are a maximum of 0.08. The existing junctions close to the appeal site are therefore currently operating well within capacity at peak times. Modelling of the junctions and links with the construction traffic added is indicated in Figure 21-24 of the EIS and indicates that the impact on the analysed junctions arising is minimal (EIS Table 3.4). The construction phase increases in traffic on the N67 in the vicinity of the site would increase, however the predicted levels and volumes are not such that would give rise to an issue on a national secondary road. In making the assessment of traffic impacts I note the fact that the response to further information included revised assessment of junction and road capacity to account for an increased summer baseline traffic volumes rather than the April / November periods used in the baseline surveys. The adjustments made to the original survey data and resulting assessment as set out at RFI-EIS 5(b) is in my opinion appropriate and shows that the impact of the development traffic on top of summer peak tourism season baseline traffic would still not have a significant effect on the overall capacity of the local road network. Sightlines at the main junction of the golf links access road and the N67 are considered to be satisfactory.

7.6.5. As part of the response to further information, the applicant provided further details regarding developments that could result in a potential cumulative impact in terms of construction traffic. Specifically, a number of windfarm developments are identified and examined and the results of this assessment is presented at Response to RFI-EIS-5(c) and at Appendix G of the response to further information submission. This analysis sets out the likely timeline and haul routes for five windfarm developments in the general vicinity of the site and the anticipated volumes of traffic. On the basis of the information presented I would agree that the predicted cumulative impact of these developments in conjunction with the subject development is limited.

7.6.6. With regard to the choice between the haul route options presented, the first party favours the northern route as it provides for a direct connection onto the N67 national route. The northern option is also the favoured option of the local authority, subject to an alteration to ensure that the centre of Miltown Malbay is avoided by using the L-2106, and this route is required by way of Condition No.7 attached to the Notification of Decision issued. Notwithstanding the greater distance involved, the rationale for the selection of the northern route is accepted given that it would provide a more direct access to the national road system and, in the event of a grant of permission, it is considered appropriate that this route would be used. I also note the fact that Condition No.7 requires the developer to undertake pre and post construction surveys of the haul route and that the first party has indicated their willingness to undertake such surveys in the response to further information (RFI-EIS-5(a)). In the event of a grant of permission, it is my opinion that a condition requiring such a survey should be attached.

7.6.7. As part of the assessment of the application, the Council's area engineer identifies a rate of contribution that should be payable by the applicant towards the potential damage to roads along the haul route. This analysis is undertaken on the basis of potential long term damage arising that may not necessarily be picked up by the post construction surveys and specifies a remediation rate per square metre and the proportion of the overall remediation cost that should be apportioned to the project. This rate varies from 25 percent of the full cost in the case of the L-2106 local road that would be used to bypass Miltown Malbay to 19 percent for the national roads (N67 and N85) and 15 percent of the R460. The total cost estimated is €240,000 and this is included as Condition No.9 attached to the Notification of Decision issued by the Planning Authority. This figure appears significant, however it covers a haul route in excess of 40 km allowing for the bypass of Miltown Malbay and would potentially impact on local and regional roads that would have less capacity to deal with the c.4,500 HGV movements required. The figure has also been itemised and justified in the report of the area engineer and for these reasons it is in my opinion appropriate that in the event of a grant of permission a condition requiring a contribution of €240,000 as a special development contribution in accordance with the requirements of s.48(2)(c) of the Act would be attached.

7.6.8. During the construction phase, the access to the beach from the construction compound will require the construction of a ramped access. The response to further information submitted indicates that the access to the beach from the surfer's access point will require the construction of an access ramp parallel to the shoreline which would be over a distance of 65 metres to achieve the required gradient. Direct access to the beach for the delivery of construction materials was an issue that was raised in internal Clare County Council reports and would have the benefit of enabling the compound to be omitted or at least reduced in size. Response to RFI-EIS 5(d) submitted by the applicant to the council clarifies the breakdown of delivery traffic which amounts to approximately 40 HGV trips to the site per day or approximately 6-7 per hour at the peak period in March when the days are shortest. While the idea of direct delivery to the beach would have clear potential benefits in minimising the size of the compound and the requirement for double handling materials, it has to be set against the location of the construction area in a location that is limited in activity due to tides. Deliveries directly to the beach would only be feasible when the construction and beach storage area is not directly impacted by the tide and I note the fact that the response to further information states that direct delivery of materials to the beach will be done where feasible. For these reasons it is considered appropriate that in the event that permission is granted that provision would be made for a construction compound in the location proposed.

7.7. Geology, Geomorphology and Coastal Processes

7.7.1. The site is located in an area where the bedrock geology is identified as having a high to extreme vulnerability rating (see, Figure 30 in EIS). Auger tests undertaken along the length of the site indicate that the existing depth of sand is between 0 and 3.1 metres in thickness. Regional groundwater flow is stated to be generally in a south westerly direction towards the Skivileen River.

7.7.2. Groundwater monitoring in the form of boreholes at three transects across the site has been undertaken since 2000 on foot of the monitoring required by the conditions attached to Ref. PL03.109516. The results of these boreholes indicated that there is a very rapid response to rainfall events with an annual variation in groundwater levels of c.1 metre.

7.7.3. The design of the proposed development has been undertaken to ensure that ***groundwater movement*** will not be impacted and the sheet piling is proposed to be permeable with no long term impact on ground water flow. In the short term, during the construction phase there would be potential impacts on ground and surface water quality arising from construction activity. A draft construction and environmental management plan has been prepared that addresses issues relating to the storage of materials and the refuelling of equipment / machinery and storage of fuels and oils. All refuelling will be undertaken within the designated construction compound. The site compound is proposed to be prepared by the excavation of existing topsoil and the laying of a hardcore. This area is proposed to be reinstated on completion of the construction activity. At the construction site itself, all excavations are proposed to be backfilled as soon as possible and drainage from the site compound is proposed to pass through an oil interceptor prior to discharge. Subject to good construction practice and procedures being followed it is not considered that the construction phase of the development is likely to have any significant adverse impacts on water quality or local ecology.

7.7.4. The proposed development has a clear potential impact on the local area in terms of an impact on tides, erosion, water levels, wave action, sediment transport, shoreline retreat / erosion rates and general impacts on the geomorphology of the beach and dune system. These areas have been the subject of detailed analysis and assessment as part of the application, including information contained in the initial application documentation, the response to further information submitted to the Planning Authority and information submitted by the first party as part of their response to the third party appeals. A summary of the information sources used in the analysis is provided at section 5.2 of Volume 1 of the EIS and from this it can be seen that significant information collected in respect of previous proposals for coastal protection works at the site have been utilised. The following is a summary of some of the most significant analysis / information sources presented by the first party during the course of the assessment of the application by the Planning Authority and now by the Board:

- Review of historical mapping of the bay and analysis of the rate of shoreline retreat.
- Topographic surveys of the undertaken in August, 2014 and July, 2016.

- Review of work undertaken by HR Wallingford in respect of 2016 application for full coastal protection works
- Wave modelling of the transition of waves from offshore to the nearshore area using the SWAN model. Doonbeg Golf Course Partial Protection – Wave Modelling, HR Wallingford, December, 2016 (EIS Volume 3, Item 2)
- Modelling of changes to the beach plan shape using Beach Plan Model. This modelled the changes to the shoreline over the 50 year design life of the development in both a 'do nothing' scenario and with the proposed partial protection works in place. Doonbeg Golf Course Partial Protection – Coastal Processes, HR Wallingford, December, 2016 (EIS Volume 3, Item 1)
- Modelling of the cross shore sediment transport and how this impacts on beach and dune profiles. Doonbeg Golf Course Partial Protection – Coastal Processes, HR Wallingford, December, 2016 (EIS Volume 3, Item 1).
- Coastal Processes – Analysis of data from ongoing beach monitoring by HR Wallingford, dated February, 2018 (Appended to First Party Response to Third Party Appeals received by the Board on 5th March, 2018). This report contains a sediment budget assessment that uses information collected over the 2017 – 2018 period to update the assessment submitted with the original application which related to the survey information collected in July, 2014 and August, 2016.

7.7.5. In terms of coastal processes there are a number of ***characteristics of the study area*** that impact on the analysis and the design of the proposed development. Firstly, the site faces west and is directly exposed to waves from the Atlantic. Some protection from waves from the south west is provided by Killard Point c.3km to the west and by the profile of the coast to the south west of the site. To the north, the bay is given some protection by Carrowmore Point. In addition, there are rock outcrops running from the shore at Carrowmore Point to the north of the bay and at the southern end of the bay immediately to the north of where the Skivileen River outflows into the bay. The existing beach comprises a wide intertidal area and above the HWM sandy beach which has cobbles present in the upper sections. The dispersal of these cobbles is more predominant at the southern end of the beach

although this feature is prone to change with periods where there is sand coverage of the cobbles as evidenced from the photographs contained in Chapter 5 of the EIS.

7.7.6. The wave conditions experienced at the site are described at 5.3.4 of Volume 1 of the EIS, and the results of wave modelling as summarised in this section describes how the nearshore seabed contours are such that it causes the offshore wave directions to be narrowed and concentrated as they approach the coast in the vicinity of the site. This modelling work is presented in detail in the Wave Modelling Report prepared by HR Wallingford (December, 2016) and presented in Volume 3 of the EIS.

7.7.7. The ***sediment budget analysis*** undertaken by HR Wallingford and presented with Volume 3 of the EIS indicates that each year approximately 20,0000 cubic metres of sand is taken from below the -1.0 m OD contour, and that of this material only approximately 10 percent came from the dunes, with the balance comprising sand lost from the beach. On the basis of the narrow focus of the waves as they approach the shore, and having regard to the physical layout of the bay with headlands to the north (Carrowmore Point) and to the south, the analysis undertaken indicates that the bay acts like a closed system with regards to longshore transport. In other words, there is predicted to be little if any long term net transport out of the bay to the north or to the south. The analysis presented does indicate that there may be some short term longshore transport but that the long term net trend is neutral.

7.7.8. With regard to the ***cross shore movement*** of material and the predicted loss of 20,000 cubic metres of material, the end location of this material, i.e. whether it is stored in the nearshore area or whether it is moved to deeper water and effectively lost from the system was the subject of the request for further information issued by the Planning Authority. The response of the first party (RFI-CP 1(b)) indicates that the fate of material that is moved below the closure depth of -7mOD is unknown and has not been analysed further as the results of such analysis would not be conclusive. If it is assumed that the material remains within the bay then it would potentially be available for a return to the beach under certain conditions. If it is assumed that the material leaves the bay then it could potentially be a source of sediment for neighbouring beaches. In either case, the first party contend that the construction of the proposed development would not have any, or at most a minor, impact on this process due to the fact that only 10 percent of the material lost is from

the dunes which are the subject of protection and that only a portion of the dune face will be unprotected and available for the supply of sand.

7.7.9. An overview of the data available with regard to ***historical profile surveys*** of the bay taking in the beach and dune system is profiled at Preamble 1 in the Coastal Processes section of the response to further information submitted by the applicant to the Planning Authority. This sets out how the only detailed surveys of the bay that take in the whole frontage were between 2014 and 2016 where a survey at 34 no. individual locations was undertaken in summer 2014, early 2016 and summer 2016. These surveys have since been supplemented by additional surveys undertaken at 18 no. locations in April 2017, August 2017 and January 2018. These further results are detailed in the report of HR Wallingford submitted to the Board in March 2018 as part of the first party response to the grounds of appeal. Other survey information available is summarised at Table 1.1 of Preamble 1 to the response to further information and comprises the following:

- 2014 post winter storm with surveys of the area in the vicinity of the central and southern sections in proximity to the 14th and 18th holes.
- 2008 surveys on the central and southern sections of the bay frontage.
- 2003 survey that incorporated points along the entire frontage.
- 1896 – use of mapping from 1896 which indicates the HWM as surveyed at that date.

7.7.10. The results of the survey information indicates that the dune crest line retreated an average of c.30 metres over the 118 year period between 1896 and 2014 and up to 60 metres in the worst sections. Thirty metres equates to c.0.25 metre retreat per annum average and it is estimated that c.8.2 ha. of dunes were lost over the 1896 to 2014 period. Studies undertaken for the 2009 application for the sea bee units (Ref. 09/1097; PL03.238097) indicated that comparison of 1974 orto photography and the surveys undertaken in 2008 gave erosion distances in the central and southern sections of between 6 and 15 metres meaning an average of c.0.25 – 0.5 metres of dune retreat per annum. It is stated that the rate of retreat has increased over time and that a comparison of 2003 and 2014 information indicates a retreat rate of approximately 0.7 metres per annum. Preamble 1 of the response to further information sets out how use of wave data over the 1979-2016 period was used to

assess the representativeness of the data collected over the 2014-2016 period at the 38 locations across the site. The results of this assessment indicate that the estimated sediment transport for the two years surveyed is '*reasonably representation of the long term climate'*.

7.7.11. Further analysis of data from ongoing beach monitoring is contained in a report from HR Wallingford submitted as part of the first party response to the grounds of appeal, dated February, 2018. This analysis takes in additional survey data collected over 2017-2018 and notably identifies that '*seasonal accretion of the dune face has been observed and there was net accretion over the year from August 2016 – August 2017 but this accretion on the dunes was removed by storm Eleanor and the associated surge at the beginning of 2018*.' The conclusion of the assessment is that the beach is subject to seasonal and annual variability linked to storm events and accretion was observed *'between August 2016 and April 2017 and also between April 2017 and August 2017'*, with the accretion over this period '*about three times greater than the erosion that took place over the two years between July 2014 and August 2016*'.

7.7.12. Analysis of the 'end effects', that is the potential for additional shoreline or dune erosion to occur in the vicinity of the ends of the protected sections, and for the outflanking of defences is also addressed in the first party submissions on file. This analysis refutes the potential for outflanking to occur within the design life of the project (50 years) and sets out how the structural design of the defence structures has been undertaken having regard to the predicted rate of beach lowering and end effects and to ensure that significant remedial works to ensure the structural integrity of the defences would not be required over this period. In terms of 'end effects', the analysis presented as part of the response to further information (RFI-CP-5) and section 2.9 of the first party response to the grounds of appeal received by the Board on 5th March, 2018. The results of this assessment indicates that there is predicted to be a small additional loss of habitat within the SAC boundary compared with a 'do nothing' scenario, measuring c.92 sq. metres 50 years post development and c.347 sq. metres 100 years post development. These 'end effects' and additional habitat loss are clearly minor especially when set in the context of the overall predicted loss of dune habitat over the same periods due to natural processes. The analysis of potential 'end effects' and outflanking as well as the design life and long term

management of the defence structures, are however issues that are of significant relevance to the assessment of the potential impact of the proposed development on European sites and are therefore considered in significantly more detail in section 9.0 of this report under the heading of Appropriate Assessment.

7.7.13. In conclusion therefore, the analysis presented indicates that the there is a long term trend of erosion at Doughmore Bay and that this rate of erosion is increasing over time with the recession rate per year increasing from c.0.25 metres per annum over the 1896-2014 period to c.0.7 metres per annum over the 2003-2016 period. It is accepted by the first party that there have been instances of short term accretion within these periods such as that observed to the front of the southern part of the SAC over the 2014-2016 period, but that these are short term events in a long term trend of erosion. It would also appear from the information presented that the rate of erosion is likely increasing over time with increased frequency and intensity of storm events and the impact of climate change. Information presented would also appear to generally support the conclusion reached by the first party that Doughmore Bay acts as a closed system with regard to longshore transport, albeit that there remains a significant degree of uncertainity with regard to the destination of the estimated 20,000 cubic metres per annum of material lost from the beach and dunes within the bay. In the context of the identification of a need for the proposed development and protection of the existing golf course and other assets at the site, the information presented is considered to set out a strong case as to why some form of defence structure is required. The issue of survey information and the adequacy of the information on which the analysis is based is however revisited in section 9.0 of this report under the heading of Appropriate Assessment where a different standard of certainty with regard to model inputs and likely impacts of the development is required to be met.

7.8. **Ecology**

7.8.1. The following discussion of ecology should be read in conjunction with section 9.0 of the report relating to appropriate assessment and the consideration of the likely effects of the proposed development on European sites in the vicinity.

7.8.2. The site is located in close proximity to the Mid Clare Coast SPA and to the Carrowmore Dunes SAC. As set out in the section on Appropriate Assessment (section 9.0) the site where there is the most significant potential for significant effects on conservation objectives arises is the ***Carrowmore Dunes SAC (site code 002250)***. The qualifying interests of this site are as follows:

- Reefs,
- Embryonic shifting dunes,
- Marram Dunes,
- Fixed Dunes
- Narrow Mouthed whorl snail

The main potential impacts arising on this European site as a result of the proposed development relate to changes in coastal processes arising from the construction of the partial defence structure and the resulting indirect impact on the SAC and changes in local hydrology which have the potential to impact on the habitat of the Narrow mouthed whorl snail (Vertigo Angustior). The location and design of the proposed structures are such that significant impacts arising from changes to the local hydrological regime are not anticipated to arise and monitoring of the Vertigo Angustior population as required under the monitoring programme conditioned as part of the original grant of permission for the hotel and golf course do not indicate any clear correlation between population numbers and hydrology. As highlighted in the first party submissions, the proposed development would likely have an overall positive impact in terms of the extent of suitable habitat for V. Angustior as the partial defence structures are predicted to result in the retention of c.2.4 ha. of dune habitat that would otherwise be lost.

7.8.3. As set out in sections 7.7 (Coastal Processes and Geomorphology) and 9.0 (Appropriate Assessment), the modelling work undertaken with regard to cross shore processes and the rate of dune retreat indicate that there will be some additional 'end effects' at the ends of the proposed partial defence structures which are located in close proximity to the boundary of the SAC and that there would be some additional loss of habitat within the SAC arising from additional erosion as a result of

the partial defence structures. There is also a degree of uncertainity with regard to the likely impacts of the structures on coastal processes which arises as a result of the limited timespan over which accurate survey information of the existing shoreline is available and which can be verified for use in the modelling. Finally, there are issues arising with regard to the long term management of the structures and the role that is envisaged by the applicant for the Beach Monitoring and Management Plan which includes future adaptations to the project if required to ensure that there would not be adverse impacts on the SAC. For these reasons, while it is considered that any impacts arising on the conservation objectives of the SAC are not likely to be very significant, particularly in the context of a coastline with a long term erosive trend and the nature of the dune system, the predicted and potential impacts on the SAC and uncertainity in this assessment is such that it is not considered possible to come to a conclusion that the proposed development would not have an adverse effect on the integrity of the European site in light of its conservation objectives.

7.8.4. The ***Mid Clare Coast SPA*** (Site Code 004182) bounds the appeal site to the west beyond the mean HWM, overlapping with the extent of the Carrowmore Dunes SAC. In addition, the SPA extends further from shore to a distance of c.3.5km beyond White Strand and extends north as far as Spanish Point, c.11km to the north of the appeal site. The qualifying interests of this site are as follows:

- Cormorant,
- Barnacle goose,
- Ringed plover,
- Sanderling,
- Purple sandpiper,
- Dunlin,
- Turnstone,
- Wetlands.

7.8.5. The proposed development would have potential impacts on a number of terrestrial and marine species and habitats and on the aquatic environment. These impacts are assessed at Chapters 6, 7 and 8 of Volume 1 of the submitted EIS and are based on a range of survey information collected for the current application as well as the results of surveys undertaken for previous applications including, for example, surveys of the intertidal rocky areas and reefs located at the northern and southern ends of the strand which were undertaken in 2004. Other surveys indicate that the existing sand on White Strand consists mainly of medium to coarse material with fauna recorded consistent with mobile sand habitats. The construction activity would lead to potential changes in habitat for ***aquatic species*** due to compaction of the sand, temporary loss during the construction phase, disturbance and potential for pollution. Significant construction phase mitigation in the form of the layout and management of the construction compound and access to the works areas are proposed and subject to good construction practice and the preparation and implementation of a detailed CEMP it is not anticipated that there would be any significant negative impacts arising and such impacts as do arise would be short term in nature arising from the direct construction activity.

7.8.6. The ***terrestrial habitats*** at and in the vicinity of the site primarily comprise sand dune habitat with part of this area identified as a SAC, (Carrowmore Dunes SAC). The area identified as SAC is fenced off from the golf course and access is not available. It is noted that the entirety of the dune habitat and the golf course is designated as a proposed natural heritage area (pNHA). The bulk of the site is made up of fixed dunes, with a smaller amount of embryonic shifting dune habitat. In areas between the dunes there are dune stacks and pond areas that provide habitat for a range of species. The golf course itself presents a range of habitats arising from its maintenance with highly managed areas as well as areas of longer vegetation. Arising from the original permission for the development of the site it is the subject of a management plan to ensure the protection of the Annex II species Vertigo Angustior (Narrow Mouthed Whorl Snail) and this is one of the qualifying interests of the Carrowmore Dunes SAC. Surveys of the dune front undertaken for the current application at 13 no. locations recorded the presence of snails at eight locations, though the levels recorded in some samples were very low. The nature of the proposed works is such that there is not likely to be a significant loss of V.

Angustor habitat arising however a full assessment of the impact of the development on the species in light of its inclusion as a qualifying interest of the Carrowmore Dunes SAC is provided at section 9.0 of this report under the heading of Appropriate Assessment.

7.8.7. The two separate works areas included in the current application lie entirely outside of the ***boundary of the Carrowmore Dunes SAC*** which occurs in the central part of the site along the strip closest to the beach with two additional areas extending further east at the northern and southern end. Existing dune and other habitat at the site is identified in Figures 37-43 of Volume 1 of the EIS. The location of the proposed scheme in relation to the SAC boundary is shown in Figure 33 of the same volume of the EIS and the location of test cores and sediment samples taken for the current EIS shown in Figure 32.

7.8.8. The results of the assessment undertaken indicate that the ***dune habitats*** of conservation interest at the site are experiencing a range of pressures. The embryo dunes at the seaward edge are experiencing erosion, a lack of plants / vegetation despite a sward management plan being implemented in recent years and experience is that each periodic storm event erodes the embryonic dunes before they have a chance to become properly established.

7.8.9. The surveys undertaken for the current and previous applications at the site have identified a site close to the dune frontage at Hole 1 which comprises a ***legacy landfill*** of domestic refuse. The extent of this area is not significant and the amount of waste by volume is not significant. Testing indicates that the presence of this material has not had a significant impact in terms of contamination and the EIS (paragraph 7.6.7) states that it is proposed that this material would be removed as part of the golf course maintenance programme.

7.8.10. The extent of ***direct loss of habitats*** from the construction activity is indicated in Table 7.6 of Volume 1 of the EIS and this indicates that the overall loss is relatively modest at c.0.15 ha., none of which is within the boundary of any European site. The location of the site compound is on an area that was historically used as a go karting track prior to the development of the golf course. This area has therefore previously been modified, is currently a meadow habitat and is not of any particular ecological significance.

7.8.11. The proposed construction activity requires the importation of a limited amount of soil or sand material in the initial phase of construction however there is the potential for the introduction of ***invasive species***. Measures for the control of invasive species do not appear to be included in the Draft CEMP submitted as part of the response to further information (Appendix D) however in the event of a grant of permission details could be required by way of condition.

7.8.12. Under the heading of ***marine mammals***, the vicinity of the appeal site is an important location for a range of cetacean species with a range of dolphin, porpoise and whale species recorded in the general area (Table 8.1 EIS Volume 1). The closest European site which have marine mammals as a qualifying interest of the site are located more than 40km from the appeal site. Sightings of marine mammals in the immediate vicinity of Doughmore Bay are relatively infrequent with a total of 21 no. species recorded on the Irish Whale and Dolphin Group database, of which approximately one third are bottle nosed dolphin and a further quarter common dolphin. Harbour porpoise are recorded though this species is likely more frequent that records indicate on account of it being very difficult to observe. The Irish Whale and Dolphin Group also record a number of species that have been stranded on Doughmore beach and adjacent shores and these are listed in Table 8.2 of Volume 1 of the EIS. Impacts on cetaceans and other marine mammals arising from the proposed development comprises disturbance and displacement and a number of marine mammal species such as harbour porpoise are particularly sensitive to noise. In the case of the proposed development, all works will be undertaken above the high water mark and there will be no piling or works within the water column that would facilitate the propagation of sound. The assessment of noise impacts arising from the construction activity as set out at section 14.0 of Volume 1 of the EIS indicates that the predicted sound levels generated at the construction phase are not such that they would have the potential to impact on the marine environment and on marine mammals.

7.8.13. ***Land mammal*** surveys undertaken for the project identified a total of 7 no. species of animal with the most notable being the presence of otter in the vicinity of bank of the Skivileen River. Mammal surveys were also undertaken as part of the 1998, 2003 and 2009 applications and these surveys included an observation of a badger set to the east of the site in the vicinity of the N67. Survey information collected do

not indicate any breeding or resting place for mammals in the vicinity of the proposed works areas. During the construction phase there is potential for disturbance of mammals arising from noise and general disturbance by construction activity and deliveries to the site. These impacts arising during the construction phase are likely to be temporary and long term impacts are unlikely subject to the implementation of mitigation measures including those set out at 9.4 of Volume 1 of the EIS. These mitigation measures include a restriction of construction to daylight hours, the siting and design of the construction compound, the undertaking of a pre construction mammal survey and training for construction staff. The nature of the proposed development is such that no significant impacts on terrestrial mammals are considered likely to arise during the operational phase of the project.

7.8.14. The site and its environs are an important location for ***birds*** having terrestrial, intertidal and marine habitats and the site is located adjoining the Mid Clare Coast SPA. As part of the current application the site was the subject of surveys undertaken over the 2014 / 2015 period with a summer bird survey undertaken in August 2014 and winter bird survey undertaken during the 2014 – 2015 winter. As with other ecological surveys and aspects of the project, there is a significant resource of previous bird survey information available arising from previous applications at the site and which has been used to augment and compare with the current survey information (see EIS Volume 1, paragraph 10.3.5). A total of 23 species were observed at low water on white Strand and significant number of sand martin burrows observed in the dune face. The winter survey recorded a total of 14 species present and a limited number of sightings were recorded at the proposed works areas or in the inter tidal areas. Four red list species were however recorded at White Strand as well as four Annex I species comprising dunlin, great northern diver, chough and red throated diver. Annex I species observed at Rinnagonnaght included dunlin, chough, great northern diver, red throated diver. Annex I species observed at the adjoining Rinnagonnaght included golden plover, peregrine falcon, whooper swan and kingfisher. Terrestrial bird species observed, other than those identified in the intertidal areas include a single egret sighting, chough and species of warbler.

7.8.15. The potential impacts of the proposed development on birds arise from the loss of habitat due to changes in the dune face, disturbance during construction and potential changes in hydrology. These impacts have to be seen in the context of a dune habitat that is being eroded and changes in wetland areas back from the dune frontage. Some reduction in breeding habitat for sand martins will likely arise on the protected sections of dune front arising from the altered profile and availability of sand. There is also some potential impact on benthic organisms in the inter-tidal areas with resulting impact on foraging habitat. Overall however the area of the proposed development is of low value for breeding and wintering birds and impacts on identified species is not considered likely to be significant. Construction phase impacts arising from disturbance from access routes, construction activity and noise would have a potential short term negative impact though the timing of works for the late spring and summer months will avoid the worst impact. Disturbance of sand martin, of which 72 viable burrows were identified in surveys in 2014, is possible and the construction activity would be during the breeding period for this species. Sand martin are however a relatively tolerant species to disturbance and the overall construction phase impact is not considered likely to be significantly negative. It is also noted that the ongoing process of natural erosion at the dune front will potentially impact on sand martin burrows in any event.

7.8.16. Mitigation measures identified in section 10.5 of Volume 1 of the EIS include the undertaking of works only during daylight hours and construction will avoid the peak season for wintering waterbirds. A sand martin monitoring programme is proposed to be implemented with nests mapped and no construction activity permitted within 25 metres of identified nests. The number of sand martin nesting sites in the proposed works area is recorded as being limited as a result of the dune profile in these areas which is shallower than that preferred by the species. Periodic restoration of sand to the front of the completed revetments is proposed to be undertaken outside of the main overwintering period for birds. On balance therefore, subject to the proposed mitigation measures set out in the EIS being implemented, it is not considered that the impacts on bird species would be significantly negative.

7.9. Other Issues

7.9.1. With regard to ***archaeology***, Chapter 12 of the EIS sets out the desktop assessment and intertidal metal detector survey that was undertaken. The results of this survey indicate the presence of a submerged woodland at the southern end of the study area and the full report of the survey is presented in Appendices 8C to 8E of Volume 2 of the EIS. No other significant archaeological material was encountered during the survey of the intertidal area. Subject to conditions similar to those set out in the reports of the NPWS on file, including the supervision of all works by a qualified archaeologist, I consider that the potential archaeological impacts arising from the proposed development could be adequately mitigated and that no significant adverse impacts are likely to arise. .

7.9.2. Issues relating to ***noise and vibration*** impacts, and ***air quality*** are of relevance to the proposed development, with the potential impacts under these headings arising almost solely at the construction phase of the proposed development. An assessment of the likely impacts, mitigation measures and residual impacts under these headings is provided at section 8.5 below under the heading of Air, Noise and Climate. This assessment concludes that there are potential impacts at construction phase, particularly in terms of noise generation but that subject to the mitigation measures set out in the EIS and having regard to the predicted noise levels arising, it is not considered that such impacts would be significantly negative.

8.0 Environmental Impact Assessment

8.1. Introduction

8.1.1. The form of development proposed constitutes a structure for the purposes of providing defences from coastal erosion. Class 10(k) of Part 2 of the Fifth Schedule of the *Planning and Development Regulations, 2001* (as amended) states, under the heading of 'Infrastructure Development', that the following shall be development for the purposes of Part 10 of the Regulations and therefore require EIA:

> '*Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dikes, moles, jetties and other sea defence works, where the length of coastline on which works would take place would exceed 1 kilometre, but excluding the maintenance and reconstruction of such works or works required for emergency purposes.*'

8.1.2. In the case of the proposed development, the total linear length of defences proposed measures c.883 metres and therefore while the length of coastline within the bay exceeds the threshold of 1km specified in Class 10(k) of the Fifth Schedule, the actual linear extent of the coastal protection works themselves would be below the threshold specified. The submitted EIS does not indicate the basis on which the proposed development comes within the criteria set out in Schedule 5 or the result of any assessment undertaken in accordance with the criteria set out in Schedule 2A which indicates that the project is likely to have significant effects on the environment. Notwithstanding this, in circumstances where an EIS has been submitted it is a requirement for the Board to consider its contents and its compliance with the relevant requirements of the Planning and Development Act and Regulations. This is undertaken below.

8.1.3. The EIS submitted by the first party as part of the application documentation was submitted to the Planning Authority on 22nd day of December, 2016. The submission of the EIS to the Planning Authority therefore pre dates the 16th day of May, 2017 which was the transposition date of the 2014 EIA Directive (2014/52/EU) and, in accordance with Circular Letter 1/2017 issued by the Department of the

Housing Planning Community and Local Government, the requirements of the 2011 EIA Directive continue to apply to the process of assessment of the proposed development. As part of the assessment undertaken by the Planning Authority further information covering a range of issues including some of relevance to EIA was requested. The response to this further information request did not however include the submission of a revised EIS / EIAR document. It is therefore my opinion that the requirements of the 2011 EIA Directive are applicable.

8.1.4. I have undertaken an examination of the information presented by the applicant, including the submitted EIS, NIS and revised NIS (submitted as part of the response to further information issued by the Planning Authority) as well as the submissions made during the course of the application, including the specialist consultant reports commissioned by the planning authority.

8.1.5. As the submitted EIS falls to be assessed under the provisions of the 2011 Directive what is required is an outline of the ***main alternatives*** considered in the project. Alternatives are set out at Appendix 1A of Volume 2 of the EIS and have been the subject of detailed comment in section 7.3 of this assessment under the heading of 'Need, Form of Development Proposed and Alternatives'. I note that there is dedicated section in the main volume (Volume 1) of the EIS containing the written statement that specifically addresses the issue of alternatives. The 8 no. options identified for partial protection of the dune frontage are set out at Table 2 of Appendix 1A of Volume 2 of the EIS and comprise the following options:

- Do minimum,
- Groyne with sand recharging,
- Groyne with cobble recharging,
- Nearshore breakwater,
- Toe berm protection,
- Revetment,
- 'Seabees' revetment,
- Rock augmentation

8.1.6. A description of each option and an options analysis is also presented in Table 4 of Appendix 1A. This information has been augmented by RFI-NIS-2 which includes a comparative summary of alternatives (the above 8 no. options) and their impact on the conservation objectives of the Carrowmore Dunes SAC site. The assessment of alternatives contained at Appendix 1A of the EIS is also supported by information contained at Preamble 2 to the Response to Further Information Request. Preamble 2 then includes a table (Table 2.2) which sets out the 8 no. options under a range of criteria including Performance, Monitoring and Maintenance, Constructability, Impact on Natural resources, Impact on Beach Users and Schedule. A second assessment (Table 2.3) evaluates each option as per environmental criteria that largely follows the factors of the environment as set out in the EIA Directive. In both assessments, more detail is provided to support the assessment criteria applied to each option. As set out at section 7.3 of this assessment relating to 'Need Form of Development and Alternative's and section 9.0 below relating to Appropriate Assessment, I have a number of concerns regarding the way in which the project is justified and the assessment of alternatives. However, for the purposes of EIA and in particular EIA under the provisions of the 2011 Directive, I consider that the information submitted in the EIS as supported and augmented by the information submitted in the response to further information is sufficient to provide an outline of the main alternatives considered and that reasons are given for the option chosen and that the information is therefore in accordance with the requirements of the EIA Directive.

8.1.7. With regard to the identification and assessment of ***impacts***, the EIS submitted examines the potential impact of the proposed development under a grouped format approach with each of the areas set out in Article 3 of the 2011 EIA Directive being addressed individually for potential impacts and proposed mitigation measures. Under the heading of ***mitigation***, it is noted that no consolidated schedule of mitigation measures or environmental commitments is included as part of the EI, however a schedule is included in the Draft High Level Construction and Environment al Management Plan submitted as part of the response to further information. In the event of a grant of permission, it is considered appropriate that the submission of such a finalised schedule for agreement with the Planning Authority would be required by way of condition.

8.1.8. Overall, the EIS submitted, in my opinion, addresses the main likely significant direct and indirect effects that the proposed development may have on the environment and is in compliance with the relevant legislative provisions as set out in Art.94 of the Planning and Development Regulations, 2001 (as amended).

8.2. **Human Beings**

8.2.1. The impact of the development on the human environment is considered at Chapter 13 of the EIS, and in addition to the economic factors considered in this part of the EIS, there are a number of other potential impacts on the environment that fall to be considered under the heading of population.

8.2.2. The proposed development would result in the control of ***erosion*** and regression of the dune front in the protected areas and has been designed to protect the most vulnerable parts of the existing resort and golf course. The proposed development would therefore have significant potential benefits in terms of economic development and impact on the local and wider economy, and these are considered in detail at 8.7 below under the heading of material assets and cultural heritage and have also been discussed at 7.3 under the heading of 'Need, Form of Development and Alternatives'. In terms of ***employment***, the existing TIGL facility has a total of 207 full time equivalent positions in high season and 93 in the low season (2015) and significant additional employment and economic benefits to local suppliers are evident as set out at section 13.4.2 of the EIS. There is potential for additional employment in the event that additional conference and leisure facilities are provided at the site which could be undertaken if the partial protection works were permitted. The proposed development would also have a positive impact in terms of construction employment. Overall therefore, the proposed development would have a long term positive impact on population having regard to the protection of existing employment at the site and the potential for additional employment in the future.

8.2.3. The Doughmore Bay area is a popular ***amenity area*** used by walkers, surfers and a range of other recreational activities. The proposed development would have a short term potentially significant negative impact on such uses arising from visual impacts during construction, noise and other disturbance. Mitigation measures to ensure access for amenity purposes during the construction period are proposed. During the operational phase, the access to the beach will be reinstated. Long term

potential negative impacts on amenity use of the beach arising from changes to the landscape and profile of the bay are possible and, as discussed below under the heading of landscape, it is considered that the long term potential adverse impacts on amenity arising from changes to the landscape and the future outflanking or redundancy of the proposed defence structures, including in the period after the 50 year design life of the development, has not been fully considered in the assessment undertaken in the EIS.

8.3. **Flora and Fauna**

8.3.1. The proposed development would have a number of potential impacts on flora and fauna during both the construction and operational phases of the development. The following assessment should be read in conjunction with section 9.0 of this report below under the heading of Appropriate Assessment which sets out the effects on European sites in the vicinity of the appeal site in accordance with the specific requirements of the Habitats Directive and in conjunction with section 7.8 of the planning assessment above relating to general ecology. The impact of the proposed development on flora and fauna are assessed at Chapters 6 (Aquatic Environment), 7 (Terrestrial Habitats) and 8 (Marine Mammals) of Volume 1 of the submitted EIS and this information is augmented by information contained at Appendix 6A (Aquatic Environment – Photographic plates) and Appendix 7A (Bird Survey Data).

8.3.2. The site is located in close proximity to two ***European Sites***, the Mid Clare Coast SPA and to the Carrowmore Dunes SAC. As set out in the section on Appropriate Assessment (section 9.0), the site where the most significant potential for significant effects on the conservation objectives of the site arises is the Carrowmore Dunes SAC, with the main potential effects resulting from changes in coastal processes arising from the construction of the partial defence structures. The location and design of the proposed structures are such that significant negative impacts arising from changes to the local hydrological regime are not anticipated to arise, and the impacts on ***Vertigo Angustior*** (Narrow Mouthed Whorl Snail) habitat are not considered likely to be significant. As highlighted by the first party, the proposed development is predicted to result in the retention of an area of c.2.4 ha. of dune which is suitable Vertigo Angustior habitat and the proposed development will

therefore have a potential long term beneficial impact on the numbers of this species.

8.3.3. As set out in section 9.0 (Appropriate Assessment) the modelling work undertaken indicate that there will be some additional 'end effects' at the ends of the proposed partial defence structures which are located in close proximity to the boundary of the SAC, with the development leading to some additional loss of habitat within the SAC when compared to the 'do nothing' scenario. There is also a degree of uncertainity with regard to the likely impacts of the development on the SAC as a result of the limited timespan over which comprehensive and accurate survey information of the existing beach and dune profile is available, as well as issues relating to the future management of the coastal protection structure. For these reasons, while it is considered that any impacts arising on the conservation objectives of the SAC are not likely to be very significant, particularly in the context of a coastline with a long term erosive trend and the nature of the dune system, the predicted and potential impacts on the SAC and uncertainity in this assessment is such that it is not considered possible to come to a conclusion that the proposed development would not have an adverse effect on the integrity of the European site in light of its conservation objectives.

8.3.4. The appeal site is located such that there are potential impacts on terrestrial flora and fauna, on marine fauna and on birds. The construction phase of the proposed development would lead to potential negative impacts on marine mammals arising from noise and disturbance, on bird species from disturbance and direct loss of habitat from construction activity and terrestrial flora and fauna arising from the loss of habitat and disturbance. The construction activity would lead to potential changes in habitat for aquatic species due to compaction of sand, temporary loss during the construction phase, disturbance and potential for pollution. Subject to good construction practice and the preparation and implementation of a detailed CEMP it is not anticipated that there would be any significant negative impacts arising and such impacts as do arise would be short term in nature arising from the direct construction activity.

8.3.5. The extent of ***direct loss of habitats*** from the construction activity is indicated in Table 7.6 of Volume 1 of the EIS and this indicates that the overall loss is relatively modest at c.0.15 ha, none of which is within the boundary of any European site. The

location of the site compound is on an area that was historically used as a go karting track prior to the development of the golf course. This area has therefore previously been modified, is currently a meadow habitat and is not of any particular ecological significance. No significant negative impacts on terrestrial habitats of significance are therefore predicted to arise.

8.3.6. Under the heading of ***marine mammals***, the vicinity of the appeal site is an important location for a range of cetacean species with a range of dolphin, porpoise and whale species recorded in the general area (Table 8.1 EIS Volume 1). The closest European site which have marine mammals as a qualifying interest of the site is located more than 40km from the appeal site. Sightings in the immediate vicinity of Doughmore Bay are relatively infrequent, with a total of 21 no. species recorded on the Irish Whale and Dolphin Group database, of which approximately one third are bottle nosed dolphin and a further quarter common dolphin. Potential impacts on cetaceans and other marine mammals arising from the proposed development comprises disturbance and displacement and a number of marine mammal species are particularly sensitive to noise, notably the harbour porpoise. In the case of the proposed development, all works will be undertaken above the high water mark and there will be no piling or works within the water column that would facilitate the propagation of sound. The assessment of noise impacts arising from the construction activity as set out at section 14.0 of Volume 1 of the EIS indicates that the predicted sound levels generated at the construction phase are not such that they would have the potential to impact on the marine environment and on marine mammals and, on the basis of the information presented, I do not consider it likely that the proposed development would lead to any material negative impacts on marine mammals.

8.3.7. ***Land mammal*** surveys undertaken for the project identified a total of 7 no. species of animal with the most notable being the presence of otter in the vicinity of bank of the Skivileen River. Survey information collected does not indicate any breeding or resting place for mammals in the vicinity of the proposed works areas. During the construction phase there is potential for disturbance of mammals arising from noise and general disturbance by construction activity and deliveries to the site. These impacts arising during the construction phase are likely to be temporary and long term impacts are unlikely subject to the implementation of mitigation measures

including those set out at 9.4 of Volume 1 of the EIS. These mitigation measures include a restriction of construction to daylight hours, the siting and design of the construction compound, the undertaking of a pre construction mammal survey and training for construction staff.

8.3.8. The site and its environs are an important location for ***birds*** having terrestrial, intertidal and marine habitats and the site is located adjoining the Mid Clare Coast SPA. As part of the current application the site was the subject of surveys undertaken over the 2014 / 2015 period with a summer bird survey undertaken in August 2014 and winter bird survey undertaken during the 2014 – 2015 winter. As with other ecological surveys and aspects of the project, there is a significant resource of previous bird survey information available arising from previous applications at the site and which has been used to augment and compare with the current survey information (see EIS Volume 1, paragraph 10.3.5). A total of 23 species were observed at low water on white Strand and significant number of sand martin burrows observed in the dune face. The winter survey recorded a total of 14 species present and a limited number of sightings were recorded at the proposed works areas or in the inter tidal areas. A small number of terrestrial bird species were also observed during surveys of the site, the majority common species but also including a single egret sighting, chough and species of warbler.

8.3.9. The potential construction phase impacts of the proposed development on birds arise from disturbance during construction and direct loss of habitat, notably for sand martin. There is also some potential impact on benthic organisms in the inter-tidal areas with resulting impact on foraging habitat. Overall however the area of the proposed development is of low value for breeding and wintering birds and impacts on identified species is not considered likely to be significant. Construction phase impacts arising from disturbance from access routes, construction activity and noise would have a potential short term negative impact though the timing of works for the late spring and summer months will avoid the worst impact. Disturbance of sand martin, of which 72 viable burrows were identified in surveys in 2014, is possible and the construction activity would be during the breeding period for this species. Sand martin are however a relatively tolerant species to disturbance and the overall construction phase impact is not considered likely to be significantly negative. Mitigation measures identified in section 10.5 of Volume 1 of the EIS include the

undertaking of works only during daylight hours and construction will avoid the peak season for wintering waterbirds. A sand martin monitoring programme is proposed to be implemented with nests mapped and no construction activity permitted within 25 metres of identified nests. The number of sand martin nesting sites in the proposed works area is recorded as being limited as a result of the dune profile in these areas which is shallower than that preferred by the species. Periodic restoration of sand to the front of the completed revetments is proposed to be undertaken outside of the main overwintering period for birds. Subject to the proposed mitigation measures set out in the EIS being implemented, it is not considered that the construction phase impacts on bird species would be significantly negative.

8.3.10. During the ***operational phase***, the nature of the project is such that no significant impacts on terrestrial or marine mammals are considered likely to arise. For birds, there would be some potential operational phase impacts arising from loss of habitat due to changes in the dune face and potential changes in hydrology. These impacts have to be seen in the context of a dune habitat that is being eroded and changes in wetland areas back from the dune frontage. Some reduction in breeding habitat for sand martins will likely arise on the protected sections of dune front arising from the altered profile and availability of sand. Overall, operational phase impacts on bird species and habitats are not considered likely to be significantly negative.

8.4. Land, Soils, Geology and Geomorphology

8.4.1. The proposed development has the potential to result in potential construction phase impacts in terms of exposure of bedrock, removal of soil and sand material, erosion of sand and other material during the construction excavations by wave action and the impacts of vehicular movements resulting in soil and sand compaction. There are also potential construction phase impacts in terms of spillages from construction equipment and resulting potential impacts on land and soils and from changes to sediment transport during the construction activity.

8.4.2. The construction activity is detailed in section 2.0 of the EIS and in the response to further information. The construction activity is proposed to be undertaken in sections and a limited extent of excavation would be undertaken and open at any one time. A storm event during construction may have some negative impacts,

however the chances of the installed sheet pile being at risk prior to the installation of the toe protection / rock armour is low. The construction phase may also have some impact on sediment transport in the immediate vicinity of the works site, however any such impacts are considered likely to be temporary and minor.

8.4.3. Construction phase mitigation is proposed in the form of measures to protect from spillages and accidental discharges. During the construction activity it is not anticipated that the driving of the sheet piles will require the exposure of bedrock or significant extent of soils. Should a peat layer of rock overburden be encountered during the installation of the piles then this material is proposed to be replaced at the base of the fill to the rear of the pile. Compaction of soil and sand is anticipated at the construction compound and at the entry point to the beach via the northern surfer's access. This compaction would have short term negative impacts on soils however mitigation in the form of the covering of access tracks to the beach from the compound, reinstatement of the compound and ramp areas is proposed and is set out in the response to further information submitted, (RFI-EIS-3(a)).

8.4.4. During the ***operational phase***, the proposed development has potential to result in changes to patterns of erosion and the profile of Doughmore Bay. Extensive modelling of the impact of the proposed development on coastal processes and the rate of retreat has been undertaken and the methodology and main conclusions of this assessment are set out at Chapter 5 of the submitted EIS. The cross shore modelling indicates that Doughmore Bay acts as a confined system with limited if any long term movement of material into and out of the bay along the coast. Cross shore transport is the dominant feature with a pattern recorded of long term erosion of dune frontage at a rate that would appear to be accelerating. Future dune retreat of c.0.7 – 1.0 metres per annum is predicted with an estimate of c.20,000 cubic metres of sad material lost from the system per annum and transported seawards out of the intertidal area. Beach lowering is predicted to average c.3cm per annum with the mean HWM reaching the southern defences c.25 years post construction in the southern location and c.39 years post construction in the northern location.

8.4.5. At the operational phase, the proposed development will therefore have some long term negative impact in terms of 'coastal squeeze' and a reduction in access to the beach during periods of high tide. The project will have long term positive impacts in terms of the protection of existing dune habitat at the protected locations with

additional extent of amenity area and habitat in these locations. The structures will also result in some additional erosion impacts at the ends of the protected areas and the impact of these additional erosion / 'end effects' is estimated to be an additional 15-30 percent in the level of erosion in these locations, (EIS Volume 1, paragraph 5.5.2). Long term impacts on aeolian transport are not likely to be significantly negative as the dune crest height is not proposed to be altered though its elevation relative to the beach will reduce gradually over time with beach lowering. Changes in wave reflection from the protected areas are not projected to be significantly altered from existing and would not be significantly negative.

8.5. Water, Air, Climate and Noise

8.5.1. The issue of ***Noise and Vibration*** is addressed at Chapter 14 of the EIS and Air Quality and Climate is covered in Chapter 15 of Volume 1. Appendix 10A contained in Volume 2 of the EIS sets out a glossary of acoustic terminology and Appendix 11A provides details of ambient air quality standards. Given the nature of the proposed development the primary impacts arising in terms of impacts on air quality, climate and noise would at the construction phase of the project. Once completed, the development would be relatively inert and with the exception of some deliveries to replenish sand stocks to the front of the revetment no material impacts would be likely to arise. ***Operational phase impacts*** arising from the delivery of sand could be significantly mitigated by controls on the handling and transport of materials and, subject to the implementation of such mitigation measures, no significant adverse effects are considered likely to arise.

8.5.2. With regard to ***construction phase noise and vibration impacts***, there are a number of noise sensitive locations (NSLs) in the vicinity of the site including the TIGL hotel, the houses associated with the golf course and a number of one off dwellings and agricultural holdings in the vicinity, particularly at the northern end of the works area. The NSLs included in the assessment contained in the EIS are considered appropriate and inclusive of the main locations where noise issues could arise. The background environment is quiet with the main noise sources relating to the coastal environment and local roads. The assessment undertaken uses the British Standard Code of Practice for Noise and Vibration Control on Construction and Open Sites and BS 5228-2 and Transient Vibration Guide Values for Cosmetic

Building Damage in the case of vibration. The most significant noise and vibration impacts are predicted to arise from the piling of the sheet metal into the bedrock and secondly the installation of the revetment in front of the sheet piles. Construction noise impacts in terms of LAeq are modelled to be within the 70 dB limit for the daytime period (07.00 to 19.00 hrs) for all 6 no. NSLs examined with a maximum of 63 dBALaeq projected. On the basis of the information presented and subject to the mitigation measures as set out in 14.9 of Volume 1 of the EIS I do not consider that significant negative impacts related to noise and vibration are likely to arise and those impacts that do arise will be temporary in nature.

8.5.3. The ***construction*** activity would give rise to some potential ***emissions to air and deterioration in air quality.*** Such impacts would primarily be as a result of dust generated during the construction activity, both at the construction site and at access and storage areas. The prevailing wind direction is such that any dust generated during construction would potentially impact locations inland from the construction areas. As mitigation it is proposed that traffic speeds would be restricted along local haul routes and mitigation for the storage of materials at the compound and the handling of materials is also proposed. Subject to these mitigation measures, it is not considered likely that significant impacts related to air quality or dust would arise.

8.5.4. The potential impacts on ***water*** are addressed at Chapter 4 of the EIS. The groundwater vulnerability of the site is identified as high to extreme and the groundwater direction of flow is considered likely to be in a south westerly direction and towards the sea. The level of recharge as evidenced by the groundwater monitoring undertaken indicates a relatively quick response time and recorded annual variation in groundwater levels is c.1.0 metre. During construction, there would be potential vulnerability to groundwater when the site is excavated. Other potential construction phase impacts arising relate to spillages and drainage of the site construction compound. At the operational phase, the sheet pile construction has the potential to alter the groundwater flow in the vicinity. Construction phase mitigation in the form of spill control and management measures are set out in 4.1.2 of the EIS and in the Draft CEMP submitted as part of the response to further information. The construction methodology is also detailed in the EIS and response to further information and sets out how the extent and duration of excavations associated with the construction of the revetments is proposed to be kept to a

minimum. Subject to the implementation of the measures set out in the EIS and CEMP I do not consider that significant impacts on water quality are likely to arise. At operational phase, the design of the proposed revetments including the use of openings in the sheet piling are such that no significant barrier to ground water movement would arise. The change in the relative erosion rate between the defended and undefended sections of the dune and resulting change in dune profile would not have any likely negative impacts on ground or surface water.

8.5.5. The potential for the development to ***impact on climate*** is considered to be negligible and any such impacts arising would relate to the use of equipment and machinery at the construction phase. In the context of overall emissions and climate change factors, the scale of the proposed development and resulting emissions from the construction phase are considered to be negligible.

8.6. Landscape

8.6.1. The landscape and visual impact implications of the proposed development has been discussed in detail at section 7.4 of the Planning Assessment section of this report above and this section should be read in conjunction with the detailed analysis presented in that section. The proposed development has the potential to alter coastal processes and will result in the fixing of part of the dune system with other undefended sections allowed to be subject to natural processes, primarily erosion. The proposed development therefore has the potential to result in changes to the shape of the natural coastline in this location with resulting impacts on the landscape. The coastal protection works comprising of the revetment has potential for visual impacts arising from the exposure of the structure either post storm events or at the end of its lifespan. In addition, potential negative impacts on landscape character and views would arise during the construction phase when the dunes along the work area would be excavated, materials transported and construction access to and along the beach facilitated, together with the development of a construction compound.

8.6.2. ***Construction phase impacts*** would be locally significantly negative with views from and along the beach significantly negatively impacted. In this regard it is noted that the construction schedule and methodology outlined in the EIS provides for the works to be undertaken concurrently on both the northern and southern sites with

work undertaken over sections of c.75 metres in length at a time. The duration of such impacts would, however be limited with the main construction period stated to be undertaken over a period of approximately 12 weeks. Overall it is considered that the impact of the construction phase of the development would be moderate, locally high negative and of short term duration. In general terms, this is consistent with the assessment contained at 11.6.2 of the EIS where it is concluded that the construction phase impacts would be of medium significance.

8.6.3. With regard to the ***operational phase landscape impact***, the coastal processes modelling undertaken by the first party and submitted as part of the EIS and additional details provided in the response to further information and the first party response to appeals, indicates that the rate of retreat of the undefended sections of the dune frontage would be in the range of 0.7 to 1.0 metres per annum on average. There is therefore the potential for negative medium to long term impacts arising from the fixing of the shoreline at the locations of the proposed defences and the retreat of the undefended areas in between. This disparity in erosion will lead to changes in the profile of the bay and secondly to potential long term issues of outflanking of the existing defences, leading to visual impacts. In addition, during the operational phase, there will be potential ongoing landscape and visual impacts arising from the impacts of storm events leading to the removal of sand cover from the revetment. Some slight change in the close range visual appearance of the dunes in the immediate vicinity of the proposed structures would also be evident.

8.6.4. During the operational phase of the project, the assessment contained in the EIS (11.6.2) concludes that the magnitude of landscape effects would be negligible on account of the mitigatory effects of sand and cobble build up in front of the revetments. This is likely to be true for significant periods however there are, in my opinion, likely to be other periods when the weather is such that it is not feasible for sand replacement and other reinstatement works to be undertaken for a longer period of time. In such instances there would in my opinion be periodic short term negative landscape and visual impacts arising, particularly local visual impacts.

8.6.5. The analysis undertaken by the first party indicates that retreat of the existing dunes at a rate of between 0.7 and over 1.0 metre per annum is anticipated. Page 66 of the EIS indicates that retreat of the existing dunes / shoreline by approximately 55 metres over the 50 year design life of the structure and that with the partial protection

in place this rate of retreat is expected to remain as per the 'do nothing' scenario. Therefore, even over the 50 year design horizon of the proposed development, the potential change in the existing shoreline profile is significant and such a rate of retreat is unlikely to alter significantly over subsequent years, indeed it is possible that due to climate change factors this rate of shoreline retreat would increase. Having regard to these factors, I cannot agree with an assessment of a negligible long term landscape impact arising from the proposed development and I do not agree with the statement contained at the last paragraph of section 11.6.2 that it would be difficult to argue that the landscape changes arising from the alteration of the relative rates in shoreline / dune retreat between the defended and undefended sections would be imperceptible.

8.6.6. ***Post the 50 year design life of the structure*** there are in my ***opinion potential additional negative landscape and visual impacts*** arising which are not addressed in the EIS. The submitted Draft Beach Management Plan refers to maintenance of the structure over a design life of 50 years and references are also made in the application and first party submissions to the design of the structure and specification of materials being undertaken with a 50 year design life in mind. No commitment regarding maintenance of the structure post the 50 year design life is provided in the application documentation and while I note that Condition No. 3(d) requires that the revetment structures would be maintained in perpetuity by the owners and operators of the resort, no financial bond to ensure compliance with this requirement is included as a condition of permission and it is not clear what would be the situation in default of this condition or in a situation where the resort ceased operation for any reason. No assessment is provided in the EIS of the potential landscape and visual impacts arising in the period following 50 years from the completion of development and the expiry of the Beach management Plan. Even assuming continued erosion rates in the 0.7 – 1.0 metre per annum range as modelled by the first party, coastal erosion by this stage in the central undefended part of the bay would be significant and difficult to accurately predict given the time period and potential variables regarding climate change. The potential for long term outflanking and exposure of the revetment structures is in my opinion possible and were it to occur would have a significant negative effect on views local to the site and more significantly to local landscape quality and character. Overall, I do not consider

that the long term landscape and visual impacts of the proposed development are well addressed in the EIS, that the potential long term effects are understated, potentially significantly so and that the submitted document does not provide a good basis for assessing the potential long term effects identified above.

8.7. Material Assets and Cultural Heritage

8.7.1. The only issue addressed under this heading in EIS is the ***use of physical materials / resources*** which is covered in section 2.4 of Volume 1 of the EIS under the heading of Material Assets. An outline of project quantities is set out at Table 2.1 of the EIS, and the overall quantities of material are not such that they would have significant environmental impacts with c. 28,000 cubic metres of primary armour (rock) and under layer proposed to be imported. Over the longer term (after c.18 years from completion), the importation of sand for restoration of the area to the front of the revetment will be required. Sources of sand for use at this time have been set out in the response to further information submitted (RFI-EIS-2). Overall, in terms of physical materials and inputs to the project, it is not considered that significant impacts on the environment would be likely to arise.

8.7.2. In addition to materials input requirements to the project there are in my opinion a number of other aspects of the proposed development that require consideration under the heading of Material Assets. These include the potential impact on existing infrastructure and the economic aspect of the development. The issue of need, the risk to the existing golf course, hotel and associated built infrastructure and the economic benefits accruing from the existing TIGL facility and the potential future extension of the facility has been discussed at section 7.2 of this report above under the heading of the Principle of Development.

8.7.3. As set out in the application documentation including Chapter 13 of Volume 1 of the EIS under the heading of Human Environment, and Appendices 9A, 9B and 9C, the existing TIGL facility is a very significant employer in the local economy and has a ***significant positive impact on the economy of the west Clare and wider region***. Specifically, figures presented at Appendix 9C of Volume 2 of the EIS titled *The Contribution of Doonbeg Golf Resort* indicate that in the base year of 2016, the facility had over 14,000 paid rounds of golf with a projected local expenditure of over €3.7 million, a total economic impact of c.€4.65 million and induced expenditure of

over €931,000. The total economic contribution to the Clare tourism economy arising from the 35,646 guests at the facility in 2016 is estimated at c.€4.07 million. The proposed development has the stated aim of protecting parts of the golf course and thereby ensuring the continuing attraction of visitors to the site with resulting economic contribution. Of further significance in terms of overall economic impact of the development is the analysis presented regarding future loss of business that is projected to arise in the event that facilities at the site are not expanded to cater for the conference and event market. In this regard it is noted that permission for such a facility has recently been granted permission by Clare County Council (Clare Co. Co. Ref. 18/930). The projected loss of business from the lack of such facilities is estimated by the first party to be c.€675,000 in 2016 rising to c.€1.9 million by 2020.

8.7.4. As set out in the cross shore modelling (COSMOS model), the first party state that a failure to implement and protection works will result in continued coastal erosion at the site with the anticipated rate of erosion over the 50 year design life of the project estimated at between 0.7 and 1.0 metre on average. As noted previously in this assessment under the heading of Principle of Development (section 7.2) the first party is not clear regarding how it is intended that the central parts of the golf course would be protected over the medium to long term, particularly in a context where it has been set out how there are significant restrictions on further relocations of the golf course (see Appendix 8 of Report on Coastal Processes prepared by HR Wallingford submitted as part of the first party response to third party appeals). Even with regard to existing built assets, it should be noted that the existing hotel facility is located at a distance in excess of 100 metres from the existing dune frontage with other TIGL infrastructure including the houses located at a significant further remove from the dune. At projected rates of erosion therefore, it is likely to be beyond the 50 year design horizon of the project before there is any imminent threat to built infrastructure or assets at the site.

8.7.5. Overall therefore, the existing facility has a significant positive economic impact on the local economy in terms of jobs (207 full time equivalents) and total economic contribution with the potential for additional benefits if additional conference, leisure and hospitality infrastructure is provided. The absence of the partial defence structures as proposed would potentially jeopardise the long term future of the facility and the continuation of the identified positive economic and employment impacts. In

stating this however, it is not clear from the information presented how it is intended that the golf course would be maintained long term without the protection of the central part of the site frontage which it is stated is not the intention of the first party and given the restrictions of further reconfiguration of the course as outlined in first party submissions to the Board. Overall it is considered that the impact of the proposed development in terms of economic impact and employment would be positive, however without further coastal protection works in the future and given the predicted rate of erosion and restrictions on re configuration of the golf course layout as set out in first party submissions it is not clear how secure the long term future of the site and associated economic and employment benefits would be.

8.7.6. With regard to ***archaeology***, Chapter 12 of the EIS sets out the desktop assessment undertaken and intertidal metal detector survey that was undertaken (details provided at Appendix 8C of Volume 2 of the EIS). Given the location of the site on the west coast with prevailing onshore winds and the enclosed nature of the bay there is potential for additional archaeological finds relating to shipwrecks and associated artefacts to be encountered. The results of the survey undertaken indicate the presence of a submerged woodland at the southern end of the study area and the full report of the survey is presented in Appendices 8C to 8E of Volume 2 of the EIS. No other significant archaeological material was encountered during the survey of the intertidal area and the survey undertaken to date is considered to be appropriate given the potential for archaeological material to be present at the site. Mitigation in the form of the monitoring of construction works by a suitably qualified and experienced archaeologist is proposed and is in my opinion appropriate.

8.7.7. I note the fact that the submissions on file from the Department of Arts Heritage Regional Rural and Gaeltacht Affairs notes the scale of the project and the resulting potential for sub surface archaeological remains to be encountered, agrees with the archaeological mitigation as set out in the EIS and recommends that archaeological monitoring of the works would be required as a condition of any permission granted. Recommended conditions include the retention of a suitably qualified archaeologist with marine / underwater experience and the identification of a buffer zone around the timbers recorded in the applicant's survey. Subject to conditions relating similar to those set out in the reports of the NPWS, I consider that the potential

archaeological impacts arising from the proposed development could be adequately mitigated.

8.7.8. Under the heading of ***cultural heritage***, the proposed development would not have any significant potential to impact on monuments, artefacts or long established land use patterns in the area. The development would not result in the loss of any such features in the local area and no significant impacts are considered likely to arise.

8.8. Interactions

8.8.1. Chapter 16 of the EIS addresses ***interactions*** between environmental impacts identified and cumulative effects and a summary of the significant effects arising is also provided. The assessment of interactions and cumulative effects arising is supplemented by materials submitted as part of the response to further information, notably RFI-EIS-5C and Appendix G to the RFI which provides an assessment of the potential cumulative impact of the proposed development together with a number of proposed wind farm and other developments in the general vicinity of the site. Given the limited visual envelope of the proposed development the potential for cumulative visual impacts is considered limited. The main potential cumulative impact is identified as being related to traffic. The nature of the proposed development is such that the physical development and future change in coastal profile gives rise to potential interactions with a significant number of other environmental factors. The following is my assessment of the most significant areas of potential interactions between factors:

8.8.2. There are potential negative impacts on population arising from the interaction with geomorphology and the reduced level of visual and recreational amenity available at Doughmore Bay. There are also negative impacts of construction activity and traffic, including noise, on persons within the study area. The interaction between geomorphology and population is also potentially positive with regard to the protection of existing physical assets and the resulting protection of economic activity and employment.

8.8.3. There are potential negative impacts on flora and fauna arising from the interaction with geomorphology and the impact of the partial defence on erosion rates in the undefended sections and arising from changes to the hydrological regime. In

particular, the development has the potential to impact on European sites, in particularly the Carrowmore Dunes SAC site. Against this, the same interaction has the potential to have a positive impact on the habitat for the vertigo angustior as the retreat of the dune system will be stopped in the protected areas thereby resulting in increased habitat for this species.

8.8.4. The change in shoreline and coastal processes occurring as a result of the proposed development would have potential positive interactions with material assets in the form of the existing hotel and associated resort infrastructure. The changes in coastal processes and shoreline profile also have the potential to interact with the landscape and long term changes in the shoreline profile would potentially impact negatively on the landscape character and visual amenity of the area.

8.8.5. I have reviewed these potential significant interactions and consider that the mitigation measures set out in the revised EIS and which have been discussed in the relevant sections of this EIA and preceding planning assessment are such as to significantly reduce or remove the potential environmental effects arising.

9.0 Appropriate Assessment

9.1. Appropriate Assessment – Screening

Geographical Scope of Proposed Development

9.1.1. The site is located adjoining White Strand, Doonbeg and comprises a linear strip of the beach above the mean high water mark and extending into the dune face at the back of the beach. The site extends over a distance of approximately 2.7km from the mouth of the Skivileen River at the southern end of the bay to the rock outcrop at Carrowmore Point at the northern end of Doughmore Bay. The extends inland (east) from the existing right of way access across the golf course to encompass an area to the east of the golf course and west of the main resort access, the resort access road and connection to the N67 and a connection to an area to the north which is the golf course nursery. The stated area of the site is 33.9 ha.

Main Characteristics of Proposed Development

9.1.2. The proposed development comprises coastal protection measures designed to limit the erosion of the dunes at White Strand and to provide protection for golf course and hotel infrastructure at the Trump International site. The main aspect of the development comprises the construction of two new protection structures at the beach side of the dunes, one located at the southern end of the site and a second smaller structure to be located at the northern end. The lengths of these structures are 626 metres at the southern end and 257 metres at the northern end. The two sections are separated by a distance of c.1,900 metres where no protection works are proposed to be undertaken. The extent of frontage located between the two areas of protection works approximate to the extent of the Carrowmore Dunes SAC (site code 002250) with the main protection works located such that they are not within the SAC or any other European site.

9.1.3. Detail of the proposed structures is set out at section 2.2 of the submitted EIS and at Figures 16 and 17 of the same document. The construction process is proposed to involve the removal of the beach cobbles where present at the upper part of the beach and the driving of sheet piles into the dunes 'several metres back from the dune face', (EIS, section 2.2, pg.11). The height of the top of these piles is indicated as being at a level of 8.0-8.5 metres above OD Malin and the piles would be driven

in until it meets the bedrock. The sheet piles are proposed to be secured in place with soil nails that are approximately 15 metres in length and which would be driven into the dunes at a shallow angle to the horizontal. The sand in front of the installed sheet piles would then be excavated to the profile as indicated in the construction drawings enabling the construction of a tie in revetment at the base of the sheet piles. Excavated cobbles would be stored further down the beach with sand to be stored in a construction compound to be situated to the east of the surfer's access to the beach and north of the surfer's car park. The revetment would be covered by a geotextile layer overlaid by a layer of secondary and then primary armourstone, c. 2 metres in depth and having a slope of approximately 1 in 3. At the front of the rock armour slope a toe is proposed to extend seawards with the aim of preventing the undermining of the structure. On completion of the revetment it is proposed to be covered with sand and cobbles currently on the beach replaced as appropriate. Also included as part of the development are enabling works comprising a construction compound and construction access route from the construction compound to the beach via the surfers' access. The layout of the construction compound is indicated at Figure 20 of the submitted EIS and indicates the storage of materials at a height of up to 10 metres. The ancillary works also include the provision of additional public car parking in the vicinity of the surfer's access.

European Sites Potentially Affected by Proposed Development

The site is adjoining and / or located in relatively close proximity to the following European sites:

9.1.4. ***Carrowmore Dunes SAC (Site Code 002250)***

9.1.4.1 The Carrowmore Dunes SAC site lies to the immediate west of the appeal site and is bounded from the appeal site by the high water mark. The site extends from Doonbeg Bay to the south west of the site to Carrowmore Point to the north generally extending c.1km offshore (beyond the MHW).

The qualifying interests of this site are as follows:

- Reefs,
- Embryonic shifting dunes,
- Marram Dunes (White Dunes),
- Fixed Dunes
- Narrow Mouthed whorl snail

9.1.4.2 The conservation objectives for the site are as follows:

Reefs – To maintain the favourable conservation condition of reefs in Carrowmore Dunes SAC.

Embryonic Shifting Dunes – To restore the favourable conservation condition of embryonic shifting dunes in Carrowmore Dunes SAC. Targets identified include an increasing area and no decline in habitat distribution subject to natural processes and the maintenance of natural circulation of sediment without any physical obstructions.

Shifting Dunes Along the Shoreline (White Dunes) – To restore the favourable conservation condition of shifting dunes along the shoreline in Carrowmore Dunes SAC. Targets identified include an increasing area and no decline in habitat distribution subject to natural processes and the maintenance of natural circulation of sediment without any physical obstructions.

Fixed Coastal Dunes – To restore the favourable conservation condition of fixed coastal dunes with herbaceous vegetation in Carrowmore Dunes SAC. Targets identified include an increasing area and no decline in habitat distribution subject to natural processes and the maintenance of natural circulation of sediment without any physical obstructions.

Narrow Mouthed Whorl Snail (Vertigo Angustior) – To maintain the favourable conservation condition of narrow mouthed whorl snail in Carrowmore Dunes SAC.

9.1.4.3 The proposed development is located such that no part of the proposed development would be located within the Carrowmore Dunes SAC. The site is however located such that the construction access to the works areas would cross the SAC and the boundary of the SAC is located immediately adjoining the site boundary in the vicinity of the proposed coastal protection structures. Given that the works are proposed to the dune frontage and that the SAC encompasses the area below the high water mark and adjacent dune habitats above the high water mark there is a potential pathway between the proposed works areas and the SAC in the form of the dune system and potential changes to the cross shore and longshore sediment transport in the vicinity of the site.

9.1.4.4 At construction phase, the proposed construction access is via the central surfer's access point, and the construction access route to the works areas on the beach will therefore cross the dune habitat located within the SAC boundary. Potential direct impacts on the dune system in the form of compaction and disturbance therefore arise. The construction compound is identified for a location to the east of the beach and immediately north of the surfer's car park and west of the main access road to the TIGL resort. The location of the compound is located within less than 200 metres of the SAC boundary and there are potential impacts arising in terms of the storage and possible spillage of pollutants.

9.1.4.5 At operational phase, the proposed partial defence structures have the potential to alter coastal process in the vicinity of the development and to alter the rate of erosion in the un protected areas. These unprotected areas largely match with the location of the Carrowmore Dunes SAC and there is therefore the potential that the proposed development could alter the rate of erosion of dune habitat within the SAC. The development may also have implications for the ability of embryo dunes to form along the unprotected dune frontage and have implications for the circulation of sand from the beach area to enable dune formation. Changes in coastal processes arising from the development would also have potential impacts on the adjoining reef habitat at the southern end of the SAC in terms of the intertidal habitat.

9.1.4.6 A number of existing and permitted developments in the general vicinity of the appeal site are noted. These comprise wind energy developments that are located on lands to the east of the appeal site and east of the N67 national road. There is also a recent grant of permission issued by Clare County Council for the expansion

of facilities at the TIGL site comprising permission for conference and leisure centre and additional houses. I do not consider that any of these projects have the potential to act in combination with the proposed partial coastal protection works to give rise to significant effects on the Carrowmore Dunes SAC.

9.1.4.7 Having regard to the above, I consider that the proposed development is likely to have significant effects on the Carrowmore Dunes SAC site in light of its conservation objectives.

9.1.5. ***Mid Clare Coast SPA (Site Code 004182)***

9.1.5.1 The Mid Clare Coast SPA bounds the appeal site to the west beyond the mean HWM, overlapping with the extent of the Carrowmore Dunes SAC. In addition, the SPA extends further from shore to a distance of c.3.5km beyond White Strand and extends north as far as Spanish Point, c.11km to the north of the appeal site.

The qualifying interests of this site are as follows:

- Cormorant,
- Barnacle goose,
- Ringed plover,
- Sanderling,
- Purple sandpiper,
- Dunlin,
- Turnstone,
- Wetlands.

9.1.5.2 The conservation objectives for the site are the maintenance of the favourable conservation condition of the above listed bird species in the Mid Clare Coast SPA and to maintain the favourable conservation condition of the wetland habitat in mid-Clare Coast SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

9.1.5.3 The boundary of the appeal site is located immediately adjoining that of the Mid Clare Coast SPA. The proximity of the SPA is such that there is a clear pathway between the SPA and the appeal site in the form of the beach area above the mean HWM and the adjoining area of dunes located within the site boundary.

9.1.5.4 With the exception of the cormorant, the qualifying interests of the SPA are all overwintering bird species. The proposed development has the potential to give rise to disturbance to these species during the construction phase of the project given the proximity of the proposed works areas to the SPA. The construction activity will also reduce the extent of available beach habitat for foraging. Post construction, the proposed development may have potential impacts on foraging arising from a reduction in the extent of intertidal habitat as a result of the fixing of the dune frontage location in parts of the bay and the impact of beach lowering. The cormorant species breeds in the area however the proposed development would not impact on this activity as this occurs mainly on Mattie Island which is a significant distance to the north of the appeal site. The proposed development would also give rise to issues of potential changes in benthic habitat and marine species that could impact negatively on food supply.

9.1.5.5 A number of existing and permitted developments in the general vicinity of the appeal site are noted. These comprise wind energy developments that are located on lands to the east of the appeal site and east of the N67 national road. There is also a recent grant of permission issued by Clare County Council for the expansion of facilities at the TIGL site comprising permission for conference and leisure centre and additional houses. I do not consider that any of these projects have the potential to act in combination with the proposed partial coastal protection works to give rise to significant effects on the Mid Clare Coast SPA site.

9.1.5.6 Having regard to the above, it is considered that the proposed development is likely to have significant effects on the Mid Clare Coast SPA site in the light of its conservation objectives.

9.1.6. ***Carrowmore Point to Spanish Point and Islands SAC (Site Code 001021)***

9.1.6.1 The Carrowmore Point to Spanish Point and Islands SAC extends from Carrowmore Point just to the north of the appeal site and comprises a triangular shaped site that extends approximately 7km offshore at its widest point before ending just to the north of Spanish Point. The marine area identified includes Mutton Island located c.5km to the north of the appeal site and

The qualifying interests of this site are as follows:

- Coastal lagoons
- Reefs
- Perennial vegetation of stony banks
- Petrifying springs with tufa formation

9.1.6.2 The conservation objective for the site relating to coastal lagoons is to restore the favourable conservation condition of coastal lagoons in Carrowmore Pont to Spanish Point and Islands SAC. In the case of the other identified habitats, the conservation objective is to maintain the favourable conservation condition of the habitat.

9.1.6.3 The proposed development has the potential to alter coastal processes in the vicinity of the site and result in changes to the regime of alteration and deposition in the vicinity of the site. I note that the screening assessment submitted and undertaken by the first party (Habitats Directive Appropriate Assessment dated October, 2017) screens out the Carrowmore Point to Spanish Point and Islands SAC on the basis of its separation from the sites of the proposed partial coastal defence structures and the presence of Carrowmore Point as a barrier. I note this fact however, in principle and on the basis of a preliminary examination of the potential coastal processes implications of the proposed development and in the absence of mitigation, the proposed development could lead to longshore movement of sediment. Any such changes in longshore sediment transport would, in my opinion have potential impacts on coastal lagoon habitat, notably Lough Donnell c.2km to the north east of Carrowmore Point, reef habitat which extends over the entire length of the SAC. It is also noted that one of the attributes relating to Perennial Vegetation of Stoney Banks is Physical Structure: functionality and sediment supply, with a target of maintaining

the natural circulation of sediment and organic matter. This habitat is found in the vicinity of Lough Donnell, c.2km to the north east of Carrowmore Point and c.2.5 km from the appeal site at the closest point.

9.1.6.4 A number of existing and permitted developments in the general vicinity of the appeal site are noted. These comprise wind energy developments that are located on lands to the east of the appeal site and east of the N67 national road. There is also a recent grant of permission issued by Clare County Council for the expansion of facilities at the TIGL site comprising permission for conference and leisure centre and additional houses. I do not consider that any of these projects have the potential to act in combination with the proposed partial coastal protection works to give rise to significant effects on the Carrowmore Point to Spanish Point and Islands SAC.

9.1.6.5 Having regard to the above, it is considered that the proposed development is likely to have significant effects on the Carrowmore Point to Spanish Point and Islands SAC site in the light of its conservation objectives.

9.1.7. ***Kilkee Reefs SAC (site code 002264)***

9.1.7.1 The Kilkee Reefs SAC is located north of the River Shannon estuary and extends for a distance of c. 12 km along the coast to the north and south of Kilkee. The site is located c.9km from the appeal site at the closest point.

The qualifying interests of this site are as follows:

- Large shallow inlets and bays
- Reefs
- Sea caves.

The conservation objectives for the site are to maintain the favourable conservation condition of the above habitats.

9.1.7.2 The appeal site and the Kilkee Reefs have a potential hydrological connection via the sea. Given the nature of the proposed development and the separation distance between the appeal site and this SAC (c.40km) it is considered that the proposed development is not likely to have significant effects on this European site in light of its conservation objectives.

9.1.8. ***Tullaher Lough and Bog SAC (side code 002343)***

9.1.8.1 The Tullaher Lough and Bog SAC is located c. 4km to the south of the appeal site at the closest point. The site comprises raised bog, wet grassland, woodland, alkaline fen and lake. The conservation objectives for the site are to restore (active raised bog) or maintain (transition mires) the favourable conservation condition of these habitats. In the case of degraded raised bogs still capable of natural regeneration, the conservation objective is that its peat forming capacity is re-established and the objective is therefore linked to that of active raised bog and such that a separate conservation objective has not been set. Similarly, no separate conservation objective has been set for the habitat Depressions on Peat Substrates of the Rhynchosporion.

9.1.8.2 The appeal site is located c.3.5km to the north east of the Tullaher Lough and Bog at the closest point. There is no hydrological or other connection between the appeal site and this SAC and, having regard to this and to the nature of the proposed development it is considered that the proposed development is not likely to have significant effects on this European site in light of its conservation objectives.

9.1.9. ***Lower River Shannon SAC (site code 002165)***

9.1.9.1 The Lower River Shannon SAC stretches over a significant distance from Killaloe along the Shannon estuary to Loop head in the west. The site takes in both marine and freshwater habitats and a number of river estuaries including the Shannon, Fergus and Mulkear. The site is identified for a significant number of habitats and species including estuaries, sandbanks, salt meadows, freshwater pearl mussel and lamprey species.

9.1.9.2 The appeal site is located c.10 km to the south of the appeal site at the closest point and the separation distance along the coast is c. 40km. There is no overland hydrological or other connection between the appeal site and this SAC and, having regard to this, to the very significant separation distance by sea and to the nature of the proposed development it is considered that the proposed development is not likely to have significant effects on this European site in light of its conservation objectives.

9.1.10. ***Appropriate Assessment Screening Conclusion***

9.1.11. The conclusion of this appropriate assessment screening is that in the absence of mitigation measures and on the basis of a preliminary examination, the proposed development is considered likely to have significant effects on the following European sites having regard to their conservation objectives:

- Carrowmore Dunes SAC
- Mid Clare Coast SPA
- Carrowmore Point to Spanish Point and Islands SAC

The following sections of this assessment comprise a Stage 2 Appropriate Assessment of the effects of the proposed development on the integrity of the above sites in light of their conservation objectives.

9.2. Appropriate Assessment – Stage 2

This appropriate assessment relates to the potential for the proposed development to give rise to adverse effects on the integrity of the following European sites:

- Carrowmore Dunes SAC
- Mid Clare Coast SPA
- Carrowmore Point to Spanish Point and Islands SAC

The following sections describe the baseline conditions of the sites, provide an assessment of the possible impacts arising from the project on the conservation objectives of these sites, assess potential in combination effects with other plans and projects and, allowing for mitigation measures, determine the effects of the development on the integrity of the sites. This process is undertaken for each of the three identified sites in turn.

In advance of the Stage 2 Appropriate Assessment of the potential effects of the proposed development on the conservation objectives of the three European sites identified in the screening assessment as being subject to likely significant effects, there are a number of ***general principles*** raised by the first party in the response submissions on the third party grounds of appeal and which are considered of relevance to the Appropriate Assessment – Stage 2. These are identified and briefly commented upon below.

- Firstly, it is stated by the first party that the Board is the decision maker regarding the presence of ***reasonable doubt*** in AA (Holohan v ABP 2017) and it is the absence of ***real risk*** with which the Board is concerned. This is noted.
- That the proposed developer has no ***obligation to enhance or positively protect the European sites*** – its obligation is merely not to harm them (People Over Wind V ABP 2015). This is noted and agreed with. The tests, set out in Article 6(3) of the directive, and which are required to be determined by the competent authority in this case the Board, is whether the project is or is not likely to have significant effects on any European site(s) and, if such effects are considered likely, whether the proposed development would or would not have an adverse effect on the integrity of the European site in light of its conservation objectives. There is no obligation under Article 6(3) to enhance or positively protect European sites.
- That the proposed developer is obliged to deploy the ***best scientific knowledge*** reasonably available, (People Over Wind V ABP, 2015). This is noted.
- The first party contends that the examination of ***Alternatives*** is not part of appropriate assessment, and cites (Case C441-03) Commission V Netherlands on this issue. The issue of alternatives and the lack of justification for the rejection of alternative approaches to coastal protection was raised by a number of parties to the appeal including An Taisce. I note and generally agree with the comments of the first party on this issue. The obligation to examine alternative solutions to a plan or project does not come within the scope of Article 6(3) of the directive, but rather within the scope of

Article 6(4). Article 6(4) only becomes operative where the assessment under 6(3) is negative and where the plan or project must nevertheless be carried out for imperative reasons of overriding public importance.

- Finally, it is stated by the first party that the proposed ***works are designed to protect the edge of the golf course*** and not the SAC. This is the clearly stated purpose of the project throughout the application documentation and is noted.

9.2.1. **Carrowmore Dunes SAC**

9.2.1.1 The ***qualifying interests*** of this site are as follows:

- Reefs,
- Embryonic shifting dunes,
- Marram Dunes (White Dunes),
- Fixed Dunes
- Narrow Mouthed whorl snail.

9.2.1.2 The ***conservation objectives*** for the site are as follows:

Reefs – To maintain the favourable conservation condition of reefs in Carrowmore Dunes SAC.

Embryonic Shifting Dunes – To restore the favourable conservation condition of embryonic shifting dunes in Carrowmore Dunes SAC. Targets identified include an increasing area and no decline in habitat distribution subject to natural processes and the maintenance of natural circulation of sediment without any physical obstructions.

Shifting Dunes Along the Shoreline (White Dunes) – To restore the favourable conservation condition of shifting dunes along the shoreline in Carrowmore Dunes SAC. Targets identified include an increasing area and no decline in habitat distribution subject to natural processes and the maintenance of natural circulation of sediment without any physical obstructions.

Fixed Coastal Dunes – To restore the favourable conservation condition of fixed coastal dunes with herbaceous vegetation in Carrowmore Dunes SAC. Targets identified include an increasing area and no decline in habitat distribution subject to natural processes and the maintenance of natural circulation of sediment without any physical obstructions.

Narrow Mouthed Whorl Snail (Vertigo Angustior) – To maintain the favourable conservation condition of narrow mouthed whorl snail in Carrowmore Dunes SAC.

9.2.1.3 Information on the ***baseline condition*** of site is available from the habitat surveys presented as part of the application and submissions made by the first party and from documents published by the NPWS. The entire extent of the SAC extends to c.442 ha. and the majority of the site is a marine habitat. The boundary of the SAC extends along the mean HWM with two main extensions into the dunes to the east of the beach. There is also a wetland area to the east of the main part of the site which is located at a separation of c. 200-300 from the main part of the site. The layout of the identified SAC boundary is such that the permanent works areas are located outside of the SAC area. Construction access to the works areas from the proposed central beach access point does require that the SAC would be crossed.

9.2.1.4 The NPWS site synopsis, dated January 2014, identifies that fixed dunes with herbaceous vegetation (Grey Dunes) is the largest dune habitat within the site and that this habitat extends over an area of c. 10.5 ha. The fixed dunes extend to a height of c. 25 metres in some areas and are characterised by a high coverage of marram grass. The eastern side of the fixed dune habitat is also characterised by a range of other plant species including red fescue, ribwort and wood rush. There are other fixed dune habitat area which are characterised by more variety of species and an area characterised by higher prevalence of grass species (O'Connor 2014-2016). ***Marram dunes*** (White Dunes) occur on the steeper slopes on the seaward side of the site above the beach and on the fringes of blowout areas. The extent of marram cover in these areas, while still high, is lower than in the area of fixed dunes and there are notable areas of bare sand. Species notable in this habitat include red fescue, common ragwort and white clover. ***Embryonic shifting dunes*** are a qualifying interest of the site, however their extent is limited within the SAC. The erosive nature of the frontage is such that there is limited opportunity for embryonic dunes to become established prior to their being eroded in severe weather. The

threats to the site identified in the data form include reference to the degree of erosion to which the site is susceptible. Reference is also made to the impact of grazing (Standard Data Form updated September, 2017). Surveys undertaken by the first party and recorded in Volume 3 of the EIS (Design Reports) detail the extent of dune loss over the 2014, 2015 and 2016 years.

9.2.1.5 ***Intertidal reefs*** is a qualifying interest of the site and is located primarily in the southern part of the site with a smaller area located to the north of White Strand in the vicinity of Carrowmore Point. The tidal reef area support a significant extent of algal flora and invertebrates including the red algae and the snapping shrimp. The dune habitat, both within and outside of the identified boundary of the SAC provides habitat for the Annex II species the ***Narrow Mouthed Whorl Snail, Vertigo Angustior***. Areas of marsh and swamp habitat located in close proximity to the dunes are identified in the SAC as important habitat for the snail. The species has a significant range at the site and as part of the surveys undertaken, the first party recorded the number of snails at 12 no. separate dune front locations. These 12 dune front locations indicated a generally high concentration of snails, however locations further from the dune front and in areas more dominated by marram grass exhibited lower numbers of the species. The evidence presented from the surveys undertaken by the first party also indicate that the snail can survive grass sod translocation and that this opens up possibilities for the conservation of the species.

9.2.1.6 ***Site specific conservation objectives*** for the Carrowmore Dunes SAC site were published by the NPWS in September, 2014 and the overall objective is to restore the favourable conservation condition of the interests identified. In the case of ***Reefs***, the listed attributes and targets comprise Habitat Area with the target that the permanent habitat area is stable or increasing, Distribution with the target that the distribution of reefs is stable or increasing subject to natural processes and Community Structure, with the target that a number of community types be retained in a natural condition. In the case of ***Embryonic Shifting Dunes***, ***Shifting Dunes Along the Shoreline*** (White Dunes) and ***Fixed Coastal Dunes with Herbaceous Vegetation*** (Grey Dunes), the attributes include the following:

- Habitat area with an attribute that the area be stable and / or increasing subject to natural processes including erosion and succession.

- Habitat distribution with the target that there be no decline (or change in habitat distribution) subject to natural processes.
- Physical structure: functionality and sediment supply with the target to maintain the natural circulation of sediment and organic matter without any physical obstructions.
- Vegetation structure: zonation with the target to maintain the range of coastal habitats including transitional zoned, subject to natural processes including erosion and succession.

For each of the three dune habitats, the measurement of the attributes assigned to the conservation objectives makes clear reference to these being in the context of natural processes, including erosion and succession and ensuring a lack of any physical obstructions.

9.2.1.7 In the case of the ***baseline*** or '***do nothing' scenario***, the information presented by the coastal process analysis undertaken by the first party and detailed in Volume 3 of the EIS and expanded upon in the first party submissions responding to the third party appeals highlights a number of likely features. These include a number of legal points and reference to EC Guidance related to the baseline / 'do nothing' scenario which it is considered appropriate to comment upon at this stage of the assessment. The issues arising can be summarised as follows:

- There is ***evidence of ongoing retreat of the dune front*** along the full extent of the bay. The cross shore modelling undertaken by the first party and as detailed in the Coastal Process report prepared by HR Wallingford and contained at Appendix 3 of the EIS indicates that the bay will be the subject of retreat in the order of 0.7 to 1.1 metres per annum on average. Historical shoreline profiles together with more recent dune profiles have been used to derive this figure and while there are issues arising with regard to the detailed methodology and modelling inputs used for the analysis of coastal processes and the degree of fluctuation in the periods of erosion and deposition at the site, it is evident from the information presented that the long term trend in the dune system is one of erosion.

- Related to the modelled rate of retreat in the dune system, the first party contends that the ***normal model of dune process*** incorporating accretion and erosion as highlighted by third parties in the case ***is not applicable in the case of Doughmore Bay***. Specifically, on the basis of the information presented by the first party regarding the historical rate of retreat in the dune frontage, the absence of any establishment of fore dunes or embryo dunes over any sustained period together with the lack of any clear evidence that the dune system is migrating landwards, it does not appear likely that the dune system will migrate landward as per the methodology presented in the Scottish Natural Heritage document ('*Beach Dunes - a guide to managing coastal erosion in beach dune systems'*) cited by An Taisce and also referred to in the JBA Consulting reports prepared for the Planning Authority. Rather, I would agree with the analysis presented by the first party that the situation at Doughmore Bay is consistent with the historical erosion that has been recorded at the site, albeit that the record of erosion over the period when the subject of accurate surveying has coincided with the presence of the golf course as a potential restriction on the landward migration of the dunes and that other land uses including agriculture and land drainage as well as developments undertaken on the landward side of the dune system could have historically impacted on the ability of the dune system to retreat landwards. It is also noted that the analysis undertaken indicates that the rate of erosion of the dunes is not uniform and that there are periods of accretion including that indicated most recently in the 2016 – 2017 surveys presented by the first party as part of the response to third party appeals.
- The 'do nothing' scenario will evidently result in the ongoing ***loss of dune and Vertigo Angustior habitat*** within the identified boundary of the SAC and the extent of these losses in a 'do nothing' scenario are presented by the first party in Table 1 contained in section 2.9 of the first party response to the third party grounds of appeal (received by the Board on 5th March, 2018). This indicates that by 2066, (50 years post development), a total of 48.1 ha. of the area of the SAC (or approximately 36 percent of the current area) would be lost. By 2116 (100 years post development) the extent of loss of SAC area is projected to be over 85 ha., or c.64 percent of the existing SAC. The

modelling work undertaken by the first party estimates that over the design life of the project (50 years), c. 2.4 ha. of terrestrial, largely dune, habitat adjacent to the SAC would be saved from erosion with the coastal protection works in place. As set out in the submitted NIS (October, 2017) the favourable conservation status of the Vertigo Angustior within the SAC is directly linked to the rate of coastal erosion and the highest concentrations of snail observed in surveys of the site are at and in close proximity to the dune frontage.

- ***Reef habitat*** would not be significantly impacted in the event of a do nothing scenario as reef substrate will not be removed and in fact additional material could be uncovered with the ongoing natural erosion of material from the beach and dunes and the effect of beach lowering.
- In the event of a 'do nothing' scenario, the potential adverse ***construction related impacts*** from site access, storage of materials, accidental release of contaminants and direct and indirect negative impacts from the construction activity would be avoided.
- A central point made by the first party is that it is ***beneficial from an environmental point of view that the dune is fixed*** as this will result in the protection of dune habitat that would otherwise be lost, namely the 2.4 ha. of habitat referenced above (see 2.9.1 of first party response to third party appeals received 28th March, 2018 and also RFI-NIS-4(a) submitted to Planning Authority on 24th October, 2017). On this issue, however, it should be noted that this 2.4 ha. referred to is habitat outside of the identified boundary of the Carrowmore Dunes SAC. This Stage 2 assessment only relates to the impact the proposed development would or would not have on the integrity of the SAC in light of its conservation objectives. I also note that the submissions received from the NPWS and on file (dated 6th February and 20th November, 2017) clearly state that it is central to the conservation objectives of the Carrowmore Dunes SAC site that there would be no impediments to natural processes created. While the analysis undertaken indicates that the proposed development would likely not have any significant impact on natural processes within the SAC, the proposed development would clearly impact on the ability of the surrounding dunes located outside of the SAC to evolve subject to natural processes.

- Related to the 'do nothing' or baseline conditions of the site, the first party submissions to the Planning Authority and the Board make reference to the ***general obligations on member states to ensure the protection of natural habitats within designated sites***. Specifically, Preamble 2 to the RFI submitted to the Planning Authority cites the wording of Article 6(1) and 6(2) of the Directive which sets out the requirement for member states to establish the necessary conservation measures (Art. 6.1) and that *'member states shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats…'*. It is further contended by the first party that the provisions of Art. 6(1) and 6(2) are such that *'benign neglect is not an option'* as held in the case RSPB vs Scottish Ministers (2016), and that leaving the site at the mercy of natural processes will not achieve conservation objectives. It is taken from this that conservation of a SAC may include protecting it from natural phenomena likely to cause '*deterioration of natural habitats and the habitats of species as well as disturbance of the species'* (Art 6.2). There are, in my opinion, a number of points to note on these related issues. Firstly, and most significantly, the first party has clearly stated that the proposed development is not designed to provide protection for the dune habitat within the SAC and has sought in the application documentation to demonstrate how the SAC would not be impacted by the proposed works. The first party submissions on file make a number of references to this point, and specifically refute the reference in the NPWS submissions to the Planning Authority that the NIS argues that the coastal protection works are necessary for the conservation of the SAC. I note that the NIS states that '*at this site, conservation of site dynamism may be at the expense of habitat loss'*, however the fact that natural processes may result in habitat loss within the SAC is not in my opinion a basis upon which the identified attributes and targets relating to habitat area, distribution, physical and vegetation structure for dune habitats within the SAC that inform the relevant conservation objectives can be ignored. The requirements set out in

Articles 6(1) and 6(2) and cited by the first party are general proactive and preventative measures designed to avoid the deterioration or natural habitats. When it comes to the assessment of individual proposals for plans or projects, however the relevant provisions are Article 6(3) and 6(4) when set out specific measures for the assessment process relevant to individual plans or projects. In the case of the project the subject of this appeal, it is compliance with these Article 6(3) requirements including the assessment of impact on site integrity in light of the set conservation objectives which is the primary relevant consideration.

- Secondly, the situation on the appeal site is one of a coastal environment that is the subject of natural change. It is a dynamic coast and this is recognised in the NPWS documents relating to the site and specifically the attributes and targets set in respect of the conservation objectives for the site. The fact that the available information would point to the dune systems within the SAC as having an erosional trend is noted, however this is likely at least partially due to the current and historic land uses on and on the landward side of the dunes including the golf course development, agricultural activities and infrastructure. The fact that an area adjoining the coast, in this case the Carrowmore Dunes SAC, has been the subject of designation cannot in my opinion reasonably be interpreted as meaning that there is an onus on the member state to ensure its protection in whatever means available, including the construction of physical interventions in the environment. This is not to say that there is no onus on member states not to ensure the protection of designated sites, but this protection has to be in the form of the control of plans or projects which would have an adverse effect on such sites.
- With regard to the ***RSPB v Scottish Ministers*** case cited by the first party and the point made that this case supports the contention that '*benign neglect*' of the site in the form of ignoring ongoing processes that are leading to the loss of habitat is not an option, I do not see where this issue is addressed in this judgement or how the judgement is clearly relevant to the circumstances

of the subject appeal. No clear quotations or paragraph references to this judgement have been provided by the first party to support the point made and the issues raised in the case predominately relate to (i) procedural issues around EIA and opportunities for RSPB to comment, (ii) whether the conclusion on appropriate assessment was reached on the basis of facts and methodologies that were in error and (iii) whether the competent authority (Scottish Ministers) should have treated certain draft (proposed) SPA sites as if they had been approved for the purposes of the assessment rather than omitting them. I also note that this decision relates to the UK legal system, was not the subject of an appeal to Europe or further consideration by the ECJ and that it would appear that the decision was overturned on appeal by the Inner House of the Court of Appeal (CSIH 31 2017)).

- Also related to the 'do nothing' scenario and baseline condition of the site, I note the reference by the first party to provisions of ***EC Guidance Document 'The Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones with particular attention to port developments and dredging' (EC, January, 2011).*** The first party contends that this document identifies that large scale habitat loss, even if caused by natural processes, is viewed as site deterioration and not a neutral impact, and provides a quotation at Page 25 of the revised NIS dated October, 2017 and submitted as part of the response to further information in support of this statement. It is also noted by the first party that the 2011 EC Guidance on Estuaries and Coastal Zones states that conservation objectives and management measures can be revisited where and when necessary on the basis of measured trends and that, as set out in Volume 3 of the EIS 'Design Reports', the current measured trend at the site is erosional and the outlook for the site is habitat erosion and loss in the 'do nothing' scenario. There are a number of issues that require to be highlighted on these points. Firstly, quotation provided at Page 25 of the submitted NIS (October, 2017) does not reflect the text contained in the EC Guidance document. Rather it combines two

separate sections, the first contained at the bottom of Page 29 of the guidance document and the second at the bottom of page 21 and top of page 22 into one single quotation. It should be noted that the part taken from page 21 / 22 relating to '*losses caused by natural developments or climate change also need consideration'*, is under the heading of '*Setting Conservation Objectives for the Estuaries and Coastal Habitats'* rather than under the heading of assessment of projects. The document does clearly recognise the dynamic nature of estuaries and coastal zones and I note that there is reference at page 22 (section 3.1.3) to the fact that '*conservation objectives should not be static'* and that they should adapt 'to *the actual evolution of the conservation status of species or habitats and to the evolution of other ecological factors in a complex and dynamic environment'*. Periodic review and adaptation of the conservation objectives of coastal and estuarine sites is clearly appropriate given the dynamic nature of the environments in such areas, however no such change in conservation objectives for the Carrowmore Dunes site has been undertaken, and it is apparent that the assessment of plans or projects has to be undertaken in accordance with Article 6(3) and with the conservation objectives in place for the European site at the time of assessment by the competent authority. As per the content of Page 29 / 30 of the cited EC Guidance, the likely future natural changes at the site in the form of a long term trend of dune erosion have been noted at the first bullet point above and is recognised in this assessment.

- Arising from the above, the first party also state that the conservation objectives for qualifying interest habitats within the Carrowmore Dunes SAC are increasing area (for embryo dunes) or stable and increasing area (for mobile and fixed dunes) subject to natural processes and that the conservation objective for physical structure is to maintain the natural circulation of sediment and organic matter. It is stated that the 'do nothing' scenario will definitely and without any scientific doubt lead to significant loss of area of sand dune habitat at the site (in particular the fixed dunes). In the

case of the appeal site however, the coastal process and other relevant assessments presented indicate that the partial coastal protection works proposed would not lead to any significant loss of dune habitat within the SAC, with the 12.06 ha. predicted to be lost without the project almost entirely located outside of the SAC.

- Finally on the issue of the 'do nothing' impact and the interpretation made by the first party regarding the relationship between natural processes and site conservation objectives, the contention that benign neglect is not an option and that large scale habitat loss even if caused by natural processes is site deterioration rather than a neutral process would appear to be contrary to the principle put forward by the first party in their appeal that the proposed developer has no obligation to enhance or positively protect the European sites – its obligation is merely not to harm them (People Over Wind V ABP 2015). As noted in the introduction to this Stage 2 assessment, this general principle is noted and agreed with and, in the promoting or assessment of a project such as the partial coastal protection project which is the subject of this appeal, there is no obligation under Article 6(3) to enhance or positively protect European sites, rather the appropriate test is that the project in itself or in combination with other plans or projects would not have an adverse impact on the integrity of the site having regard to its conservation objectives.

Impacts on the Conservation Objectives of the Site

9.2.1.8 The development would have a number of ***potential impacts*** on the conservation objectives of the Carrowmore Dunes SAC site. These impacts would arise during both the construction and operational phase of the proposed development. At the ***construction phase***, the development has potential impacts on the site arising from the delivery and storage of materials at the construction compound, the transportation of materials from the compound to the works areas and the construction activity itself. Spillages for construction machinery could impact on habitats and species within the SAC and the construction access to the works area could result in compaction of the dunes and beach sand. Access to the beach from

the existing access point proposed (northern surfer's access) would require some works to facilitate access by construction equipment, including the construction of a ramp access to the beach parallel with the dune front. Details of this were submitted as part of the RFI to the Planning Authority, (RFI-NIS-1b and Figure 25 of RFI). There is also potential for the importation of contaminated sand material to the site that would be used in the restoration of the areas to the front of the revetments following storm events which would impact negatively on the existing species of the dunes and the vegetation structure. The use of the access via the golf course has potential impact on compaction of the dunes and similar issues of compaction occur on the beach.

9.2.1.9 During the ***operational phase*** of the development, the primary potential impact arising on the conservation objective of the SAC relates to the potential for the structures to alter the existing coastal processes in Doughmore Bay and to alter the rate of erosion in the undefended sections of the bay, thereby potentially impacting on the SAC. In addition, during the operational phase, there is a stated requirement to undertake periodic reinstatement of sand to the front of the defence structures. The importation of sand material from off site, as is predicted to be required from year 18 post construction onwards (EIS, Vol.1 paragraph 2.4.1), raised potential impacts in terms of the importation of invasive species which would potentially impact on the existing habitat within the SAC. The access for these ongoing maintenance activities is stated in the EIS (Vol.1, paragraph 2.5) to be via the Mountrivers (southern end of the beach) access and also the southern surfer's access point in the centre of the beach. It is noted that in subsequent submissions it is stated by the first party that maintenance access would be via the Mountrivers access only. In either case, operational phase maintenance access would require vehicles / equipment to cross the SAC in order to access the northern defence structure thereby leading to potential impacts on the dune habitat arising from compaction of the dunes, beach sand and potential spillages leading to negative impacts on the dune vegetation. Long term, meaning post the 50 year design life of the proposed project, there are potential issues for the integrity of the SAC related to the long term maintenance or removal of the structures, the potential for the structures to be outflanked when erosion in the undefended sections and the degree of beach lowering reaches a higher level post the design life of the project.

9.2.1.10 With regard to the assessment of ***coastal processes and the impacts on the conservation objectives of the SAC***, there are in my opinion ***three primary issues*** that arise. The first relates to the reliability of, and methodology used in, the coastal process modelling undertaken by the first party. The second relates to the outcome of the modelling results and the impact on the SAC and the third relates to the design life of the project and the potential impacts on the conservation objectives of the Carrowmore Dunes SAC post this 50 year design period. Addressing the issue of the ***outcome of the modelling result first***, the analysis presented by the first party in the submitted revised NIS (dated October, 2017) which was submitted as part of the response to further information sets out at Pages 29-32 how the '*impact of the engineered solution will be therefore very much localised, to the area south and north of the tie ins……will not impact dynamics over the entire length of the beach and thereby will not impact conservation objectives over and above the 'do nothing' scenario during operational phase of the works…' (pg.31)*. The NIS goes on at Pg.31 to state that '*It is therefore certain beyond reasonable scientific doubt that there will be no negative impact to the SAC as a result of this development'*. The NIS also highlights (at Table 2.1, pg.30) that a total of 12.06 ha. of priority habitat would be lost with no protection as against 9.63 ha. with protection, and the net saving of habitat with protection is estimated at 2.38 ha. On this issue, I note that the figures of 12.06 ha. and 9.63 ha. of priority habitat cited in Table 2.1 relate to areas that are located both inside and outside of the SAC boundary, and it is not the case that the proposed development would result in additional areas of priority habitat located within the SAC being protected.

9.2.1.11 Table 1 contained in section 2.9 of the first party response to the third party grounds of appeal (received by the Board on 5th March, 2018) sets out the predicted impacts on the SAC of the 'end effects', that is the potential increased erosion at the limits of the defence structures. In response to issues raised by the third party appellants the analysis undertaken by the first party on this issue was extended to cover a period of up to 100 years post construction and this was submitted as part of the first party response to the grounds of appeal (HR Wallingford report as part of response received by the Board on 5th March, 2018) and augments the information submitted by the applicant as part of their response to further information submitted to the Planning Authority (Response to RFI-CP 5). The modelling results for 'end effects'

indicate that there would be a direct loss, albeit a small one, in terms of the overall area of the SAC over and above the predicted loss of SAC area from natural erosion or erosion which would occur in a 'do nothing' scenario. The extent of this loss within the SAC attributable to the 'end effects' is estimated by the modelling to be 92 sq. metres 50 years post development, rising to 347 sq. metres 100 years post development. It is noted that there are aspects of the modelling inputs and site conditions, including the presence of cobbles on the shore and the northern outfall, that would potentially reduce the impact of 'end effects' and that the extent of such impacts are minor in the context of the overall site area. The fact remains however that modelled results predict an indirect effect in terms of loss of habitat within the SAC boundary arising as a result of the proposed development. As such, the impact of the proposed development would appear to be contrary to the principles arising from ECJ Case 258/11 (Sweetman v An Bord Pleanala) in the case of the Galway bypass where it was determined by the ECJ that:

> *"If, after an appropriate assessment of a plan or project's implications for a site … the competent national authority concludes that that plan or project will lead to the lasting and irreparable loss of the whole or part of a priority natural habitat type whose conservation was the objective that justified the designation of the site concerned as an SCI, the view should be taken that such a plan or project will adversely affect the integrity of that site."*

Having regard to this judgement I consider that the loss of habitat within the boundary of the SAC that is predicted to arise as a result of the proposed development, while small in the context of the overall site area, is such that it would adversely affect the integrity of the Carrowmore Dunes SAC. Specifically, the proposed development would impact negatively on the Habitat area and Habitat distribution of embryonic shifting dunes, shifting dunes along the shoreline and fixed coastal dunes all of which are indicated in map 5 of the Conservation Objectives document as being located in the areas at the ends of the partial defence structures and where the 'end effects' are predicted to occur. These impacts are particularly significant in an instance such as that at the Doughmore Bay where the available information indicates a long term trend of dunes erosion with limited evidence that the dunes are likely to move landwards and regenerate. This assessment relates

solely to the likely impact of the proposed development on the area of the SAC and I note the points raised by the first party with regard to the likely beneficial impacts of the project on the extent of priority habitat outside of the SAC. For the reasons set out under the heading of baseline / '*do nothing'* scenario above, however it is considered that the appropriate test for an individual project is the impact on the integrity of the SAC site itself in light of the conservation objectives rather than the impact on habitat which is located outside of the SAC.

9.2.1.12 The level of ***modelling accuracy*** (second issue identified above as relevant to the topic of coastal processes and the impact on the SAC) is also of relevance to the assessment of coastal processes and the likely impact ***of end effects*** on the integrity of the Carrowmore Dunes SAC. In making its decision, the competent authority must be sure that decision based on best available scientific information and that no reasonable scientific doubt remains regarding the impact on the conservation objectives of the SAC. Given the nature and complexity of the environment the subject of modelling, and the very long time horizon covered by the model, the reliability of the results has, in my opinion to be the subject of detailed examination. With regard to the assessment of 'end effects' that has the potential to impact directly on the SAC, I note the fact that the separation between the southern end of the northern defence and the SAC boundary and the northern end of the southern defence and the SAC boundary appears to be drawn such that the extent of the defences are maximised allowing for the modelled impact of 'end effects'. Notwithstanding the small impacts predicted within the SAC, the approach chosen appears not to allow for any significant margin of error in the assessment of likely 'end effects', and any significant deviation from the modelled results has the potential to result in significant additional unforeseen direct impacts on the SAC. I note the comment provided at section 5.5.2 of the EIS Volume 1 where it is stated that end effects *'….are likely to be local and minor – in terms of the overall long term effects*.' This section goes on to state that '*However during the design life (50 years) erosion rates in these areas can be higher that the long term effects shown*'. It has been estimated by HR Wallingford that the increase in erosion rates near the ends of the protection could be in the range 15 to 30 percent. These estimates are based on an analysis undertaken for 1 and 100 year events and the results are given in Table 7.3 and 7.4 of the Coastal Processes report (HR Wallingford, December 2016, (see EIS

Volume 3 Design Reports). On the basis of the information presented and having regard to the variabilities that are required to be accounted for in the modelling and the very long time horizon required to be modelled, I am not satisfied that the outcome of the project in terms of its 'end effects' is such as to enable the additional retreat in the vicinity of the ends of the protected areas, and the resulting impacts on the SAC, to be determined with the level of scientific certainty required under the Habitats Directive.

9.2.1.13 Also on the topic of modelling, and the assessment of ***cross shore impacts*** that have arisen in the past and which are predicted to arise on foot of the proposed development, the first party acknowledges that specific surveying of the entire dune has only been taken over a relatively recent period. The statement of the first party that the modelling undertaken is the best analysis possible with the available information is accepted, and I note that the reports on file from JBA Consulting on behalf of the first party support this statement. The issue, however, is whether the model is based on information that can be deemed to give rise to scientific certainty or that no reasonable scientific doubt remains regarding the analysis undertaken. On the subject of cross shore modelling and the inputs used in the modelling process undertaken, I am not clear that there is an absence of scientific doubt on account of the limited detailed beach profile survey information available. This issue has been highlighted by JBA Consulting (on behalf of the Council) which concludes in the final version of the second report (dated December, 2017) that while *'…there is a clear trend of erosion based on the data available, and the best available data has been used appropriately, it remains that there is limited reliable beach monitoring data available on which to base this study'*. The JBA Consulting report (final version December, 2017) goes on to state that '*It is key that data continues to collated now that a scheme is proposed. Regular beach monitoring will provide the data required to develop a sustainable solution for coastal defences at Doonbeg and if the scheme is to go ahead monitoring data will be key to identifying and mitigating any potential impacts before they cause significant detriment to the bay and thus the SAC*.' The conclusion of the JBA Consulting Final Report states that '*The data underpinning the assessment is limited and further monitoring should be conducted before determining whether there will be integrity level impacts on the SAC'*.

9.2.1.14 I note that the issue of the ***time period of the data*** collected has been addressed by the first party in their response to the first party grounds of appeal (which would be subsequent to the JBA Final Report). Specifically, section 3.2 of the response submission received by the Board on 5th March 2018 addresses the concerns raised by ***JBA Consulting*** in their reports to the council and section 3.3 that address the issues raised by the Environment Assessment Officer. This information augments that provided at Preamble 1 to the Response to Further Information submitted to the Planning Authority which details how the long term trend in the dune crest was established from the analysis of cartography and specifically OS Maps from 1896. This information was augmented by 1974 cartography and survey of the dune crest undertaken in 2008. It remains, however that the first full topographic data available to inform the analysis covers the period from July 2014 to June 2016. Additional analysis of data from ongoing beach monitoring, dated February, 2018, is provided in a report by HR Wallingford on Coastal Processes attached with the first party response to the third party appeals and includes additional beach topographic information from 2017. I do not, however consider that the additional years data submitted as part of the first party response to appeals addresses the basic issue raised by JBA Consulting and the Council's Environmental Assessment Officer regarding the availability of adequate full beach profile data to enable verification of the beach modelling to be undertaken. The first party states that the JBA Final Report of December, 2017 acknowledges that the best available data has been incorporated in the analysis and used in an appropriate manner and that the that the best data available relating to the sediment budget has been used. These statements are indeed made by JBA, however they are done so in the context of the use of the information available, and does not in my reading imply that the information used is necessarily sufficient. The use of OSI information as a means of expanding the data set and assessing long term trends in dune position is noted, and is applicable for the identification of the dune crest position at these dates (1896 and 1974), however the absence of full dune profile information in the form of a topographic survey is a limitation on the possible analysis. The JBA report is in my opinion clear with regard to the caution that must be used in the interpretation of modelling results that use a limited period of beach profile data stating that '*….the limitation remains that this is a short term beach profile data set on which to base the assessments. The only mitigation to this is to undertake further monitoring through a*

structured monitoring scheme as set out in the preliminary Beach Management Plan presented as part of the RFI response'. These concerns are reinforced by the nature of the suggested conditions attached with the report to be used in the event that a grant of permission is being considered which include the development of a detailed monitoring programme (Condition 3) and surveys to monitor the areas of increased erosion to monitor potential outflanking and impacts on the SAC (Condition No.4). These, and other conditions identified in the JBA Consulting Final Report, in my opinion reinforce the concerns regarding the scientific certainty of the modelling outputs presented and, as is discussed below, are mitigations that are potentially indicative of a lack of the level of scientific certainty required under the Habitats Directive. On the basis of the information presented as part of the first party response submission dated 5th March, 2018 I do not consider that additional data covering one year / season (2017) full beach profile is sufficient to mitigate these concerns.

9.2.1.15 The ***third issue*** identified at 9.2.1.10 as being relevant to the assessment of coastal processes and the impact on the conservation objectives of the Carrowmore Dunes SAC relates to the ***Design Life of Project***. The project has a design life of 50 years and this has been taken into account in the design and specification of the structure and in the modelling work undertaken. The issue of what may potentially happen post the 50 year design period of the project, and how this may impact on the Carrowmore Dunes SAC is in my opinion of relevance. Issues that may potentially arise post the design life of the project include, but are not limited to, beach lowering in front of the structure with implications for the structural integrity of the structures, outflanking of the structures and long term maintenance and future modifications / removal of the structures. It is also noted that the commitments entered into regarding the maintenance of the structure relate to the same 50 year design period and that while Condition No.3(d) requires the maintenance of the structure in perpetuity by the first party, that this is not provided for in the submitted Preliminary Beach Management and Monitoring Plan (HR Wallingford May, 2017) which refers to a 50 year design life. There is therefore the potential for longer term impacts on the integrity of the proposed structures that have not, with the exception of the extrapolation of the potential '*end effects'* as set out in section 2.9 of the first party

response to third party appeals (received by the Board on 5th March, 2018), been the subject of detailed modelling.

9.2.1.16 As discussed above, the long term analysis of end effects (post the 50 year design period) indicates that the structures would result in the loss due to erosion of additional area of the Carrowmore Dunes SAC than would be the case without the development. Also, as referenced above, the level of historical beach profile information available, together with variation in the coastal environment and the long time period over which the modelling is being undertaken, raise issues with regard to the reliability of the predicted impacts on the SAC. The modelled outcomes presented by the first party as part of the first party response to the appeal do not indicate any significant potential for outflanking of defences up to the 100 year post development period, however I note that the project is stated to be designed to take account of the potential for beach lowering and consequent impact on the integrity of the structure based on a 50 year design life. In this regard I note the content of section 7.1 of the Coastal Processes report prepared by HR Wallingford (December, 2016) which states that '*the shoreline is displaying evidence of long term retreating trend and with the partial protection in place the beach level will continue to lower once the shoreline has reached this structure. It is important therefore that the toe of the coastal defence is designed in such a way to prevent undermining of the structure within the life of the scheme*', (emphasis added). RFI-CP-9 states that the drop in beach levels is anticipated to continue over the design life of the structure and the toe foundation level will be such that it will remain below the beach level for the design life of the structure. The modelling of the potential impact in terms of end effects as presented as part of the first party response submissions is noted, however it is apparent that additional works to the revetment structure and specifically the depth of the toe structure will potentially be required post the 50 year design life. The question therefore arises as to the degree of certainty that such future works to the revetments to prevent their failure will be undertaken, the exact of these works which is not detailed in the current application and what impact such works may have on coastal processes and on the integrity of the SAC. Similarly any works to the ends required to prevent the future (post 50 year design period) outflanking of the defences are not detailed in the application documentation and the submitted Draft Beach Monitoring and Management Plan submitted as part of the

further information response indicates that monitoring of the end effects will be undertaken and that effects will be managed in an adaptable way to avoid impacting on the SAC throughout the lifetime of the scheme. These issues relating to potential outflanking, integrity of the structure post the 50 year design life of the project and the adaptive management of the long term effects to avoid impacting on the SAC are noted in the JBA Consulting Final Report and are in my opinion issues which introduce a degree of uncertainity with regard to the long term impact of the development on the integrity of the Carrowmore Dunes SAC.

Mitigation Measures / Monitoring

9.2.1.17 At the ***construction phase***, significant mitigation has been proposed to ensure that the risk to the environment are minimised. The site compound is proposed to be located at a remove of 200 plus metres from the boundary of the SAC at the closest point. Notwithstanding this, the EIS and submitted Draft CEMP set out a range of mitigation measures relating to the design and operation of the construction compound. The location and design of the fuel soakaway in the compound is shown in Figure 20 of EIS and sections 2.3.1 and 2.7 and the submitted Draft CEMP sets out a range of measures relating to the operation of the construction compound. Subject to the implementation of the mitigation measures as set out in the application documentation including the Draft CEMP, I do not consider that this aspect of the construction activity would be likely to have significant effects on the SAC.

9.2.1.18 The construction access to the site is proposed to be via the existing main access route to the TIGL resort from the N67. In the vicinity of the surfers car park the access route runs west across the golf course and following an existing track across the course. As noted by the first party, this existing usage has modified these areas by usage (on the grassed course) and by addition of gravel in other areas. The first party response to the grounds of appeal states that the construction access route will be fully rehabilitated and reinstated as dune habitat following the completion of the development. Access to the beach will require the removal of some areas of dune on either side of the access point to the beach and for the construction of an access ramp from the northern surfer's access down to beach level. On the beach, the transport route to the works areas will be away from the front part of the dunes and

the embryo dune habitat. Overall, subject to the construction phase mitigation measures proposed, no permanent adverse effects on the integrity of the SAC are considered likely to arise.

9.2.1.19 In the case of the proposed development, ***operational phase mitigation*** comprises design mitigation which seeks to prevent impacts on the SAC from arising and also the implementation of a Beach management and Monitoring Plan which identifies a number of areas that will be the subject of long term monitoring and the setting of trigger values which will result in certain actions being taken to manage the impacts with particular regard to the impacts that may arise on European sites. On *design mitigation* firstly, mitigation for the construction of the revetments with the incorporation of openings is proposed to ensure that the hydrology of the site is not adversely impacted. These openings are proposed to be 10cm in diameter and located at 1.5 metre centres along the sheet piles and taken in conjunction with the cited evidence the species has not demonstrated any significant sensitivity to water levels, are such that there would not be any adverse impacts on the integrity of the site in light of the conservation objective identified for Vertigo Angustior.

9.2.1.20 With regard to operational phase design mitigation relating to the three dune habitats identified as qualifying interests of the site, the modelling of the sediment budget and coastal processes undertaken as part of the application is intended to demonstrate that the integrity of the Carrowmore Dunes site would not be adversely impacted in light of the conservation objectives identified for these dune habitats. As discussed above, however, I consider that the analysis presented indicates that the proposed development would lead to an additional long term permanent loss of priority dune habitat over and above that which would occur in a '*do nothing'* scenario and that as a result the targets identified under the headings of Habitat Area and Habitat Distribution would not be met and physical structures introduced that would impact on the natural circulation of sediment such that there would be an adverse effect on site integrity. The sections above have identified issues with regard to the modelling inputs which impact on the level of certainty regarding the effects on the conservation objectives of the SAC and in my opinion result in scientific doubt regarding the likely future impacts on the conservation objectives of the Carrowmore Dunes SAC.

9.2.1.21 There are a number of elements of the mitigation and monitoring proposed by the first party, and specifically aspects of the project which are proposed to be the subject of ongoing monitoring with the aim of determining the potential impact of the project on the SAC, which increase my concerns with regard to the level of scientific certainty available to the competent authority in this case prior to the making of a decision. In identifying these issues, I am conscious that the environment which is being modelled is a complex and dynamic one and that this complexity is exacerbated by the long time period over which effects are required to be assessed. This issue is acknowledged at Section 3.3.3 of the *EU Guidance on Implementation of the Birds and Habitats Directives in estuaries and coastal zones* (2011) regarding the need to recognise the dynamic nature of such environments and that '*minor remaining uncertainties should not or restrain projects indefinitely'* and that '*In case of uncertainity on particular mechanisms of complex estuarine or coastal ecosystems port and waterway developers should assess the nature of the remaining uncertainties and manage them through targeted monitoring and adaptive strategies. Monitoring schemes should be designed in a way that they signal any unexpected developments at a stage where effective corrective measures can still be taken.'* In the case of the proposed development, there are however a number of proposals for monitoring of the development and conditions relating to monitoring imposed by the Planning Authority that indicate that there is a lack of certainty regarding the likely effects and specifically the effects on the Carrowmore Dunes SAC site. Firstly, the granting of permission is subject to Condition No.3 which requires the submission and agreement of a finalised Beach Monitoring and Management Plan that would include all monitoring and management proposals as outlines in the preliminary plan submitted to the Planning Authority. The stated reason for this condition includes the wording '…*to ensure no adverse effects on the integrity of any European sites'*. Similarly, it is noted that the Final Report of JBA Consulting (dated December, 2017) recommends conditions to be attached in the event of a grant of permission, of which Conditions Nos. 4 (regarding monitoring of erosion and outflanking at the end points) and 6 (relating to the future assessment of the impact of any repair or revetment extension works on the SAC), are in my opinion indicative of a situation where the full effects of the proposed development on the SAC are not known in advance of the making of a decision.

9.2.1.22 In addition, on this subject, I note and wish to highlight to the Board, the comments contained in the response to further information submitted to the Planning Authority (Response to RFI-CP 5) relating to the modelling of end effects, the potential impact on the SAC and the role envisaged for the Beach Monitoring and Management Plan. Under the heading of '*End Effects – Time Evolution'* RFI-CP 5 states that

> *'The monitoring programme set up in the Beach Management Plan will provide information on the evolution at the ends, which will be used to plan the management of the structure and its end effects after 2066 to avoid impacting on the SAC'*.

Under the heading of 'Structures End Design', RFI-CP 5 states that '*Under the provisions of the Beach Management Plan, erosion will be monitored over the entire frontage, with relatively high precision used in the locations with anticipated end effects. Also, as set out in the Beach Management Plan, an annual Beach Status Report with the monitoring results will be provided to the beach stakeholders such as Clare County Council and the NPWS. Effects will be managed in an adaptable way to avoid impacting on the SACs throughout the life of the scheme'*. The role of the Beach Management Plan, which is a condition of the Notification of Decision to Grant Permission issued by the Planning Authority (Condition No.3), and a final version of which is proposed by the first party to be submitted for agreement post consent being issued for the project, is in my opinion such that further adaptations to the scheme are envisaged as possible in the event that the monitoring results indicate that the effects of the scheme on the SAC are more significant than anticipated on foot of the modelling. In my opinion, the overall effect reinforces the concerns set out in the sections above regarding a lack of certainty in the modelled outcomes such as to enable the Board as the competent authority to have the required level of confidence regarding the absence of long term adverse effects on the integrity of the Carrowmore Dunes SAC site and to come to a conclusion of no adverse effects on the integrity of the site in light of its conservation objectives.

In Combination Effects

9.2.1.23 Regarding ***in combination effects***, a number of existing and permitted developments in the general vicinity of the appeal site are noted. These comprise wind energy developments that are located on lands to the east of the appeal site and east of the N67 national road. These include the permitted 29 no. turbine windfarm at Slievecallan c.17km to the north east of the appeal site, the permitted 11 no. turbine windfarm at Slaghbooly, c.20 km to the east north east of the appeal site and the Tullabrack windfarm located c.7km to the south of the appeal site. In addition, there is also a recent grant of permission issued by Clare County Council for the expansion of facilities at the TIGL site comprising permission for conference and leisure centre and additional houses. I do not consider that any of these projects have the potential to act in combination with the proposed partial coastal protection works to give rise to significant effects on the Carrowmore Dunes SAC.

Effects on Site Integrity

9.2.1.24 Arising from the above, it is considered that the ***effects on the Conservation Objectives and Site Integrity*** for each of the identified habitats and species for which the site is designated are as follows:

<u>Reefs</u>

The proposed development is not likely to result in a material change in the sediment deposition at or the reef communities in this habitat by virtue of the limited changes in sediment budget arising and the predicted limited longshore transport of material. No significant effects on Habitat Area, Distribution or Community Structure are therefore considered likely to arise, and the proposed development would not therefore have an adverse effect on the conservation objectives for this habitat or on the integrity of the site as it relates to reef habitat.

<u>Embryonic Shifting Dunes</u>

Given the nature of the project that comprises a physical structure that would impact on sediment movement and coastal processes, the predicted direct impact that the development would have on the extent of dune habitat post development and particularly the predicted additional habitat loss over and above that in a ‘do nothing’

scenario and the uncertainity regarding cross shore modelling inputs and range of beach profile data that inform the analysis of the coastal processes at Doughmore Bay and the modelling of the end effects, it is considered that the proposed development would result in an additional reduction in Habitat Area and Distribution over and above that which would likely occur in a 'do nothing' scenario with the site the subject of natural processes and would impact on the availability of sediment such would impact negatively on Physical Structure and such that the proposed development would have an adverse effect on the conservation objectives of this habitat and on the integrity of the site.

Shifting Dunes Along the Shoreline (White Dunes)

Given the nature of the project that comprises a physical structure that would impact on sediment movement and coastal processes, the predicted direct impact that the development would have on the extent of dune habitat post development and particularly the predicted additional habitat loss over and above that in a 'do nothing' scenario and the uncertainity regarding cross shore modelling inputs and range of beach profile data that inform the analysis of the coastal processes at Doughmore Bay and the modelling of the end effects, it is considered that the proposed development would result in an additional reduction in Habitat Area and Distribution over and above that which would likely occur in a 'do nothing' scenario with the site the subject of natural processes and would impact on the availability of sediment such would impact negatively on Physical Structure and such that the proposed development would have an adverse effect on the conservation objectives of this habitat and on the integrity of the site.

Fixed Dunes with Herbaceous Vegetation (Grey Dunes)

Given the nature of the project that comprises a physical structure that would impact on sediment movement and coastal processes, the predicted direct impact that the development would have on the extent of dune habitat post development and particularly the predicted additional habitat loss over and above that in a 'do nothing' scenario and the uncertainity regarding cross shore modelling inputs and range of beach profile data that inform the analysis of the coastal processes at Doughmore Bay and the modelling of the end effects, it is considered that the proposed development would result in an additional reduction in Habitat Area and Distribution

over and above that which would likely occur in a ‘do nothing’ scenario with the site the subject of natural processes and would impact on the availability of sediment such would impact negatively on Physical Structure and such that the proposed development would have an adverse effect on the conservation objectives of this habitat and on the integrity of the site.

Vertigo Angustor (Whorl Snail)

The proposed development is not likely to result in a material change in the area of dune available to the species relative to a ‘do nothing’ scenario and the design of revetment proposed will result in no significant change in hydrology within the dune system. The development would result in the preservation of additional dune habitat which is currently populated by Vertigo Angustor, albeit habitat that is located outside of the SAC. No significant effects on Habitat Distribution, Presence or Abundance on Transect, Transect Quality or Wetness or Habitat extent are therefore considered likely and the proposed development would not therefore have an adverse effect on the conservation objectives for this habitat or on the integrity of the site as it relates to the species Vertigo Angustior.

9.2.1.25 The ***overall conclusion*** of this Stage 2 Appropriate Assessment is therefore that the proposed development would have an adverse effect on the integrity of the Carrowmore Dunes SAC site in the light of its conservation objectives as they relate to the identified dune habitats.

9.2.2. Mid Clare Coast SPA

9.2.2.1 The qualifying interests of this site are as follows:

- Cormorant,
- Barnacle goose,
- Ringed plover,
- Sanderling,
- Purple sandpiper,
- Dunlin,
- Turnstone,

- Wetlands.

9.2.2.2 The conservation objectives for the site are the maintenance of the favourable conservation condition of the above listed bird species in the Mid Clare Coast SPA and to maintain the favourable conservation condition of the wetland habitat in mid-Clare Coast SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

9.2.2.3 The ***baseline condition*** of the site as set out in the NPWS Site Synopsis and Standard Data Form indicates a site that supports a nationally important population of barnacle goose which winters on Mattle and Mutton Islands, 2 and 4km to the north west of the appeal site at the closest point. Mattle Island also supports a nationally important population of cormorant with a breeding colony. The shoreline within the SPA including the vicinity of the site is important for wintering wading birds and include an internationally important population of purple sandpiper and nationally important populations of ringed plover, dunlin, sanderling and turnstone.

9.2.2.4 The supporting documentation for the conservation objectives of the Mid Clare Coast SPA (conservation objectives document Pg.5) and the Standard Data Form (NPWS, 2010, updated 09.2017), indicate that White Strand had a relatively diversity of species with 13 species present during a high water survey and 7 at a low water survey. The situation at Rinnagonnaght Strand is that there are a greater range and number of species. The supporting documentation also indicates that there are a number of existing activities that may give rise to disturbance of birds in the vicinity of the proposed development sites including walking, dog walking, surfing and general recreational activities and harvesting of seaweed and periwinkles.

9.2.2.5 Survey information presented by the first party in Chapter 10 of the EIS and Appendix 7A of Volume 2 of the EIS surveys undertaken over the 2014 / 2015 period with a summer bird survey undertaken in August 2014 and winter bird survey undertaken during the 2014 – 2015 winter. As with other ecological surveys and aspects of the project, there is a significant resource of previous bird survey information available arising from previous applications at the site and which has been used to augment and compare with the current survey information (see EIS Volume 1, paragraph 10.3.5). The surveys covered both White Strand and

Rinnagonnaght Strand to the immediate south and both sites exhibited a higher range of species during the low water periods. A total of 23 species were observed at low water on White Strand and significant number of sand martin burrows observed in the dune face. No other breeding birds were observed along the shoreline at White Strand. Four red listed species were observed at White Strand during both phases of the tidal cycle, however the range of species observed at Rinnagonnaght to the south is more extensive with greater number of foraging shorebirds including curlew, oystercatcher, ringed plover and sanderling. Surveys also indicated a greater number and diversity of bird species in the inter tidal areas at Rinnagonnaght than is the case at White Strand.

9.2.2.6 The winter survey recorded a relatively low total of 14 species present at White Strand during both low and high water and a limited number of sightings were recorded at the proposed works areas or in the inter tidal areas. It is again notable that the winter surveys indicate a greater range and number of species at Rinnagonnaght. Four red list species were recorded at White Strand as well as four Annex I species including dunlin. The red list species observed at Rinnagonnaght included black headed gull, curlew, dunlin, golden plover, and lapwing. Annex I species observed at Rinnagonnaght included dunlin, golden plover, great northern diver, peregrine falcon, whooper swan and kingfisher. Terrestrial bird species observed, other than those identified in the intertidal areas include chough. The site surveys undertaken indicate that there was no clear high water roost area identified and the upper shore areas returned virtually no records of water or wading birds. The upper beach cobbled areas did not appear to result in good foraging or roosting habitat for species identified in the SPA.

9.2.2.7 The ***potential impacts*** of the proposed development on bird species which are identified as qualifying interests of the site, and for which there conservation objectives, arise from the loss of habitat due to changes in the dune face, disturbance during construction, particularly from noise or lighting, and potential changes in hydrology. There is also some potential impact on benthic organisms in the inter-tidal areas with resulting impact on foraging habitat. Given the limited sightings of species identified in the surveys undertaken for the proposed development and those identified in the NPWS documentation, it is considered that there is limited potential for the proposed development to impact on the population

dynamics or range of the species and that the SPA area is such that there would continue to be a sufficiently large habitat for the identified species to maintain their populations over the long term. On this latter point, the relatively higher significance of Rinnagonnaght Strand is particularly noted. Having regard to these factors, the potential impact on conservation objectives of the site is considered to be limited.

9.2.2.8 ***Mitigation measures*** relating to the potential impacts identified above are set out in section 10.5 of Volume 1 of the EIS and a full list of the mitigation measures contained in the EIS is set out section 3.0 of the Draft High Level Construction and Environmental Management Plan submitted to the Planning Authority as part of the response to further information. The proposed mitigation measures include the undertaking of works only during daylight hours and construction will avoid the peak season for wintering waterbirds. No sheet piling or delivery to the shore area would be undertaken over the October to March period and the construction compound is proposed to be located away from the shoreline to minimise disturbance to the species identified as being of significance to the SPA. Best practice construction measures are proposed to be followed including relating to the management and refuelling of machinery it is proposed that a wildlife register would be maintained during the construction phase. General bird activity at the site is also proposed to be monitored by an ecologist throughout the construction phase and for the winter period following completion of the works. Periodic restoration of sand to the front of the completed revetments is proposed to be undertaken outside of the main overwintering period for birds and sand stocks would be checked for breeding bird species. The nature of these mitigation measures are such that they are considered to be readily implementable and would be effective in mitigating the potential impact of the proposed development on the bird species for which conservation objectives are set under the Mid Clare Coast SPA.

9.2.2.9 A number of existing and permitted developments in the general vicinity of the appeal site which have the potential to lead to ***in combination effects*** when taken in conjunction with the proposed partial coastal defence works are noted. These comprise wind energy developments that are located on lands to the east of the appeal site and east of the N67 national road. These include the permitted 29 no. turbine windfarm at Slievecallan c.17km to the north east of the appeal site, the permitted 11 no. turbine windfarm at Slaghbooly, c.20 km to the east north east of

the appeal site and the Tullabrack windfarm located c.7km to the south of the appeal site. In addition, there is also a recent grant of permission issued by Clare County Council for the expansion of facilities at the TIGL site comprising permission for conference and leisure centre and additional houses. I do not consider that any of these projects have the potential to act in combination with the proposed partial coastal protection works to give rise to significant effects on the Mid Clare Coast SPA.

9.2.2.10 In ***conclusion***, I note the limited evidence of the use of the site or areas in close proximity to the site, including the construction area, by bird species listed as qualifying interests for the Mid Clare Coast SPA site and the nature of the conservation objectives for these species which is the maintenance of the favourable conservation condition of the above listed bird species and to maintain the favourable conservation condition of the wetland habitat in mid-Clare Coast SPA as a resource for the regularly occurring migratory waterbirds that utilise it. Having regard to this, and subject to the mitigation measures set out in the EIS, I do not consider that the proposed development would have an adverse effect on the integrity of the Mid Clare Coast SPA site having regard to its conservation objectives.

9.2.3. Carrowmore Point to Spanish Point and Islands SAC

9.2.3.1 Following from the Screening Assessment undertaken at 9.1 above, the Carrowmore Point to Spanish and Islands SAC was screened in and is therefore included in this Stage 2 Appropriate Assessment. It should be noted that this site was screened out by the applicant and is not therefore included in the Appropriate Assessment contained in the submitted NIS. The qualifying interests of this site are as follows:

- Coastal lagoons
- Reefs
- Perennial vegetation of stony banks
- Petrifying springs with tufa formation

9.2.3.2 The conservation objective for the site relating to coastal lagoons is to restore the favourable conservation condition of coastal lagoons in Carrowmore Pont to Spanish Point and Islands SAC. In the case of the other identified habitats, the conservation objective is to maintain the favourable conservation condition of the habitat.

9.2.3.3 The ***baseline condition of the site*** is set out in the published NPWS documentation relating to the site. The Standard Data Form was first prepared in 2001 and most recently updated in 2017 and the site specific conservation objectives date from April, 2014. The site contains priority habit in the form of petrifying springs with tufa formation and this occurs along the sea cliffs at the southern end of Spanish Point beach at the northern end of the SAC. The inter tidal reef habitats extend over the bulk of the length of the site and there is record of a high number of littoral reef communities. The site contains small sand dune systems including in the vicinity of Lurga Point towards the southern end of the SAC and approximately 5km from the appeal site at the closest point. The most significant aspect of the SAC from the perspective of the potential impacts arising from the proposed development is likely Lough Donnell. Lough Donnell comprises a lagoon with a sea barrier and beach separating it from the open sea. The lough is used by a variety of wading birds including dunlin and golden plover that are species of interest for the adjoining Mid Clare Coast SPA.

9.2.3.4 The proposed development has the potential to alter coastal processes in the vicinity of the site and result in changes to the regime of accretion and deposition in the vicinity of the site. Any changes in longshore sediment transport would, in my opinion have potential impacts on coastal lagoon habitat, notably Lough Donnell c.2km to the north east of Carrowmore Point and the reef habitat which extends over the entire length of the SAC. Attributes related to Coastal Lagoons include the hydrological regime with a target of maintaining water level fluctuations within natural ranges and 'barrier: connectivity between lagoon and sea' with a target of maintaining appropriate hydrological connections. It is also noted that one of the attributes relating to Perennial Vegetation of Stoney Banks is Physical Structure: functionality and sediment supply, with a target of maintaining the natural circulation of sediment and organic matter. This habitat is found in the vicinity of Lough Donnell, c.2km to the north east of Carrowmore Point and c.2.5 km from the appeal site at the closest point.

9.2.3.5 As part of the analysis undertaken by the first party and submitted with the application, the applicant has undertaken modelling of the potential for longshore movement of sand and sediment. The results of the modelling process is presented in Chapter 5 of the submitted EIS and specifically section 5.3.5 of Volume 1 of the EIS. Further details are presented at Volume 3 of the EIS in the form of the Coastal Process Report prepared by HR Wallingford dated December, 2016. The analysis undertaken indicates that there is a narrow range of nearshore waves (see Wave Modelling Report prepared by HR Wallingford, dated December, 2016 and included at Volume 3 of the EIS). This, combined with the shape of Doughmore Bay, its orientation relative to the angle of the waves and the presence of rock outcrop both to the north (at Carrowmore Point) and south (at Magraths Point) indicate a closed system with regards to longshore transport of sediment.

9.2.3.6 As part of the first party response to the grounds of appeal, the results of a validation exercise undertaken of the longshore transport model covering the summer 2003 – summer 2016 period was undertaken. This validation exercise examined the predicted changes in sediment transport against the observed changes, and the results generally support the conclusion of the first party regarding Doughmore Bay being a physiographic unit, albeit one where there is acknowledged to be some short term longshore movement of material with the long term trend clearly cross shore. As part of the request for further information, the first party was requested to provide for information relating to the likely final destination of the estimated 20,000 cubic metres of sand that are calculated to be lost annually from the beach and dunes and which are moved via cross shore movement beyond the -7.0 metre closure depth. Specifically it was asked whether this material was likely to be lost to the bay, in which case it could have potential to end up on neighbouring beaches, including that to the north in the vicinity of Lough Donnell. The response to this issue, provided by the first party (RFI-CP-1(b) and Appendices A and B to the RFI), indicates that it is possible that material could be transported to beaches outside the bay, however, the modelling required to verify such movements would be subject to limitations in that firstly, the distribution of sediment is not uniform and very detailed information on bed composition and bathymetry would be required and secondly, that validation of sediment transport throughout the bay under storm conditions would be required. Even if these limitations could be addressed, it is stated that it is likely that the

findings would be only partially conclusive regarding the extent of the estimated annual loss of material that would be lost from the bay. The conclusions relating to the validation exercise shows a loss of beach material and retreat of the shoreline since 2003 apart from at one location (Profile 023). It is also shown that the beach is subject to seasonal and annual variability linked to storm events and accretion was observed '*between August 2016 and April 2017 and also between April 2017 and August 2017'*, with the accretion over this period '*about three times greater than the erosion that took place over the two years between July 2014 and August 2016'*. While there are no repeat surveys of the offshore area to enable verification of the results obtained, it would appear reasonable that some beach material is drawn temporarily into the lower part of the beach where it is available to be mobilised and transported back in the future, further indicating a limited likelihood of significant volumes of material being transported out of the bay.

9.2.3.7 Notwithstanding the sediment transport analysis above, the proposed partial coastal defence structures will not, in themselves, result in the generation of any significant increase in cross shore sediment movement and potential loss of material from the bay. Specifically, while there is some increased potential for erosion of the unprotected areas in proximity to the end of the defence structures ('end effects') these effects are relatively small and localised and the amount of additional material which is predicted to be lost as a result of the proposed development is minor in the context of the predicted overall volume of material that would be lost (see RFI-CP-5 and information presented as part of the first party response to the grounds of appeal). In addition, with the development in place, the protected areas will result in dune material not being lost in these locations.

9.2.3.8 Overall however, while a detailed assessment of the potential change in material eroded per annum in the do nothing and as proposed scenarios is not presented, the net effect when account is taken of additional erosion from the end effects set against the reduced erosion from the protection of c.883 linear metres of dune frontage is likely to be insignificant. When this very limited net effect is combined with the analysis presented supporting the concept that the bay is a closed system for longshore sediment transport, it is considered that the potential for the proposed development to lead to any material change in the amount of sediment transported out of the bay and into the Carrowmore Point to Spanish Point and Islands SAC is

very limited. The level of additional sediment potentially transported out of the Doughmore Bay system arising as a result of the proposed development would have to be very significantly higher to result in a potential effect on the conservation objectives of the SAC and the integrity of the site.

9.2.3.9 ***Mitigation*** in the form of the short term longshore processes being accounted for in the cross shore (COSMOS) modelling has been undertaken and the short term longshore transport has been considered in the assessment undertaken of the potential impacts on the SAC (see Preamble 5 in the response to further information dated October, 2017).

9.2.3.10 Regarding ***in combination effects***, a number of existing and permitted developments in the general vicinity of the appeal site are noted. These comprise wind energy developments that are located on lands to the east of the appeal site and east of the N67 national road. These include the permitted 29 no. turbine windfarm at Slievecallan c.17km to the north east of the appeal site, the permitted 11 no. turbine windfarm at Slaghbooly, c.20 km to the east north east of the appeal site and the Tullabrack windfarm located c.7km to the south of the appeal site. In addition, there is also a recent grant of permission issued by Clare County Council for the expansion of facilities at the TIGL site comprising permission for conference and leisure centre and additional houses. I do not consider that any of these projects have the potential to act in combination with the proposed partial coastal protection works to give rise to significant effects on the Carrowmore Point to Spanish Point and Islands SAC.

9.2.3.11 Having regard to the above, it is considered that the proposed development would not have an adverse effect on the integrity of the Carrowmore Point to Spanish Point and Islands SAC in the light of its conservation objections.

10.0 **Recommendation**

10.1. Having regard to the above, it is recommended that permission be refused based on the following reasons and considerations

11.0 **Reasons and Considerations**

1. On the basis of the information presented with the application and appeal, including the Natura Impact Statement, and in light of the assessment carried out above, I am not satisfied that the proposed development individually, or in combination with other plans or projects would not adversely affect the integrity of the Carrowmore Dunes SAC (site code 002250) in view of the sites conservation objectives. In such circumstances, the Board is precluded from granting permission.

2. The appeal site is located in an area of high landscape sensitivity and quality and is recognised as an area of high tourism importance and amenity value, and it is the objective of the *Clare County Development Plan, 2017-2023* to ensure that developments do not interfere with the recreational use of the area (Objective CDP12.14A), make all efforts to reduce their visual impact (Objective CDP13.6) and to support tourism related developments in coastal areas only where it can be demonstrated that there would be no negative impacts on the amenities of the area or the economic value of the county's coastline and beaches (Objective CDP9.12). Having regard to the long lifespan of the proposed development, to the predicted rates of erosion of the undefended sections of Doughmore Bay and the predicted beach lowering which will mean that the high water mark will reach the defences from approximately 25 years post development, together with the uncertainity regarding the long term maintenance and management of the structures, the Board is not satisfied that the proposed development would not have a long term significant negative impact on landscape and visual quality in the area and on the amenity value of White Strand, or that these potential long term post development landscape and amenity impacts are adequately assessed in the EIS and other submissions made by the first party. The proposed development would

therefore be contrary to Objectives CDP9.12, CDP12.14A and CDP 13.6 of the development plan and would be contrary to the proper planning and sustainable development of the area.

S*tephen Kay*
Planning Inspector

20th December, 2019