



Able Marine Energy Park Environmental Statement
Response to Planning Inspectorate Questions
(Rule 8 Letter)

June 2012
Revision: 0

	RESPONSE TO PLANNING INSPECTORATE QUESTIONS (Rule 8 Letter)	JUNE 2012
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QUESTIONS PRIMARILY TO THE APPLICANT (AMEP)

ECONOMIC FACTORS

1 QUESTION 1

With specific reference to Section 4.3 of the National Policy Statement for Ports (NPSP), has the methodology suggested by the Department for Transport in either WebTAG or the Project Appraisal Framework for Ports been applied?

Answer

- 1.1 Section 4.3 of the NPSP deals with the economic impacts of port development.
- 1.2 In undertaking a socio-economic impact assessment of the project as part of the EIA process, the applicant took account of all relevant government guidance relating to appraisal of economic projects. This included the HM Treasury Green Book, English Partnerships Additionality Guidance and The Department for Business Innovation and Skills research on additionality. The assessment also **followed the guidance set out in the 'Project Appraisal Framework for Ports'.**
- 1.3 The Project Appraisal Framework for Ports was published in 2005 and follows on from an earlier consultation document issued in December 2001. Its purpose is to provide non-statutory advice to apply to port projects in England and Wales. The framework derives from Guidance on the Methodology for Multi-Model Studies (GOMMS), but is designed to reflect the specific factors relating to ports and in particular the fact that most port developments are privately financed and promoted.
- 1.4 The framework requires:
 - (a) all alternatives to be compared with a do-minimum scenario, and
 - (b) a tabulated summary of the qualitative and quantitative indicators for each highlighted objective and sub-objective—the Appraisal Summary Table (AST).

The framework suggests that no weighting is implied amongst these objectives and sub-objectives. Further, while it is normally expected that a 30-year appraisal period would be appropriate, **'a longer term view'** is called for in the framework where long-lasting or irreversible environmental effects are anticipated. At the same time, it is acknowledged that UK ports are characterised by diverse ownership and that it would therefore be inappropriate to demand **that promoters reveal information of a 'commercially sensitive'** nature.

- 1.5 The framework recommends that **"promoters of port projects should make detailed comparisons of alternatives under their control"**. The purpose of this requirement is to ensure that an applicant's existing facilities are operating at their maximum capacity before they bring forward proposals for new development. However, the applicant has undertaken a broader assessment of alternative sites.

Assessment of Alternatives

- 1.6 A detailed assessment of alternative sites was undertaken and is set out in Chapter 6 of the Environmental Statement (ES). This sets out the Consultation process and Site Selection criteria that resulted in the choice of site. The site selection criteria covered technical, environmental and socio-economic factors. It then sets out a discussion and comparison of alternative sites for the Marine

Energy Park before concluding that, "*Able Humber is the only feasible solution for a significant MEP to serve the emerging offshore wind market in the North Sea.*"

- 1.7 Annex 6.1 to the ES, '*Assessment of Potential Environmental Impacts of Alternative Scenarios of Supply Chain Arrangements*' in considering the impact of small scale, largely ad-hoc, port development for the offshore energy sector. Whilst a multiplicity of possible options exist, an understanding of the environmental impact of a more distributed manufacturing base is assessed in Annex 6.1 by postulating and assessing two broad potential alternatives *viz.*
- smaller manufacturing and construction sites distributed along the east coast of the UK; and,
 - smaller manufacturing and construction sites distributed across the UK and the continent.
- 1.8 The conclusion of the assessment is that, "**It is evident from this assessment that the AMEP scenario compares favourably with the alternative scenarios and there is no solution which stands out as providing an option with less potential adverse environmental impact than AMEP.**" Other alternatives have both adverse environmental impacts and positive socio-economic impacts. None can be said to be demonstrably better than the AMEP scheme.

Appraisal Summary Table

- 1.9 An Appraisal Summary Table for the Economy Objectives and sub-objectives, consistent with the requirements of the project Appraisal Framework for Ports is set out in Table 1.1 below and cross-refers to the relevant sections of the Environmental Statement (ES).
- 1.10 **In undertaking the assessment, the impacts were assessed against a 'Do Minimum' Counterfactual** option. Effectively there would have been little or no change in activity in the area, but product and labour market displacement were accounted for by the application of standard additionality factors. The Project Appraisal Framework for Ports refers to the GOMMS seven-point textual scale where quantified results are not available. We set out this scale below and have applied this to the Appraisal Summary Table.

Textual Scale

- Large Beneficial
- Moderate Beneficial
- Slight Beneficial
- Neutral
- Slight Adverse
- Moderate Adverse
- Large Adverse



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Table 1.1 Appraisal Summary Table for Able Marine Energy Park

Objectives and Sub Objectives	Qualitative Assessment	Quantitative Assessment/Scale
ECONOMY: Effect on:		
Cargo owners/ passengers/ leisure users	Cargo owners will benefit from some additional demand due to the servicing of the Marine Energy Park and installation of the offshore turbines. There will no impacts on passengers or leisure users.	Minor Beneficial
Port operators	The scheme will create a significant amount of additional demand at the port through servicing of the Marine Energy Park and installation of the offshore turbines	Moderate Beneficial
Port workers (number employed)	Jobs will be created across a range of sectors with key occupations being service engineers, fabrication engineers, structural engineers, site operators and installation engineers. These generally require good skills in STEM subjects. The detail is set out at Section 21.6 of the ES	4,700 jobs on site £264.5m GVA p.a. generated on site Large Beneficial
Ship operators	Ship operators will benefit from some additional demand due to the servicing of the Marine Energy Park and installation of the offshore turbines.	Minor Beneficial
Government (if relevant)	The numbers of net additional jobs and net additional GVA are set out in Section 21.6 of the ES. These will generate net additional tax revenues. The tax revenue will depend on a number of variables but we have made a broad estimate of the potential revenue.	Potentially in the region of £136m p.a. additional tax revenue to UK government Moderate Beneficial



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Objectives and Sub Objectives	Qualitative Assessment	Quantitative Assessment/Scale
Non-port users and providers of surface access links	<p>The proposed development does not result in any significant advantage or detriment to road or rail users.</p> <p>The surface transport impacts are covered in detail in Chapter 15 of the ES</p>	Neutral
Regeneration and redistribution of economic activity	<p>In addition to the direct jobs created on site there will be further jobs created through expenditure on goods and services with suppliers and through induces expenditure from the wages of workers at the site. These effects will be felt locally, in the wider region and at the UK level.</p> <p>The detail is set out at Section 21.6 of the ES</p>	<p>10,590 net additional UK jobs</p> <p>£869.5m net additional UK GVA p.a.</p> <p>Large Beneficial</p>
Productivity growth across the economy	<p>There will be a productivity gain through a shift to higher value higher productivity sectors.</p> <p>Section 21.5 of the ES sets out the Baseline position with the low productivity sectors in the area. GVA per head in the Offshore Wind Turbine sector will be higher than most existing local industries.</p>	Moderate Beneficial
Foreign Direct investment and trade	<p>The offshore wind industry is a global sector and much of the investment will come from large overseas firms. Examples of such investment are noted at 21.6.3 and 21.9.5 of the ES</p>	Moderate Beneficial
Particular industries	<p>There will be beneficial effects for the Ports sector but more importantly the scheme will assist in the development of a new cluster of activities around the offshore wind industry sector. This diversification is particularly import for the local area with the decline in traditional manufacturing.</p> <p>This is discussed in Sections 21.6.17 – 21.6.27 of the ES</p>	Large Beneficial

SCOPE AND SCALE OF PROPOSED DEVELOPMENT

2 QUESTION 2

Does AMEP have any further grounds to support Hochtief's assessment that the proposed development qualifies as a Nationally Significant Infrastructure Project (NSIP) by virtue of theoretical design capacity alone?

Answer

- 2.1 Section 24 of the Planning Act 2008 is clear on the definition of a harbour that comprises a NSIP and the application complies by virtue of satisfying the conditions of 24 (1)(a) and 24(3)(c) as reproduced below (emphasis added).
- '(1) *The construction of harbour facilities is within section 14(1)(j) only if (when constructed) the harbour facilities—*
- (a) will be in England or Wales or in waters adjacent to England or Wales up to the seaward limits of the territorial sea, and**
- (b) are expected to be **capable** of handling the embarkation or disembarkation of at least the **relevant quantity** of material per year.*
- (3) "The relevant quantity" is—*
- (a) in the case of facilities for container ships, 500,000 TEU;*
- (b) in the case of facilities for ro-ro ships, 250,000 units;*
- (c) in the case of facilities for cargo ships of any other description, 5 million tonnes;**
- (d) in the case of facilities for more than one of the types of ships mentioned in paragraphs (a) to (c), an equivalent quantity of material.'*
- 2.2 As AMEP is neither a container terminal nor a ro-ro facility, the legal test for AMEP to be an NSIP reduces to:
- is it a harbour facility;
 - is it in England or Wales; and,
 - **is it 'capable of handling the embarkation or disembarkation'** of 5 million tonnes of cargo per year.
- 2.3 It is important to note that the test is one of expected capability rather than expected throughput, although the method of assessing the expected capacity is not defined in the Act. Any assessment of expected capacity must reasonably take into account the physical parameters of the proposed harbour: the number of berths available; the depth of the approaches; the depth of water available at the berth; the associated land parcel and the quayside facilities.
- 2.4 Whilst it is clear in the ES that AMEP is not expected to handle more than 5 million tonnes of cargo per year at the point of consent, it is clearly expected to be capable of doing so without any physical modification.

- 2.5 Table 2.1 shows all the **UK's** ports that have handled the embarkation of disembarkation of more than 5M tonnes of freight in any year between 2000 and 2010. Of those listed, Port Talbot is possibly the smallest harbour with most of the freight being handled on a single 305 m deep water berth and quayside facilities for bulk import. At the Port of Immingham, an adjacent facility, the Humber International Terminal with a berth frontage of 520 m has an annual throughput of 11 M tonnes annually (paragraph 3.33 of ABP's Draft Masterplan, 2010). Both of these examples are physically much smaller than AMEP and the latter benefits from the same approaches.
- 2.6 Separately, ABP, through their solicitors' letter dated 4 February 2011 to the then Infrastructure Planning Commission, appears to accept that the quay *per se*, is capable of handling more than 5 million tonnes annually, noting that it seems unlikely to actually handle that amount of freight if it is used solely for the offshore wind energy sector. However, it would be absurd to argue that the removal of a biomass power station from the application had any effect on the expected capacity of the quay.
- 2.7 In summary therefore, the applicant considers that the grounds set out in the application to be sufficient for the **Examiner's consideration and, as such,** demonstrate compliance with the criteria set out in the 2008 Act.

		TOTAL OF INWARD AND OUTWARD FREIGHT HANDLED BY UK PORTS 2000 – 2010 (thousands of tonnes)										
Ports	Port Group	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Grimsby & Immingham ⁴	Humber	52,501	54,831	55,731	55,931	57,616	60,686	64,033	66,279	65,267	54,708	54,029
London ⁴	Thames and Kent	47,892	50,654	51,185	51,028	53,289	53,843	51,911	52,739	52,965	45,442	48,062
Milford Haven ³	West and North Wales	33,768	33,792	34,543	32,737	38,452	37,547	34,307	35,496	35,875	39,293	42,788
Southampton ⁴	Sussex and Hampshire	34,773	35,689	34,156	35,773	38,431	39,947	40,556	43,815	40,974	37,228	39,365
Tees and Hartlepool ⁴	North East	51,473	50,842	50,447	53,842	53,819	55,790	53,348	49,779	45,436	39,163	35,697
Forth ⁴	Scotland East Coast	41,143	41,607	42,202	38,752	34,892	34,218	31,556	36,681	39,054	36,690	34,335
Liverpool ⁴	Lancs and Cumbria	30,421	30,288	30,413	31,684	32,233	33,775	33,550	32,258	32,204	29,936	30,020
Felixstowe ¹	Haven	29,686	28,354	25,119	22,282	23,413	23,144	24,370	25,685	24,988	24,267	25,756
Dover ²	Thames and Kent	17,434	19,074	20,212	18,796	20,753	21,145	23,805	25,144	24,344	25,087	24,093
Medway ⁴	Thames and Kent	15,292	14,853	14,840	15,619	14,535	15,470	18,957	15,417	14,971	13,150	13,971
Belfast ⁴	Northern Ireland	12,484	13,402	12,825	13,201	13,559	13,500	13,514	13,416	13,040	12,050	12,827
Clyde ⁴	Scotland West Coast	7,224	11,069	9,733	9,214	11,507	15,737	14,981	12,063	14,338	12,552	12,283
Sullom Voe ⁴	Scotland East Coast	38,204	31,166	29,376	26,360	23,939	20,541	19,447	16,573	14,539	11,217	11,270
Hull ⁴	Humber	10,722	10,586	10,298	10,529	12,443	13,363	12,785	12,497	12,249	9,771	9,236
Port Talbot ³	Bristol Channel	11,725	8,271	4,971	7,819	8,555	8,573	8,659	9,052	8,147	5,156	8,832
Bristol ⁴	Bristol Channel	9,647	10,895	10,083	11,439	10,759	11,206	12,261	11,178	11,527	8,999	7,272

¹ Container terminal

² Ro-Ro

³ Other (eg. General Cargo/Bulk/Liquids)

⁴ Mixture

Table 2.1 : Ports Embarking or Disembarking >5MT of Freight Annually between 2000 - 2010

3 QUESTION 3

What is the relationship, if any, between the proposed Marine Energy Park and the consented Logistics Park? Specifically –

a) *Is direct access to the Logistics Park necessary to the operation of the Marine Energy Park?*

Answer

3.1 No. The MEP will have sufficient land to service the quay without needing use of, or direct access to, the land within the Logistics Park.

b) *What would be the implications of failing to secure direct access?*

Answer

3.2 None.

3.3 No consent has ever been sought for such an access and the applicant does not own a suitable land corridor to enable the development of such an access. Had it been necessary and essential for the harbour facility, the applicant would have included provision for such an access and sought appropriate powers of acquisition on the grounds that it was needed.

c) *Have any conditions been attached to the grant of planning permission for the Logistics Park which relate to the possible AMEP development?*

Answer

3.4 No.

3.5 The status of the proposed Able Logistics Park (ALP) is explained in the Committee Report that is included in the volume of supplementary environmental information (EX3.1) accompanying these answers.

ASSOCIATED DEVELOPMENT

4 QUESTION 4

With specific reference to the Project Justification (Document 12) –

a) *what is the basis for the calculation of the land required for associated development, including manufacturing, storage and other back-up facilities?*

Answer

- 4.1 The offshore energy industry is an emerging market that has been gradually developing over the last decade. In the UK, development has been phased with Round 1 projects given permission to proceed in 2001; these projects were limited to 10 square kilometres in size, with a maximum of 30 turbines and all together they provide 1.1GW of energy. Round 2 projects were awarded in 2003, with 15 projects awarded providing a combined power generating capacity of 7.2 GW. In May 2010 the Crown Estate gave approval for seven Round 1 and 2 sites to be extended creating an additional 2 GW of offshore wind capacity. The Crown Estate then launched a third round of site allocations in June 2008. Round 3 is envisaged on a much bigger scale than either of its predecessors – combined, Rounds 1 and 2 (including extensions) allocated 10 GW of sites, while Round 3 alone identifies up to 32 GW.
- 4.2 Currently, a total of 1.86GW of offshore wind capacity has been installed and 2.36GW is under construction (<http://www.bwea.com/statistics/>). As explained in paragraph 5.2.14 of the ES, **the UK's target for offshore wind capacity in 2020 is 12.99GW**; the onshore and offshore wind capacity target accounts for 73 per cent of the total planned renewable energy capacity. Significant development of offshore wind is also being planned in other European countries.
- 4.3 The above plans are consistent with the EC Commission Communication on Offshore Wind Energy which stated that, **'the potential exploitable by 2020 is likely to be some 30-40 times the current installed capacity, and in the 2030 time horizon it could be up to 150 GW'**¹.
- 4.4 To address the increased demand, offshore wind generation is now entering into a new phase of development as explained in Section 5.4 of the ES. This phase of development requires manufacturing to be co-located with port facilities. The requirements for these new port facilities are described in Section 5.6 of the ES.
- 4.5 Paragraph 5.6.4 of the ES details the generic guidance that has been published by the Department of Energy and Climate Change for the size of a MEP, whilst Table 5.6 lists the estimated size requirements for various manufacturers. These estimates are based on an understanding of current onshore manufacturing facilities which have then been scaled using professional judgement; hence, a range of areas are conjectured. However, the areas proposed are consistent with current commercial enquiries.
- 4.6 Whilst commercial enquiries are subject to Confidentiality Agreements, the following range of enquiries has been received:

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0768:FIN:EN:PDF>

- Nacelle manufacturers – 25 to 90 ha with 200 to 600 m of quay for exclusive use.
- Tower manufacturers – up to 30 ha with 200 m shared quay
- Blade manufacturers – up to 30 ha with 200 m shared quay
- Foundation manufacturers – Up to 100 ha with up to 450 m of quay for exclusive use plus additional shared facilities.
- Component Manufacturers – Up to 10 ha and up to 200 m shared quay.
- Operation and Maintenance – Up to 30 ha and shared quay.
- Developers (for use as a construction port) – Up to 30 ha and up to 360 m shared quay.

b) *What would be the phasing of the development of this land, and at what point and when would the proposed quay meet the NSIP capacity threshold?*

Answer

- 4.7 The construction of the quay will not be phased but will be built under a single contract.
- 4.8 Phasing of the associated development will need to respond to market demand. However, to provide some guidance to the examiners, in the absence of policy change, the development is expected to be complete within seven years of its consent.
- 4.9 For the indicative layout, the cargo expected to be handled in practice would be <5M tonnes (although its capability will be higher than that threshold). Its proposed use addresses current policy imperatives with respect to offshore wind and its size reflects the anticipated demands of that emerging market as well as future marine energy targets for wave and tidal generators. Whilst that policy exists in its present form the harbour is intended to handle a restricted range of cargo. If that policy changes, and that change adversely affects the commercial viability of the harbour as a MEP, its use will need to change subject to the granting, if necessary of any additional consents. At that point the tonnage of cargo it handles would be expected to increase. Since **harbours that are 'capable of handling'** (either by importing or exporting) more than 5M T of cargo, **MUST** be submitted for authorisation in accordance with the procedures set out in The Planning Act 2008, the applicant submitted the application to the then IPC.

- c) *Given the assessment that the proposed development is likely to have a significant impact on the European sites, and require significant compulsory acquisition, why is it essential for the scheme to be this size? What consideration has been given to the possibility of a smaller development which would have a reduced impact and land-take?*

Answer

- 4.10 The scale of the site reflects the scale of the need.
- 4.11 The scale of investment necessary to transform European energy production from its current reliance on fossil fuels to renewable sources is significant, in the order of hundreds of billions of pounds of private sector funding, and a clear means of delivery is absolutely essential to facilitate, and provide the confidence for such investment. As explained in Section 5.8 of the ES, there are three broad options for the UK, *viz.*
- Negligible Investment: The UK does not attract any significant investment from the manufacturing sector.
- Low level Investment: The UK develops a small manufacturing sector but procures a significant proportion of components from overseas. Installation and O&M is undertaken from UK ports.
- Significant Investment: The UK grows an industrial and knowledge base capable of installing much of its own offshore wind capacity and builds global companies of a scale to capture a significant proportion of the investment in UK and international waters.
- 4.12 In 2008 the British Wind Energy Association commissioned Bain and Company to report on the potential development options in relation to wind energy. Their report, *'Employment Opportunities and Challenges in the Context of Rapid Industry Growth'*, assessed three possible scenarios:
- The static case – This scenario assumes failure to achieve leadership in offshore development and the absence of manufacturing within the UK that would lead to significant imports and limited exports. By 2020, this scenario would lead to wind capacity of 22 GW, cumulative investment of £19 billion and 23 000 jobs. Design and manufacturing would remain at its current level, i.e. covering 15 percent of the UK market for offshore turbines.
- Solid Progress This scenario assumes clear political support for wind energy, market leadership in offshore development, the UK becoming self-supplying, and achieving a limited degree of export in knowledge-related activities such as technical consulting and offshore operations. By 2020, this scenario would lead to wind capacity of 27 GW. This scenario would generate cumulative investment of £26 billion and 36 000 jobs. Design and manufacturing would cover 35 percent of the UK's offshore turbine market along with a limited

amount of export.

The Dynamic case - This scenario, assumes strong political support and recognition of the UK as the global centre of expertise in offshore development with the development of manufacturing clusters that allow the UK to become self-supplying and a significant exporter of both knowledge and components. This scenario would generate a cumulative investment of £39 billion and generate 57 000 jobs. Design and manufacturing would cover 70 percent of the UK market for offshore turbines and would be exporting a similar volume to continental Europe.

4.13 Whilst clearly assumptions over timescales have proven to be optimistic, the important conclusion of the analysis by Bain and Company is that manufacturing clusters that enable the efficient production of offshore components are an essential element of a thriving offshore wind industry. Examples of such clustering are already emerging at Bremerhaven and Cuxhaven in Germany. The UK needs an equivalent development.

4.14 The applicant acknowledges that there are different ways of delivering the port infrastructure necessary to facilitate the delivery **of the UK's**, (indeed **Europe's**), renewable energy policy. In fact it is acknowledged in the ES that a combination of smaller sites could potentially provide a distributed chain of facilities of similar capacity to AMEP and its associated development, although these would lose any economies of scale and involve considerably more transport movements and component handling operations. Whilst there is a multiplicity of such possible options, so to gain some understanding of the environmental impact of a more distributed manufacturing base, two broad potential alternatives were assessed in Annex 6.1 of the ES, *viz.*

- smaller manufacturing and construction sites distributed along the east coast of the UK; and,
- smaller manufacturing and construction sites distributed across the UK and the continent.

4.15 Whilst the full assessment is reported in Annex 6.1, the overall conclusion is, **'that the AMEP scenario is not out-**performed (on environmental grounds) by any of the alternative options and there is no scenario which provides a demonstrably **'better' environmental solution'**. Consequently, reducing the scale of AMEP would not demonstrably reduce the overall impact of providing new port facilities for offshore wind developers.

4.16 With respect to the scale of the development and land-take for AMEP, all of the terrestrial land on the south bank is allocated for industrial development, and the opportunity for port development on the site is identified in **NLC's Core Strategy**. Policy CS12, identifies the South Humber Bank as a strategic employment site and states its role and function to be to,

'(m)aintain, increase and enhance the role of Immingham Port as part of the busiest port complex in the UK, by extending port related development northwards from Immingham Port to East Halton Skitter in harmony with the environmental and ecological assets of the Humber Estuary. This will include safeguarding the site frontage to the deep water channel of the River Humber

for the development of new port facilities and the development of new pipe routes needing access to the frontage. The deep water channel offers the opportunity of developing a new port along the River Humber frontage between Immingham Port and the Humber Sea Terminal. The role of the South Humber Ports should be strengthened by providing an increased number of jobs particularly giving employment opportunities for North Lincolnshire and North **East Lincolnshire residents', (emphasis added)**.

- 4.17 One of the reasons for the site being undeveloped as a port to date, despite its allocation, has been its fragmented ownership; this has limited the options for marine development. However, over a period of several years the applicant has purchased the vast majority of the land on the site by agreement with other landowners; this has substantially reduced that particular development constraint. A few relatively small land parcels remain and acquisition of those is now essential for the development of a MEP for which, there exists, an imperative need.
- 4.18 Given **the site's** development allocation, its optimal location and the need for such facilities, reducing the scale of the development would not seem to serve any useful planning purpose – it is demonstrably beneficial that the whole site be developed. Indeed, it can be argued very cogently, that the larger site enables a more co-ordinated approach to both addressing the need and mitigating the consequential environmental impacts – environmental mitigation can be addressed more coherently in a single application for the development of Killingholme Marshes.

ALTERNATIVE USES

5 QUESTION 5

Section 1.3.5 of the Introduction to the Environmental Statement refers to the possibility of the site supporting other forms of renewable energy. In this context-

a) *Is it the intention to accept any cargoes other than those relating to the manufacture of wind turbines on either a temporary (interim) or permanent basis?*

Answer

5.1 The focus of renewable energy production from the marine environment is currently dominated by national and European plans for offshore wind turbines. However, this might change depending on the results of large scale demonstrator projects in wave and tidal energy. Accordingly, the development aims to serve all marine energy projects and the intention is to import and export cargoes relating to the renewable energy market.

b) *If so, what would these cargoes be and how does the project documentation take account of their possible impact?*

Answer

5.2 The project documentation does not consider cargoes other than those related to marine energy.

c) *If not, is a further Requirement in Schedule 11 restricting operation to the functions described in Schedule 1 necessary and appropriate?*

Answer

5.3 In terms of the question as asked, it would not be appropriate to restrict operations to the functions described in Schedule 1, since there are no functions set out as such in Schedule 1, in terms of what the harbour facilities would be used for.

5.4 If the question is to explore the imposition of a requirement to restrict the cargo that the harbour facilities will handle to marine energy infrastructure, the applicant would not wish to accept any restriction. For the applicant, or, for that matter, any other port operator, there is a commercial reality that needs to be recognised in terms of funding a large development. Given that certain risks are beyond the control of the applicant, in particular both long term economic conditions and policy priorities, any prescriptive restriction could significantly undermine an overarching economic case and could preclude the project from being funded. This of course, would also preclude the significant economic opportunity for the UK provided by the development.

5.5 Notwithstanding the above, the clear anticipation is that the Offshore Renewable Sector will sustain the development for the foreseeable future but funders (and tenants) are more risk averse than they once were. Whilst Tenants are prepared to commit to leases of 20+ years it is fairly certain that any definition of

permitted use would need to be broad enough to reflect opportunities in the future beyond the offshore renewable sector. Furthermore, and in the light of the fact that port related developments of this type have a life that will span many decades, then such a development needs to have the flexibility to adapt to market requirements that, quite understandably, would not be envisaged at the original time of consent.

d) *what provisions in the Development Consent Order (DCO) might be appropriate and necessary to ensure no derogation from the Imperative Reasons of Over-riding Public Interest (IROPI) justification put forward in the proposal?*

Answer

5.6 At paragraph 8.6.24 of the Habitat Regulations Assessment Report accompanying the application summarises the IROPI as being that AMEP will help to:

- decarbonise the means of energy production;
- secure energy supplies from indigenous sources;
- manufacture large scale offshore generators;
- grow manufacturing in the UK; and
- regenerate the Humber sub-region

5.7 The same considerations as for answer (c) would apply – while every indication is that there is strong demand as well as an imperative need for marine energy infrastructure, a future change of energy policy leading to non-viability would leave the facilities unable to be used. In that case, none of the reasons would apply any longer, but if additional cargo were able to be handled then at least the final two IROPI reasons would still be fulfilled. No provisions additional to those proposed in the previous answer would be necessary to address this.

CLIMATE CHANGE MITIGATION

6 QUESTION 6

With specific reference to Section 4.12.7 of the NPSP, to what extent is the current design intended to minimise emissions and achieve fuel efficiency in the operation of buildings and outdoor plant and machinery?

Answer

- 6.1 AMEP provides for the manufacture and storage of offshore energy components on the same site and is of sufficient scale to allow the majority of the manufactured products to be part assembled and stored on the quayside for loading directly onto installation vessels. This approach has significant benefits in minimising carbon emissions compared to the current operational practice of exporting components to a construction port, unloading them for temporary storage, part assembling them and then loading again onto an installation vessel.
- 6.2 The site also benefits from its optimal geographical location on the east coast of England. No alternative site is more centrally located to the major wind farm sites of Hornsea, Norfolk Bank and Dogger Bank. This minimises shipping emissions that are an inevitable consequence of the development of offshore energy. The emissions benefit of a single site, by comparison to two generic alternative solutions, has also been assessed and is reported in Annex 6.2 of the ES.
- 6.3 The carbon benefit assessed in Annex 6.2 omits the additional benefit obtained through the avoidance of double handling of components if they are loaded and unloaded onto vessels taking them from their place of manufacture to a separate construction port. Not only are emissions increased with double handling but plant capable of handling and transporting abnormal loads must also be duplicated at a second port. Such operations represent an inefficient use of plant and machinery by comparison to a single site solution.
- 6.4 The large manufacturing space within the factories on the site is unlikely to be heated, so the issue of fuel efficiency in the operation of those facilities is less relevant. Natural light will be used as far as possible by the inclusion of roof lights within the factory areas.
- 6.5 Notwithstanding the above, the designs will be subject to a suitable assessment process, such as BREEAM, from the early stages of the design process, once tenant requirements are confirmed.

7 QUESTION 7

With specific reference to Sections 4.12.7 and 4.12.8 of the NPSP, to what extent will renewable energy sources be used in the operation of the port and the associated development?

Answer

- 7.1 The energy demand for the manufacturing plants is significant and will need to be secured from the National Grid as described in paragraphs 4.4.68 *et seq* of the ES. As more electricity comes from renewable sources in general this will increase the proportion that is used for AMEP.



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- 7.2 Renewable energy sources will make a contribution **to the site's energy** requirements but services design has not been undertaken to that level of detail at this stage.

CLIMATE CHANGE ADAPTATION

8 QUESTION 8

With specific reference to Section 4.13.9 et seq of the NPSP –

a) *have the latest UK Climate Change Projections been used both in the Environmental Statement and for design purposes?*

Answer

- 8.1 The Flood Risk Assessment has used the climate change requirements set out in PPS25 which was withdrawn with the publication of the National Planning Policy Framework (NPPF). However, the NPPF and the associated Technical Guidance Document retain key elements of PPS25, including in particular the same recommended contingency allowances for net sea level rise (see Table 4 of the NPPF Technical Guidance Document).
- 8.2 However, the National Policy Statement for Ports makes the UKCP09 climate change projections the relevant documents for the AMEP scheme, and these incorporate less onerous climate change projections as detailed in Table 8.1 below.

Table 8.1 Climate Change

Document	Sea Level Rise mm/yr up to 2025	Sea Level Rise mm/yr 2026 to 2050	Sea Level Rise mm/yr 2051 to 2080	Sea Level Rise mm/yr 2081 to 2115
PPS25 (comparable to the 90% high emission scenario from UKCP09)	4.0	8.5	12.0	15.0
UKCP09 (95% medium emission scenario)	4	7	11	15

- 8.3 Accordingly, the climate change adaptation used for AMEP exceeds the requirements of the NPSP.

b) *have these been applied over the estimated lifetime of the project?*

Answer

- 8.4 The design of AMEP allows for 100 years of predicted climate change.

c) *are there any critical features of the design of the proposed development which might be affected by changes beyond those projected in the latest UK Climate Change Projections?*

Answer

- 8.5 The critical design element in relation to climate change is the finished quay level which also acts as a flood defence. As noted above, the design already incorporates for climate change impacts on sea level rise that are greater than those projected in the latest UK Climate Change Projections.
- 8.6 Because of the uncertainty associated with sea level predictions over very long timeframes (indeed any predictions over long time frames), an adaptive approach is proposed to be adopted in the design, by agreement with the Environment Agency. This would comprise raising the level of the quay in the future, subject to actual sea level rise.

HABITATS REGULATION ASSESSMENT

(A) ALTERNATIVES

9 QUESTION 9

The alternative sites considered in Chapter 6 of the Environmental Statement appear to have been considered primarily in relation to the criteria in the National Policy Statement for Ports. Were any site-selection criteria used which related to possible impacts on European and Ramsar sites?

Answer

- 9.1 Section 6.5 of the ES does have regard to the impacts of development at alternative port locations for the project as proposed; see for example paragraphs 6.5.10, 6.5.16 and 6.5.42. Moreover, the overall conclusion of the review of alternative sites was that *'there is no single alternative site that is of an equivalent scale to AMEP except for Southampton and development of that site would result in the destruction of significantly more of the Natura 2000 network than would AMEP and is much further from the principal Round 3 sites. It is therefore a manifestly less suitable site on both environmental and economic grounds'*, (paragraph 6.6.1).
- 9.2 Given the above, the applicant considered the more realistic alternative solution that equivalent port facilities and associated development could be provided by a series of smaller developments at a number of disparate ports subject to them being made fit for the purposes of the marine energy sector. Clearly, hundreds of such alternative solutions are possible with multiple credible combinations of ports and associated development. In order to reduce the assessment of these types of alternative to a practical level, the applicant postulated two scenarios and the comparative environmental impacts of those alternative solutions are reported in Annex 6.1 of the ES. The conclusion of that assessment is, *'that each of the scenarios would have some adverse environmental impact and positive socio-economic impact. However, it is clear that the AMEP scenario is not out-performed by any of the alternative options and there is no scenario which provides a demonstrably 'better' environmental solution'*.

10 QUESTION 10

Section 2.2 of Annex 4.4 to the Environmental Statement refers briefly to alternative designs. Figure 2.1 shows one alternative to a quay design. Were other alternative designs considered which might have a lesser impact on the integrity of the site?

Answer

- 10.1 It is explained in Annex 4.4 that the particular requirements of the offshore energy sector are **'characterized by large, heavy components that require heavy lift transporters and substantial cranes to manoeuvre them. It is also evident that the sector requires extensive laydown areas close to quays for storage and preassembly prior to export. These considerations have significantly influenced the choice of quay design'**.
- 10.2 Annex 4.4, Figure 2.2 illustrates a second alternative design of a suspended quay. Although this would avoid reclaiming the estuary, the estuary bed underlying the quay would lose its ecological function, negating the apparent

benefit of avoiding physical loss. This option would also be financially unviable - the costs of constructing a suspended quay over such a large area is prohibitive - and therefore this solution **reduces to a 'zero option'**.

- 10.3 The conclusion of the design process was that there is no alternative other than a solid quay involving reclamation of the estuary that would be fit for the intended purpose of the quay. The applicant believes that the application documents show that developing a large quay at an optimal location for the offshore energy sector results in the smallest environmental impact taking into account both construction and operation.

11 QUESTION 11

Were design alternatives discussed with Natural England or the Marine Management Organisation?

Answer

- 11.1 Alternative solutions, including alternative quay designs were discussed during a meeting held with Natural England, RSPB and North Lincolnshire Council on 28 February 2011. The reasons for the applicant discounting other alternative arrangement for the quay were explained at the meeting.

12 QUESTION 12

How did any alternative designs considered compare with the proposed quay design in terms of its effects on the integrity of the European sites, other environmental impacts, operational efficiency and capacity?

Answer

- 12.1 Other alternative quay designs considered were discounted either because they would not be fit for the intended purpose of the quay, or because they were not **financially viable and therefore amounted to a 'zero option'**. The relative impact of the alternative solution to construct a series of smaller developments at various ports which together aggregate to an equivalent AMEP (including capacity), is reported in Annexes 6.1 and 6.2 of the ES.
- 12.2 The fact that Annex 6.2 demonstrates that a distributed supply chain would result in a greater carbon footprint is broadly indicative of the reduced efficiency of that solution.

(B) MITIGATION

13 QUESTION 13

What possible mitigation strategies (i.e. comprehensive and co-ordinated mitigation programmes) were investigated before consideration of compensation measures? Were possible strategies discussed with Natural England or the Marine Management Organisation?

Answer

- 13.1 Compensation may only be provided if it is not possible to mitigate an impact on a European site sufficiently to avoid a significant adverse effect.
- 13.2 Compensation is only proposed for the direct impact of reclaiming 45 ha of the designated site as well as the associated indirect impacts due to the change in the local sedimentary regime and the operational disturbance of functional intertidal habitat. It is not possible to mitigate for the physical loss of estuary or the operational disturbance and therefore new compensatory estuary habitat is being provided with functional equivalence.

14 QUESTION 14

How were any possible mitigation strategies assessed in relation to –

a) The impacts on the integrity of the European sites?

Answer

General

- 14.1 The term 'integrity' is not defined in legislation and appears only once in the Habitats Directive itself. According to the EC Commission's guidance, '*Managing Natura 2000 Sites*', the integrity of a site involves its ecological functions. Section 4.6.3 of the guidance states that, '(a) *site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required*'.
- 14.2 On the basis of the above, the question is understood to be exploring how the possible mitigation strategies were assessed, in terms of their efficacy, to ensure that the conservation objectives of the Humber Estuary SAC/SPA would continue to be realised with a minimum of management intervention.
- 14.3 The challenge in assessing mitigation strategies in relation to the natural environment, and in particular those that aim to maintain functionality, is dealing with uncertainty. In the light of uncertainty, a precautionary, but proportionate, approach has been adopted in line with the Precautionary Principle.
- 14.4 Whilst the Precautionary Principle has not been incorporated directly into domestic legislation, the requirement to take account of the Precautionary

Principle in European law and policy is enshrined in Art. 174(2) of the EC Treaty. There is no universally accepted definition of the Precautionary Principle but guidance is provided in ILGRA² Report, '*The Precautionary Principle: Policy and Application*' (2002), which is itself based on 1992 Rio Declaration on Environment and Development. The ILGRA report provides some guidance on how the principle should be applied in practice by government departments. The current **EC and UK approach to the principle is a 'weak' version** that requires precautionary action to be balanced against the costs and benefits of taking the action.

- 14.5 The advice given by ILGRA is that the principle should only be invoked when, '*scientific uncertainty is a significant factor and there is good reason to expect harmful effects*', When the principle is invoked, ILGRA note that '*it doesn't mean that a risk based approach is abandoned – decisions continue to be informed by the best available scientific advice, taking into account the uncertainties.*' Thus **there should be no 'step change' in the decision making process.** Application of the Precautionary Principle is essentially a matter of making assumptions to establish credible scenarios, and then using standard procedures of risk assessment and management to inform decisions on how to address the hazard. In decision-making, **the report states that 'action in response to the precautionary principle should accord with the principles of good regulation, i.e. be proportionate, consistent, targeted, transparent and accountable'.**
- 14.6 It is also noted that question is specific to the mitigation strategy and not the compensatory strategy which addresses those effects that cannot be mitigated.

The Conservation Objectives

- 14.7 For the purpose of the assessment the conservation objectives of the site have been taken to be those issued in draft by Natural England and dated December 2009.

Mitigation for the SPA Assemblage

- 14.8 The overarching objective for the SPA assemblage is to maintain the ability of the estuary to support its bird populations. This includes, *inter alia*, ensuring that there remains sufficient supporting habitat outside of the SPA itself to accommodate birds displaced at high tide and to **supplement the SPA's food resource.**
- 14.9 The greenfield terrestrial area on the south bank currently provides some roosting and feeding habitat for the SPA assemblage. The availability of the land to the assemblage is not guaranteed and may change without any consent being required so long as it remains in agricultural use. Such agricultural changes can, and do, give rise to a loss of habitat functionality in just the same way as development can. The extent to which a developer needs to mitigate for the loss of unsecured habitat outside of the SPA is, to some extent, a moot point, especially where that habitat is replicated around much of the designated site and for considerable distances inland from its boundaries. It seems to the applicant that in order for the loss of the feeding habitat outside the SPA to affect the SPA population in any measurable way (and therefore affect its favourable conservation status), **either the 'carrying capacity' of the hinterland would need**

² Inter-Departmental Liaison Group on Risk Assessment

to be limiting the size of the bird population on the SPA itself or the alternative food resource would have to be so far away as to exhaust the bird population in accessing it. There is no evidence to support the existence of either criteria on the Humber, especially for Curlew that are known to feed for significant distances inland. Nevertheless, the applicant has accepted the advice of Natural England that mitigation is required.

14.10 Curlews are by far the most frequently recorded species on Killingholme Marshes. An analysis of bird counts for Killingholme Marshes shows the level of usage to be as follows: -

- On average, only 18 curlews are present on the 251 acres of AMEP Greenfield land being developed.
- The maximum number of curlews recorded on the 251 acres of land at any one time has been 89.
- Within the area to be developed for AMEP, one single 8.5 ha field accounts for 78 per cent of all curlew days. A public footpath is located adjacent to the eastern boundary of this field; a vehicular access and MOD Tank Farm is located adjacent on the southern boundary and an industrial site lies just beyond the western boundary. This is therefore a partially disturbed site yet it is clearly a preferred roosting/feeding site for curlew in that area.

14.11 Given that 78% of site usage is substantially concentrated on a single 8.5 ha field, a potentially reasonable assessment of the area required to mitigate for the unsecured feeding resources is $(8.5/0.78)$ ha, or 10.9 ha with disturbance levels that are no greater than those experienced at present.

14.12 On 15 July 2011, NE provided advice to the applicant on suitable buffer distance to ensure that the mitigation area provided for the benefit of the SPA assemblage was sufficient to avoid significant disturbance and so ensure its functionality; this advice is reproduced in Appendix A. The advice concluded that any terrestrial mitigation area for SPA birds should be 150 m wide.

14.13 North Lincolnshire Council's ecologist made a separate assessment of the area required to support the Curlew that feed on the site. Using data from two **comparator sites in Lincolnshire and assessing the number of 'wader days'** for each site, a core area of around 14 ha with a disturbance buffer of 50 -100 m, refer to Appendix B. The applicant considered the assessment conservative as it included one site that was little used by Curlew; sites with no Curlew whatsoever could, on that basis, be further added to the assessment to indicate ever larger habitat requirements.

14.14 Taking into account the above information, Natural England advised the applicant by letter dated 20 September 2011, 'that a core area of almost 17ha with a buffer of 150m is required to mitigate for the impact of AMEP on the SPA and Ramsar waterbirds that utilise Killingholme Marshes. The entire mitigation area (excluding the operational buffer) should be optimally managed as wet **grassland**. **If mitigation can be provided at this level, it is Natural England's advice that this mitigation would satisfy the requirements of the Habitat Regulations; our advice is that your plans do not currently provide for this'.**

14.15 The remaining issue to be resolved was the location of the mitigation area which logically needs to be proximal to the loss and with secure connectivity to the estuary. Three sites were identified as potentially suitable, viz.

- An area around North Killingholme Haven Pits
- Killingholme Marshes between the development and Rosper Road Pools
- Halton Marshes, immediately behind the flood defence wall.

The site adopted, Killingholme Marshes, is the one most proximal to the loss.

14.16 In summary therefore, the assessment of the mitigation for the SPA assemblage was undertaken using site specific data, data from comparator sites, scientific literature and professional judgement to minimise uncertainty.

Mitigation for SAC Marine Species

14.17 SAC marine species potentially affected by the works are:

- Grey Seal
- River Lamprey
- Sea Lamprey
- Invertebrate assemblage

Grey Seals

14.18 Grey seals are a feature of the Humber Estuary SAC and the conservation objective is to maintain the population of the species. Grey Seal are occasional visitors to the middle estuary but they predominantly feed in the open sea and so are not reliant on the estuary for food, so that any disturbance within the estuary is not likely to have any long term effect on the population of the species, or indeed on any individual.

14.19 Underwater noise will be generated by impact piling but the propagation of the sound level from the source varies from site to site and is difficult to predict. Significant levels of underwater noise can affect the grey seal and scientific literature has been reviewed during the EIA process to understand the level of sound at which impacts to this species have been observed to occur. Box 10.3 of the ES explains the basis of the underwater noise calculations that have been undertaken whilst paragraph 10.6.44 provides an assessment of the impact. Only seals in very close proximity to any piling works are likely to suffer any **significant effect and this will be addressed through an agreed 'soft start'** procedure that will provide for reduced energy piling for a short period to allow any individual to move away from the noise source before full impact piling commences. The efficacy of this mitigation strategy stems from the scientific studies of noise impacts on marine mammals.

River and Sea Lamprey

14.20 The existing scientific knowledge on both Sea and River Lamprey is very limited but Annex 10.2 of the ES provides a comprehensive review and interpretation of currently available data.

14.21 Essentially, the review concluded that:

- There is a weight of scientific opinion that some fish will avoid areas where underwater noise is elevated.

- Impact piling will generate elevated levels of noise relative to the existing background noise environment within the estuary.
- There is no scientific certainty that lamprey can hear or that they cannot and therefore whether or not they would avoid swimming in proximity to marine piling works.
- There is no scientific evidence to support either the assertion that underwater noise can have an adverse effect on lamprey populations or the alternative assertion that it does not.
- There is high scientific uncertainty about the consequences or likelihood of the impact.

14.22 In environmental decision making the precautionary principle should be invoked when:

- there is good reason to believe that harmful effects may occur to human, animal or plant health or to the environment; and
- the level of scientific uncertainty about the consequences or likelihood of the risk is such that the best available scientific advice cannot assess the risk with sufficient confidence to inform decision-making.

14.23 The first criterion is not met directly by any scientific studies relating to migrating fish. The risk can be inferred from scientific observations, including evidence that artificially elevated levels of underwater noise will reduce (but not prevent) fatality levels of some fish species at power station intakes (Maes et al 2003). Conversely however, recent piling activity within the Humber Estuary and close to the site has not obviously harmed the lamprey population of the estuary, and on that basis the risk cannot, credibly, be that significant.

14.24 **The current EC and UK approach to the principle is a 'weak' version, which requires precautionary action to be balanced against the costs and benefits of taking the action. ILGRA Report, 'The Precautionary Principle: Policy and Application' (2002) states that 'action in response to the precautionary principle should accord with the principles of good regulation, i.e. be proportionate, consistent, targeted, transparent and accountable'.**

14.25 The applicant is still seeking to agree proportionate mitigation with the Environment Agency, Natural England and the Marine Management Organisation. Given however that the species has not been obviously harmed by previous piling campaigns it seems unlikely that the efficacy of any measures agreed and adopted will be measurable.

Invertebrate Assemblage

14.26 The marine invertebrate assemblage will be directly impacted by a direct loss of estuarine habitat and by the dredging works and potentially indirectly by the dredge disposal operation that will generate a sediment plume, some of which will eventually settle on the estuary bed.

14.27 The direct and indirect losses caused by the reclamation works are mitigated to the extent that the applicant has assessed that no alternative is likely to have a lesser impact on the Natura 2000 network. The mitigation strategy for the effects of the dredge plume is based upon the use of good practice guidelines that will

be promulgated to all contractors working on the site through a Code of Construction Practice to be agreed with the relevant local planning authority.

Mitigation for the SAC Habitat

- 14.28 The physical loss of SAC habitat cannot be mitigated other than by minimising the physical loss itself. As a result of extensive hydrodynamic modelling work, and taking feedback from consultation into account, the extent to which the reclamation extends into the river has been minimised as far as reasonably practicable. In considering other alternative solutions, the assessment concluded that there was no other location, or combination of smaller sites, likely to have a lesser environmental impact.

b) Other possible impacts or effects.

Answer

Water Quality

- 14.29 The mitigation strategy for avoiding adverse impacts on water quality during construction is based upon the use of good practice guidelines that will be promulgated to all contractors working on the site through a Code of Construction Practice to be agreed with the relevant local planning authority. The efficacy of these measures is proven by experience.

Aquatic Ecology

- 14.30 During construction, the principal mitigation strategy is to avoid disturbance from piling operations as discussed above in relation to sea and river lamprey. Further mitigation will comprise the use of good practice during construction as also noted above in relation to the invertebrate assemblage.

Terrestrial Fauna

- 14.31 The mitigation strategy for fauna is, where practicable to do so, to provide sufficient replacement habitat on the site to enable the current use of the site by terrestrial fauna. The exception to this is badger foraging territory; the value of the site to badgers is likely to be reduced and as a consequence the habitat may not be able to support the same population levels as exist at present. The efficacy of these measures is proven by experience.

Avifauna

- 14.32 The mitigation strategy for avifauna is, where practicable to do so, to provide sufficient replacement habitat on the site to enable the current use of the site by avifauna. It is not always possible to achieve this goal; for example, the loss of habitat for ground nesting birds cannot be mitigated. The efficacy of these measures is proven by experience.

Commercial Fishing

- 14.33 The principal impact on commercial fishing operation arises from the loss of habitat. This cannot be mitigated but is being compensated for. There is also good evidence that managed realignment sites, as proposed for Cherry Cobb Sands will benefit fish as a nursery ground.

Flood Risk

- 14.34 Flooding is an ever-present risk. The mitigation strategy is to reduce the risk of flooding to a level that is as low as reasonably practicable and is based upon return periods for rain and tidal events that have been agreed with the Environment Agency.

Navigation

- 14.35 The risk of marine accidents is ever-present. The mitigation strategy is to reduce the navigational risk to a level that is as low as reasonably practicable and is qualitatively assessed using experience and professional judgement. The strategy will be delivered through the appointment of a suitably qualified marine team, adherence to the Port Marine Safety Code, effective liaison with the Harbour Master Humber and effective liaison with adjacent port operators.

Traffic

- 14.36 Traffic levels are concentrated on specific peak hour periods when people travel to and from their place of work. In the south bank the mitigation strategy has been to avoid impacts during existing peak hour periods and staggering shift patterns on the development site. Any residual impact is then mitigated by junction improvements to avoid, as far as practicable, any detriment to existing road users. To ensure a robust mitigation strategy it has been assumed that all permitted development will proceed and that the A160 Port of Immingham Improvement scheme will not proceed.
- 14.37 The mitigation strategy will be delivered through a Framework Travel Plan that will form the basis of tenant specific Travel Plans in accordance with best practice guidelines issued by the Department of Transport.
- 14.38 On the north bank the impact will be mitigated by agreeing a Traffic Management Plan with the local highway authority that takes due cognisance of the narrow lanes, road condition and of the condition of any existing highway structures.

Airborne Noise

- 14.39 No mitigation is required for operational activities.
- 14.40 The principal noise generating activity during construction will be impact piling. The principal mitigation measures for this activity will be the use of noise shrouds around the hammer and also the avoidance of night-time working. With respect to other construction activities, the mitigation strategy is based upon the use of good practice guidelines that will be promulgated to all contractors working on the site through a Code of Construction Practice to be agreed with the relevant local planning authority.

Air Quality

- 14.41 No mitigation is required for operational activities.
- 14.42 The mitigation strategy for avoiding adverse impacts on air quality during construction is based upon the use of good practice guidelines that will be promulgated to all contractors working on the site through a Code of Construction Practice to be agreed with the relevant local planning authority.

Archaeology

- 14.43 The mitigation strategy is based upon agreeing and implementing a Written Scheme of Investigation (WSI) to ensure that all significant archaeology is identified and either preserved in-situ or preserved by record.
- 14.44 The mitigation strategy for addressing the adverse impact on the setting of the group of three lighthouses on Killingholme Marshes is to develop a Management Plan to secure a sustainable future for these assets.

Landscape

- 14.45 During construction and operation, site activity has the potential to be highly visible. The mitigation strategy is based upon landscaping provision within and around the boundary of the site and the use of appropriate colours for building finishes.

Socio-Economic

- 14.46 The development will provide a significant economic boost to a relatively deprived area. The principal mitigation strategy is to keep service providers and local businesses informed of progress. To this end, the Chairman of Able UK Ltd, Peter Stephenson, is a member of the Humber LEP and maintains close links with the local authority. As developments plans crystallise into real investment, these bodies will be kept fully informed.

(C) IMPERATIVE REASONS OF OVER-RIDING PUBLIC INTEREST

15 QUESTION 15

The arguments in favour of Imperative Reasons of Over-riding Public Interest (IROPI) put forward in Section 8.6 of the Habitats Regulation Assessment Report relate primarily to the manufacturing process, which constitutes the Associated Development in the proposal. Are there precedents for arguments of IROPI applying to a development proposal other than for its ostensible primary purpose?

Answer

- 15.1 According to article 6(4) of Directive 92/43/EEC, a plan or a project may be carried out in spite of a negative assessment of the implications for a Natura 2000 site, in the absence of alternative solutions, if it is justified for imperative reasons of overriding public interest, including those of a social or economic nature. In such cases the Member States must take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected and must inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, and if considerations relating to human health, public safety or beneficial consequences of primary importance for the environment cannot be invoked, the project can be justified, further to an opinion from the Commission, by other imperative reasons of overriding public interest.

15.2 All of the Commission's opinions issued in accordance with Article 6(4) are published on the EC's website and provide useful guidance in themselves.

(http://ec.europa.eu/environment/nature/natura2000/management/opinion_en.htm)

15.3 Whilst the Planning Act 2008 discriminates between the NSIP element of an application (presumably what the question refers to as being *'its ostensible primary purpose'*), and associated development, the division is somewhat artificial in the case of AMEP, since the project is indivisible. A marine energy park must comprise both a harbour and the manufacturing units that make the goods that are simply too large and/or too heavy to be transported by any other means than by ship. The Project must therefore be viewed as whole, rather than a series of parts.

15.4 As explained in paragraph 8.1.5 of the sHRA Report, the project will deliver socio-economic benefits to the UK generally and the Humber Estuary sub-region in particular by enabling the growth of the emerging renewable energy sector. It will also have beneficial consequences of primary importance for the environment **by enabling Europe's necessary transition to low carbon energy production.**

15.5 Some parallels might be drawn with the IROPI case that the Commission accepted for the enlargement of an aerospace plant into an SPA and Ramsar site in Germany. The Commission agreed, in that case, that there was an IROPI case because:

- The project was of outstanding importance for Hamburg and for Northern Germany and for the European Aerospace industry;
- it would contribute to technological advances, generate highly qualified new jobs, and,
- have a positive impact on the competitiveness of the European aeronautical industry.

15.6 It is also useful to have regard to the IROPI case accepted by the Secretary of State when consenting to the Associated British Ports (Hull) Harbour Revision Order 2006. The reasons stated include:

136. The Secretary of State accepts the Applicant's case that the port of Hull plays a crucial role in the regional economy of Yorkshire and the Humber, both as a major employer in its own right and as providing a gateway for regional imports and exports. It contributes to the overall regional economic environment for investment decisions and has a beneficial effect on business competitiveness in the region. The port, with other Humber ports, is responsible for considerable numbers of direct, indirect and induced jobs equating to 2% of regional employment and 12.3% in the four nearest surrounding local authority areas.

And,

138. The Secretary of State considers that continued expansion of the port would enable it to underpin regional and local economic performance and that without such expansion there is a realistic prospect of the port not being able to maintain even its current trade, in the light of modern trends for the use of increasingly larger vessels. He accepts the case that the present configuration of the port, with the limitations imposed by the lock

system, restricts the dimensions of the vessels which can be catered for and that unrestricted berths are therefore needed to meet the requirements of present and future customers. Without such facilities at Hull there is a risk of trade moving elsewhere.

139. There would be consequential adverse effects on regional and local employment and business of a failure to maintain Hull's economic position. The Secretary of State disagrees with objections that the importance of the port of Hull is diminishing and notes the Applicant's evidence of the demand by customers for new berths. He agrees with the Inspector's conclusion that the levelling off of container volumes at Hull in recent years, against the national trend, is not due to a lack of demand but to lack of the requisite facilities at the port to meet nationally rising demand. He agrees moreover with the Inspector's conclusion that the provision of lo-lo facilities at Hull would be in the national and public interest.

140. The Secretary of State considers for the above-mentioned reasons that there are imperative reasons of overriding public interest, including those of a social and economic nature, as to why consent should be given for Quay 2005'.



ENVIRONMENTAL STATEMENT

16 QUESTION 16

Please provide a schedule of all matters identified in the Environmental Statement as requiring mitigation, and identify the corresponding provisions in the draft DCO delivering that mitigation.

Answer

16.1 Refer to Table 16.1.

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Geology, Hydrogeology and Ground Conditions		
Damage to soil structure during excavation	Excavation of soils will be undertaken in accordance with DEFRA's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) to minimise damage to soil structure and thus allowing reuse of the material. (Par. 7.7.1 of ES)	Sustainable Use of Soils on Construction Sites plan will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Piling works creating pathway for contamination to chalk aquifer	Contractors will undertake a risk assessment and develop a method statement for piling works based on guidance on piling produced by the EA- Piling and Penetrative Ground Improvement, Methods on Land Affected by contamination: Guidance on Pollution Prevention (2001). (Par. 7.7.2 of ES)	Risk assessment & Method statements will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Land fill gas from historical landfill 150m southwest of site boundary ingress into buildings (Annex 7.1, Section 3.7 of ES)	Buildings within 250m of the Lindsey Oil Refinery landfill to the west of the site will require a full gas risk assessment to be completed and approved by LPA prior to construction. (Par. 7.7.3 of ES)	Suggested amendment to Schedule 11 Requirement 12 of the Development Consent Order <i>"12.-(1) No stage of the authorised development shall commence until a written scheme applicable to that stage, to deal with the contamination of any land, including groundwater and ground gas within the Order limits which is likely to cause significant harm to persons or pollution of controlled waters or environment has, after consultation with the Environment Agency, been submitted to and approved by the relevant planning authority."</i>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Change of character of estuary bed from deposition of dredge arisings	A dredging strategy will be agreed in consultation with statutory regulators in order to ensure that arisings are deposited within licensed site of similar soil characteristics. (Par. 7.7.5 of ES)	Dredging Strategy secured through Schedule 8 Paragraph 19 of the Development Consent Order
Hydrodynamic and Sedimentary Regime		
Increase in concentrations of suspended sediment during construction of the quay	Suspended sediment levels will be monitored and Stop/Caution trigger levels will be agreed. (Par. 8.7.1 of ES)	Suspended sediment monitoring will be included within the Dredging Strategy secured through Schedule 8 Paragraph 19 of the Development Consent Order.
Increase in sediment deposition/settlement	Sediment accumulation within the vicinity of the outfall/intakes will be monitored and managed through maintenance dredging. New outfalls will be built into the quay as a contingency should maintenance via dredging prove uneconomic. (Par. 8.7.3 of ES)	Dredging Strategy secured through Schedule 8 Paragraph 19 of the Development Consent Order
Water and Sediment Quality		
Pollution and spill risk of oils and fuels during construction	Oils and fuels will be stored in sealed containers in a sealed bunded area away from water. Pollution Prevention Response Plans will be developed by the Principal Contractor	Pollution Prevention Response Plan to be included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Aquatic Ecology		
Underwater Noise affecting aquatic mammals and fish	<p>Use of a vibratory hammer for initial driving and slow start procedure to scare away marine mammals and fish in the immediate vicinity of the piling operation. (Par. 10.7.9 of ES)</p> <p>Piling restrictions may be agreed to cover sensitive periods</p>	Piling/Construction works method statement will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Ecology and Nature Conservation		
Removal of vegetation (habitat) for nesting birds	<p>All vegetation removal will be undertaken outside of the bird breeding season that, subject to local variation, is taken to run from 1 March to 31 August.</p> <p>If this is not possible, an Ecological Clerk of Works (ECoW) will supervise any vegetation removal and if an active nest is located it will have to be retained along with its associated vegetation until the end of the breeding season or the nest is vacated. (Par. 11.7.5 of ES)</p> <p>Management of new and existing hedgerows and unmanaged strips of grassland at field edges within mitigation Areas A and B will form new habitats for breeding birds. Area B will be managed to enhance foraging and nesting habitat for breeding birds. (Par. 11.7.30 – 11.7.34 of ES)</p> <p>Ten nest boxes for tree sparrows along Chase Hill Wood will</p>	This mitigation to be contained in an Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
	be erected. (Par. 11.7.35 of ES)	
Loss of bird roosting and feeding habitat	Mitigation Area A will provide alternative feeding and roosting habitat. (Par. 11.7.10 of ES)	Included as part of authorised development. Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Loss of great crested newt habitat	Six new ponds will be created in Area B (Par. 11.7.14 – 11.7.20 of ES)	Included as part of authorised development. Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Loss of water vole habitat	New ditch system will be created twelve months prior to loss of existing ditches to create new habitat. (Par. 11.7.21 – 11.7.25 of ES)	Included as part of authorised development. Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Disturbance of bat roosts	An inspection of trees will be undertaken prior to any felling, to identify new roosts since previous surveys.	Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Loss of inter-tidal habitat	Mitigation not possible, compensation provided and managed by implementation of a Management and Maintenance Plan of Cherry Cobb Sands	Included as part of authorised development. Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Construction & operational lighting causing disturbance to terrestrial and marine ecology	<p>Directional luminaires will be used to limit the spill of light outside of the working area. (Par. 11.7.38 of ES)</p> <p>Localised task lighting shall be used during construction stage</p>	<p>Operational lighting secured through Schedule 11 Requirement 14, 17 & 20 of the Development Consent Order.</p> <p>Temporary lighting during construction to be included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order and secured through Schedule 11 Requirement 20 of the Development Consent Order</p>
Drainage and Flood Risk		
Pollution of existing watercourses during construction	Pollution prevention guidelines will be implemented during construction to mitigate potential impacts of pollution incidents (Par. 13.7.1 of ES)	Prevention of Pollution Mitigation Measures will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Increase in suspended sediments during construction within watercourses	Any over-pumping around works in watercourse channels will be carried out with a suitably-sized pump, in order that excessive flows are not generated and disturbance of the bed material is minimized. (Par. 13.7.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Disturbance of channel structure and watercourse habitats	Where possible, watercourse bank reinstatement works will be carried out by vehicles operating from the bank rather than the watercourse channel. (Par. 13.7.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Pollution of watercourses or flooding of existing sewers due to foul discharge	In absence of agreed point of discharge or existing foul drainage network restrictions, foul water and sewage effluents produced by the construction workforce will be contained by temporary facilities. All foul water will be disposed of off-site by the Contractors. (Annex 4.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) and Schedule 11 Requirement 11 of the Development Consent Order

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Restriction of flows in watercourses causing flooding	Construction materials shall be prevented from entering watercourses, blocking channels or culverts (Par. 13.7.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Flooding of development due to rainfall	Land raising will be completed with suitable contouring to allow any floodwaters to be channelled back into the river or into the surface drainage network. (Annex 4.2 of ES)	Secured through Schedule 11 Requirement 11 of Development Consent Order
Flooding of development due to breach in sea defences	Implement a Flood Warning and Evacuation Plan to evacuate all persons on the site before flooding occurs (Par. 13.7.7 of ES)	Suggested amendment to Schedule 11, new Requirement of the Development Consent Order <i>"Flood Warning and Evacuation Plan</i> <i>No building of the authorised development shall be occupied until, after consultation with the relevant planning authority, written details of a flood warning and evacuation plan, which must include details of expected means of evacuation or safe refuge during a tidal flood event, has been submitted to and approved by the relevant planning authority."</i>
Commercial and Recreational Navigation		
Collision with river vessels during construction phase	The Principal Contractor will have responsibility for managing construction vessel movements and liaising with Humber Vessel Traffic Services (Par. 14.8.2 & 14.8.9 of ES) and exhibit lights and lay down such buoys to prevent danger to navigation	Secured through Article 25; Schedule 9, Part 2 Paragraphs 14 and 18; and Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Collision of river vessels into quay during operational phase	Navigation lights will be installed on the extents of the quay. (Par. 14.8.1 of ES)	Secured through Articles 26 & 27; and Schedule 9, Paragraph 14 of the Development Consent Order
Collision of river vessels with operational vessels using quay	A marine safety management system shall be developed, implemented and maintained in accordance with the Port Marine Safety Code (Par. 14.8.7 of ES)	Suggested amendment to Schedule 11, new Requirement of the Development Consent Order <i>"Port Marine Safety Code</i> <i>No berth on the completed quay shall be occupied until the Department of Transport has approved the Port Security Safety Plan"</i>
Traffic and Transport		
Construction traffic crossing the railway and colliding with trains	Railway line within extents of the Order to be removed from the network operated by Network Rail. Railway to become a siding under developer control. Level crossings to be constructed and appropriate safety measures installed. (Par. 15.8.2 & 15.8.23 of ES)	Secured through Article 47 of the Development Consent Order.
Congestion due to additional construction traffic on the local transport network.	Each contractor is to prepare and implement an agreed Construction Traffic Management Plan (Annex 4.2 of ES) No parking shall be permitted on public roads for site operatives	Construction Traffic Management Plan and Framework Travel Plan secured through Schedule 11, Requirement 18 and 21 of the Development Consent Order

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Noise and Vibration		
Noise disturbance on local community from construction	<p>Terrestrial based construction activities will generally be restricted to during normal working hours: 07:00 to 19:00 from Monday to Friday; 07:00 to 17:00 on Saturdays if required; with occasional working as required on Sundays and Bank Holidays. (Annex 4.2 of ES)</p> <p>A Noise Management Scheme shall be developed and implemented by the Contractor during construction</p> <p>Site traffic noise shall be mitigated by adopting good practices during construction and incorporating within Construction Traffic Management Plan</p>	<p>Noise Management Scheme secured under Schedule 11, Requirement 19 of the Development Consent Order.</p> <p>Construction Traffic Management Plan secured through Schedule 11, Requirement 18 and 21 of the Development Consent Order</p>
Congestion due to site generated traffic during operation	<p>All parking shall be provided on site and included within Travel Plan. (Annex 4.2 of ES)</p> <p>Junction improvements shall be carried out as per Appendix Q Transport Assessment (Annex 15.1 & 15.8.4 – 15.8.22 of ES)</p>	<p>Framework Travel Plan secured through Schedule 11, Requirement 18 and 21 of the Development Consent Order</p> <p>Junction improvements secured through Part 4 of Schedule 9 of the Development Consent Order</p>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Air Quality		
Dust generated during construction affecting air quality at properties and ecological receptors within 200m of the site	A detailed Dust Management Plan will be developed by the Principal Contractor prior to the commencement of construction activities.	Dust Management Plan secured by Schedule 11, Requirement 20 of the Development Consent Order
Historical Environment		
Damage to archaeological deposits during construction	A Written Scheme of Investigation (WSI), for terrestrial and marine, will be prepared and agreed with North Lincolnshire Council's Archaeological Officer and English Heritage. It will detail the scope and methodology of the archaeological field evaluation. (Par. 18.7.1 & 18.7.4 of ES)	Secured by Schedule 11, Requirement 13 of the Development Consent Order.
Damage to listed building (lighthouse)	<p>Measures will be taken to reduce the risk of damage to the listed building. A management plan shall be agreed with the local authority. (Par. 18.7.3 of ES)</p> <p>The management plan shall incorporate the guidelines and procedures within BS5228, Code of Practice for Noise and Vibration Control on Construction and Open sites to be included by within Contractor within Code of Construction Practice</p>	<p>Suggested amendment to Schedule 11, new Requirement of the Development Consent Order</p> <p><i>"Listed Buildings</i></p> <p><i>No stage of the authorised development shall commence until a written scheme applicable to that stage, written details of a listed building management plan, which must include details of protection of the building from vibration damage and the renovation or re-use of the building, to the relevant planning authority."</i></p>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Light		
Proposed lighting during operational phase causing disturbance to ecology	<p>50m lighting towers will be fitted with directional luminaires to limit spill outside the working areas to avoid adjacent sensitive ecological habitats and unnecessary overspill into the estuary area. (Par. 19.7.3 of ES)</p> <p>Down-lights will be fitted to the outside of buildings to provide localised lighting for safe access to the buildings. (Par. 19.7.4 of ES)</p>	Secured by Schedule 11, Requirement 17 of the Development Consent Order.
Proposed lighting during operational phase causing impacting upon aircraft safety	For aviation safety all external lighting shall be flat glass, full cut off design with horizontal mountings to avoid light spill above the horizontal. (Par. 19.7.6 of ES)	Secured by Schedule 11, Requirement 17 & 20 of the Development Consent Order
Landscape and Visual Impact		
Visual impact on views due to construction activities	Mitigation measures to be applied during construction include: limiting land clearance and occupation to the minimum necessary for the works; restricting construction site lighting outside normal working hours to the minimum required for public safety and security. Directional luminaires to be used to limit unwanted light spill; maintenance of tidy and contained site compound; and spreading of topsoil and replacement of turf, or reseeded and planting as soon as possible after sections of work are complete; limiting dust emissions. (Par. 20.7.1 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Visual impact on views during operational phase	<p>The buildings and warehouses associated with the AMEP will be coloured subject to detailed design approval in order to mitigate visual impact. (Par. 20.7.2 of ES)</p> <p>Landscaping and ecology strategy has been produced to mitigate views. (Par. 20.7.4 of ES)</p>	Secured by Schedule 11, Requirement 4 of the Development Consent Order.

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Aviation		
<p>Interference with radar and aircraft operations by tall structures</p>	<p>For structures on the AMEP site between 45-150 m above ground level, deemed to present a hazard to aviation, medium intensity red steady obstacle warning lighting will be provided. (Par. 22.7.4 of ES)</p> <p>For structures 150 m or more above ground level, medium intensity (2000 candelas) steady red obstacle lights will be provided, positioned as close as possible to the top of the obstacle and at intermediate levels spaced so far as practicable equally between the top lights and ground level with an interval of not more than 52 m. (Par. 22.7.5 of ES)</p>	<p>Suggested amendment to Schedule 11, new Requirement of the Development Consent Order</p> <p><i>"Tall Structures</i></p> <p><i>No structure shall be erected over 45 metres in height above finished ground level until written details of a lighting scheme applicable to that structure has been submitted and approved in writing by the relevant planning authority following consultation with the Civil Aviation Authority."</i></p> <p>Effect on radar secured by Schedule 11, Requirement 25 of the Development Consent Order.</p>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Waste		
<p>Waste generated during construction increases traffic movements and volume of waste at disposal sites</p>	<p>A Site Waste Management Plan will be produced detailing how waste material is to be categorised and dealt with (Par. 23.7.1 of ES)</p>	<p>Site Waste Management Plan will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order</p>
Compensation Site - Geology, Hydrogeology and Ground Conditions		
<p>Potential contaminated soils impacting upon estuarine waters</p>	<p>Prior to excavation of material within the Cherry Cobb Sands site a further intrusive Site Investigation of potential landfill areas will inform the risk of encountering contaminated sediments.</p> <p>Sufficient investigation to be carried out to characterise the site and identify where the material can be placed</p> <p>(Par. 31.8.1 of ES)</p>	<p>Secured by Schedule 11 Requirement 12 of the Development Consent Order.</p>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Compensation Site - Hydrodynamic and Sedimentary Regime		
Erosion of flood defences	The site will be modelled and designed carefully in further consultation with Natural England to encourage erosion within the site away from the flood embankments and reduce the rate of accretion as far as practicable. Protection will be provided to protect the new flood embankment from wave and current erosion as described (Par. 32.8.2 of ES)	Secured by Schedule 11 Requirement 4 of the Development Consent Order.
Compensation Site - Water and Sediment Quality		
Pollution and spill risk of oils and fuels during construction	Oils and fuels will be stored in sealed containers in a sealed bunded area away from water. Pollution Prevention Response Plans will be developed by the Principal Contractor	Pollution Prevention Response Plan to be included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Increase in suspended sediments in estuary during construction of site	The impact will happen only during the creation of the breach. Removal of salt marsh in front of the breach and excavation of the breach will be completed during periods of low tide to allow loose soils and sediment to be removed from the site before the area of excavation is inundated. This will minimise the suspension of sediment and soils from the excavations. The final stage of works to create the breach will be undertaken on a neap tide in order to reduce the area over which surface waters are likely to experience an increase in suspended sediment concentrations. This will allow material to settle out of suspension faster than on a spring tide, where the tidal range would be larger. (Par. 33.8.6 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Compensation Site - Aquatic Ecology		
Loss of salt marsh during construction of breach	Mitigation not possible, compensation provided and managed by implementation of a Management and Maintenance Plan of Cherry Cobb Sands	Included as part of authorised development. Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Compensation Site - Ecology and Nature Conservation		
Disturbance to local wildlife during construction	Principal Contractor to adopt good working practices with respect to avoiding contamination of habitats, using appropriate plant and equipment and dust suppression	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Visual disturbance to birds using inter-tidal feeding habitat	Construction of the managed realignment at Cherry Cobb Sands will be undertaken between April and October which will minimise impact upon designated bird species that utilise the foreshore or fields behind the existing foreshore for feeding and roosting overwinter or on passage. It is anticipated that the majority of earthworks would be undertaken in the first year. (Par. 35.9.3 of ES)	Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Disturbance to breeding birds	<p>Due to the need to avoid winter working, it will be necessary to undertake works during part of the bird breeding season which, subject to local variation, is taken to run from 1 March to 31 August.</p> <p>To minimise impacts upon breeding birds, an Ecological Clerk of Works (ECoW) will supervise any vegetation removal that occurs during bird breeding season, and if an active nest is located it will have to be retained along with its associated vegetation until the nest is vacated. (Par. 35.9.4 of ES)</p>	Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Soke dyke at compensation site affecting reptiles	Before commencing work to divert the soke dyke, close hand strimming will be undertaken to discourage reptiles from using the dykes and to allow them to move away from the area. (Par. 35.9.10 of ES)	Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Loss of badger foraging area at compensation site	Active badger setts to be closed and landscaping strips created	Ecological Management Plan secured through Schedule 11 Requirement 14 of the Development Consent Order.
Compensation Site - Drainage and Flood Risk		
Pollution of existing watercourses during construction	Pollution prevention guidelines will be implemented during construction to mitigate potential impacts of pollution incidents (Par. 36.8.1 of ES)	Prevention of Pollution Mitigation Measures will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Increase in suspended sediments during construction within watercourses	Any over-pumping around works in watercourse channels will be carried out with a suitably-sized pump, in order that excessive flows are not generated and disturbance of the bed material is minimized. (Par. 36.8.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Disturbance of channel structure and watercourse habitats	Where possible, watercourse bank reinstatement works will be carried out by vehicles operating from the bank rather than the watercourse channel. (Par. 36.8.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Restriction of flows in watercourses causing flooding	Construction materials shall be prevented from entering watercourses, blocking channels or culverts (Par. 36.8.2 of ES)	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Breach in sea defences	The new sea defences shall be designed for a 1 in 200 year flood event taking into account rate of sea level rise over 100 years.	Proposed amendment to Schedule 11, new requirement of the Development Consent Order <i>"No stage of the authorised development shall commence until a written scheme applicable to that stage, to deal with the design and construction of tidal defences, has been submitted to and approved by the relevant planning authority after consultation with the Environment Agency."</i>



TABLE 16.1 : SCHEDULE OF MITIGATION		
IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Increased siltation within Stone Creek	Levels of accretion to be reviewed and monitored and included within a post-construction plan	Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order
Compensation Site - Traffic and Transport		
Construction traffic damaging existing road network and structures and causing congestion on single track road	A Traffic Management Plan will be developed and agreed with the local highway authority prior to construction. (Par. 37.8.3 of ES)	Secured by Schedule 11, Requirement 18 of the Development Consent Order
Compensation Site - Noise and Vibration		
Noise disturbance on local community from construction	<p>Terrestrial based construction activities will generally be restricted to during normal working hours: 07:00 to 19:00 from Monday to Friday; 07:00 to 17:00 on Saturdays if required; with occasional working as required on Sundays and Bank Holidays. (Annex 4.2 of ES)</p> <p>A Noise Management Scheme shall be developed and implemented by the Contractor during construction</p> <p>Site traffic noise shall be mitigated by adopting good practices during construction and incorporating within Construction Traffic Management Plan</p>	<p>Noise Management Scheme secured under Schedule 11, Requirement 19 of the Development Consent Order.</p> <p>Construction Traffic Management Plan secured through Schedule 11, Requirement 18 and 21 of the Development Consent Order</p>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Compensation Site - Air Quality		
Dust generated during construction affecting air quality at properties and ecological receptors within 200m of the site	A detailed Dust Management Plan will be developed by the Principal Contractor prior to the commencement of construction activities with particular reference to lime/ cement stabilisation.	Dust Management Plan secured by Schedule 11, Requirement 20 of the Development Consent Order
Compensation Site - Historical Environment		
Damage to archaeological deposits during construction	A Written Scheme of Investigation (WSI), for terrestrial and marine, will be prepared and agreed with Humber Archaeology Partnership and English Heritage. It will detail the scope and methodology of the archaeological field evaluation. (Par. 40.7.1 of ES)	Secured by Schedule 11, Requirement 13 of the Development Consent Order.

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Compensation Site - Landscape and Visual Impact		
<p>Visual impact on views due to construction activities</p>	<p>The effects on adjacent residential properties will be minimised works will be restricted to daytime working only. Therefore there will be no need for lighting at the site compound other than security lighting. (Par. 41.8.2 of ES)</p> <p>A minimum offset distance between the construction compound and residential properties will be maintained to minimise effects further. (Par. 41.8.2 of ES)</p> <p>Site traffic delivering to site should be strictly limited to working hours. (Par. 41.8.2 of ES)</p> <p>Construction traffic should focus on the phased completion of sections of the embankment as a priority to reduce the sprawl of traffic across the site and achieve a form of visual screening for the wider excavation works. (Par. 41.8.2 of ES)</p>	<p>Secured through Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order</p>

TABLE 16.1 : SCHEDULE OF MITIGATION

IMPACT	MITIGATION PROPOSED	DELIVERY METHOD
Compensation Site - Socio-Economics		
Loss of recreational activity during construction affecting local community and interest groups	<p>Three bird hides are proposed to be located on the top of the realigned embankment, which will mitigate impacts of anthropogenic disturbance caused by bird watching activities. (Par. 35.9.6 of ES)</p> <p>Early consultation with local residents and interest groups will inform people of the timing and nature of construction. This will minimise the people that are affected by forewarning them of construction so that they can make alternative arrangements during this period, such as visiting another area for walking or bird watching pursuits during construction. (Par. 42.8.4 of ES)</p>	<p>Bird hides secured by Schedule 11, Requirement 5 of the Development Consent Order.</p> <p>Public rights of way secured by Schedule 11, Requirement 9 of the Development Consent Order.</p>
Compensation Site - Waste		
Waste generated during construction increases traffic movements and volume of waste at disposal sites	A Site Waste Management Plan will be produced detailing how waste material is to be categorised and dealt with (Par. 23.7.1 of ES)	Site Waste Management Plan will be developed by Contractors and included in Code of Construction Practice (Schedule 11 Requirement 15) of the Development Consent Order

17 QUESTION 17

Invertebrate surveys have not been undertaken for the compensation site (Table 35.1 of the ES Volume 2). The data sources for aquatic ecology at the compensation site include 'Allen, J.H. (2006); an assessment of temporal variation of benthic invertebrate communities in the Humber Estuary Institute of Estuarine & Coastal Studies (IECS), University of Hull, UK'. Please provide a copy of the Allen (2006) document and provide evidence that this six year old report can be considered robust and appropriate for the assessment.

Answer

- 17.1 A copy of the paper quoted is included in the volume of supplementary environmental information (EX34.2).
- 17.2 The 2006 report undertaken by IECS records that, following an assessment of data stretching over 24 years, the intertidal communities of the North Bank of the Humber appear to be typical estuarine communities largely structured according to salinity, shore height and sediment type / mobility. The sites exhibited some temporal variation in species abundance and diversity with no major changes in community structure, most likely to be due to natural variability. Since the foreshore in this area is known to be stable, with no significant changes in salinity, shore height and sediment type, we can be relatively confident that there will have been no significant change (that is change beyond natural variation) in benthic community type over the past six years. This could be verified by sight of a more recent report that was prepared on behalf of Natural England in 2011 (Biological Survey of the Intertidal Sediments of the Humber Estuary, by ABPmer). The copyright holder of this report has not, however, made this later report available for this project.

COMPENSATION SITES

18 QUESTION 18

What criteria and weightings have been used for identifying and assessing possible compensation sites? Specifically –

- a)** *What weight was placed on the need or desirability of finding a compensation site within the middle estuary, and what was the scientific evidence behind the selection of this objective?*

Answer

18.1 Natural England advised the applicant during a meeting held on 9 June 2010, that compensatory habitat for the loss of estuary habitat needed to be within the middle estuary. The division of the estuary into three ecological sections is described in Section 2.2 the Humber CHaMP. Any further scientific justification will need to be provided by Natural England.

18.2 Notwithstanding the above, the intertidal bird surveys undertaken by the applicant and reported in Annex 11.9 of the ES highlighted:

'the importance of the intertidal zone for a number of wader species such as Dunlin, Curlew, Redshank and Ringed Plover, but most importantly for Black-tailed Godwit. The surveys confirmed the status of the intertidal zone as a key feeding site for this species on the Humber Estuary, quite probably due to the proximity of the site to the Black-tailed Godwit's high tide roost at the North Killingholme Haven Pits. The peak count of 2,566 Black-tailed Godwit on the intertidal zone of the survey area represented 17.1% of the UK population and 66% of the Humber population. Underlining the importance of this section of the estuary for the species, and this localised importance considered to be primarily being driven by the location of the preferred roost site at North Killingholme Haven Pits. As well as the presence of internationally important numbers of Black-tailed Godwits throughout August and October, nationally important numbers were present on the intertidal zone during the spring passage. The absence of birds in November and December was considered partly due to the adverse weather, although only a low level of usage is expected on the Humber Estuary at this time with the wintering population generally falling to below 500 birds (Allen et al., 2003; Mander and Cutts, 2005).'

18.3 Given the importance of the reclaim area as a feeding resource to the black tailed godwit and the location of that species principal high tide roost at North Killingholme Haven Pits, the applicant accepts that there is a compelling case for the compensatory habitat to be proximal to the loss. Consequently, significant weight was given to a location that was not just within the middle estuary but also within a relatively short flight distance from the NKHP.

- b)** *What weight was placed on the need to avoid, or the desirability of avoiding, a compensation site in a Built Conservation Planning Area, and why?*

Answer

18.4 Weighting of planning constraints is a matter of professional judgement as it is essentially a qualitative rather than quantitative exercise. At the screening stage weight was given to this matter as evidenced by the summary in Table 4.1 in Annex 32.1 of the ES. However this did not preclude them from further consideration in the more detailed assessment described in Annex 32.2 of the ES.

18.5 Paragraph 2.1.105 of the Holderness District Wide Local Plan states that:

'It is important to appreciate that development within a conservation area is not prohibited nor need it necessarily be discouraged. New building, if sensitively designed and located, can act as a positive improvement to character and appearance and can enhance the conservation area in which it is located. The special character and appearance of such areas may be derived from a combination of features. This may not just include buildings but also special architectural and historic features, sites of archaeological interest and also trees and areas of open space. The importance of open spaces within the street and landscape should not be undervalued. Many local villages have prominent ecclesiastical architecture which will be protected from development that detracts from its character'.

18.6 Table 2 in Annex 32.2 of the ES lists the presence of a site within a Built Conservation Planning Area as being a 'disbenefit' demonstrating that this issue continued to be given weight in the decision making process, but not overriding weight as there is no bar on development in these areas *per se*.

- c)** *on what basis were the Sunk Island sites selected for particular consideration? If sparseness of population was the only factor, how does this compare with population densities in the other sites subject to the high-level assessment?*

Answer

18.7 As explained in response to Q18(a) above, proximity to the habitat loss was given significant weight. Sunk Island lies directly across the estuary from the high tide roost for black tailed godwits at NKHP. The impact on residential properties was considered in the site selection process, the principal aim being to avoid impact upon them.

d) *what weight was placed on the value of agricultural production at Cherry Cobb Sands?*

Answer

- 18.8 As illustrated in Figure 18.1, on the north bank of the estuary the land fronting the estuary is Grade 2 whilst on the south bank it is Grade 3, and both frontages of the estuary are generally used for arable farming.
- 18.9 On the north bank, the Holderness District Wide Local Plan states at paragraph 2.1.32 that considerable weight should be given to loss of higher graded land. However the fact that all potential managed realignment sites on the north bank are classified as Grade 2 means that little weight can reasonably be given to that issue as all sites on the north bank have the same relative impact.
- 18.10 As Grade 3 agricultural land is itself good quality, and is capable of producing high yields of some crops, there is therefore little difference in the weighting attributed to the north and south bank on this specific matter.

e) *What weight was given to flood risk assessment for the various sites in the high-level assessment?*

Answer

- 18.11 The Humber Flood Risk Management Strategy (HFRMS) provides an overview of areas adjacent to the Humber that are low lying and susceptible to flooding, refer to figure 18.2; it includes all land fronting the middle estuary. Accordingly the matter was not given weight when comparing options. Nevertheless, it is noted that the economic viability of maintaining flood defences at Cherry Cobb Sands in the long term is raised as a potential issue in the HFRMS and, as sea levels rise continues, flooding of some of the land may become inevitable in any case.



Figure 18.2 Abstract from HFRMS

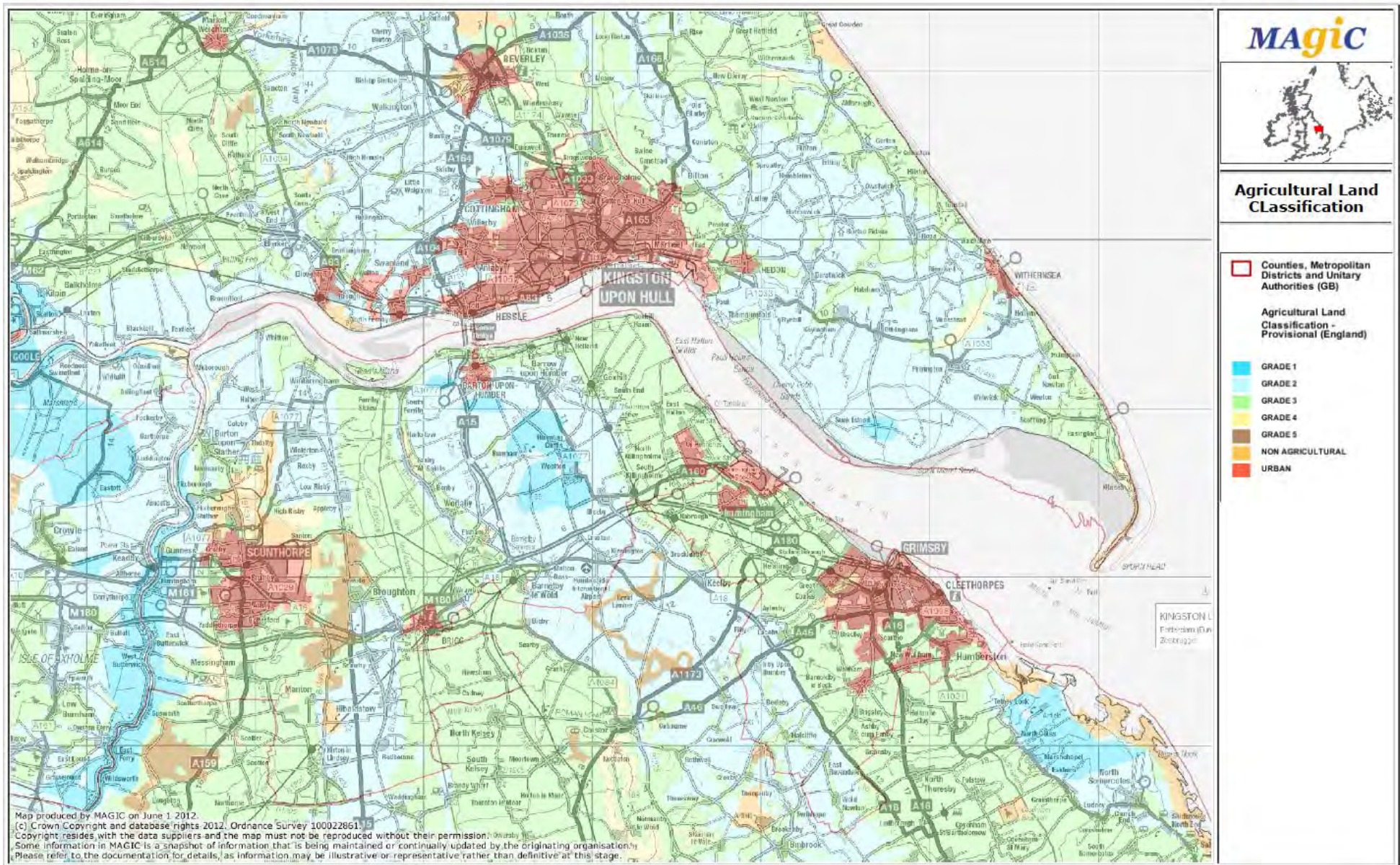


Figure 18.1 Agricultural Land Classification Adjacent to the Humber Estuary.

19 QUESTION 19

What account has been taken of the experience with other compensation sites in the Humber estuary, including Chowderness and Paull Holmes Strays, and the extent to which they are proven to have provided the precise compensation habitat sought in each case?

Answer

- 19.1 The design of the Compensation Site is being undertaken by Black and Veatch who have wide experience of reporting on the Humber Estuary, and recently designed the managed realignment scheme at Donna Nook for the Environment Agency.
- 19.2 Annex 32.5 of the ES provides an overview of other managed realignment sites on the Humber Estuary. The closest site is Paull Holme Strays which was created by the Environment Agency in 2003 and comprises 80 ha of new intertidal habitat. All of the managed realignment sites are still developing but a detailed doctorate thesis on the development of Paull Holme Strays is provided in, *'Managed realignment in the Humber estuary: factors influencing sedimentation'*, (Clapp, 2009).
- 19.3 According to Clapp, Paull Holme Strays was predicted to deliver 45 ha of sustainable mudflat and 35 ha of saltmarsh, but monitoring indicates that saltmarsh is likely to dominate unless there is some management intervention in the natural development of the site. The reason for this is largely attributed to a much faster rate of accretion within the site than predicted by the designers, ABP Mer. The accretion rate cannot be easily controlled, as it is a function of the suspended sediment concentrations in the water body and also the initial site levels; the lower the initial level the faster the recorded rate of accretion. For this reason, it is likely that all managed realignment sites on the Humber will exhibit high rates of accretion.
- 19.4 The applicant is currently undertaking a detailed assessment of the likely development of the site in its first 5 years and that modelling currently confirms that accretion may be rapid. As levels on the site rise, the habitat becomes inundated less frequently and conditions become suitable for saltmarsh development; intertidal areas with fewer than 450 inundations per year tend towards saltmarsh. As noted above, the rapid accretion rates are effectively a consequence of the Humber Estuary being relatively turbid, and this, together with the fact that realignment sites can be relatively low energy environments provide good conditions for the settlement of suspended sediments but not their re-suspension. The detailed design of the initial site levels and layout is seeking to address this inherent issue.
- 19.5 An interim report on the detailed design of Cherry Cobb Sands compensation site is provided in the volume of supplementary environmental information (Report EX28.1) accompanying these answers.

20 QUESTION 20

What factors will determine the choice of the site for the breach in the current sea wall at Cherry Cobb Sands?

Answer

- 20.1 Annex 32.3 of the ES contains an assessment of various breaching options. The factors that have been considered of primary importance are detailed in Section 2.2 of that Annex.

21 QUESTION 21

If medium and long-term monitoring shows that the required compensation habitat is not being delivered at Cherry Cobb Sands, what mechanisms are proposed to ensure that the required effects are achieved?

Answer

- 21.1 Natural England has advised that the compensatory habitat needs to be sustainable with the minimum of management intervention. Accordingly, the primary aim of the detailed design works is to identify initial design levels that ensure sustainable mudflat will develop with the minimum of intervention.
- 21.2 An interim report on the detailed design of Cherry Cobb Sands compensation site is provided in the volume of supplementary environmental information (Report EX28.1) accompanying these answers. The report includes a review of management options for the site which would be delivered through the Ecological Management Plan

22 QUESTION 22

What is the current state of knowledge about contamination of the land at Cherry Cobb Sands, and what if any are the implications for its use as a suitable compensation site?

Answer

- 22.1 A second site investigation was undertaken on behalf of the applicant in April/May 2012. A draft copy of the factual report is included in the volume of supplementary environmental information accompanying these answers (Report EX31.5). Results indicate that contaminated land is present in one of the areas identified within the applicants risk assessment. Initial evidence indicates that the material was deposited on the site in the late 1960's to early 1970's. In these circumstances the Environmental Protection Act 1990, Part IIA, requires that any **necessary remediation work is the responsibility of an 'appropriate person'**, or, alternatively that the enforcing authority may undertake remediation work and **recover the cost of doing so. An 'appropriate person' is defined as either being any person or persons who caused or knowingly permitted the substances giving rise to the contaminated land being in, on or under that land, or is the owner or occupier of the land in question.**

- 22.2 The material will need to be removed from its current location and made suitable for use, either in the flood defence bank itself or outside of the site. This does not affect the use of the site as for managed realignment.

23 QUESTION 23

Is it proposed to retain ownership of the compensation site in perpetuity, or to transfer it to the Crown Estate? If so, when or under what test would the transfer be made, and how?

Answer

- 23.1 Yes. It is proposed to purchase the land from the Crown Estate by Agreement if the application is successful.

OLD LITTLE HUMBER FARM

24 QUESTION 24

Section 28.2.30 of the Environmental Statement says that the wet grassland compensation will be maintained here until monitoring reports show that the main compensation site (Cherry Cobb Sands) is providing effective compensation for the proposed development. Other than the intention to have an implementation plan approved by Natural England (Schedule 9, Part 1, of the draft DCO) how is performance of this to be secured?

Answer

- 24.1 Compensation objectives for the site will be agreed with Natural England and these will form part of the Ecological Monitoring and Management Plan to be approved by the LPA as a requirement of Schedule 11 of the DCO.

CIVIL AVIATION IMPACTS

25 QUESTION 25

In relation to the points raised in the relevant representation of the Civil Aviation Authority –

a) *will the construction methods to be used for wind turbines require them to exceed a height of 165m?*

Answer

25.1 No. The applicant accepts that, without further risk assessment, construction methods must not cause any object on the site to exceed a height of 165m.

b) *will the turbines when constructed need to rotate for test purposes?*

Answer

25.2 No. However, should a need arise it would be addressed through a new application for planning consent.

c) *what discussions have taken place or are taking place with local emergency services air support?*

Answer

25.3 Humberside Police operates an air support unit (helicopter) from Humberside Airport. It primarily covers the four unitary local authority areas of North Lincolnshire, North East Lincolnshire, East Riding of Yorkshire and Hull. Humberside Police Force has a reciprocal agreement to provide air support services to neighbouring Police forces, if and when required. These police helicopters are based in South Yorkshire and West Yorkshire. The air support service is operated and funded by Humberside Police Force.

25.4 The Fire Service does not have their own air support unit as it is the responsibility of the Police Authority to provide air support in instances where the Fire Services require it.

25.5 Air Ambulances serving the Humber area are provided from bases at Leeds Bradford Airport (West Yorkshire), Topcliffe (Thirsk) and Waddington (Lincolnshire). However, an arrangement exists that if an air ambulance is not available (in life threatening situations) the Humberside Police Helicopter can be deployed.

25.6 The emergency services have expressed a wish to continue to be consulted on the erection of structures or the operation of plant that exceeds 45 m in height above the ground.

d) *what discussions have taken place or are taking place with Humberside Airport about the possible impacts of the proposed development?*

Answer

25.7 Consultations with Humberside Airport are detailed in Section 22.4 of the ES.

MARINE MATTERS

26 QUESTION 26

The Harbour Master Humber states that recently constructed facilities on the Humber (such as Humber Sea Terminal) have a 100m limit of jurisdiction from the berth face. In this context –

a) *Why does AMEP require its Harbour Limit to be 200m out from the face of the Quay and also extend beyond the seaward end of the quay?*

Answer

26.1 The applicant does not need the Harbour Limit to extend 200m from the face of the quay.

26.2 ABLE (**the applicant's agent**) met with the Harbour Master on 10 December 2010 and the draft minutes of that meeting were issued to the Harbour Master for comment. An abstract from the minutes are reproduced below with the Harbour Masters corrections underlined:

'RC (Able) asked who was responsible for maintenance dredging within the estuary. PC (Harbour Master) noted that port operators dredged their own berths and dock entrances for a distance of 200 metres from their frontage'.

26.3 ABLE understood this to mean that it was normal for the Harbour Limit to extend 200m from the face of the quay.

26.4 AMEP has no need for the Harbour Limit to extend 200m into the estuary and simply believed that limit to be the standard.

b) *What would be the implications of reducing this limit to 100m?*

Answer

26.5 None – the applicant would be happy to reduce the limit set out in Schedule 10 to the Development Consent Order if the examining Authority were prepared to allow the application to continue with this change.

27 QUESTION 27

The Harbour Master Humber objects to the inclusion in the limit of jurisdiction of the area at the southern inner extremity of the proposed berth (where the return wall meets the river bank). In this context –

a) *For what specific purposes is this area required?*

Answer

27.1 Schedule 10 of the DCO does not show the harbour authority extending to the area described.

b) *What powers are necessary and appropriate to those purposes?*

Answer

27.2 Given the previous answer, the question is not applicable.

c) *What would be the implications of excluding this area?*

Answer

27.3 Given the previous answers, the question is not applicable.

28 **QUESTION 28**

What work, if any, has been done to comply with the requirements of the Port Marine Safety Code?

Answer

- 28.1 The Port Marine Safety Code relates primarily to the safe operation of harbour facilities and covers the duties and responsibilities of harbour authorities. At this stage consideration has been given to these matters insofar as a navigation risk assessment has been undertaken and discussions have also been held with the Harbour Master with regard to appropriate navigation lighting.
- 28.2 Subject to a successful application for consent, the applicant would recruit a suitably experienced and qualified marine team to develop an effective safety management system, formulate emergency plans and safe operating procedures for the harbour.
- 28.3 The dedicated marine team will liaise with ABP-HES as the adjoining harbour authority and integrate with existing forums for stakeholder and liaison meetings.

29 **QUESTION 29**

Has AMEP consulted the Department for Transport regarding the security implications of the development? Specifically is AMEP satisfied that it will be able to fully comply with the ISPS Code?

Answer

- 29.1 The applicant has consulted the Transport Security Compliance Division of The Department of Transport and they have advised that once the new Port is established it **will fall into the 'Other Bulk Cargo Operations'** type of Port and will have to have a prescribed Port Facility Security Officer and deputy.
- 29.2 The applicant is familiar with the ISPS code as evidenced by the Certificate reproduced in Figure 29.1. The design has had regard to the requirements of the Code and the applicant is satisfied that the facility will be able to fully comply with it.



Department for
Transport

**STATEMENT OF APPROVAL
PORT FACILITY SECURITY PLAN**

UNITED KINGDOM

Statement Number: TRANSEC/1680

Issued under the provisions of Part B of the INTERNATIONAL SHIP AND PORT FACILITY SECURITY CODE
(ISPS CODE) under the authority of

The Government of

THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Name of the Port Facility: **Able Seaton Port (TERRC - Teesside Environmental Reclamation &
Recycling Centre)**

Address: **Able UK Ltd, Able House, Billingham Reach Industrial Estate, Billingham, Teesside, TS23 1PX**

THIS IS TO CERTIFY:

That this port facility fulfils the provisions of Chapter XI-2 of the SOLAS Convention and Part A of the International Ship and Port Facility Security Code (ISPS Code) and has an approved Port Facility Security Plan (PFSP).

This Statement of Approval is valid for five (5) years from the date of issue but is subject to verification by compliance inspection (as indicated overleaf).

Issued at: **The Transport Security and Contingencies Directorate (TRANSEC)
DEPARTMENT FOR TRANSPORT, LONDON, UK.**

Date of Issue: 8 January 2010

Signed 
(Signature of Duly Authorised Official)

STEPHEN HILTON
HEAD OF MARITIME SECURITY OPERATIONS

Figure 29.1 Certificate of Compliance with ISPS Code for Able Seaton Port

30 QUESTION 30

In respect of vessels using the specialist berths at the seaward end of the quay–

a) *At what state(s) of the tide does AMEP envisage the vessels berthing and unberthing?*

Answer

30.1 Slack water with no ebb tide running.

b) *Will tug(s) be used if berthing/unberthing is to take place at anything other than slack water?*

Answer

30.2 This question is not applicable; refer to answer (a) above.

31 QUESTION 31

During the capital dredge how is the dredging to be managed in respect of the operations of other river users?

Answer

31.1 All Contractors will be required to work in accordance with a Code of Construction Practice to be agreed with the local planning authority.

31.2 The dredging contractor will liaise with ABP-HES in advance of the dredging campaign to agree parameters for the movement of all craft during the dredge campaign.

31.3 The Contract Manager for the dredging works and the Masters of all dredgers will meet with VTS Humber to ensure familiarity with the existing management systems for the Humber.

31.4 ABP-HES will consider the issue of Pilot Exemption Certificates for suitably qualified and experienced Masters.

31.5 Notice to Mariners will be issued by ABP-HES prior to the commencement of the works.

32 QUESTION 32

What impacts have been assessed for the Humber Work Boats facility in terms of siltation and current? What discussions have taken place or are taking place with Humber Work Boats about possible mitigation of these impacts?

Answer

32.1 There are two reports that are relevant to the impacts on the existing berth at Humber Work Boats, viz.

- *'Update to Longer Term Morphology Predictions in the region of the Centrica and E.OM Intakes'*, HR Wallingford 2012 (EX8.8); and
- *'AMEP Supplementary Report - Modelling of Final Quay Design (Supplement to Annex 8.1 of the ES)'*, JBA Consulting 2012 (EX8.7).

- 32.2 EX8.8 shows that, initially at least, sedimentation will occur over the lower intertidal and sub-tidal areas within 700m of AMEP but not at HWB. EX8.7 also identifies no impacts on the berths at Humber Work Boats in the short term.
- 32.3 With regard to currents, the modelling indicates a small reduction in current on the flood (in the order of 0.2-0.4m/s) during a MHWS tide and no change on the same ebb tide. The circulation pattern shown in the upstream lee of the original quay layout, which projected 80 m further into the estuary than the proposal submitted for consent, is no longer evident.
- 32.4 In the longer term, impacts can be informed by the historical analysis of the intertidal area that has occurred in the upstream lee of HIT; this is reported in, *'Assessment of Changes to Morphology (Particularly Intertidal) Between the Humber International Terminal (HIT) and Humber Sea Terminal (HST)'*, Wallingford 2012 (EX8.9). Using the impact of HIT on the intertidal areas as a *'proxy'* for the impact of AMEP, then it is not possible to exclude the potential for **long term accretion at HWB's berth. Taking this into account, the applicant has** exchanged Heads of Terms with HWB to ensure that they suffer no detriment in the operation and maintenance of their existing berth if AMEP is constructed. The applicant is awaiting comments on the draft Heads of Terms which HWB has agreed to provide.

33 QUESTION 33

What is the assessed siltation impact on terminals further afield, in particular, Immingham Outer Harbour?

Answer

- 33.1 No adverse effects are predicted, refer to Section 3.3.3 of report EX8.7 in the volume of supplementary environmental information accompanying these answers.

34 QUESTION 34

What are the assessed cumulative and in combination impacts on the river regime in relation specifically to Hull Riverside Bulk Terminal, Green Port Hull, Sunk Dredged Channel Deepening and the Grimsby Ro-Ro Berth?

Answer

- 34.1 Refer to the volume of supplementary environmental information accompanying these answers; report EX8.7.

35 QUESTION 35

During the capital dredge who will be responsible for monitoring any build up of silt at the adjoining berths and the intakes/outfalls used by E.ON and Centrica?

Answer

- 35.1 Adjacent berths will be subject to an existing survey regime to monitor sedimentation within the berths. The applicant does not anticipate any need to change the intensity of that survey effort and it would remain the duty of the berth operator to undertake those surveys.
- 35.2 Schedule 9, Part 1 of the draft DCO provides for a post-construction plan for the monitoring of indirect sediment transport and geomorphological effects to be prepared by the applicant and approved by Natural England. This would include monitoring of the intertidal areas to the north and south of the quay by the applicant.

36 QUESTION 36

In the long term how will the predicted build up of silt inside the nearby berths and at the intakes/outfalls of the E.ON and Centrica sites be managed?

Answer

- 36.1 Sedimentation at nearby berths will continue to be managed by the berth operators. Whilst no increased maintenance dredging is predicted, the applicant has proposed Heads of Terms to the operators to protect them against any additional costs arising from those operations where those additional costs are attributable to AMEP.
- 36.2 The principal risk to the E.ON and Centrica infrastructure is to the outfalls. It is proposed to divert the outfalls and this would negate the need for any management of the intertidal area to the north of the quay. The Centrica outfall is at less risk and it may be possible to undertake maintenance dredging in the vicinity of the that outfall using a plough dredger as detailed in the dredging strategy. Alternative solutions are still being explored with the operators of both outfalls that might allow their infrastructure to remain in-situ, subject to separate consents being obtained.

37 QUESTION 37

Given that the approach channel to Humber Sea Terminals and the proposed approach channel for AMEP overlap and will be dredged to different depths, what guarantees are there that neither channel will interfere with the other in terms of siltation/scour?

Answer

- 37.1 The material exposed at the final dredge depth is likely to be inerodible boulder clay. The applicant has exchanged Heads of Terms with HST which would ensure that they suffer no detriment in the operation and maintenance of their existing berth and approaches if AMEP is constructed.

38 QUESTION 38

With regard to the channel at Stone Creek –

a) *What is the current maintenance regime, if any?*

Answer

38.1 Stone Creek is currently subject to maintenance dredging as sedimentation within the Creek has the potential, if not managed, to restrict (and if unmanaged, to block) the outfalls to four significant surface water drainage channels that outfall within the Creek, viz. Keyingham Drain, Cherry Cobb Sands Drain, Ottringham Drain and Sunk Island Drain (Figure 36.1 of the ES).

38.2 The Environment Agency state in their Relevant Representation that:

'Dredging of Stone Creek has in recent times been undertaken by the Environment Agency. The local Internal Drainage Board has recently taken over responsibility for a temporary dredging programme, part funded for 5 years by the Environment Agency and East Riding of Yorkshire Council, to alleviate the existing siltation issue'.

b) *What monitoring regime is proposed?*

Answer

38.3 Notwithstanding the above, the applicant does accept that the project must not exacerbate the existing extent and frequency of maintenance dredging that is undertaken to mitigate the impact of sedimentation on the drainage outfalls. Accordingly, the applicant proposes to undertake monitoring of sedimentation within the Creek and its channels over the long term and where such monitoring shows sedimentation patterns to be demonstrably outside any established natural variation, and likely to have been caused by the development, then the applicant would make a contribution towards any additional maintenance costs incurred.

38.4 The applicant proposes to prepare a report on historic siltation within Stone Creek using a combination of LIDAR data and any dredge data that is available. Baseline bathymetric surveys would then be undertaken every 3 months for the 12 month period preceding the breach; these would be continued for 12 months after the breach and at an appropriate frequency thereafter for the following 4 years.

c) *Is a programme of maintenance dredging proposed from the outset?*

Answer

38.5 As noted in (a) above there is an existing 5 year programme.

d) *How is dredging to be ensured if the siltation levels warrant it?*

Answer

38.6 The question is effectively a request for a provision similar to paragraph 20 of Part 2 of Schedule 9 (Sedimentation, etc.: remedial action) to apply to Stone

Creek and the Environment Agency as it applies to the Humber in respect of the Humber harbourmaster in that provision, and Able would be happy to include an additional protective provision in Part 3 of Schedule 9 to that effect.

39 QUESTION 39

In disposing of the non-erodible material at HU082 how is this activity to be monitored to ensure that it is discharged in such a way so as to not alter the current regime of the Sunk Channel or to cause mounds on the sea bed?

Answer

- 39.1 The impact of disposal at HU082 has been assessed and is reported in EX8.7 including in the volume of SEI accompanying these answers.
- 39.2 To ensure uniform disposal on the designated site vessels will dispose of arisings on a grid pattern within the designated site facilitated by GPS navigation aids.
- 39.3 Routine bathymetric surveys of the works will be used to verify that material is being disposed of in a uniform manner that is consistent with the assumptions of the Impact Assessment.

40 QUESTION 40

Does AMEP intend to dispose of the erodible material at HU080 on the ebb or flood tides or at all states of the tidal cycle?

Answer

- 40.1 The assessment of impact of the disposal operation at HU080 is presented in Appendix 8.1 of the ES and includes disposal throughout the tidal cycle.

41 QUESTION 41

What is the design life of the quay? What would be the decommissioning implications?

Answer

- 41.1 The harbour is not expected to be decommissioned. The quay will effectively become part of the flood defences for the Humber and will be covered by a Section 30 Agreement between the applicant and the Environment Agency under the Anglian Water Authority Act 1977. The agreement will prescribe its design, construction and maintenance
- 41.2 The design life of the quay will be dependent on its maintenance regime and in this respect it will be important to ensure that the steelwork enclosing the quay is adequately protected from corrosion. A cathodic protection system will be used to inhibit corrosion and if that is properly maintained, the design life can extend into the foreseeable future.



**RESPONSE TO PLANNING INSPECTORATE
QUESTIONS** *(Rule 8 Letter)*

JUNE 2012

- 41.3 Different elements of the quay will have a different design life. Elements of the quay will be appropriately maintained until it becomes more economic to replace rather than repair them.
- 41.4 There is no environmental benefit in decommissioning a flood defence so the quay will be maintained for the foreseeable future.

GOOD DESIGN

42 QUESTION 42

Noting Annex 4.4 to the Environmental Statement Volume 1, with particular reference to Section 4.10.4 of the NPSP –

a) *how was the design process conducted and how has the proposed design evolved?*

Answer

- 42.1 The design process has been informed by extensive discussions with a wide range of key players within the offshore energy sector (developers, suppliers and vessel operators) to obtain an understanding their specific requirements. Whilst any detailed discussions are, in all instances, covered by Confidentiality Agreements, a universal feature of the enquiries is a need for heavy duty quays (in the order of 20T/m²), large plots of land for manufacturing, storage and assembly, and substantial building envelopes (both in plan and elevation).
- 42.2 Conceptual designs for the quay were first developed in mid 2009 by Mott MacDonald (MM) who had been employed by the former Regional Development Agency, Yorkshire Forward (YF). MM developed schematic layouts in response to an enquiry from an original equipment manufacturer (OEM) with a significant presence in the offshore wind sector. Over the course of that commission it became evident that, for operational reasons, a reclamation scheme would be needed. This was because the berthing face would have to be 300-400 m into the estuary to be proximal to the deep water channel, and behind that extensive lay down areas were required for large components to be made ready for export. In the course of this study, YF liaised fully with the applicant, as the owner of the associated terrestrial development land.
- 42.3 Over the following 12 months the applicant held many meetings with the offshore wind industry and worked closely with Yorkshire Forward to gain a detailed understanding of the specific requirements of the offshore sector and also to understand the scale of the demand. Development plans were also informed by Government literature regarding the need for port development to support the offshore wind sector, for example, *'UK Ports for the Offshore Wind Industry: Time to Act'*, Department of Energy and Climate Change (February 2009).
- 42.4 In February 2010, YF commissioned a suite of studies to gather environmental information pertaining to the site and the wider locale including: geotechnical investigations, water and sediment quality surveys; marine invertebrates surveys; fish and bird surveys as well as navigation studies and hydrodynamic modelling.
- 42.5 During 2010 the applicant commenced informal discussions with key stakeholders to obtain a fuller understanding of the regulatory regime in relation to port development and, in particular, the requirements for compensatory habitat.
- 42.6 In July 2010, based on the information available at that time, the applicant determined, given the private sector interest in the site, to prepare an application for development consent. In doing so the applicant judged that the derogation tests that would permit the development to proceed despite its impacts on the European site could be passed. Accordingly, the applicant

assembled a team of suitably qualified and experienced consultants to undertake an environmental impact assessment of a new quay and associated development. The applicant developed the initial masterplan using in-house resources.

- 42.7 On 8 July 2010, the applicant launched an informal consultation exercise on its proposals involving stakeholders seeking a response by 6 August 2010; 19 individuals and organisations responded. The project was adjusted in response to this initial consultation exercise.
- 42.8 From mid August 2010 onwards, the core EIA team comprising ERM, Black and Veatch, BDB and the applicant met on a fortnightly basis to monitor progress, review information, agree on-going actions and determine any necessary design modifications in the light of the EIA process. The EIA team also held meetings with regulators and the local business community up until, and beyond, the point of application.
- 42.9 In January 2011, the design team judged the project to be sufficiently defined to enable formal consultation in accordance with the requirements of Section 42, 47 and 48 of the Planning Act 2008. The consultation period ran from 31 January until 19 March 2011. This included public consultation events attended by the applicant and the core EIA team. Following receipt of the consultation responses the development proposal was reviewed and the EIA continued.
- 42.10 In February 2011, the applicant engaged Counsel to advise on the robustness of the project, as defined at that stage, in view of the likelihood that the project would have an adverse effect on the integrity of a European Site. Specifically, the applicant sought opinion on the weight of the respective arguments relating to the need for the development, the absence of alternatives and the IROPI case.
- 42.11 At the beginning of June 2011, a design review of the quay was undertaken and it was decided that further hydrodynamic modelling should be undertaken with the aim of further mitigating the impact on the European site by moving the berthing face inshore and exploring the benefit of an upstream chamfer. In the event, a number of alternative quay footprints were modelled to mitigate impacts as far as possible. This further work was not completed until September 2011 at which point the applicant further liaised with Natural England over the requirements for compensatory habitat. From October onwards, with the project now fully defined, the Environmental Statement was completed.
- 42.12 During the entire design period, the applicant took responsibility for design co-ordination using an in-house team led by a Chartered Civil and Structural Engineer with **30 years' experience** in the planning and delivery of major infrastructure schemes.
- 42.13 In summary, the design evolved through:
- Liaison with potential end-users to understand their requirements.
 - Surveys and investigations to fully understand development constraints.
 - Liaison with regulators, the public and the local planning authority.
 - Liaison with local businesses.
 - The EIA process.

b) *how does the chosen design take into account functionality (including fitness for purpose and sustainability) and aesthetics?*

Answer

42.14 Port development must, first and foremost, be functional. Annex 4.4, together with the main text of the ES, explains the need for the design to:

- permit the transport around the **entire** site of large, heavy components and thus the site must be essentially level;
- provide large areas for component storage, hence the size of the associated development;
- provide heavy duty quays suitable for the operation of mobile cranes, hence the piled relieving slab alongside the quay;
- provide berths of sufficient depth and width to enable use by existing and proposed installation vessels, hence the berthing pocket is dredged to -11 mCD and backfilled with stone;
- provide adequate lighting to enable 24/7 operation, hence the high mast lighting;
- provide connectivity across the railway, hence the need to take the railway line out of the network;

42.15 With regard to sustainability, it is first necessary to understand the current definition of sustainability within the context the new planning framework. Most broadly, the foreword to the NPPF defines sustainability as *'ensuring that better lives for ourselves don't mean worse lives for future generations'*. At paragraph 5 the NPPF states that:

'The UK Sustainable Development Strategy Securing the Future set out five 'guiding principles' of sustainable development: living within the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly'.

42.16 At paragraph 7 the NPPF identifies three *'dimensions'* to sustainable development: economic, social and environmental. Finally, at paragraph 8 it is stated that, *'to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system'*. Accordingly, these three issues, and the way in which the chosen design addresses them, are explained in Table 42.1.

42.17 With regard to aesthetics, paragraph 4.10.1 of the NPSP acknowledges that, **'the nature of much port infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area'**. The applicant would agree with this observation. However, the design does incorporate landscaping proposals and it is proposed that building finishes will be agreed with the local planning authority. The applicant anticipates that finishes will provide a coherent backdrop, albeit that their visibility will be impossible to avoid.

42.18 The applicant also met with CABE during the design process but they were unable to provide detailed comments at this stage of the design process.



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Sustainable Development Roles (NPPF, paragraph 7)	Compliance within the Chosen Design
<p>economic – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure</p>	<p>The development is proposed to be undertaken on land specifically allocated for that purpose. There is sufficient associated development land of the right type for the needs of the industry with substantial adjacent areas also allocated for development. Taking into account licensed development zones for Round 3 the site is optimally located on the Humber. The Highways Agency is currently planning complementary infrastructure improvements to the trunk road network, Anglian Water has confirmed it is able to supply water to the site and receive effluent from the site. The National Grid has confirmed that the estimated electricity demand is available without significant reinforcement of the local network. The Harbour Master Humber is content that existing infrastructure can support the development. The site has rail connectivity.</p>
<p>social – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being</p>	<p>The development will provide a significant economic boost to a relatively deprived area of the UK, which will have an important, overriding, social benefit for the local community. Chapter 21 of the ES finds that existing and planned social provisions, in the surrounding areas are sufficient to avoid stress on housing or other social provision. Whilst the development will be highly visible, it is located in an area of significant industrial development that will, to some extent, mask its visual impact upon local residents. Sympathetic landscaping and building finishes will mitigate the visual impact as far as reasonably practicable. Chapter 24 of the ES concludes that AMEP is likely to have a positive impact on health from local employment and procurement.</p>
<p>environmental – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy</p>	<p>The development will enable the UK to meet its renewable energy objectives and move towards a low carbon economy. Its optimal location minimises the carbon impact of shipping to the principal windfarm sites. Where it is possible to do so, the potential adverse effects of the project on flora and fauna are mitigated or, in the event that mitigation is not possible, compensated for on a like for like basis. Any loss of habitat is replaced with a greater quantum of equivalent habitat and existing populations of animal species (with the possible exception of badgers and ground nesting birds) should be maintained or improved. The historic environment will be safeguarded through the development of a WSI and the implementation of a Management Plan for the Lighthouse, which is a listed building. As a new facility, the development will be built and operated to current standards of good practice ensuring that environmental impacts are minimised at all stages of the Project.</p>

Table 42.1 Sustainability of the Chosen Design

COMPLETENESS OF DESIGN

43 QUESTION 43

In File 4, Planning Application Drawings, the (Building) Masterplan and the Landscape Masterplan are both described as 'Indicative' and the drawings are both specified as 'Preliminary'. Requirement 4 in Schedule 11 states that the authorised development shall be carried out in accordance with the design drawings unless otherwise approved in writing by the relevant planning authority. In this context –

a) *To what extent do the drawings in the application represent a fully-evolved final design?*

Answer

- 43.1 There are a number of stages in the design process and final building designs cannot be undertaken until settled specifications are received from tenants. The applicant **has received a number of specifications on a 'commercial in confidence'** basis and the building envelopes presented in the application reflect those draft specifications.
- 43.2 The design of the quay itself is settled in terms of its overall size and structural form. The next stage of design will enable actual pile sizes to be determined, concrete dimensions, drainage details, fenders, bollards, ladders and the like to be detailed. That detailed process is not necessary at this stage.
- 43.3 The Indicative Masterplan presents the applicants best understanding of the requirements of the emerging offshore wind industry and provides the essential features in terms of access, building envelope, plot size, building services, lighting, security and quay lay down. Again this is based on extensive discussions with the industry, most of which are covered by commercial confidentiality agreements.
- 43.4 In common with many other major developments of similar scale, a degree of flexibility in the configuration of certain elements of the Project will be required. In this case, this applies principally to building dimensions. This will ensure that eventual occupiers of the facility can develop the site in a way that best serves the interests of the renewable energy industry. It will also enable the completed harbour to respond to market demands in the longer term, after the wind farm developments in the North Sea and beyond are complete, providing continuing benefit to the UK economy.
- 43.5 This sort of flexibility is essential if the Project is to proceed and be successful, as it allows it to respond to commercial opportunities and emerging economic circumstances. Indeed, Justice (now Lord Justice) Jeremy Sullivan, in his second judgement on the Kingsway Business Park application in Rochdale, remarked **that, "a substantial industrial estate development project is bound to be demanded to a greater or lesser degree"** (paragraph 85). He goes on to observe that,

"If a particular kind of project, such as an industrial estate development project (or perhaps an urban development project) is, by its very nature, not fixed at the outset, but is expected to evolve over a number of years depending on market demand, there is no reason why 'a description of the project' for the purposes of the directive should not recognise that reality. What is important is that the environmental assessment process should then take full account at the outset of the implications for the environment

of this need for an element of flexibility. The assessment process may well be easier in the case of projects which are 'fixed' in every detail from the outset, but the difficulty of assessing projects which do require a degree of flexibility is not a reason for frustrating their implementation." (paragraph 90).

- b)** *What particular matters might the applicant need or wish to change should development consent be granted?*

Answer

- 43.6 Annex 4.1 of the ES explains the flexibility that has been considered within the EIA process. Where development falls outside of the envelope considered in the EIA process separate consents will be sought from the local planning authority.

- c)** *What safeguards within the DCO would be appropriate to ensure that final detailed design remains compatible and consistent with the details of the scheme as submitted for approval? Specifically, what safeguards would ensure that the final detailed design could not have any new or greater impact than assessed through the Habitats Regulation Assessment and the Environmental Statement?*

Answer

- 43.7 Able would be content for requirement 4 to be amended along the lines of requirement 6 of the Rookery South DCO which uses the formulation:

'unless otherwise approved in writing by the relevant planning authorities and the altered development accords with the principles of the design and access statement and falls within the Order limits'

- 43.8 In the case of AMEP, since there is no design and access statement, the **equivalent formulation would be proposed as** 'unless otherwise approved in writing by the relevant planning authority and the development as so altered falls within the envelope assessed by the Environmental Statement and falls within the Order limits'.

RAILWAY CONSTRUCTION AND OPERATION

44 QUESTION 44

Is it the intention to operate the railway line within the application site solely as a single siding?

Answer

- 44.1 Additional sidings may be added to permit trains to pass, depending upon demand.

45 QUESTION 45

Is it the intention to reinstate the railway line along the section which is dismantled towards the Logistics Park, and if so where are the impacts of this assessed?

Answer

- 45.1 The railway already extends beyond Humber Sea Terminal towards the Logistics Park. No further extension is proposed along the route of the dismantled line, but a spur will be taken into the Logistics Park, subject to demand.

46 QUESTION 46

What would be the implications for the construction and operation of the proposed development if the compulsory acquisition of the Network Rail land was not approved?

Answer

- 46.1 Network Rail has stated that if the line remains within the network and on its current alignment, grade separated crossings will be required to cross it. This is not reasonably practicable for the intended purpose of the site and is not essential for the site specific conditions, *viz.* a freight only line where speed restrictions can be imposed without detriment to operations.

47 QUESTION 47

Is it proposed that the railway track should be maintained at existing levels, or does the proposed development require that it should be raised to match new ground levels of working areas?

Answer

- 47.1 Yes. The track will be maintained at existing levels with discrete crossing points.

TRANSPORT AND TRAVEL

48 QUESTION 48

In Annex 15.1, Transport Assessment –

- a)** *Table 6.4, which deals with route allocation for journeys to work, shows a trip allocation of 50% to 'York, Wakefield, Doncaster and area to the west of the study area'. Is this based entirely on population distribution? Have any sensitivity tests been carried out which would model the effect of more recruitment being more local?*

Answer

48.1 Refer to Appendix B of these answers.

- b)** *Table 6.6, which deals with HGV delivery assumptions, shows a break-down by modes of sea, rail and road. What is the basis for the assumptions made? Have any sensitivity tests been carried out which would show the effects if significantly more HGV deliveries were by road?*

Answer

48.2 Yes, refer to Appendix B of these answers.

- c)** *What if any assumptions about growth in port traffic at Immingham and C.Ro have been built into the modelling?*

Answer

48.3 It was agreed with the relevant highway authorities that since a large number of committed developments (some of which have not yet gained planning approval) are included in the assessment, no traffic growth would be applied to the baseline traffic counts and no future year assessments undertaken (ES paragraph 15.10.6). In effect, the potential for industrial growth in the area is already accounted for by including so many consented (but not implemented) development projects.

48.4 The roads on the approach to the Port of Immingham and C.Ro are already congested. It would clearly be an inequitable situation for the Port of Immingham or C.Ro to expect other developers in the area to relieve existing road congestion to improve the viability of any development plans they might also have. The applicant has proposed junction improvements to ensure, so far as reasonably practicable, existing road users do not experience additional delay due to AMEP in combination with other committed development.

48.5 To address the potential for significant traffic growth from the Port of Immingham and anticipated development of the South Humber Bank, the Highways Agency has proposed a scheme to upgrade the A160 trunk road on the approach to the site. The Highways Agency estimated the cost of the scheme to be £108M in December 2010, and its implementation would have significant benefit to the economy as a whole. On 11 May 2012, the Roads Minister announced development work would recommence on this scheme to enable it to *'be in a good position to be considered for delivery in the early years of the next*

spend review period (post 2015)'. Accordingly, the delivery of the significant highway improvements necessary for the expansion of the Port of Immingham and to enable development of South Humber Bank as a whole justifies, and must equitably rely on, public investment.

48.6 The applicant notes, in addition, that paragraph 8.40 of ABP's draft Port of Immingham Masterplan (2010) states that '(p)roposed improvements to the A160 and A180 trunk roads leading to the Port will support future port growth, ease current congestion and improve safety' (emphasis added). It is therefore clear that the Port of Immingham's growth is actually dependent upon the Highways Agency scheme, and, vice-versa, the Highways Agency scheme is justified as it enables the growth of the Port of Immingham. Any claim to the contrary would appear counter-productive, as it would undermine the case for any public investment.

d) Paragraph 6.27 refers to the possibility of two extra train paths per 24 hours on the Killingholme Branch. Would the rail traffic anticipated in Table 6.6 use all that extra capacity?

Answer

48.7 No.

48.8 Network Rail's publication, '*The Value and Importance of Freight*', (July 2010), provides guidance on freight train capacities; it is reproduced in Table 48.1 below.

Commodity	Fully Loaded Train Potential ⁴²
Coal	1,500 tonnes
Metals and ore	1,000 to 2,500 tonnes
Construction materials	1,500 to 3,000 tonnes
Oil and petroleum	2,000 tonnes
Consumer goods	600 to 1,100 tonnes
Other traffic	1,000 to 1,500 tonnes

Table 48.1 Freight Train Capacities

48.9 The total to be transported to the site by rail, as given in Table 6.6 of the Transport Assessment is 96 500T; this would substantially comprise steel plate. Taking a freight train to have a minimum capacity of 1 000T, then only around 100 trains would access the site each year, or alternatively two trains per week.

LIGHTHOUSES AT SOUTH KILLINGHOLME

49 QUESTION 49

What discussions have taken place or are taking place with English Heritage and/or North Lincolnshire Council about a management plan to protect the three Grade II listed lighthouses at South Killingholme (Killingholme High LB No. 165871, Killingholme North Low LB No. 165872 and Killingholme South Low LB No. 165873)?

Answer

- 49.1 In its Relevant Representation, English Heritage raised the issue that the mitigation strategy proposed in the application for impacts on the group of three lighthouses at Killingholme was unclear. It is stated in the ES that a Management Plan for Killingholme North Low Lighthouse will be prepared; however, this had not yet been included as a requirement of the draft DCO.
- 49.2 English Heritage went on to request that compensatory measures for the impacts on the three lighthouses as a group should be considered; this had been mentioned in Annex 18.4 of the ES, but not in the main ES text or the DCO. EH proposed that such compensatory measures could be built into a management plan that considered the lighthouses as a group.
- 49.3 **Subsequent to receipt of EH's Relevant Representation, Able discussed with EH** the preparation of a Statement of Common Ground. In its written response (dated 21st May 2012) to the **applicant's** draft of this document, EH again raised the issue of a Management Plan dealing with impacts on the lighthouses as a group.
- 49.4 The applicant has held discussions with representatives of both English Heritage and North Lincolnshire Council (NLC) on the form that such a Management Plan might take, and is currently exploring the options of mitigation measures that might be included. The applicant is content to undertake that such a Plan will be developed in consultation with NLC and EH, and that the preparation of such a plan will be secured by a requirement of the DCO. The plan would set out how it would be implemented, and as such the implementation strategy would be agreed with NLC and EH.
- 49.5 The applicant is continuing to develop its SoCGs with EH and NLC on this basis.

OTHER CONSENTS

50 QUESTION 50

Please supply a schedule setting out any other consents applied for, or required but still to be applied for, in connection with the proposed development, together with, for each consent, the name of the consenting body, the date the application was made and a note of the progress made so far towards a decision.

Answer

50.1 Refer to Table 50.1



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Table 50.1 Consents and Approvals

CONSENT/ APPROVAL TITLE	DETAILS	STATUS
Environment Agency - Consents & Approvals not subject to Development Consent Order		
Environmental Permit under Environmental Permitting Regulations 2010	Construction of quay and backfill	Post Consent
Environmental Permit under Environmental Permitting Regulations 2010	Operation of quay	Post Consent
Environmental Permit under Environmental Permitting Regulations 2010	Relocation of Anglian Water sludge main	Pre Consent
Environmental Permit under Environmental Permitting Regulations 2010	Relocation of Anglian Water brine main	Pre Consent
Environmental Permit under Environmental Permitting Regulations 2010	Increase in foul discharge from Anglian Water Sewage Treatment Works	Pre Consent
Environmental Permit under Environmental Permitting Regulations 2010	Diversion of Cooling Water Outfall	Post Consent
Flood Defence Consent under the Anglian Region Land Drainage and Sea Defence Byelaws 1987	Construction of quay	Currently included in Draft Development Consent Order, but likely required Post Consent
Flood Defence Consent under the Anglian Water flood defence bylaws	Construction of surface water pumping station and installation of pipe work through existing flood defences to outfall	Post Consent
Flood Defence Consent under the Anglian Water flood defence bylaws	Construction of pipework for sludge & brine main diversion through existing flood defences	Post Consent
Flood Defence Consent under the Yorkshire Water flood defence bylaws	Construction of flood defences at Compensation Site	Post Consent



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CONSENT/ APPROVAL TITLE	DETAILS	STATUS
Land Drainage Act 1991, section 23	Obstruction of existing watercourses at Compensation Site	Post Consent
Planning (Hazardous Substances) Act 1990	Consent for use of hazardous substances (if required) during operation of development	Unknown if needed, however tenant will be responsible for obtaining Post Consent
Anglian Water - Consents & Approvals not subject to Development Consent Order		
Water Industry Act 1991, sections 41 & 45	Application for new water supply	Submitted 1/2/2012
Water Industry Act 1991, sections 106	Application for connection to public sewer	Submitted 1/2/2012
Water Industry Act 1991, sections 185	Application for sewer diversion	Submitted 27/1/2012
Natural England - Consents & Approvals not subject to Development Consent Order		
Licence under section 10 of the Protection of Badgers Act 1992	Badger Licence for closure of setts at Compensation Site	Post Consent
Licence under section 16 of the Wildlife and Countryside Act 1981	Licence for relocation of water voles	Post Consent
Licence under section 16 of the Wildlife and Countryside Act 1981	Licence for relocation of bat roosts	Post Consent
European Protected Species Licence for Great Crested Newts	Licence for trapping and translocation of great Crested Newts & removal & replacement of habitat	Draft application submitted 24/2/2012. Comments from Natural England received & included in document EX 11.20



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AUTHORITY	DETAILS
Consents & Approvals required subject to Development Consent Order	
North Lincolnshire Council	Temporary stopping up, alteration, or diversion of any street not included within Development Consent Order
	Highway access improvements to development
	Alternative public rights of way to Footpath 50
	Trial hole investigation of any land within the highway boundary
	Written scheme for setting out the stages of the authorised development
	Landscaping details
	Proposed tree planting
	Access management scheme
	Temporary and permanent fencing and wall details
	Surface water and foul water drainage details
	Written scheme to deal with contamination of any land including groundwater
	A written scheme for the investigation of areas of archaeological interest
	Ecological management plan
	Code of construction practice
	External lighting details
	Construction traffic route plan on public highways
	Noise management scheme
	Written scheme for management and control of emissions



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AUTHORITY	DETAILS
	Travel plan
	Scheme for protection and mitigation measures of European protected species
	Written details of the operation of the authorised development and its effect on radar
North Lincolnshire Council/ Highways Agency	Improvements to junctions on A160
East Riding of Yorkshire Council	Alternative public rights of way to Paull Footpath 6
	Surface water and foul water drainage
	Written scheme to deal with contamination of any land including groundwater
	A written scheme for the investigation of areas of archaeological interest
	Ecological management plan
	Code of construction practice
	External lighting
	Construction traffic route plan on public highways
	Noise management scheme
	Written scheme for management and control of emissions
	Travel plan
Marine Management Organisation	Works schedule for construction of the quay
	Navigational warning system during the construction of the works
	Works schedule for construction of surface water pumping station
	Works schedule for capital dredging
	Works schedule for maintenance dredging



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AUTHORITY	DETAILS
	Works schedule for deposition of dredged arisings
	Details of the Master of any vessel or Contractor carrying out activities permitted by the Deemed Marine Licence
	Name, type, registration number of each vessel carrying out activities permitted by the Deemed Marine Licence
General Lighthouse Authority	Lighting of the works
Natural England	Biodiversity enhancement and monitoring plan
	Post-construction plan for the monitoring of indirect sediment transport and geomorphological effects

**QUESTIONS PRIMARILY FOR THE APPLICANT, ENVIRONMENT AGENCY,
NATURAL ENGLAND AND MARINE MANAGEMENT ORGANISATION**

HABITATS REGULATION ASSESSMENT

51 QUESTION 51

In conjunction with Natural England, Environment Agency, Marine Management Organisation and others as appropriate, please complete, correct and update the attached screening matrix and appropriate assessment matrix (Annex D2).

Answer

51.1 NE are responding on behalf of all four parties.

QUESTION 51 – ANNEX D2

a) General Questions

For Natural England: *Do you agree with the statement that carrying out a 'Through the Tide' count in 2010/11, combined with the available WeB counts and other surveys referred to in the HRA and ES, provides sufficient data to assess the likely impacts of the proposed development on the bird populations using the estuary? (See paragraph 11.5.63, ES Chapter 11). If not what additional data is required?*

Answer

51.2 Not applicable to the applicant.

For Natural England (NE) & applicant: *Both construction & operation will generate substantial traffic movements with the potential to generate localised air pollution. Has the impact of traffic generated air pollution on the European Sites been considered?*

Answer

51.3 The air pollution generated by increased traffic movements is indeed localised: the ES states that "emissions from road traffic will not affect an area of greater than 200 m from the roadside. Therefore consideration of total traffic, rather than only the increment in airborne pollution associated with AMEP traffic emissions is appropriate as the estimated baseline will not include the large majority of traffic related emissions."

51.4 Accordingly, the European Sites were not identified as sensitive receptors for AMEP-specific traffic impacts, since no part of a European Site falls within 200m of Rosper Road. However, an air quality standard exists for oxides of nitrogen (NO_x) for the protection of vegetation – AMEP's impacts were assessed against this criterion by means of the dispersion model, which did include all road traffic impacts arising from AMEP and total traffic, as well as other potential sources of air pollution. The results of this assessment were set out in paragraph 17.6.34 of the ES, which states:

In terms of impacts on habitats the emissions arising from the additional road traffic and emissions from the AMEP site are not predicted to result in a significant impact on the Humber Estuary. However, the air quality standard of

30 µg/m³ for the protection of vegetation is already exceeded at the Humber Estuary due to the elevated baseline', (ES, Ch.17, ERM).

- 51.5 As NO_x levels, which arise from road, vessel and rail traffic, exist in concentrations in excess of the air quality standard for the protection of vegetation, and the impact of AMEP (dispersion modelled from all three sources) on this elevated baseline, will not be significant, this impact was not taken forward in the Shadow AA.
- 51.6 NE agree that the impact is not significant.

For applicant: Please confirm whether or not the area of sub-tidal habitat being lost to create the berthing pocket is included in the 13.5 ha loss of sub-tidal habitat referred to in the Habitats Regulations Assessment report.

Answer

- 51.7 The area of sub-tidal habitat will not be lost but will change, refer to Report EX10.6 in the volume of supplementary environmental information submitted with these answers.

b) Likely Significant Effect

Table 2-a, for applicant/Natural England: Occasional records for bittern have been recorded for North Killingholme Haven Pits (ES Chapter 11, paragraph 11.5.15), although they have been excluded from the HRA because they have not been recorded in either the WeBS data for the site over the last five years or from the 'Through the Tide Count' surveys 2010-11. Given the rarity and shyness of bittern, does this provide adequate justification for the exclusion of the species from the HRA?

Answer

- 51.8 According to, 'The Humber Estuary: A Comprehensive Review of its Nature conservation Interest', (English Nature, 2003) the key sites for the Bittern are: Barton to new Holland Clay Pits Complex and Blacktoft Sand. North Lincolnshire Council's ecologist has informally advised that he is aware of a single record in the previous 10 years at this location. On this basis the possibility that NKHP is important for Bittern can be excluded.

Table 2-c, for applicant: *The noise from piling activities is predicted to be no higher than existing LAMAX levels (ES Chapter 11, paragraphs 11.6.34-11.6.54). However the noise levels resulting from the piling will be in addition to the existing baseline levels. Please can you explain how the calculation of the predicted levels takes this into account.*

Answer

- 51.9 The ES states that 'the survey data recorded at ECO_1 on the northern side of NKHP are **representative of the existing noise levels across NKHP**'. The mean LA_{MAX} for ECO_1 is quoted to be 65dB(A), with a standard deviation of 7dB.
- 51.10 The ES states that LA_{MAX} values from piling at the northern end of the quay as experienced at NKHP are quoted as being 58-63dB(A). It is then stated that, '*It is clear from Table 11.23 that predicted unmitigated noise levels from piling at Killingholme Fields (S2 and S3) and NHKP (ECO_1) are less than the existing average LAMax levels. There will therefore be no discernable noise effects from these levels at these sites.*'
- 51.11 No additive effect will be experienced from the two noise levels occurring at the same time, so the combined noises will not result in a higher noise level.
- 51.12 BS5228-1: 2009 Code of practice for noise and vibration control on construction and open sites gives a procedure for the summation of steady sound levels when these are expressed as LAeq (defined as equivalent continuous sound pressure level with 'A' frequency weighting. This means the value of the sound pressure level of a continuous steady noise that, for a measurement interval of time (t), has the same mean square sound pressure as the sound under consideration whose level varies with time). This procedure allows for an additive effect when noise sources of similar level are experienced together. This procedure is only applicable to noise levels expressed as LAeq, because of the statistical way this parameter is derived.
- 51.13 The noise levels referred to in the ES, as stated above, are expressed as LAMAX – this parameter is a maximum, not a time-weighted equivalent like LAeq. Accordingly, it does not represent a continuous sound pressure level, so additive effects do not apply, and the procedure set out in BS5228-1 is not appropriate for use. If the existing $LAMAX = 65dB(A)$ and another noise source provides a sound level of $LAMAX = 63dB(A)$, then the maximum experienced is nevertheless still $LAMAX = 65dB(A)$.

Table 2-c, for applicant: *Lighting levels: Please could you provide light contour maps indicating what the light levels will be (in lux) at different points on the European sites and adjacent areas at present, during construction and during operation.*

Answer

- 51.14 Refer to EX19.1 of the volume of supplementary environmental information accompanying these answers.

Table 2-d, for Natural England: Ruff has been excluded from the HRA because so few birds were recorded either on the foreshore or at North Killinghome Haven Pits. The HRA concluded that, although the numbers recorded represented 1.6% of the population within the Humber Estuary, the area was clearly not important for ruff. Do you agree with this assessment?

Answer

51.15 Not applicable to the applicant.

Table 3-f, for applicant: Natural England has advised that a 'soft-start' technique should be used to mitigate the impact of underwater piling noise on grey seal. Please advise if you are proposing to do this and give brief details.

Answer

51.16 The applicant is proposing to adopt a 'soft start' practice for impact piling and is in the process of agreeing the parameters with Natural England.

Table 3-f, for MMO: Natural England has advised that a 'soft-start' technique should be used to mitigate the impact of underwater piling noise on grey seal. Are you satisfied that this would provide adequate mitigation?

Answer

51.17 Not applicable to the applicant.

Table 3-g, for Natural England: Is there any realistic prospect of the estuary achieving an annual mean for suspended solids of <25 mg/l (target within Conservation Objectives)? If there is, would the effect of the project prevent the achievement of Favourable Conservation Status with respect to sea and river lamprey?

Answer

51.18 Not applicable to the applicant.

c) Likely Significant Effects – In-combination

Paragraph on 'in-combination effects', for applicant: Relying on the mitigation measures associated with other projects to avoid in combination effects will not be adequate to comply with the requirements of the Habitats Regulations. Please advise on the likely significant effects generated by in combination effects between:

AMEP and the Neptune RE Tidal Stream Generator

AMEP and the Green Port development in Hull

Answer

51.19 Refer to report EX8.7 in the volume of supplementary environmental information accompanying these answers.

Paragraph on 'in-combination effects', for applicant: *Please advise if there are likely to be any other significant effects generated by Able MEP in combination with other plans or projects, if compensation measures are not taken into account. Please explain which plans and projects have been considered and how conclusions about likely significant effects have been reached.*

Answer

51.20 Refer to report EX44.1 in the volume of supplementary environmental information accompanying these answers.

d) Appropriate Assessment

Table 5, for Natural England: *The shadow appropriate assessment has reviewed the data on disturbance distances and has selected a distance of 275m (see HRA report, paragraph 6.3.8). It is assumed that any birds within 340 m of the development may experience disturbance. Do you agree with the selection of this distance? If not, what approach would you advise?*

Answer

51.21 The text has been misinterpreted. Paragraph 6.3.8 explains that the greatest disturbance distances are associated with recreational activity and provides an example of 340 m for Curlew. However, studies of construction disturbance suggest lower figures and the review by Cutts et al (IECS, 2008) proposes 275m for Curlew and lesser distances for other species. The author of the sHRA was referring to the Cutts et al review when stating that the disturbance distance presumed be the greatest distance for any species '*in the above review*', see below.

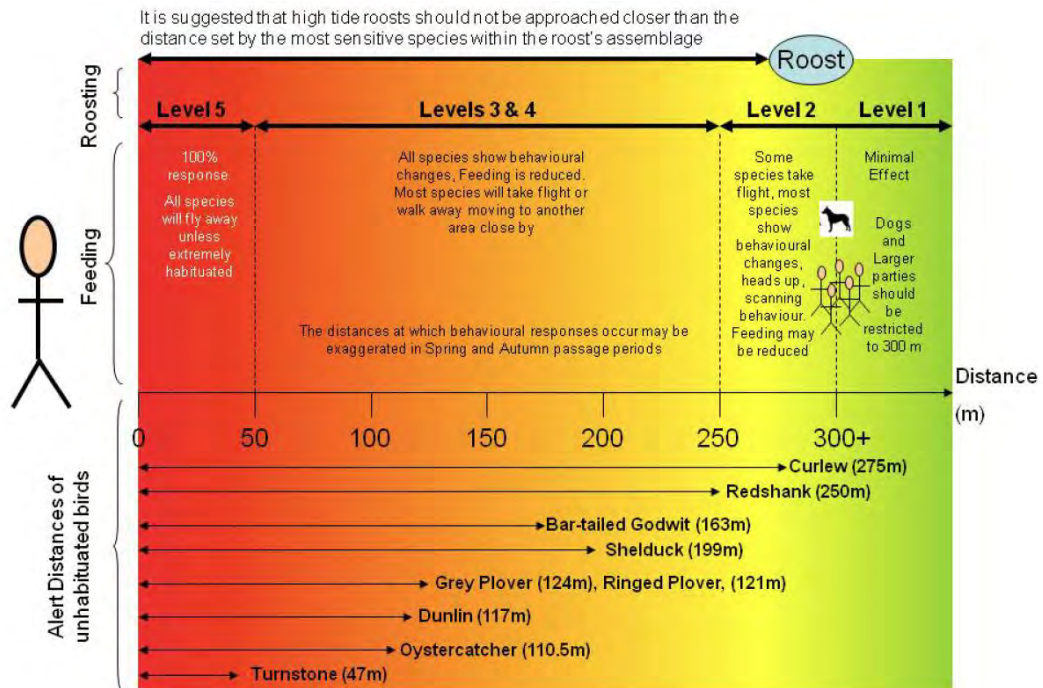


Table 5, for applicant: The shadow appropriate assessment assumes a disturbance distance of 275m (HRA report paragraph 6.3.8). Please could you confirm whether this is 275m from the boundary of the development or 275m from the noise source?

Answer

51.22 This distance will extend from the operational boundary of the quay.

Table 5-e, for applicant: HRA report paragraph 6.3.38 refers to the number of birds that are likely to be lost from North Killingholme Haven Pits, although previous paragraphs have said there will be no significant effects on the Haven Pits. Should this actually refer to Killingholme Marshes foreshore rather than the Haven Pits?

Answer

51.23 Yes. A known feeding resource will be lost as a consequence of the development and there is no certainty that an alternative resource exists within the Estuary; if that were the case, the population would reduce. The compensation proposal aims to avoid this impact. Disturbance levels within the NKHP will not be significantly affected by the proposals and its value will be retained.

Table 6-a, for applicant: The screening assessment in Annex D appears to combine the 'Salicornia and other annuals colonising mud and sand' with the 'Atlantic salt meadows' habitat type as having a significant positive effect but is not referred to in the shadow appropriate assessment (HRA report, Chapter 6).

Please could you explain why this is – if you are combining the two habitat types please explain why.

Answer

- 51.24 The conservation objectives for the site combine the two habitat types, so the screening assessment does likewise.
- 51.25 The net positive impact on this habitat type will occur as a consequence of the indirect effects of the quay. Over decadal timescales the areas in the lee of the reclamation will accrete and eventually become suitable saltmarsh habitat. This matter is explained in more detail in report EX11.24 included in the volume of supplementary environmental information accompanying these answers.

Table 6-c, for applicant: *Has the impact of maintenance dredging (including disposal of material) on migrating lampreys been considered?*

Answer

- 51.26 The sediment plume arising from either maintenance dredging or dredge disposal would give rise to a level of turbidity in the estuary which is lower than the natural turbidity maximum in the estuary, which is upstream of the Goxhill Bend. Accordingly, migrating lamprey must have passed through this zone of elevated turbidity on their downstream migration, and must subsequently pass through it again on their upstream migration. Since their natural behaviour **leads them to tolerate turbidity in excess of what will be caused by AMEP's maintenance dredging activities**, it is concluded that these activities have no significant impact on migrating lamprey.

Table 6-c, for EA/NE/MMO: *What conditions would you advise should be attached to the DCO to avoid or reduce impacts on lamprey? If there are residual impacts after mitigation what compensatory measures could be adopted?*

Answer

- 51.27 Not applicable to the applicant.

Table 6-c, for MMO: *The draft DCO states that both capital and maintenance dredging will be carried out according to a schedule of works to be agreed with the MMO. In your view, would it be possible to attach conditions to the works schedule which would mitigate the impacts on migrating lampreys?*

Answer

- 51.28 Not applicable to the applicant.

Table 6, for applicant: *Likely in combination effects on lamprey: Please could you explain what your understanding is of current environmental baselines with respect to noise and vibration, water abstraction, habitat disturbance and permanent habitat loss, the likely combined contribution of Able MEP and other*

plans or projects which have the potential to exacerbate the effects of Able MEP that fall in the following categories:

- a) All projects started but not yet completed;*
- b) All projects with consent but not yet started;*
- c) All projects subject to ongoing review e.g. annual licences;*
- d) All applications lodged but not yet determined;*
- e) All refusals subject to appeal procedures not yet completed;*
- f) All known projects that do not need consent;*
- g) All proposals in adopted plans*
- h) All proposals in draft plans formally published for consultation.*

Answer

- 51.29 Refer to report EX44.1 in the volume of supplementary environmental information accompanying these answers.

**QUESTIONS PRIMARILY FOR THE APPLICANT AND NORTH LINCOLNSHIRE
COUNCIL**

52 QUESTION 52

Does the introduction of the National Planning Policy Framework have any implications for the scheme?

Answer

52.1 No.

53 QUESTION 53

The application site falls within the Humber Enterprise Zone. What implications if any might that have for the discharge of requirements?

Answer

53.1 None.

QUESTIONS PRIMARILY FOR THE APPLICANT AND THE MARINE MANAGEMENT ORGANISATION (MMO)

54 QUESTION 70

Can the applicant and the MMO provide an agreed updated report on the status of the issues set out in the MMO's Relevant Representation? Specifically –

a) *What are the key outstanding issues, if any, in terms of data still to be provided or agreed?*

Answer

54.1 The Applicant's current understanding is set out in Table 54.1.

b) *What are the key provisions still to be agreed in relation to the draft Marine Licence?*

Answer

54.2 An updated version of the draft Marine Licence is included in Appendix B of the Applicant's comments on the Relevant Representations.



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Table 54.1 MMO Relevant Response Current Status

Key:

	Query Closed Out
	Action with MMO
	Action with Applicant

No	MMO	Able UK	MMO comments
7. Environmental Statement: Volume 1 Able Marine Energy Park			
Chapter 7, Geology, Hydrology and Ground Conditions			
7.1-7.3		<p>Informative paragraphs, no action required.</p> <p><u>28-6-12</u></p> <p>In response to 7.1:</p> <p>The definition given in the report is the one adopted for the purposes of the ES. Socio-economic effects can have a wider regional effect without having a significant local effect. Waste disposal may have a regional effect without having any direct local effect.</p>	<p><u>29-5-12</u></p> <p>We would like a response to 7.1.</p> <p>Agree no response required for 7.2 and 7.3</p>

No	MMO	Able UK	MMO comments
7.4	<p><i>The dredging of the reclamation area, anchorage trench, berthing pocket, approach channel and turning area have been considered in Chapter 7. Dredging requirements for the excavation works at the pumping station, the south back channel, of Stone Creek (mentioned in previous draft chapters of the ES but not the current one) and of plough dredging have not been included. In addition, it is not clear if the over-dredge of the berthing pocket has been accounted for in the values provided.</i></p>	<p><u>5-4-12</u></p> <p>The cofferdam for the construction of the pumping station will incorporate the existing flood defence wall which will be removed to allow outfall pipes to be laid; the wall will then be reinstated. The invert of the outfall pipes will be at +3.9mCD. A channel up to 20m wide will be excavated through the intertidal area at a shallow gradient to direct flows initially.</p> <p>Plough dredging is mentioned in Annex 7.6 as possible mitigation for the Centrica outfall. Work undertaken post submission is presented in HRW Technical Note DHR 4808-1 shows only the E-ON outfall is likely to be smothered and will need to be diverted. The frequency of plough dredging at the Centrica outfall is difficult to estimate; it should be subject to an agreed monitoring programme.</p> <p>The impact of the scheme on sedimentation in Stone Creek is assessed in Annex 32.4, Section 4.5 of</p>	<p><u>29-5-12</u></p> <p>I understand HR Wallingfords work will provide the dredge and disposal estimates required for the deemed marine licence. As such I provide no further comment on this until that report is received.</p> <p>The level of detail required is contained in our relevant representations.</p> <p>I understand you are not now seeking permission to dredge Stone Creek.</p>



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No	MMO	Able UK	MMO comments
		<p>the ES. Siltation is not expected to change as a consequence of the scheme. Nevertheless, an effect cannot be excluded due to the uncertainty attached to hydrodynamic modelling. Accordingly paragraph 4.5.5 recommends monitoring of sediment levels. Routine maintenance dredging is currently undertaken by the EA with (we understand) contributions from landowners and we would expect this to continue. It is considered that there is only a slight risk that the frequency of dredging operations increases due to the scheme. Any possible increase in maintenance dredging would be miniscule compared to the annual maintenance dredging on the Humber and is not be considered to give rise to a likely significant effect that needs specific assessment.</p> <p>Dredging volumes are being reviewed against more recent site investigation data.</p> <p><u>28-6-12</u></p> <p>We are not seeking consent to dredge Stone creek</p>	



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No	MMO	Able UK	MMO comments
		<p>Maintenance dredge variability is detailed in Report EX8.6 included in the volume of supplementary environmental information (SEI).</p>	
7.5	<p><i>These additional dredging and disposal operations are licensable activities under the 2009 Act. The MMO would prefer for these activities to be deemed within the DCO alongside the other marine licenses in order for the project to be considered as a whole. However, the Applicant will need to undertake an impact assessment of these activities to do so.</i></p>	<p><u>5-4-12</u></p> <p>Excavation within the cofferdam will be undertaken in dry conditions when there is no hydraulic connection with the estuary. Material will be disposed of on the land.</p> <p>The requirement to excavate a channel for the pumping station outfall is noted in Annex 8.3, Section 4. The potential requirement for maintenance dredging of the channel is also highlighted. It was agreed with Natural England that a similar feature that would be created in relation to a proposed pumping station for Able Logistics Park (NLC Planning Application Reference PA/2009/0600) simply represented a functional change to the habitat. It is estimated that the initial channel will be 25m wide, but this will narrow as it moves away from the discharge point. The initial channel dredge will make no difference to the impact assessment undertaken for</p>	<p><u>29-5-12</u></p> <p>See comments for 7.4</p>



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No	MMO	Able UK	MMO comments
		<p>capital dredging works.</p> <p>Increased dredging of Stone Creek is not anticipated (see above).</p> <p>Plough dredging causes sediment to be suspended in the lower reaches of the water body. Works would be undertaken on an ebb tide so that material resettles within the AMEP berthing pocket and approach channel and removed during maintenance dredging works.</p> <p><u>28-6-12</u></p> <p>Dredge operations and disposal is assessed in the ES. The MMO will need to define the omissions in the ES more precisely if they require further assessment.</p>	
7.6	<p><i>The MMO requests that the Applicant provides details of the location and quantity of material to be capital and maintenance dredged and disposed of the sea from these additional locations. The impact assessment in Chapter 7 and the Dredging Strategy at Annex 7.6 need to be updated to include this information.</i></p>	<p><u>5-4-12</u></p> <p>Capital Dredging</p> <p>Cofferdam: Approximately 2 000m³ of material will be excavated from the sea wall and incorporated into the development as fill.</p> <p>South Bank Channel: Approximately</p>	<p><u>29-5-12</u></p> <p>See comments for 7.4</p>



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No	MMO	Able UK	MMO comments
		<p>1000m³ will be dredged to initiate a channel through the intertidal areas.</p> <p>Stone Creek: None</p> <p>Plough Dredging: None</p> <p><i>Maintenance Dredging</i></p> <p>Cofferdam: None.</p> <p>South Bank Channel: Allow complete re-dredge every year.</p> <p>Stone Creek: None</p> <p>Plough Dredging: Nominal</p>	
7.7-7.13		Informative only	<p><u>29-5-12</u></p> <p>Agree that 7.7-7.13 are informative. However, it should be noted that full consideration of Ospar requirements will need to be undertaken again once the final dredge and disposal qualities are provided. Further sampling and analysis of areas not previously covered may be required and consideration of the Waste Framework Directive and</p>



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No	MMO	Able UK	MMO comments
			the Waste hierarchy is required (as per my email of 22 May 2012).
7.14	<p><i>The Applicant has provided further information to the MMO on this in the form of a Green Port Hull Cumulative Impacts Screening Assessment. However, this assessment has been made presuming that Green Port Hull is the same as Quay 2005. Whilst the Green Port Hull project does use the existing licenses granted for Quay 2005, there is additional work including infilling of part of Queen Alexandra Dock and additional dredging. Therefore the cumulative assessment screening needs to be updated allowing for this work, particularly as most cumulative impacts surround the dredging and changes to suspended sediment and coastal processes.</i></p>	<p><u>5-4-12</u> Estuary wide modelling to be reviewed <u>28-6-12</u> Refer to report EX44.1 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u> I understand JBA and ERM are undertaken additional work on the in-combination assessment. As such I provide no further comment on this until that report is received.</p>
7.17	<p><i>To conclude, based on the figures presented in the ES, 954,350m3 of non-erodible capital material is suitable for disposal to HU082 and 981,150m3 of erodible capital material is suitable for disposal to HU080. The deemed marine licence at Schedule 8 must be updated to reflect this latest advice.</i></p>	<p><u>5-4-12</u> Noted, BDB to consider appropriate drafting of the DML <u>28-6-12</u> Refer to reports EX8.5 - 8.10 in the Volume of SEI accompanying the</p>	<p><u>29-5-12</u> This will need to be updated following the findings of HR Wallingfords work. As such I provide no further comment on this until that report is received.</p>



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No	MMO	Able UK	MMO comments
		<p>Applicant's comments on the Relevant Representations.</p>	
7.18-7.20		<p>Informative</p> <p><u>28-6-12</u></p> <p>Refer to the Applicant's response to the Relevant Representations. Maintenance dredge variability is reported in EX8.6 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>Paragraphs 7.19 and 7.20 are not informative and require an action on Ables part. See comments for 7.4.</p>
7.21	<p><i>The impact assessment in Chapter 7, the Dredging Strategy at Annex 7.6 and the deemed marine licence need to be updated to reflect the additional dredging requirements from the south bank channel, Stone Creek (if to be undertaken) and the plough dredging around the E.ON and Centrica outfalls.</i></p>	<p><u>5-4-12</u></p> <p>Noted. The strategy will be amended and re-issued.</p> <p><u>28-6-12</u></p> <p>The impact assessment fully takes account of dredging and disposal operations. The Applicant is not seeking consent to dredge at Stone Creek.</p>	<p><u>29-5-12</u></p> <p>Once the HR Wallingford report is available we will need to ensure an adequate impact assessment of the dredge disposal activities has been undertaken.</p> <p>Following this, the deemed marine licence will need to be updated.</p>



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No	MMO	Able UK	MMO comments
			I am content for the updating of the Dredging Strategy to be a condition of the deemed marine licence.
7.22-7.24		Informative <u>28-6-12</u> Revised draft Deemed Marine Licence is included in Appendix B of the Applicant's comments on the Relevant Representations.	<u>29-5-12</u> 7.22 and 7.24 require conditions to be drafted to include in the deemed marine licence.
Annex 7.6 Dredging Strategy			
7.25	<i>The dredging plan produced by Westminster Dredging has not been amended to reflect the correct disposal sites mentioned in the rest of the document and in the DCO Application.</i>	<u>5-4-12</u> The deposit locations are consistent with those reported elsewhere in the ES. The document will be amended to reflect the current advice from MMO.	<u>29-5-12</u> I am content for the updating of the Dredging Strategy to be a condition of the deemed marine licence.
7.26	<i>The MMO requires that this Dredging Strategy be updated to reflect previous changes and the comments in these written representations.</i>	<u>5-4-12</u> Noted. Strategy to be revised	<u>29-5-12</u> see comments for 7.25



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No	MMO	Able UK	MMO comments
7.27	<i>The Dredging Strategy must also be updated to include all dredging and disposal activities to be undertaken as part of this project including the turning area, approach channel, berthing pocket, south bank channel, plough dredging, dredging for land reclamation, excavation at the pumping station and maintenance of Stone Creek, as well as any other dredge or disposal activities to take place which have not been mentioned in the DCO Application documents.</i>	<u>5-4-12</u> Noted. Strategy to be revised.	<u>29-5-12</u> see comments for 7.25
7.28	<i>The Dredging Strategy must be updated and be approved in writing by the MMO prior to any dredging operations commencing. This must be conditioned in the deemed marine licence.</i>	<u>5-4-12</u> Noted. Strategy to be revised.	<u>29-5-12</u> see comments for 7.25
Chapter 8 Hydrodynamic and Sedimentary Regime			
7.29-7.34		Informative <u>28-6-12</u> Refer to reports EX8.5 – 8.10 in the Volume of SEI accompanying the Applicant’s comments on the Relevant Representations.	<u>29-5-12</u> Agree 7.29 is information only, however 7.30-7.34 require further clarification. Information required to satisfy 7.30-7.32 should be provided in the HR Wallingford and JBA reports. The information requested in 7.34

No	MMO	Able UK	MMO comments
			should be provided.
7.35	<i>It would appear that the drainage channels of the currently terrestrial side of the compensation site are not represented in the model. Please comment on the significance of this.</i>	<p><u>5-4-12</u></p> <p>B&V to respond</p> <p><u>29-5-12</u></p> <p>The drainage channels are not part of the tidal system.</p>	<p><u>29-5-12</u></p> <p>I provide no further comment on this until the Black and Veatch comments are received.</p> <p><u>8-6-12</u></p> <p>Accepted</p>
7.39	<i>The increase in suspended material at the intake valves of the E.ON and Centrica power stations is also of some concern. Real-time monitoring of suspended sediment concentration is proposed near the power station intakes by the Applicant. A monitoring and mitigation strategy to assess, and where required mitigate, these changes must be agreed in writing with the MMO prior to any works commencing. The MMO requires a condition to this effect on the deemed marine licence (see paragraphs 5.16 to 5.18 for further discussion on conditions for the deemed marine licence). Consultation with the power station</i>	<p><u>5-4-12</u></p> <p>Both parties are being consulted</p> <p><u>28-6-12</u></p> <p>Meeting held with E.On 19th June and meeting with Centrica on 21st June. Discussions ongoing.</p>	<p><u>29-5-12</u></p> <p>It is likely that any mitigation or monitoring agreed with E.ON and or Centrica would need to be conditioned in the deemed marine licence. As such, I request that you keep the MMO informed of the progress of these discussions.</p>



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No	MMO	Able UK	MMO comments
	<p><i>operators (Centrica and E.ON) will be required in designing an effective monitoring programme with suitable management trigger thresholds.</i></p>		
7.40	<p><i>Construction of a new outfall structure is discussed as potential mitigation for the potential increase in suspended material at the intake valves of the power stations. The Applicant will require a licence under the 2009 Act for construction of a new outfall. The MMO would prefer for this to be deemed within the DCO alongside the other marine licenses in order for the project to be considered as a whole. However, the MMO has not found any assessment of this activity in the ES which would be required for the licence to be deemed within the DCO.</i></p>	<p><u>5-4-12</u></p> <p>Annex 9.6 of the ES assesses the temperature change in the water column above ambient. The temperature changes are too small to have an impact on any receptors and that finding is reported in paragraphs 9.8.32-9.8.34 of the ES.</p> <p><u>28-6-12</u></p> <p>Refer to report EX9.7 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>Adequate assessment of the impact of moving the outfalls does not appear to be made in Annex 9.6 of the ES. The Annex concludes (page 3) by saying that "..the horizontal extent of the [Centrica discharge] plume for a particular excess temperature at any time is <i>likely to be</i> no greater than <i>about twice</i> that shown in the Technical Note. Similarly, <i>it is considered likely</i> that the peak surface excess temperature near the E.ON intake <i>will probably</i> be no greater than <i>about twice</i> that shown in this Technical Note." <i>This opinion is unsupported by additional modelling at the present time and should be confirmed by additional modelling</i> if the option of moving the Centrica outfall is to be</p>



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No	MMO	Able UK	MMO comments
			<p>pursued further.</p> <p>We also require clarification on whether one or both of the outfalls will be moved such that a proper assessment of the works can be undertaken.</p> <p>Has any consideration been given to the new Killingholme Power Station being proposed by CGen.</p>
7.41-7.43		Informative	<p><u>29-5-12</u></p> <p>A condition relating to the requirement for monitoring plans should be drafted for inclusion on the deemed marine licence. We will provide further comments on this in due course.</p>
Chapter 10 Aquatic Ecology			
7.44	<p><i>With regards to table 10.13, the distance at which injuries, including Temporary Threshold Shift, could occur is more useful than the 'accumulation of energy' distance. Potentially, a marine mammal may only have to be within a certain</i></p>	<p><u>5-4-12</u></p> <p>ERM to comment</p>	<p><u>29-5-12</u></p> <p>I provide no further comment on this until the ERM comments are received.</p>



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No	MMO	Able UK	MMO comments
	<p><i>distance of the piling once to have some auditory damage such as a Temporary Threshold Shift in their hearing.</i></p>	<p><u>28-6-12</u> Refer to report EX10.5 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	
7.45	<p><i>Paragraph 10.6.46 states that "in a worst case scenario, harbour porpoises may display behavioural responses within a distance of 1.7km from the piling due to the maximum rms noise during a pulse". It then goes on to say that "they would only suffer potential auditory damage if they regularly approach within approximately 25.0 to 38.6km of the piling". Previous drafts of the ES stated "in a worst case scenario, harbour porpoises may display behavioural responses over a wide area (40.4 km from the piling)". The Applicant should clarify the position and ensure that the impact has been correctly assessed citing relevant studies where appropriate.</i></p>	<p><u>5-4-12</u> ERM to comment <u>28-6-12</u> Refer to report EX10.5 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u> I provide no further comment on this until the ERM comments are received.</p>
7.46	<p><i>The impact of piling on migratory fish populations, including Atlantic salmon and lamprey species, during the construction period is of some concern. The impacts of piling on these species</i></p>	<p><u>5-3-12</u> Discussions on-going with EA.</p>	<p><u>29-5-12</u> The MMO has received a copy of the latest proposal for mitigation that Able have submitted to the</p>

No	MMO	Able UK	MMO comments
	<p><i>will need to be mitigated. As such, the MMO requests that the Applicant submits a piling mitigation strategy. This must be developed in consultation with other relevant bodies, in particular the Environment Agency, and be agreed in writing with the MMO prior to works commencing. The mitigation must be detailed within the deemed marine licence for monitoring and enforcement purposes.</i></p>	<p><u>28-6-12</u></p> <p>The Applicant received details of the MMO's proposals for piling restrictions on 19th June and is currently reviewing them.</p>	<p>EA on this matter. We are still considering our position on this mitigation and propose the addition of three conditions to the deemed marine licence to mitigate for the impact of piling noise on fish, as detailed in comments for 7.48.</p>
7.47	<p><i>The construction of the Project could cause a barrier to the migration of lamprey species along the intertidal zone as the area is reclaimed. The impact has been mentioned in Table 10.10 and in paragraphs 10.6.59 and 10.6.62, stating that the lamprey could move through other parts of the estuary. However, the MMO does not consider that this is sufficient justification for the conclusion of no significant effect.</i></p>	<p><u>5-4-12</u></p> <p>What evidence exists for the premise that lamprey migrate preferentially along the intertidal zone?</p> <p>Able procured a report from the Institute of Estuarine and Coastal Studies on Lamprey and it is included in the ES at Annex 10.2. Paragraph 70 records that intertidal areas are not essential habitat for Lamprey.</p> <p><u>28-6-12</u></p> <p>The Applicant received details of the MMO's proposals for piling restrictions on 19th June and is currently reviewing</p>	<p><u>29-5-12</u></p> <p>We have reviewed Annex 10.2 in more detail and agree with the assessment made. We therefore request no further information on this. We propose the addition of three conditions to the deemed marine licence to mitigate for the impact of piling noise on fish, as detailed in comments for 7.48.</p> <p><u>6-8-12</u></p> <p>The MMO are currently discussing mitigation for the impact of piling on marine</p>



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No	MMO	Able UK	MMO comments
		them.	species with NE and EA. A draft was sent to Peter Stephenson on 8/6/12 from Annette Hewitson (EA). We will provide further comment in due course.
7.48	<p><i>Paragraph 10.8.6 states that "a significant impact to local resident fish populations beyond those that would succumb to the loss of subtidal habitat is possible". The only point at which any impact is mentioned is in paragraph 10.6.56. However other than to state there may be a locally significant effect, the impact is never described or quantified. Whilst the paragraph goes on to state that the conservation designations of the Humber Estuary SAC may not be affected, this is not to say the fish populations would not be affected either. A full description of the potential impact on resident fish populations should be provided.</i></p>	<p><u>5-4-12</u> ERM to respond</p> <p><u>28-6-12</u> Refer to report EX10.4 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>The MMO has undertaken a thorough review of the fisheries information, including commercial fisheries as well as migratory populations and proposes the following mitigation for the impacts of noise form piling activities.</p> <p>The Licence Holder must ensure that soft-start procedures are used to ensure incremental increase in pile power over a set time period until full operational power is achieved. The soft-start duration should be a period of not less than 20 minutes. Should piling cease for a period greater than 10 minutes, then the soft start procedure must be repeated.</p>



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No	MMO	Able UK	MMO comments
			<p><i>To allow mobile sensitive receptors to move away from the noise source, and reduce the likelihood of exposing the animal to sounds which can cause injury.</i></p> <p>Piling is not permitted during the period of between the 1st - 31st May to minimise the impact on smolt and elver migration.</p> <p><i>May is the peak smolt run period and peak migration period for Elvers coming into the estuary, this condition will minimise the impact on smolt and Elvers migration.</i></p> <p>Piling between 1st August and the 31st October must take place only during low tide and during daylight hours to further</p>



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No	MMO	Able UK	MMO comments
			<p>minimise the impacts on salmon migration.</p> <p><i>This is to mitigate the impacts on the remaining salmon migration period and any juvenile herring present, as most of the piling noise will travel through the air rather than the water.</i></p> <p><u>6-8-12</u></p> <p>The MMO are currently discussing mitigation for the impact of piling on marine species with NE and EA. A draft was sent to Peter Stephenson on 8/6/12 from Annette Hewitson (EA). We will provide further comment in due course.</p>
7.49	<p><i>In general, many statements of impact are made but are not evidenced or backed up by appropriate references (for example, paragraphs 10.6.44, 10.6.47, 10.6.49 and 10.6.56). While there are references within paragraph 10.6 as a</i></p>	<p><u>5-4-12</u> ERM to respond</p>	<p><u>29-5-12</u> I provide no further comment on this until the ERM comments are received.</p>



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No	MMO	Able UK	MMO comments
	<p><i>whole, all statements of impact need to be evidenced. Worked examples of how significance was calculated would assist interpretation.</i></p>	<p><u>28-6-12</u> Environmental impacts cannot always be assessed quantitatively.</p> <p>Refer to report EX10.4 - 10.6 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations for further impact assessment.</p>	
7.50	<p><i>An auditable methodology of significance assessment is not provided in this Chapter; there are only statements as to whether an impact is significant, in many cases, not backed up by any references. The Applicant needs to provide these methodologies for consideration. Impact tables or matrices of significance, as provided in Chapter 12, would also aid interpretation.</i></p>	<p><u>5-4-12</u> ERM to respond</p> <p><u>28-6-12</u> Refer to report EX10.4 - 10.6 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations for further impact assessment.</p>	<p><u>29-5-12</u> I provide no further comment on this until the ERM comments are received.</p>
Chapter 14 Navigation			
7.51-7.53		Informative, noted.	<p><u>29-5-12</u> Conditions relating to 7.51-7.53 should be drafted for inclusion</p>



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No	MMO	Able UK	MMO comments
7.54	<p><i>The Applicant will require a licence under the 2009 Act for the construction, deposit and/or removal of any permanent or temporary pilings or mooring dolphins. The MMO would prefer for this to be deemed within the DCO in order for the project to be considered as a whole. However, the MMO has not found any environmental impact assessment of this activity in the Environmental Statement which would be required for the licence to be deemed within the DCO as discussed at paragraphs 4.9 to 4.11.</i></p>	<p><u>5-4-12</u></p> <p>The impact of installing temporary dolphins is covered by the piling assessment.</p>	<p>on the deemed marine licence. We will provide further comments on this in due course.</p> <p><u>29-5-12</u></p> <p>We are currently still considering this point.</p>
	<p>8. Environmental Statement: Volume 2 Compensation Site</p>		
<p>Chapter 28 Description of Development</p>			
8.1-8.2		<p>Informative</p>	<p><u>29-5-12</u></p> <p>Agree.</p>
8.3	<p><i>Erosion protection may be required, for example concrete blocks or rockfill. The Applicant may require a licence under the 2009 Act for this activity if the activity is taking place below mean high water</i></p>	<p><u>5-4-12</u></p> <p>Rock armour is proposed at the northern and southern revetments. The rock armour will be imported by road</p>	<p><u>29-5-12</u></p> <p>We are currently still considering this point.</p>



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No	MMO	Able UK	MMO comments
	<p><i>springs. The MMO would prefer for this to be deemed within the DCO alongside the other marine licenses in order for the project to be considered as a whole. However, the MMO has not found any environmental impact assessment of this activity in the Environmental Statement which would be required for the licence to be deemed within the DCO.</i></p>	<p>and placed by land based plant. What likely significant effect is anticipated and has not been assessed in the ES?</p>	
8.4	<p><i>It is not clear whether the final resulting areas of expected salt marsh, mud flat and subtidal habitat will compensate for lost habitat at the main site in a "like for like" fashion. This needs to be clarified by the Applicant.</i></p>	<p><u>5-4-12</u></p> <p>Annex 1 of the EC Directive 92/43/EEC does not identify subtidal habitat per se, as a specific habitat type.</p> <p>Three habitat types in the marine environment are affected by the works: mudflat (1140), estuary (1130) and annuals colonising mud and sand (1310). These specific habitat types are being compensated on a 'like for like' basis.</p> <p><u>28-6-12</u></p> <p>Refer to reports EX11.23 - 11.24 in the Volume of SEI accompanying the Applicant's comments on the Relevant</p>	<p><u>29-5-12</u></p> <p>I understand you are producing a table of habitat loss and habitat creation. We request a copy of this note and will provide further comments on this point once that has been received.</p>



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No	MMO	Able UK	MMO comments
		Representations.	
8.5	<p><i>The anticipated areas of mud flat and salt marsh (after five years) alongside the areas of mud flat and salt marsh lost as a result of the development have not been provided. This is required to assess the effectiveness of the proposed Compensation Site (CS).</i></p>	<p><u>5-4-12</u></p> <p>Black and Veatch provided professional opinion to Natural England before the application was submitted. They are now undertaking the detailed design.</p> <p><u>28-6-12</u></p> <p>Refer to reports EX28.1 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>The MMO requests a copy of this report. As such I provide no further comment on this until that report is received.</p>
8.6		Informative	<p><u>29-5-12</u></p> <p>A condition relating to the requirement for monitoring plans should be drafted for inclusion on the deemed marine licence. We will provide further comments on this in due course.</p>

No	MMO	Able UK	MMO comments
Chapter 32 Hydrodynamic and Sedimentary Regime			
8.7	<p><i>Annex 32.2, paragraph 3.1: The model performance could be tested using the adjacent coastal realignment (i.e. Paull Holme Strays). As the forcing conditions are the same, such a test would give an indication of the reliability of the model as compared to the current situation in which there are no calibration data for the area of interest.</i></p>	<p><u>5-4-12</u> B&V to respond</p> <p><u>29-5-12</u> Attempting a test using Paull Holme Strays as suggested would add another set of uncertainties without necessarily demonstrating that the Cherry Cobb Sands Model was reliable.</p> <p>It is important to note that the Tuflow modelling software used is standard software routinely used by the Environment Agency for modelling inundation of tidal and fluvial floodplains.</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u> Accepted</p>
8.8	<p><i>Annex 32.2, paragraph 3.3.6: The suggestion that the large differences between the two models is due to model resolution (and a more uneven surface in the higher resolution model) appears speculative. Evidence for this suggestion and reasoning as to why field measurements were not taken to validate the model (in Cherry Cobb</i></p>	<p><u>5-4-12</u> B&V to respond</p> <p><u>29-5-12</u> The detailed model has a 10m grid compared to the 100m grid used in the</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u></p>



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No	MMO	Able UK	MMO comments
	<p><i>Creek, for example) should be provided.</i></p>	<p>model of the whole Humber, hence there is much greater bathymetry detail in the detailed model than in the whole Humber model. The detailed model was nested within the Humber model and boundary conditions from the Humber model used to drive the detailed model. The whole Humber model was validated against levels and velocities within the estuary and the detailed model verified against output from the Humber model at the same grid location. Unfortunately we do not know the bed levels in the Humber model at the locations chosen, but because of differing grid resolution there are likely to be some differences in bed level in the two models at the point where comparisons are made.</p> <p>Field measurements would have been desirable, but are difficult in intertidal conditions such as on top of Foulholme Sand and in Cherry Cobb Sands Creek. The operation of this particular model in the area of interest is almost totally determined by the bathymetry, so the potential increase in reliability and confidence in the model results was not</p>	<p>Validation of one model using another model always adds uncertainty to conclusions. Measurements in intertidal areas can be difficult but are achievable (especially on the lower intertidal area where water depths are greater at high water) and would provide greater confidence in the conclusions of the modelling study. It needs to be demonstrated that there are no gross errors in the model thereby making its predictions unreliable. We request that you provide some figures for the range of velocities predicted in the intertidal areas by the model, and a brief assessment of whether these velocities are realistic. Ideally the assessment should make reference to measurement of velocity taken somewhere comparable within the estuary. Making this assessment would give some reassurance that the model predictions are valid, and need not be an onerous task.</p>

No	MMO	Able UK	MMO comments
		considered sufficient to justify the investment.	
8.9	<p><i>Annex 32.2, paragraph 3.3.7: A potential issue with the wetting and drying of surfaces in the model is cited for spikes at points 1 and 2. However, if this were the case one might reasonably expect to observe the same behaviour at all intertidal sites. However, this is not the case. Further discussion and justification is required to identify the likely causes and whether or not the model performance is acceptable.</i></p>	<p><u>5-4-12</u> B&V to respond</p> <p><u>29-5-12</u> The cause of some spikes is certainly due to wetting and drying process. This can also be seen on tide levels and flow direction plots (i.e. Figure 6 and 7 respectively). Tuflow manual warns that "... high velocities can briefly occur during the wetting process, and are not particularly representative of the peak velocity".</p> <p>Spikes at sites 1 and 2 are linked to wetting and drying. Spikes after HW time at sites 3, 5 and 7 are thought to be due to some instability in the model.</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u> Accepted</p>
8.10	<p><i>Annex 32.2, paragraph 3.3.10: The model results/performance should be</i></p>	<p><u>5-4-12</u></p>	<p><u>29-5-12</u> I provide no further comment on</p>



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No	MMO	Able UK	MMO comments
	<p><i>compared statistically using an objective approach. On a number of the plots in Figure 7, the velocity, magnitude and phase are incorrect. For example, sites 2, 5 and 7 show significant magnitude or phase deviations between the two models.</i></p>	<p>B&V to respond</p> <p><u>29-5-12</u></p> <p>It is important to remember that we are comparing one model against another, either/ both of which could be in error. Such an 'objective approach' may not help in the assessment of model reliability. Major differences at sites are considered in the preceding paragraphs. Hence in this instance we considered statistical methods were not helpful.</p> <p>We agree that there are differences at the cited points. The specific cause is not known, and which is closer to field conditions is also not known. Important to remember that the detailed model contains a much better representation of bathymetry than the whole Humber model, including a full representation of Cherry Cobb Sands Creek which takes drainage from the landward half of Foulholme Sands. Site 2 is in this part of the sandbank.</p>	<p>this until the B&V comments are received.</p> <p><u>8-6-12</u></p> <p>This uncertainty adds weight to the comments in point 8.8 above.</p> <p>We agree that the differences are most likely to arise from differences in the model grids.</p>



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No	MMO	Able UK	MMO comments
		<p>We concluded that given the difference in model grid the differences were quite small.</p>	
8.11	<p><i>Annex 32.3, paragraph 3.4.5 and 3.4.11: The CS is predicted to give an increase in the maximum average current of 44% from 0.67 m/s to 0.97 m/s between the outlet and Stone Creek. It is stated that there will be increased erosion in this area, but no formal assessment is made to show whether this is correct and, if erosion is to occur, to what levels. As significant deepening is a highly likely impact of the proposed compensation site, it should be quantified in the assessment.</i></p>	<p><u>5-4-12</u> B&V to respond</p> <p><u>29-5-12</u> No assessment of the likelihood of erosion is included in Annex 32.2. This issue is covered in Annex 32.4 (section 4.4) and Annex 32.6 (section 3.3).</p> <p>These annexes do not quantify the deepening that will occur. The detailed modelling of the compensation site currently underway will be extended to assess the enlargement of Cherry Cobb Sands that is likely to occur because of the higher velocities.</p> <p><u>28-6-12</u> Refer to reports EX28.1 in the Volume of SEI accompanying the Applicant's</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u> We welcome the extension of the detailed modelling work and will provide further comment on this once that report is received.</p>



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No	MMO	Able UK	MMO comments
		<p>comments on the Relevant Representations.</p>	
8.12	<p><i>The MMO understands that further modelling work is being undertaken by the Applicant to predict the development of the realignment site for the first 10 years. The MMO would wish to see the results of this modelling and would need to have sight of any new design for the compensation site, along with a detailed method statement which would need to be agreed prior to works commencing.</i></p>	<p><u>5-4-12</u></p> <p>Noted, the design is currently being undertaken.</p> <p><u>28-6-12</u></p> <p>Refer to reports EX28.1 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>I provide no further comment on this until the B&V comments are received.</p>
8.13	<p><i>Annex 32.4: It has been stated that there are no data available for calibration and validation of the model. The Applicant should consider what evidence there is that this model has correctly predicted the effects of a coastal realignment, or how this may be assessed if no evidence readily exists. Although the CS under consideration here does not presently exist, there are other sites in and near the Humber estuary where similar</i></p>	<p><u>5-4-12</u></p> <p>B&V to respond, telecom on 10-5.</p> <p><u>29-5-12</u></p> <p>Please see earlier response at point 8.7 on the value of a blind test. This particular model has not been used for previous Humber managed realignment</p>	<p><u>29-5-12</u></p> <p>I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u></p> <p>The difficulty of validating the modelling predictions is</p>



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No	MMO	Able UK	MMO comments
	<p><i>activities have occurred. These sites would make an ideal blind-test of the model – that is the model could be run without calibration/validation and compared afterwards with field data from an established re-alignment site. This would give confidence in the model results. It would be useful to know if the model was used previously with any of the Humber sites and, if so, how well it performed.</i></p>	<p>sites. Previous realignment schemes have used MIKE 21 and Delft3D software in 2D mode. Model performance of water levels and inundation extent has been good. Siltation predictions were less reliable, especially at Paull Holme Strays. For this study we have taken advantage of experience at PHS reported in Annex 32.5 and Annex 32.4 (section 4.1) to 'calibrate' accretion and erosion predictions.</p>	<p>acknowledged and accepted, and the use of knowledge gained from Paull Holme Strays is welcomed.</p>
8.14	<p><i>Annex 32.4, paragraph 3.5.7: At point 16 there is a considerable change in flow speed. This is likely to scour a deeper channel and result in a slower speed. This model does not assess changes in bed level, which is a limitation. However, one could make predictions of the scour in the channel and use this information to model an anticipated 'equilibrium' channel configuration. At present the model only investigates the initial conditions rather than the hydrodynamic conditions that are likely to persist.</i></p>	<p><u>5-4-12</u> B&V to respond, telecom on 10-5. <u>29-5-12</u> We agree and as indicated in 8.12 new modelling work will include reporting on scour in the creek. <u>28-6-12</u> Refer to reports EX28.1 in the Volume of SEI accompanying the Applicant's comments on the Relevant</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are received. <u>8-6-12</u> We welcome the extension of the detailed modelling work and will provide further comment on this once that report is received.</p>



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No	MMO	Able UK	MMO comments
		Representations.	
8.15	<p><i>Annex 32.4, paragraph 4.3: This paragraph is important, but it is only briefly documented and reported. The time-series of bed shear stress, plotted along with the critical deposition and erosion values, would be informative and should be included. Likewise, an explanation of why the increased velocities at point 19 (Figure 14b) result in a reduction (rather than the expected increase) in the annual erosion estimate (Table 12) would also be useful.</i></p>	<p><u>5-4-12</u> B&V to respond, telecom on 10-5.</p> <p><u>29-5-12</u> The time series of bed shear stress will be provided in the report of detailed modelling of the 100ha compensation site currently in progress.</p> <p><u>28-6-12</u> Refer to reports EX28.1 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u> We welcome the extension of the detailed modelling work and will provide further comment on this once that report is received.</p>
8.16	<p><i>Annex 32.4, paragraphs 5.1.2 and 5.1.3: The qualitatively forecast "high erosion levels" in the Cherry Cobb Sands Creek should be quantified (i.e. erosion/accretion estimates) as for</i></p>	<p><u>5-4-12</u> B&V to respond, telecom on 10-5.</p>	<p><u>29-5-12</u> I provide no further comment on this until the B&V comments are</p>



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No	MMO	Able UK	MMO comments
	<p><i>other parts of the study area. This should be done upstream and downstream of the breach where accretion and erosion (respectively) are expected.</i></p>	<p><u>29-5-12</u></p> <p>As indicated in 8.12 and 8.14, erosion and accretion estimates for Cherry Cobb Sands Creek will be made as part of the detailed modelling studies underway.</p> <p><u>28-6-12</u></p> <p>Refer to report EX28.1 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p>received.</p> <p><u>8-6-12</u></p> <p>We welcome the extension of the detailed modelling work and will provide further comment on this once that report is received.</p>
		<p>Chapter 33 Water Quality and Sediment Quality</p>	
<p>8.17 - 8.18</p>		<p>Informative</p>	<p><u>29-5-12</u></p> <p>Agree</p>
<p>8.19</p>	<p><i>The results from locations TH11 and TH12 are higher than Cefas Action Level 2 for copper, mercury, lead and zinc; however it is unclear whether the methods are comparable to those used to determine the Cefas Action Levels.</i></p>	<p><u>5-4-12</u></p> <p>These trial pit locations lie outside the realignment site.</p>	<p><u>29-5-12</u></p> <p>We have been provided with the trial pit location sites and confirm that, since these sites are outside of the realignment</p>



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No	MMO	Able UK	MMO comments
	<p><i>The MMO requests that details of the analytical methodologies used are provided in order to assess the comparability of this data. If it is not possible to compare the results with MMO criteria, the MMO may require re-sampling and testing using Cefas methods to ensure the direct comparison of TH11 and 12.</i></p>		<p>site, we have no further comment to make on this.</p>
8.20	<p><i>TH11 and TH12 also showed higher levels of pyrene and flouranthene than background levels in the Humber. The methods for these analyses also need to be provided to the MMO to determine the suitability of the data for a direct comparison to Cefas Action Levels.</i></p>	<p><u>5-4-12</u> These trial pit locations lie outside the realignment site.</p>	<p><u>29-5-12</u> We have been provided with the trial pit location sites and confirm that, since these sites are outside of the realignment site, we have no further comment to make on this.</p>
8.21	<p><i>Some sites were also tested for dichlorodiphenyldichloroethylene (DDE) and dieldrin however the limits of detection are several orders of magnitude above Cefas Action Level 1 (0.2 PPM and 0.001 PPM respectively). DDE and dieldrin concentrations have not, therefore, been adequately assessed for risk assessment purposes and will require further sampling and analysis.</i></p>	<p><u>5-4-12</u> A second stage SI has commenced. <u>28-6-12</u> Refer to report EX31.5 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u> Able have provided the MMO with the methodologies used for the additional site investigation works have the following comments:</p> <ul style="list-style-type: none"> • DDT and it's derivatives will need to be tested by a laboratory who can achieve an LOD below Cefas action level 1 (for example, the



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No	MMO	Able UK	MMO comments
			cefas laboratory); <ul style="list-style-type: none"> • Analysis of TBT and PCBs is also required; • Samples at depths for all contaminants is also required. It may be sensible to wait for the final design of the compensation site to be agreed to ensure that the sampling at depth is appropriate; • The MMO would need to approve any remediation work undertaken. Full advice was provided to Jenn Dawes on 29/05/12.
8.22	<i>The MMO understands that the Applicant is intending to undertake additional site investigation works. The MMO strongly recommend that the MMO are consulted on the scope of these works and the methodologies to be used to ensure that the results can adequately describe the contamination and pollution risk for the marine environment.</i>	<u>5-4-12</u> Noted, consultation has commenced. <u>28-6-12</u> Refer to report EX31.5 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.	<u>29-5-12</u> see comments for 8.21



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No	MMO	Able UK	MMO comments
8.23	<p><i>The MMO would require that works are not allowed to commence at the compensation site until the information requested in paragraphs 8.17 to 8.22 is provided to the MMO and the MMO has agreed in writing that the works should commence. Should the methodologies used be insufficient to be able to assess the risk of pollution to the marine environment, the MMO would require additional sampling and analysis of sediments to be undertaken place prior to works commencing. The MMO would require that this is made a condition of the deemed marine licence.</i></p>	<p><u>5-4-12</u></p> <p>Noted, BDB to consider appropriate drafting of the DML</p> <p><u>28-6-12</u></p> <p>Revised draft Deemed Marine Licence is included in Appendix B of the Applicant's comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>see comments for 7.25</p>
8.24	<p><i>Paragraph 33.6.3 states "the sensitivity of the receiving estuarine waters to contaminants is considered to be medium and the magnitude of effect to be medium, resulting in a moderate negative significant effect". Evidence of this statement has not been provided. Where possible, appropriate mitigation should be proposed and be detailed in the deemed marine licence.</i></p>	<p><u>5-4-12</u></p> <p>B&V to respond, telecom on 10-5.</p> <p><u>29-5-12</u></p> <p>If the second stage SI shows contaminated land is present within the proposed managed realignment site, a mitigation strategy will be proposed in line with the risk assessment of Annex</p>	<p><u>29-5-12</u></p> <p>I provide no further comment on this until the B&V comments are received.</p> <p><u>8-6-12</u></p> <p>We welcome the additional SI work and will provide further comment on the SI work and the</p>



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No	MMO	Able UK	MMO comments
		<p>31.4.</p> <p>We will advise MMO on testing procedures.</p> <p><u>28-6-12</u></p> <p>Refer to report EX31.5 in the Volume of SEI accompanying the Applicant's comments on the Relevant Representations.</p>	<p>mitigation strategy once this information is received. Please see email to Jenn Dawes (Able UK) dated 29/05/2012 regarding our position on sampling and analysis requirements.</p>
8.25	<p><i>Paragraph 33.6.7 mentions that a soke dyke will need to be relocated. It is unclear whether this is below mean high water springs, but there is mention that the waters are saline, which implies that it is. Depending on its current and proposed location, this may require a licence under the 2009 Act. Details of the current and proposed location of the soke dyke should be provided to the MMO, as well as a brief intended method statement in order to clarify this point. Should this activity require a licence under the 2009 Act, the MMO</i></p>	<p><u>5-4-12</u></p> <p>Plan AME-02016 shows the diverted position of the soke dyke behind the new flood defence. The existing feature is behind the existing defence. Neither the existing nor diverted drain lie within the marine environment.</p>	<p><u>29-5-12</u></p> <p>We are currently still considering this point.</p>



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No	MMO	Able UK	MMO comments
	<p><i>would prefer for this to be deemed within the DCO in order for the project to be considered as a whole. However, the MMO has not found any assessment of this activity in the ES which would be required for the licence to be deemed within the DCO.</i></p>		
Chapter 34 Aquatic Ecology and Nature Conservation			
8.26	<p><i>Paragraph 34.6.2 states that while there will be damage to the salt marsh due to construction vehicles, but it will recover quickly. There is no evidence or references for this statement and further clarification is required.</i></p>	<p><u>5-4-12</u></p> <p>The paragraph needs to be read in the context of the previous paragraph. There should be no permanent or significant indirect effect on saltmarsh beyond the excavated channel.</p>	<p><u>29-5-12</u></p> <p>We are currently still considering this point.</p>
8.27	<p><i>Previous drafts of this chapter have mentioned that the removal of salt marsh and placement of any protective matting for vehicles tracking across salt marsh will be required during construction. There is no reference to this in the final ES; however, the applicant has agreed that there will be some excavation of the foreshore during construction. Clarification is sought from the Applicant on whether this will form part of the construction methodology. If these activities are due to occur an impact</i></p>	<p><u>5-4-12</u></p> <p>Paragraph 34.6.1 notes that approximately 2ha saltmarsh will be removed to create a drainage channel into the site. This is being compensated for within the realignment site. Vehicles will use bog mats if required but this will not have any additive effect since the machines will operate within the channel that is being created. The bog mats will be recovered on completion of the works.</p>	<p><u>29-5-12</u></p> <p>We are currently still considering this point.</p>



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No	MMO	Able UK	MMO comments
	<p><i>assessment should be made of them in this DCO Application for the project to be considered as a whole.</i></p>		
8.28	<p><i>The removal of salt marsh and placement of protective matting below mean high water springs are licensable activities under the 2009 Act. Should they be taking place, the MMO would prefer for this to be deemed within the DCO alongside the other marine licenses in order for the project to be considered as a whole. However, the MMO has not found any assessment of this activity in the ES which would be required for the licence to be deemed within the DCO (as discussed in paragraphs 4.9 to 4.11). This would need to include describe the maximum envisaged extent of matting and the impact of the matting on the marine environment. This should also be included in the in-combination and cumulative impacts assessment for salt marsh habitat.</i></p>	<p><u>5-4-12</u></p> <p>The loss of saltmarsh is covered in the ES, is compensated for (refer to Table 11.16 and 11.17).</p> <p>The use of bog mats will not give rise to any likely significant effects.</p> <p><u>28-6-12</u></p> <p>Refer to report EX11.23 – 11.24 in the Volume of SEI accompanying the Applicant’s comments on the Relevant Representations.</p>	<p><u>29-5-12</u></p> <p>We are currently still considering this point.</p> <p>We expect losses and gains of saltmarsh to be covered in the note mentioned at 8.4</p>
8.29		Informative	<p><u>29-5-12</u></p> <p>A condition relating to the requirement for monitoring plans should be drafted for inclusion on the deemed marine licence.</p>



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No	MMO	Able UK	MMO comments
			We will provide further comments on this in due course.
Chapter 36 Drainage and Flood Risk			
8.30	<i>Previous drafts of this chapter mentioned possible dredging of Stone Creek if siltation levels rise. Any specific reference to dredging has been removed but there is now mention of a monitoring and maintenance plan which will identify mitigation works (see paragraph 7.41).</i>	<p><u>5-4-12</u></p> <p>See response to 7.4</p> <p><u>28-6-12</u></p> <p>The Applicant will undertake monitoring of siltation levels in Stone Creek.</p>	<p><u>29-5-12</u></p> <p>See comments for 7.4</p>
8.31	<i>The MMO requests that the Applicant clarifies whether additional dredging is likely to be required. If there is potential for additional dredging, the environmental impacts of this should be assessed in this DCO Application for the project to be considered as a whole.</i>	<p><u>5-4-12</u></p> <p>The impact of the scheme on sedimentation in Stone creek is assessed in Annex 32.4, Section 4.5 of the ES. Siltation is not expected to change as a consequence of the scheme. Nevertheless as an effect cannot be excluded due the uncertainty attached to hydrodynamic modelling. Accordingly paragraph 4.5.5 recommends monitoring of sediment levels. Routine maintenance dredging is currently undertaken by the EA with contributions from landowners and will have to continue. It is considered that</p>	<p><u>29-5-12</u></p> <p>I understand you are not now seeking permission to dredge Stone Creek.</p>



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No	MMO	Able UK	MMO comments
		<p>there is only a slight risk that the frequency of dredging operations increases due to the scheme. Any possible increase in maintenance dredging would be miniscule compared to the annual maintenance dredging on the Humber and could not be considered to give rise to a likely significant effect.</p>	
8.32	<p><i>Any dredging or disposal would require a licence under the 2009 Act. The MMO would prefer for all licenses under the 2009 Act to be deemed within the DCO alongside the other marine licenses in order for the project to be considered as a whole. However, the MMO has not found any environmental impact assessment of this activity in the ES which would be required for the licence to be deemed within the DCO.</i></p>	<p><u>5-4-12</u> No dredging is anticipated</p>	<p><u>29-5-12</u> I understand you are not now seeking permission to dredge Stone Creek.</p>

QUESTIONS PRIMARILY FOR THE APPLICANT AND NATURAL ENGLAND

55 QUESTION 94

Have Natural England and the applicant reached agreement on the issues set out in paragraph 1.20 of Natural England's Relevant Representation? If not, what is the state of the applicant's progress on each of the matters set out in Appendices 1 to 4 of that representation?

Answer

55.1 Refer to the Applicant's comments on NE's relevant representation.

56 QUESTION 95

What is the current state of discussion and agreement on the draft European Protected Species licence?

Answer

56.1 With respect to Great Crested Newts, refer to the Natural England correspondence to the applicant included in EX11.20 within the volume of supplementary environmental information accompanying these answers.

QUESTION PRIMARILY FOR THE APPLICANT AND STATUTORY UNDERTAKERS

57 QUESTION 98

Please provide an update on any discussions relating to s.127 of the PA 2008.

Answer

- 57.1 To date, the promoter has made two applications for certificates under s127 of the Planning Act 2008, both to the Secretary of State for Transport. The first was for a certificate, or alternatively a declaration that a certificate is not required, for the acquisition of a triangle of onshore land from ABP, and the second is for a certificate for the acquisition of the Order land along which a railway runs from Network Rail. Both applications have been acknowledged and the letters of application have been copied to ABP and Network Rail respectively but nothing further has occurred. The promoter may need to make further applications should it not reach agreement with other statutory undertakers whose land is being acquired and where they have objected to this.



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**APPENDIX A
NE ADVICE TO THE APPLICANT ON DISTURBANCE BUFFERS TO BIRD
MITIGATION AREAS**

Advice from Natural England and RSPB on suitable buffers for SPA and Ramsar waterbird mitigation areas within the South Humber Gateway.

Introduction

As reported in Cruickshanks *et al* 2010 “Disturbance to birds is a complex issue, as it can result in a range of impacts, most of which involve a change in behaviour by the birds (such as birds flying away from particular areas). It is very difficult to interpret such behavioural responses in terms of their population context and a range of other factors (such as prey abundance) will interact to determine whether there are real consequences of disturbance at a population scale. The issue is particularly complex on the Humber, a large estuary system, where a range of factors may affect the birds”.

The effect of disturbance on birds is often measured as an escape flight distance, the distance at which birds take flight from a disturbance source. However, the reaction of waterbirds to disturbance, ranges from no observable response to escape flight with intermediate reactions such as increased heart rate, increased alertness, and walking or swimming away from the source of disturbance. All of these reactions can lead to increased energy expenditure as well as reduced food intake which may have an effect at an individual and population level, especially during times of severe weather when birds may be less able to meet their energy requirements. Similarly, the disturbance period, or the period of time it takes for a flock of birds to resume its activities prior to the disturbance, varies according to species, the nature of the disturbance and the degree to which birds are habituated.

IECS’s disturbance report (2008) refers to a zone of effect “The extent of this zone of impact will depend on a series of factors including the composition of the waterfowl species assemblage present and the type(s) of avifaunal activity in the area and existing habituation levels, as well as the type and ‘size’ of the stimuli, together with other exogenic abiotic factors such as the morphology of the area, time of year and weather conditions”. Steve Percival’s report to Able (2010) refers to the distance over which disturbance effects can operate “It is generally accepted that greatest distance in a terrestrial situation for any species is 800m (and more usually 600m is taken as a worst case)”.

IECS also state “The distance at which birds will initiate flight in response to a disturbance event varies interspecifically with some species, independent of site, with some reacting more strongly than others. The Sanderling (*Calidris alba*) for example show 100% response to humans when they are 30m or closer, this distance will be further for larger species such as the Curlew (*Numenius arquata*). On the strength of this assessment, set-back distances and other conservation tools should thus be set to the most sensitive of species with larger species in general having greater alert distances (Blumstein *et al.*, 2005)”.

With all these variables to consider, as reported in Steve Percival’s report to Able UK (March 2010), buffer zones “have usually resulted from situations that have required a pragmatic approach to solve an immediate problem rather than detailed long-term studies of the impacts and their ecological consequences.....The size of buffers, unsurprisingly, varies considerably”.

We understand that there is limited evidence that considers the effects of construction disturbance and port-related activities on the species of waterbirds that are affected by the proposed development of the South Humber Gateway. However, there are considerably more references

available on the impacts of other human activities, and several European marine site management schemes have recently undertaken studies of recreational disturbance; therefore it is predominately from recreational studies that evidence has been taken. Escape flight distances have often been taken as the 'measure' of disturbance in these studies as a flight response is easier to measure than raised heart rate or increased vigilance. It is important to note the limitations of measuring the effect of disturbance based on flight alone as birds may suffer adverse effects at much greater distances than those at which they take flight. Importantly, birds which have no alternative feeding areas, or cannot risk increased energy expenditure through flight, will show shorter escape flight distances. This does not mean that they are less affected by disturbance but instead indicates a trade-off between suffering the consequences of disturbance (raised stress levels, reduced food intake rates) against flying elsewhere (increase energy expenditure and increased competition for food at alternative locations).

There is no single escape flight distance that can be given for any species, but from the observed disturbance distances in the literature, it can be seen that these vary considerably. There is evidence to suggest that distances increase as body mass increases; therefore species such as curlew will have greater escape flight distances than smaller waders (Laursen *et al*, 2005).

Disturbance distances for the species for which mitigation areas are primarily required:

Curlew

Goss-Custard (2005) looked at curlew and how they may be disturbed by activities on a seawall (in relation to a footpath and cycleway). His findings experimentally were that when persons were active and visible, the feeding curlew flew at a distance of 200m from the source of disturbance. When people were screened, the disturbance distance was reduced. Goss-Custard (2003) calculated that the probability of causing a flight response in feeding curlew was 75% at 100m, 40% at 150m and 10% at 200m (as quoted in Goss-Custard 2005). In his review of the literature, Goss-Custard (2005) found that the disturbance distance for feeding curlew were reported to be 174m (sd 93.9m) and for roosting birds it was 142m (sd 43.8m).

Burton *et al* 2002a described the effects of man-made landscape features on birds. They reported that curlew numbers were reduced on mudflats within 200m of a footpath. Smit and Visser (1993) noted various escape flight distances for a number of different studies on different disturbance factors. For walkers, studies varied between a mean of almost 100m on Terschelling to 211m on the Dutch Delta area and 339m on the Wadden Sea. This review also reports escape flight distances of 188m from cars. Laursen *et al* (2005) also on the Wadden Sea identified 300m as the minimum flushing distance for curlew. The IECS Humber disturbance report refers to curlew as "a large bird with the greatest alert distance" and recommends a buffer of 275m for curlew based on flight distances from a review of disturbance effects. The English Nature Research Report (2000) assessed that the requirements for curlew were open views greater than 200m. On mudflats, Burton *et al* (2002b) notes that curlew numbers and density were reduced on areas where construction activity took place though the precise distance wasn't given; these areas were up to 300m from the activity.

We acknowledge that survey work undertaken through Humber INCA has shown that curlew are utilising smaller fields within the South Humber Gateway and this may appear to be contrary to some of these references. However, as acknowledged within the Mott MacDonald report "the field

size data are based on mapped field boundaries rather than actual boundaries, which may include ditches as well as enclosing hedgerows. Fields with open boundaries will be perceived as larger....” In addition, whilst curlew may also be utilising fields which are actually small in size, these are currently set within a wide, open landscape of available fields that the birds can move to if disturbed. Once the South Humber Gateway is developed, the mitigation areas will be largely surrounded by built development and operational activities. As the only fields left available they must be able to provide the necessary ecological function for SPA and Ramsar waterbirds at all times and be free from significant disturbance.

Lapwing and Golden Plover

With regards to golden plover, there is a large volume of literature on impacts of disturbance to breeding birds but little work on wintering birds on estuaries. For feeding golden plover and lapwing, the flight distance from disturbance was found to be around 100m for single species flocks but when other species were present, especially black-headed gulls; this was increased to 150m, with some to 200m (Barnard & Thompson 1985). Other assessments (ENRR 2000) assessed that golden plover require open views greater than 200m, while for lapwing areas with unrestricted views over 500m are required. The IECS Humber disturbance report assesses golden plover to demonstrate high sensitivity during winter and autumn passage.

Milsom *et al.* 1998 states “To optimise the value of grass fields as feeding areas for plovers and other waders, considerable attention needs to be paid to effects of landscape factors and sources of human disturbance when selecting fields... In general, larger fields will be used more frequently, and by greater numbers of birds, than smaller ones...” and “The attractiveness of fields to waders will be enhanced if they are situated away from sources of frequent human disturbance, particularly roads”. Also, “Field location in relation to the sea is also important, especially for intertidal species: fields situated within 0.5km of the sea will tend to be more attractive to waders than those located further away”.

Conclusion

As can be seen from the references, the reaction of birds to different disturbance events can vary significantly and it is therefore not possible to provide strict guidance on disturbance distances. Instead, the references have been used to enable Natural England (and the RSPB) to give advice on the practical application of buffers¹ that will ensure the South Humber Gateway mitigation areas provide sufficient ecological function to mitigate for the loss of the surrounding land. We believe that the proposed buffer of 150m is the minimum that should be considered in a situation where the adjacent land use is unsecured.

¹ Buffer in this context refers to wet grassland optimally managed for non-breeding waterbirds including curlew, golden plover and lapwing

References

- Barnard, CJ and Thompson, DBA (1985) Gulls and Plovers. Croom Helm, London
- Blumstein, D.T., Fernandez-Juric, E., Zollener, P.A. & Garity, S.C., 2005. Inter-specific variation in avian responses to human disturbance. *Journal of Applied Ecology*, 42, pp. 943-953
- Burton, N.H.K., Armitage, M.J.S., Musgrove, A.J. & Rehfisch, M.M. (2002a) Impacts of man-made landscape features on the numbers of estuarine waterbirds at low-tide. *Environmental Management* 30 857-864
- Burton, N.H.K., Rehfisch, M.M. & Clark, N.A. 2002b. Impacts of disturbance from construction work on the densities and feeding behaviour of waterbirds using the intertidal mudflats of Cardiff bay, UK. *Environmental Management* 30: 865-871.
- Cutts, N., A. Phelps & D. Burdon 2008 IECS report on Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance
- Cruickshanks, K., Liley, D., Fearnley, H., Stillman, R., Harvell, P., Hoskin, R. & Underhill-Day, J. (2010). Desk Based Study on Recreational Disturbance to birds on the Humber Estuary. Footprint Ecology / Humber Management Scheme.
- English Nature Research Report 359 (2000) Key habitat attributes for birds and bird assemblages in England. Part 1
- Goss-Custard (2003) Report on the disturbance study at Powderham Rail Crossing. Report to Devon County Council. Referenced from Goss-Custard 2005.
- Goss-Custard JD (2005) National Cycle Network – Exe Estuary Proposals. Assessment of the Anticipated Effects on the Exe Estuary Special Protection Area
- Laursen K., Kahlert, J and Frikke, J. (2005). Factors affecting escape distances of staging waterbirds. *Wildlife Biology*, 11 (1):13-19.
- Liley, Durwyn. 2011 Tender prepared for Humber Management Scheme. Recreational disturbance visitor survey and ornithological work on the Humber Estuary.
- Milsom, T.P., Ennis, D.C, Haskell, D.J., Langton, S.D. & McKay, H.V. 1998. Design of grassland feeding areas for waders during winter: the relative importance of sward, landscape factors and human disturbance. *Biological Conservation* 84:119-129.
- Mott MacDonald 2009 South Humber Bank Zone Final Report: Field usage by bird species from the Humber Estuary SPA
- Percival, S., 2010 Report for Able UK Mobile oil rig project and the Teesmouth and Cleveland Coast Coast SPA/ SSSI: A review of the evidence of disturbance effects on key bird species
- Smit, CJ and Visser, JM (1993) Effects of disturbance on shorebirds: a summary of existing knowledge from the Dutch Wadden Sea and Delta area. *Wader Study Group Bulletin* 68 Special Issue, ed Davidson and Rothwell, p6-19



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**APPENDIX B
NLC ASSESSMENT OF MITIGATION REQUIREMENTS FOR KILLINGHOLME
MARSHES**

South Humber Gateway- Strategic Mitigation for Waterbirds

A quantitative assessment of the use of Killingholme Marsh as feeding and roosting habitat by passage and wintering waterbirds and estimate of the area of wetland required to support waterbirds in the future.

Summary

Weekly winter and passage bird survey data for Killingholme Marsh were compiled and analysed to estimate the number of “wader days” currently supported by the area in a typical year. The calculations were carried out for lapwing and curlew using Humber INCA data from 2007/08. These were the only species using the area in significant numbers.

This provided a measure of the importance of the site for feeding waterbirds and hence the “demand” for feeding wader habitat. Known wader numbers and densities from managed wet grasslands on RSPB reserves and Lincolnshire Coastal Grazing Marsh were used to estimate the area of wet grassland required to support the numbers of birds currently observed. This provided a measure of the likely “supply” of wader feeding resource to meet the current demand. This method has been adopted by the RSPB and Natural England to underpin the requirement for 32 hectares of mitigation habitat with associated buffer for the Able UK PA/2009/0600 planning application.

Simple extrapolation of numbers from the existing wet grasslands indicated that 14.5 hectares of wet grassland would be adequate to provide for the numbers of lapwing and curlew currently supported by Killingholme Marsh. Current numbers of ruff and black tailed godwit could also be expected to be supported, given the low numbers involved.

However a number of factors introduce an element of uncertainty about target bird numbers being achieved. These are:

1. All wetland mitigation areas will take time to develop to reach their full potential, by which time, existing habitat may already be developed.
2. The mitigation areas will be affected to a certain degree by human and industrial disturbance and light pollution from proposed developments and rights of way.

For this reason, a buffer of 50-100 metres has been added around a core area adequate to support the required numbers of birds. This additional area can also be expected to support birds, providing an over-provision of habitat and thus an allowance for uncertainty about disturbance and habitat quality.

Given the approach recommended above, the proposed mitigation areas could then confidently be expected to support the numbers of lapwing and curlew currently observed on Killingholme Marsh. The wetlands would also support the smaller numbers of ruff and black tailed godwit required, as well as a suite of other species such as redshank, dunlin, teal and wigeon.

Methods

Method 1- Quantifying the current use of Killingholme Marsh by feeding waders.

Bird survey data were obtained from the Humber Industry and Nature Conservation Association's (HINCA) South Humber Bank survey reports (Catley 2008). The survey methods for recording habitats, weather conditions, weekly bird counts and any disturbance events are described in detail in these reports. For the 2007/2008 period, the key bird survey methods were as follows:

“All of the area covered by the study was surveyed on a single date during each of the 39 weeks spanning the period July 1st 2007 to March 29th 2008. Surveys covered each seven day period starting with July 1st to the 7th and continuing to the last week March 23rd – 29th. “

“Surveys were mainly carried out around the high tide period in order to locate all of the inland roosting and feeding areas of waterfowl and waders that had moved from the inter-tidal mudflats of the Humber estuary... All qualifying SPA species present within the various fields and wetland sites were identified and the number of birds counted and recorded in relation to specific field numbers or wetlands. Any movements of birds between different fields were recorded. Longer movements between fields and the inter-tidal areas of the estuary were also recorded and mapped. An initial attempt was always made to ascertain the total number of birds of each species within a series of fields between which there were frequent movements. Where a series of fields were used by the same individual flock of birds on a set survey date then details are discussed in the weekly report texts... When practicable the inter-tidal areas adjacent to the study area were also observed to ascertain which species were present and to gauge an estimate of the numbers of relevant species which may have been moving between the estuarine area and the adjacent or more distant fields...”

“..Any non qualifying species which were present in significant numbers or of which the distribution or abundance were considered to be of interest were also recorded and details are given in the species texts. “

To quantify the current use of Killingholme Marsh by feeding waders, bird numbers for Killingholme Marsh for each survey week were largely derived from the weekly report texts as described above. Fortunately, use of Killingholme Marsh and affected area closely equates to the “southern area” and “southern flocks” described by Graham Catley. Use of this information helped to ensure that the correct total numbers of birds were used, avoiding the double-counting that can result when field-by-field data are used. However, spreadsheets of field-by-field and week-by-week data were also used to identify any bird records that were not included in the weekly reports.

To make an annual or seasonal assessment of site usage by feeding birds, the relevant weekly counts were totalled for the whole 39 weeks (2007/08). Given that the data derive from weekly counts, the totals were multiplied by seven, to give an estimate of the number of “wader days” supported by Killingholme Marsh for each species. Similar studies (e.g. Percival 2010) have estimated numbers of “goose days” by multiplying the mean daily count by the number of days in the relevant season. Arithmetically, these are simply two ways of arriving at the same figure- see Box 1

Box 1 Calculation of wader days	
Mean no. waders = total no. of waders recorded/number of survey visits (weeks)	
Or $\mu = \Sigma x/n$, where x is a weekly wader count.	
A. From totals	B. From Means
No Wader days = $7 \times (\Sigma x)$	$\mu = \Sigma x/n$ No Wader days = $7n(\mu)$ $= 7n(\Sigma x/n)$ $= 7(\Sigma x)$

For Methods 2a and 2b below, the above calculations were re-worked for shorter periods (December-March and October to March respectively) to allow valid comparisons to be made with datasets submitted by Able UK and the RSPB.

Method 2- Estimating the capacity of proposed wetlands for feeding waders.

Attempts were made to quantify the carrying capacity of well-managed wet grassland areas for feeding waders of the species affected by development of Killingholme Marsh. The original intention was to derive estimates of the area and character of habitat required to support the required species for the required amount of time from handbooks, academic papers and other managed and monitored sites. In practice, it was not possible to track down much useable data from these sources. The literature available on carrying capacity and site management for waders focus heavily towards breeding birds. However, some data were obtained from Able UK and the RSPB (see Methods 2a and 2b below).

Method 2a

Bird count data for two existing created wet grassland sites in the Lincolnshire Coastal Grazing Marsh (LCGM) were obtained via the applicant from Roger Wardle, the designer of these sites and the originally-proposed Able Logistics Park mitigation sites (Wardle 2010). The dataset was not as comprehensive as the Humber INCA dataset for the South Humber Bank, in terms of both frequency of survey and length of winter/passage survey season. Also, parts of the report that were initially unclear had to be clarified with the report’s author over the telephone. However, it was possible to compare LCGM counts for December, January, February and March 2008/09 with Killingholme Marsh counts for equivalent weeks in 2007 and 2007/08. Both datasets were assessed according to Method 1, with the estimated number of “wader days” for Mid-December to March being calculated from mean values as per Box 1B. In this way it was possible to compare the known capacity of two managed wet grassland with the current “demand” on Killingholme Marsh for the period in question.

Method 2b

RSPB provided mean golden plover and lapwing densities for eight lowland wet grassland areas on nature reserves in the eastern half of England for the period from October 2007 to March 2008. No supporting information was provided on the survey and sampling methods used to obtain the data or on how the densities were calculated (whether edges were excluded from area measurements etc). However, the data were taken at face value and the means of the mean densities were used to predict lapwing numbers and hence “wader days” that could be expected to be supported by the wet grassland areas of the

proposed wetland mitigation areas. Note that only the lapwing numbers are relevant when considering Killingholme Marsh.

The list of RSPB sites from which the wader densities were derived is given in Table 2c of Appendix 1. It is worth noting that most of the sites have coastal or estuarine locations and most lie near Special Protection Areas designated at least in part for assemblages of wintering and passage waders, including golden plover and/or lapwing. Saltholme is notable for being a reserve set amongst heavy industry on an estuary in the north-east of England – a very similar situation to the South Humber Bank.

The area of habitat required to support currently observed numbers of lapwing was calculated by dividing the required number by the average density.

Results

Results 1- Quantifying the current use of Killingholme Marsh by feeding waders

Using Method 1 as described above it was possible to estimate the number of feeding wader-days supported by Killingholme Marsh. The key figures are as follows:

Measure	Lapwing	Curlew
Estimated no. feeding wader-days Jul-March (2007-2008 data)	1,155	8,813

Results 2a- Comparison of Killingholme Marsh with Lincolnshire Coastal Grazing Marsh (LCGM) Managed Wet Grasslands- estimated numbers of “wader days” supported.

Results are given in full in Tables 2 a-c in Appendix 1. “Wader day” estimates below are based on 6 counts (samples) per dataset and are for the period from Mid December to the end of March only.

Species	Dataset			
	LCGM Site 1- 45 hectares, 5 years old	LCGM Site 2- 73 hectares, 2 years old	Killingholme Marsh 2007	Killingholme Marsh 2007/08
Lapwing	151904	13440	-----	2272*
Curlew	17760	1296	3280	5424

*Note Lapwing estimates are inflated due to the disproportionate effect of one occasion when 142 birds were present. More detailed sampling revealed the whole year figure for Killingholme Marsh to be around 1,155 wader-days (see Results 1)

Pro rata Calculations- size of mitigation area required assuming equivalent value to LCGM Site1

a) The following values are derived as pro rata calculations from the 45 ha site

Lapwing- $45/151904 \times 2272 = 0.7$ hectares

Curlew – $45/17760 \times 3280 = 8.3$ hectares

Curlew – $45/17760 \times 5424 = 13.7$ hectares

b) However, Roger Wardle notes that at LCGM Site 1, “Virtually no roosting waders are recorded on around 50% of the site with all large concentrations on approximately 15 ha. “

If only 50% of LCGM Site 1 functions as wader feeding and roosting habitat (22.5 ha), then the following pro rata calculations can be made:

Lapwing- $22.5/151904 \times 2272 = 0.3$ hectares

Curlew – $22.5/17760 \times 3280 = 4.2$ hectares

Curlew – $22.5/17760 \times 5424 = 6.9$ hectares

Results 2b- Lapwing densities from RSPB Lowland Wet Grassland Reserves

Table 2c of Appendix1 gives typical lapwing densities from RSPB lowland wet grassland reserves for the period from October to March 2007/08. Applying the mean densities for these birds to the wetland mitigation areas proposed for Killingholme Marsh gives the following results:

Killingholme Marsh Mean number of Lapwing in Oct-March counts(2007-2008 data) = 6.6

Killingholme Marsh Peak number of Lapwing in Oct-March counts(2007-2008 data) = 142

RSPB Mean Lapwing density = 9.8 birds per hectare

Number of hectares of wet grassland required to support mean number = 1 hectare

Number of hectares of wet grassland required to support peak number = $142/9.8 = 14.5$ ha

Discussion and Conclusions

The current use of Killingholme Marsh by waterbirds can be quantified by calculating the number of “wader-days” supported from weekly counts. Lapwing and curlew are the only species recorded in significant numbers. In 2007/2008, the site supported 1,155 wader-days for Lapwing and 8,813 for curlew.

The area of wet grassland habitat required to support birds in these numbers can be estimated by comparison with known RSPB reserves and coastal grazing marsh sites, provided the datasets are treated in the same way to ensure that figures are comparable. Applying this approach suggests that around 13.7 hectares are required to support current curlew numbers and around 14.5 hectares of wet grassland are required to support peak Lapwing numbers (142 birds recorded on one occasion only).

A core area of around 14 hectares of wet grassland north of and adjacent to Rosper Road Pools with a buffer of 50-100 metres is proposed, to provide the required waterbird mitigation (see attached map). Improved management of Rosper Road Pools would also increase the number of birds that could be supported, making a mitigation block of 33 hectares in total.

Taking into account that only 50% of the comparison LCGM site supports feeding and roosting waders, it is possible that curlew and lapwing can be supported at higher densities than described above. This would halve the amount of core habitat required (see Results 2a b) above). Thus the mapped mitigation area could be alternatively be described as a roughly 7 hectare block of core wetland habitat, adequate to support the requisite numbers of curlew and lapwing, surrounded by a larger area of buffer habitat. Either way, with optimum habitat design, creation and management, such an area could be expected to act as an effective waterbird mitigation “stepping stone” for Killingholme Marsh.

References

Alab Environmental Services Ltd 2009b Able Humber Port Facility Northern Area:
Conservation Management Plan for Areas A, B & C

Percival, S. 2010 Note On The Calculation Of The Area Of The Goose Refuge Required
For The Proposed Saxby Wolds Wind Farm

Taylor, A 2010 Able UK, Land between East Halton Skitter and Chase Hill Road, North
Killingholme- Appropriate Assessment under the under The Conservation (Natural
Habitats &c) Regulations 1994

Results 2b- Comparison of Killingholme Marsh with Lincolnshire Coastal Grazing Marsh Managed Wet Grasslands.

Table 2b a) Lapwing, Mid December to End March

LCGM Site 1- 45 hectares, 5 years old			LCGM Site 2- 73 hectares, 2 years old			Killingholme Marsh 2007/08	
Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count
16/12/2008	3600	FR	16/12/2008	580	FR	16/12/2007	142
14/01/2009	450	FR	14/01/2009	0		13/01/2008	0
14/02/2009	4800	F + FI	14/02/2009	0		17/02/2008	0
23/02/2009	140	N	23/02/2009	0		24/02/2008	0
07/03/2009	145	FR	07/03/2009	75	FR	09/03/2008	0
14/03/2009	145	FR	14/03/2009	78	FR	16/03/2008	0
29/03/2009	214	FR	29/03/2009	107	FR	23/03/2008	0
Total	9494		Total	840		Total	142
Mean	1356.29		Mean	120.00		Mean	20.29
Wader days	151904		Wader days	13440		Wader days	2272

Table 2b b) Curlew, Mid December to End March

LCGM Site 1- 45 hectares, 5 years old			LCGM Site 2- 73 hectares, 2 years old			Killingholme Marsh 2007		Killingholme Marsh 2007/08	
Date	Area Count	Activity	Date	Area Count	Activity	Date	Area Count	Date	Area Count
16/12/2008	0		16/12/2008	60	F	16/12/2007	67	16/12/2007	67
14/01/2009	0		14/01/2009	15	F	08/01/2007	43	13/01/2008	48
14/02/2009	0		14/02/2009	6	F	12/02/2007	31	17/02/2008	0
23/02/2009	0		23/02/2009	0		19/02/2007	63	24/02/2008	4
07/03/2009	75	FR	07/03/2009	0		05/03/2007	1	09/03/2008	34
14/03/2009	774	FR	14/03/2009	0		12/03/2007	0	16/03/2008	36
29/03/2009	261	FR	29/03/2009	0		26/03/2007	0	23/03/2008	150
Total	1110		Total	81		Total	205	Total	339
Mean	158.57		Mean	11.57		Mean	29.29	Mean	48.43
Wader days	17760		Wader days	1296		Wader days	3280	Wader days	5424

Table 2c - Lapwing and Golden Plover densities from RSPB Lowland Wet Grassland Reserves

RSPB reserves in E England Lowland Wet Grassland with mean densities of Lapwing and Golden Plover						
2007/08						
					GOLDEN PLOVER	LAPWING
Typical lwgs in eastern half of England	Location	Nearest SPA	Area of lwg (ha)		Oct- March mean	Oct - March mean
Buckenham & Cantley Marshes	Norfolk Broads	Broadland	302		5.2	3
Dingle Marshes	Suffolk Coast	Minsmere-Walberswick	19			18.1
Elmley Marshes*	North Kent	Medway Estuary & Marshes	210		4.0	16.7
Minsmere	Suffolk Coast	Minsmere-Walberswick	109			3.2
North Warren*	Suffolk Coast	Sandlings+ Alde-Ore Estuary	98			3.3
Old Hall Marshes*	Essex	Blackwater Estuary	357		2.6	2.4
Rainham Marshes*	Essex	Thames Estuary & Marshes	203		1.1	5.7
Saltholme*	Tees Estuary	Teesmouth & Cleveland Coast	45		11	26.2
total of mean averages across reserves					24.1	78.6
mean wintering birds per hectare across 8 reserves					4.8	9.8

* = Reserve near SPA designated for assemblages of wintering and passage waders, including golden plover and/or lapwing



**RESPONSE TO PLANNING INSPECTORATE
QUESTIONS (Rule 8 Letter)**

JUNE 2012

**APPENDIX C
JMP RESPONSE TO QUESTION 48(A) TO 48(C)**

1. Question 48(a)

Examiner's question

- 1.1 *Table 6.4, which deals with route allocation for journeys to work, shows a trip allocation of 50% to 'York, Wakefield, Doncaster and area to the west of the study area'. Is this based entirely on population distribution? Have any sensitivity tests been carried out which would model the effect of more recruitment being more local?*

JMP's response

Development of the traffic distribution

- 1.2 JMP developed a traffic distribution for the vehicle arrivals and departures associated with the predicted number of employees at MEP. This was originally based on Census Journey to Work (JTW) data.
- 1.3 JMP consulted on the trip generation and resulting traffic distribution several times during pre-application discussions. Comments were received from the Highways Agency (HA), North Lincolnshire Council (NLC) and North East Lincolnshire Council (NELC) on traffic distribution, as set out below, and it was subsequently revised to a population / distance gravity model for the wider area and JTW data for the local area.
- 1.4 The resulting distribution was agreed by the HA and NLC, and NELC did not provide any further comments following the most recent response on the 19th May 2011.

Received from NLC on 13/12/10

- 1.5 *Further clarification or assessment should be provided on the methodology used to calculate journey to work trips. The map appears to highlight origins and destinations as well as routes to and from the Marine Energy Park, but does not include trips from/to places like Doncaster or Lincoln? There also appears to be a focus on catchment in the immediate vicinity of the site, despite lower population levels than places like Hull and Scunthorpe.*

Received from NLC on 31/01/11

- 1.6 *We note that HA commented that they (JMP) are assigning too much traffic to some of the local wards where few people live. The approach they (JMP) are using still allocates too much traffic to local destinations. In paragraph 1.4 they (JMP) seem to accept this and seek further guidance on an alternative approach, although it isn't clear how the distribution has been derived, perhaps a more traditional population gravity model would be appropriate.*

Received from the HA on 07/12/10

- 1.7 *Journey to work census data has been used to determine the route allocations. However, the route allocations have been done for all people rather than being based on car drivers as this will replicate the origins of car drivers rather than all modes of travel. The census data shows that some low numbers of people will be travelling to the site from certain wards. In order to avoid identifying individual people, the census data rounds up small numbers to 3 or rounds them down to 0. This can therefore potentially skew the data.*
- 1.8 *It is noted that purely using journey to work data, given the number of expected employees to the site, can result in very high proportions of people travelling from certain wards which would equate in excess of 10% of the working population in a particular ward working at the site. An extreme example of this is ward 00FDNE0022 where, based on a distribution of all people,*

some 166 employees will live in this ward out of a total working population of 163. Therefore, once the analysis has been revisited, adjustments will need to be made due to the scale of employees to ensure a realistic distribution.

- 1.9 It is noted from the Journey to Work Route Allocations plan that the catchment area includes some wards but no other adjacent wards. This is due to the small sample size gained by using one ward in the census data. The proposed site spans two wards, however only one ward including the majority of the site has been used to calculate the distribution. It is recommended that additional wards are used which take into account similar employment sites in the vicinity to overcome this problem.
- 1.10 Some of the journey origins are located a significant distance away i.e. Sunderland and it is felt unlikely that any significant number of new employees to the site would live this far away and commute every day. In addition, some of the routes chosen, especially for the long distance journeys, appear incorrect but this will be examined in more detail once the catchment for employees has been agreed.

Received from the HA on 02/02/11

"I suggest that Census JTW alone is used for trips from the immediate locality (in and around N & S Killingholme, Immingham and East Halton for example) with a gravity model used for trips from beyond the immediate local road network constrained to a 1-hour drive-time" (Source: Covering email from Daniel Gaunt)

- 1.11 The census catchment area has been extended to include multiple destination wards. As a result, adjacent wards to those identified in the previous submission have since been included in the JTW Route Allocations map. However it is unclear why there are still some adjacent wards which have not been included in the analysis and reasoning behind this should be provided.
- 1.12 Journey To Work (JTW) census data has been used to determine the route allocations and has been based on car drivers, however there are still certain wards which have a high proportion of people travelling from certain wards resulting in excess of 10% of the working population in one ward working at the proposed site. This is considered unrealistic. JMP has requested assistance in identifying a methodology which may assist them in adjusting the assignment to ensure a reasonable distribution.
- 1.13 The JTW census data should be used to establish the catchment area. Then a gravity model should be used based upon population and journey time or distance to establish the distribution. Some of the journey origins are located a significant distance away i.e. Sunderland, and it is felt unlikely that any significant number of new employees to the site would live this far away and commute every day, however the gravity model would assist with this as the journey time / distance would be high and therefore the distribution from this location would be very small.

Received from the HA on 11/04/11

- 1.14 The catchment area is considered acceptable although some of the route allocations do not appear to be realistic, for example no routes appear to use the A15(S) from Lincoln. Journey route planners confirm the use of the A15(S) when making this journey. However, more detailed assessment of the gravity model shows that these allocations will change the distribution by less than 1% and the route allocations are therefore considered acceptable.

1.15 *The gravity model is based on population / journey time²; however no justification has been given for this method. To ensure that the distribution is robust, it would be useful to base the gravity model on population / journey time to form a sensitivity test.*

Received from NELC on 14/04/11

1.16 *I know this assessment does not currently take full account of our impending major scheme (A18-A180 Link). I can understand this approach within your assessment as the scheme does not yet have full commitment from government. However, we would assess the scheme as being very likely to be delivered within the next 10 years (and likely within 3 years). This therefore needs to part of our consideration in terms of reasonable mitigation.*

1.17 *I would therefore note that a significant proportion of the vehicles using Stallingborough Interchange would make use of the A18-A180 Link, and the added capacity of the link would therefore mitigate to some significant degree this impact. Referring to the Figure 1 Route Allocation, significant areas marked in red (labelled A180 South East) would use this link. I would suggest most of the populous to the south of the A46 and east of the A18, as well as more local populations in Healing, Stallingborough and Keelby.*

Received from NELC on 19/05/11

1.18 *May I first repeat our thanks for our recent meeting in which you gave us an overview of the proposal and your forecast impact of the traffic it would generate, specifically in North East Lincolnshire. Secondly may I express my thanks for the copy of your draft TA, which was comprehensive and gave a very reasoned argument to support your conclusions.*

1.19 *The TA has helped us to understand why, in your view, there needs to be no detailed consideration of any potential impact of our A18 - A180 link, as it is, as yet, simply a bid being submitted for consideration by DfT.*

1.20 Following the consultation responses, JMP undertook the following:

- i. The route allocations were changed to base on car drivers only and not for all people;
- ii. The catchment area for the journey to work route allocations was extended to include adjacent wards;
- iii. Journey to work data was used for the 'local study area' and a population / distance² gravity model was used for areas outside the 'local study area', and;
- iv. The gravity model was reassessed and weighted trips more towards longer distance journeys (reducing the deterrence factor to 1.3). This took the emphasis away from travel costs being the journey decider. The resulting percentage from the 'local area' was 9%.

- 1.21 The changes made to the weighting of trips towards longer journeys to take account of the high percentage from the 'local study area', resulted in the changes to the distribution as shown in the table below

<i>Area</i>	<i>Allocation from original gravity model</i>	<i>Allocation from modified gravity model</i>
A1136	8.7%	5.5%
A15	6.4%	11.3%
A180 North (NW)	0.1%	0.1%
A180 South (NW)	3.8%	5.0%
A180 South (SE)	27.2%	19.1%
M180	35.0%	50.0%
Local	18.9%	9.0%

- 1.22 As the table above shows, the resulting percentage from Grimsby (A180 south) was much lower.
- 1.23 In response to NELC's concern regarding the A180-A18 link, JMP undertook a sensitivity test, which concluded the impact would not change significantly. In NELC's most recent consultation response, as set out above, it was agreed that the link road did not need to be included in the assessment. Therefore, no further action was taken.

Sensitivity test - methodology

- 1.24 JMP has undertaken a sensitivity test to identify the potential impact if a greater proportion of trips originated from the A180 south, to take account of the significant unemployment in the Grimsby area.
- 1.25 For the sensitivity test the allocation for the local area has been kept at 9%. The allocations for the wider area were taken from the original gravity model developed (with a deterrence factor of 2) and adjusted to take into account of the reduced local area allocation in proportion to their relative attractiveness. The following table shows the allocations used. The colours in brackets correspond to the maps in Appendix M of the TA, showing the gravity model allocation areas.

<i>Origin / Destination</i>	<i>Allocation assumed for sensitivity test</i>
A1136 (dark green)	9.8%
A15 (light green)	7.2%
A180 North (dark blue)	0.1%
A180 South (pink)	4.3%
A180 South (red) inc. Grimsby	30.5%
M180 (light blue)	39.2%
Local Area	9.0%

- 1.26 These percentages were then applied to the MEP arrivals and departures and the following junction capacity models were re-run for the morning and evening peak hours (base + committed + MEP):
- i. A1173 / A180 Stallingborough Interchange;

- ii. A1173 / North Moss Lane;
 - iii. A1173 / King's Road;
 - iv. A1173 / Manby Road; and
 - v. A1173 / A160 / Humber Road.
- 1.27 The capacity assessments of the other junctions along the A160 considered in the TA have not been re-assessed as the number of vehicles predicted to use them will be less following this sensitivity test.
- 1.28 The capacity assessments of the A180 / A1136 / Europarc (Great Coates Interchange) roundabouts have not been re-assessed due to the low RFC values identified in the original assessment.

Sensitivity test - results

- 1.29 **Figure 1** and **Figure 2** show the original traffic flows from the TA for the morning and evening peak respectively.
- 1.30 **Figure 3** and **Figure 4** show the sensitivity test traffic flows for the morning and evening peak respectively.
- 1.31 The sensitivity test results in an additional **66** arrivals and **14** departures on the A1173 / A180 south in the morning peak and an additional **8** arrivals and **66** departures in the evening peak.
- 1.32 A summary of the original junction capacity assessment results and the results following the sensitivity test are shown in the tables below, and the modelling outputs for the sensitivity test are provided in **Appendix X**.

A1173 / A180 Stallingborough Interchange

- 1.33 The assessment has been undertaken using the existing junction layout.

ARCADY results A1173 / A180 Stallingborough Interchange (original TA)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A180 west	35.1	1	7.9	0
A1173	43.9	1	73.3	3
A180 east	54.9	1	33.6	1

ARCADY results A1173 / A180 Stallingborough Interchange (sensitivity test)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A180 west	36.1	1	7.9	0
A1173	44.8	1	76.3	3
A180 east	58.5	1	34.1	1

A1173 / North Moss Lane

- 1.34 The assessment has been undertaken using the proposed mitigation junction layout, **JMP drawing No. NEA1114/06 Rev A** in Appendix Q of the TA. It is proposed to introduce a second lane to the North Moss Lane approach with stacking capacity and to extend the existing second lane on the A1173 west to increase stacking space.

ARCADY results A1173 / North Moss Lane (original TA)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A1173 north	78.6	4	78.5	4
North Moss Lane	19.9	0	79.5	4
Kiln Lane	0.3	0	0.0	0
A1173 West	89.1	8	41.2	1

ARCADY results A1173 / North Moss Lane (sensitivity test)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A1173 north	80.4	3.8	84.5	5.1
North Moss Lane	20.0	0.2	82.9	4.6
Kiln Lane	0.3	0.0	0.0	0.0
A1173 West	92.8	11.1	41.7	0.7

A1173 / King's Road

- 1.35 The assessment has been undertaken using the existing junction layout.

ARCADY results A1173 / King's Road (original TA)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A1173 north	65.6	2	62.0	2
King's Road	19.7	0	47.9	1
A1173 South	57.3	1	46.5	1

ARCADY results A1173 / King's Road (sensitivity test)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A1173 north	66.8	2.0	67.1	2.0
King's Road	19.9	0.2	50.2	1.0
A1173 South	62.2	1.6	47.2	0.9

A1173 / Manby Road

- 1.36 This junction has recently been modified making the A1173 the major arm through the junction and Manby Road the minor arm. This is the layout used in the assessment.

PICADY results A1173 / Manby Road (original TA)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
Left turn from Manby Rd	55.2	1	34.3	1
Right turn from Manby Rd	10.6	0	6.5	0
Right turn into Manby Rd	12.8	0	24.8	0

PICADY results A1173 / Manby Road (sensitivity test)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
Left turn from Manby Rd	62.8	1.6	37.3	0.6
Right turn from Manby Rd	20.7	0.3	12.1	0.1
Right turn into Manby Rd	14.3	0.2	26.2	0.4

Note: Model altered in light of NELC comments in the 15Jun2012 technical note

A1173 / A160 / Humber Road

- 1.37 The assessment has been undertaken using the proposed mitigation junction layout, **JMP drawing No. NEA1114/02 Rev A** in Appendix Q of the TA. The proposed layout shows a two lane approach on the Humber Road arm.

ARCADY results A160 / A1173 / Humber Road (original TA)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A160	63.3	2	45.4	1
Industrial Units	0.4	0	0.1	0
Humber Road	43.5	1	74.0	3
A1173	48.9	1	41.8	1
Depot	1.5	0	2.6	0

ARCADY results A160 / A1173 / Humber Road (sensitivity test)

Arm	Morning peak (8-9am)		Evening peak (5-6pm)	
	Degree of saturation (%)	Queue length (vehs)	Degree of saturation (%)	Queue length (vehs)
A160	60.8	2	45.1	1
Industrial Units	0.1	0	0.1	0
Humber Road	43.5	1	74.2	3
A1173	52.2	1	41.4	1
Depot	1.6	0	2.3	0

Sensitivity test - conclusion

- 1.38 The only junction to show capacity issues is the A160 / North Moss Lane junction. The highest degree of saturation is on the A1173 west arm during the morning peak hour at 92.8%. This is considered high enough to warrant caution in that capacity issues can start to appear. The longest queue length, however, is shown to be 11 vehicles. As this is a sensitivity test to establish whether the junction could accommodate a higher number of vehicles originating from the Grimsby area this is considered acceptable.
- 1.39 The other junctions do not show any capacity issues.

QUESTION 48(B)

Table 6.6, which deals with HGV delivery assumptions, shows a break-down by modes of sea, rail and road. What is the basis for the assumptions made? Have any sensitivity tests been carried out which would show the effects if significantly more HGV deliveries were by road?

Answer

- 2.1. Table 6.6 in the TA sets out the anticipated deliveries by mode during operation of MEP. Assumptions have been made on the proportion of materials that are expected to be delivered by road, sea and rail.
- 2.2. For information, Table 6.6 is replicated below:

Table 0.1 HGV Delivery Assumptions

<i>Component</i>	<i>Delivery Mode</i>
Nacelle	
Weight of each nacelle:	300 tonnes
Number constructed per year	600
60% delivered by sea	108 000 tonnes delivered by sea per year
1% delivered by rail	1 800 tonnes delivered by rail per year
39% delivered by road	70 200 tonnes delivered by road per year
Towers	
Weight of each tower	400 tonnes
Number constructed per year	400
50% delivered by sea	80 000 tonnes delivered by sea per year
49% delivered by rail	78 400 tonnes delivered by rail per year
1% delivered by road	1 600 tonnes delivered by road per year
Blades	
Weight of each blade	25 tonnes (3 per turbine)
Number constructed per year	1200
80% delivered by sea	24 000 tonnes delivered by sea per year
1% delivered by rail	300 tonnes delivered by rail per year
19% delivered by road	5 700 tonnes delivered by road per year
Foundations	
Weight of each foundation	800 tonnes
Number constructed per year	50
20% delivered by sea	8 000 tonnes delivered by sea per year
40% delivered by rail	16 000 tonnes delivered by rail per year
40% delivered by road	16 000 tonnes delivered by road per year

Source: JMP Transport Assessment, September 2011

- 2.3. The assumptions are not that critical as:
 - The maximum weight of goods to be delivered to the site is 410 000 T.

- Table 14.12 of the ES provides for 50 vessel deliveries of up to 10 000T dwt, so the navigation assessment covers the unlikely possibility that all goods are delivered by sea.
 - A freight train can transport 1000 – 2500T of freight. The ES includes proposals for up to 2 train deliveries per day which is sufficient for all goods to be delivered by rail.
- 2.4. Based on the assumed mode splits in Table 6.6, it is estimated that a total of 93,500 tonnes will be delivered to MEP by road each year.
- 2.5. The resulting estimate of the number of hourly deliveries to MEP is one HGV. The following assumptions were used to arrive at this figure:
- i. Deliveries could be made 24 hours a day except at peak times (7 am to 10 am and 4 pm to 7 pm)
 - ii. Deliveries will not be made on Sundays (52 days per year) and bank holidays (eight per year), and;
 - iii. An HGV can carry 20 tonnes.
- 2.6. Due to the number of assumptions, the resulting one HGV per hour was rounded up to two per hour for a robust assessment.
- 2.7. Further to the above, the TA set out a sensitivity test for the unlikely event that all deliveries to the site were made by road. This equates to 410 000 tonnes in one year. Using the same assumptions as above, the predicted number of HGV deliveries per hour would be four.

QUESTION 48(C)

What if any assumptions about growth in port traffic at Immingham and C.Ro have been built into the modelling?

Answer

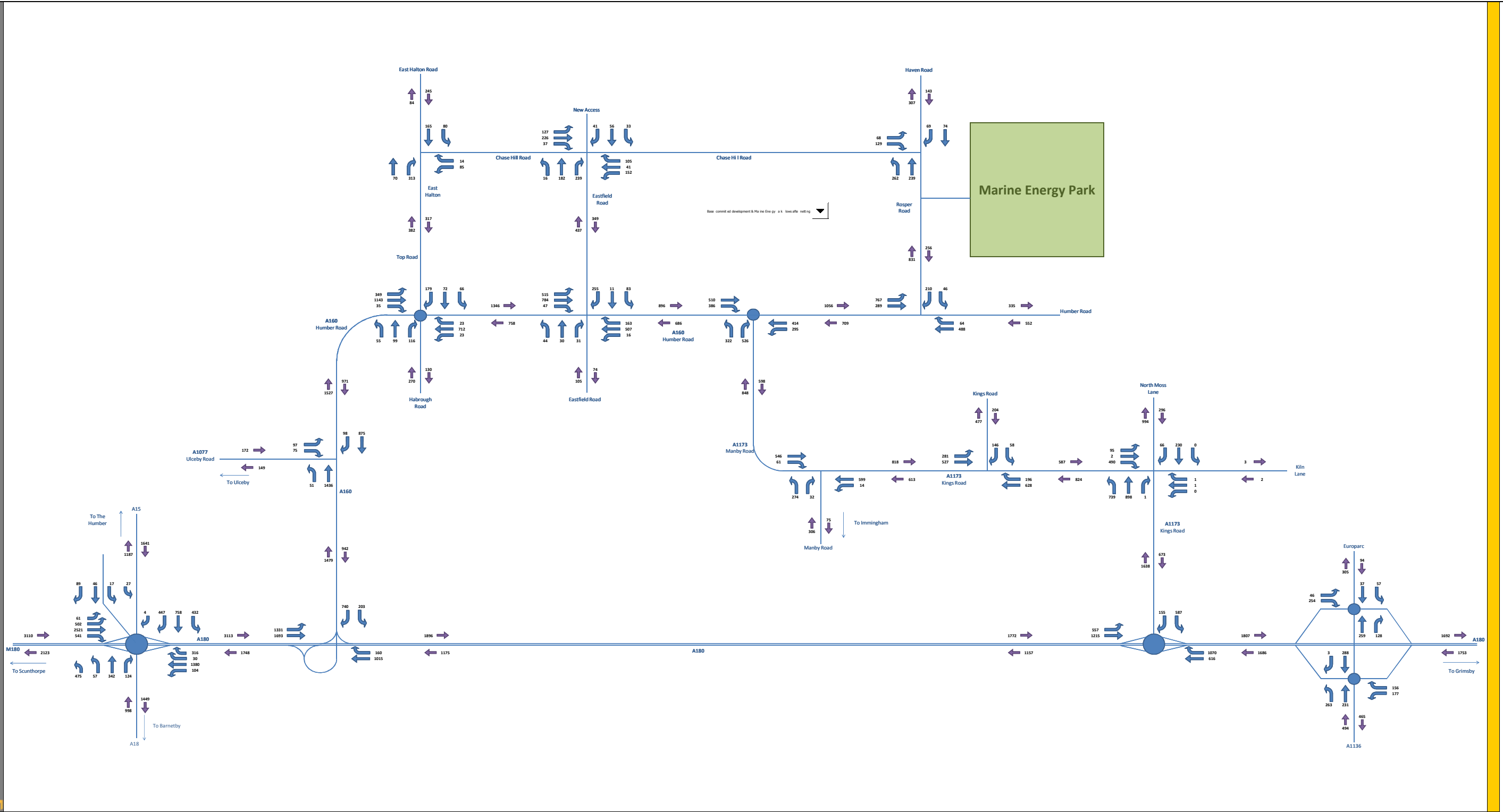
- 3.1. During scoping discussions, it was identified that no background traffic growth should be applied to the base year traffic flows due to the large number of committed developments that were required to be included in the assessment, essentially acting as background traffic growth. For information the list of committed developments is shown below in Table 15.33 from the Transport Assessment.

Table 0.1 Committed Developments

<i>Applicant</i>	<i>Development</i>	<i>Planning Application Reference</i>
Able UK Limited	Port and Logistics	PA/2009/0600
Able UK Limited	Able Humber Port Facility	PA/2007/0101
Drax	Heron Renewable Energy Plant	PA/2009/1269
Bioethanol Limited	Bioethanol Plant	PA/2010/0325
URSA Insulation SA	Glass Wool Manufacturing Plant	PA/2008/0988
HM Estates	Business Park	DC/1258/06/IMM
Helius Bio-Power / Fuel	Bioethanol Plant	DC/303/07/IMM
Vireol PLC	Bioethanol Plant	DC/202/08/WOL
Abengoa Bioenergy	Bioethanol Plant	DC/70/07/IMM
Magna Holdings	B1, B2 & B8 Industrial Development	DC/730/07/IMM

Source: JMP Transport Assessment, September 2011

- 3.2. The total number of peak hour trips associated with the committed developments included in the assessment is identified below:
- i. Morning peak – 1217 arrivals, 333 departures
 - ii. Evening peak – 326 arrivals, 1105 departures
- 3.3. The number of additional vehicle trips on the network included in the assessment is significant and has been accepted by the highway authorities to represent the likely traffic growth in the geographical area of the development.

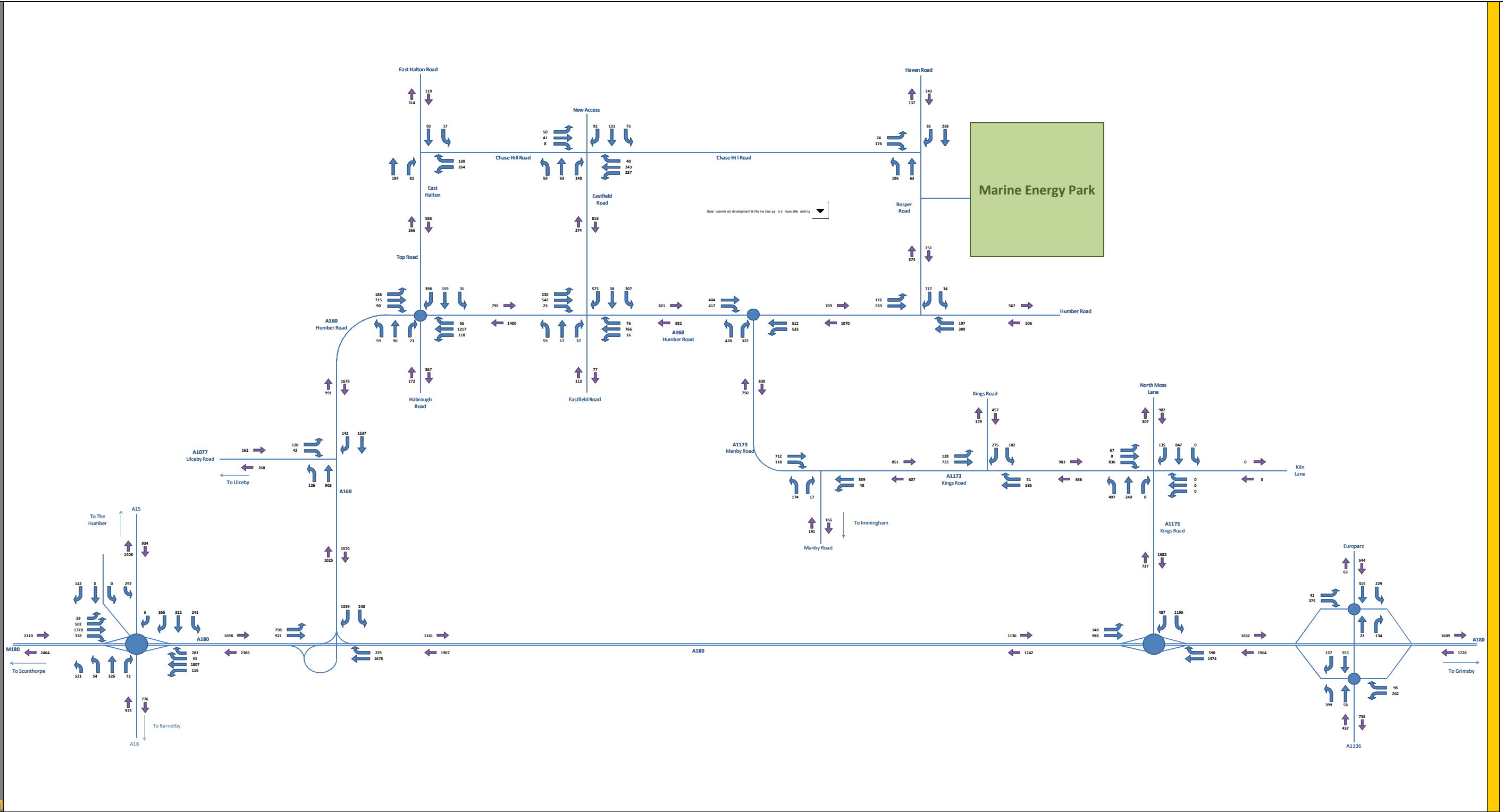


Client: Able UK Ltd

Project: NEA1114 Marine Energy Park, Kingsholme

Title: Base committed development & Marine Energy Park flows after netting off - 8-9am

Figure 1

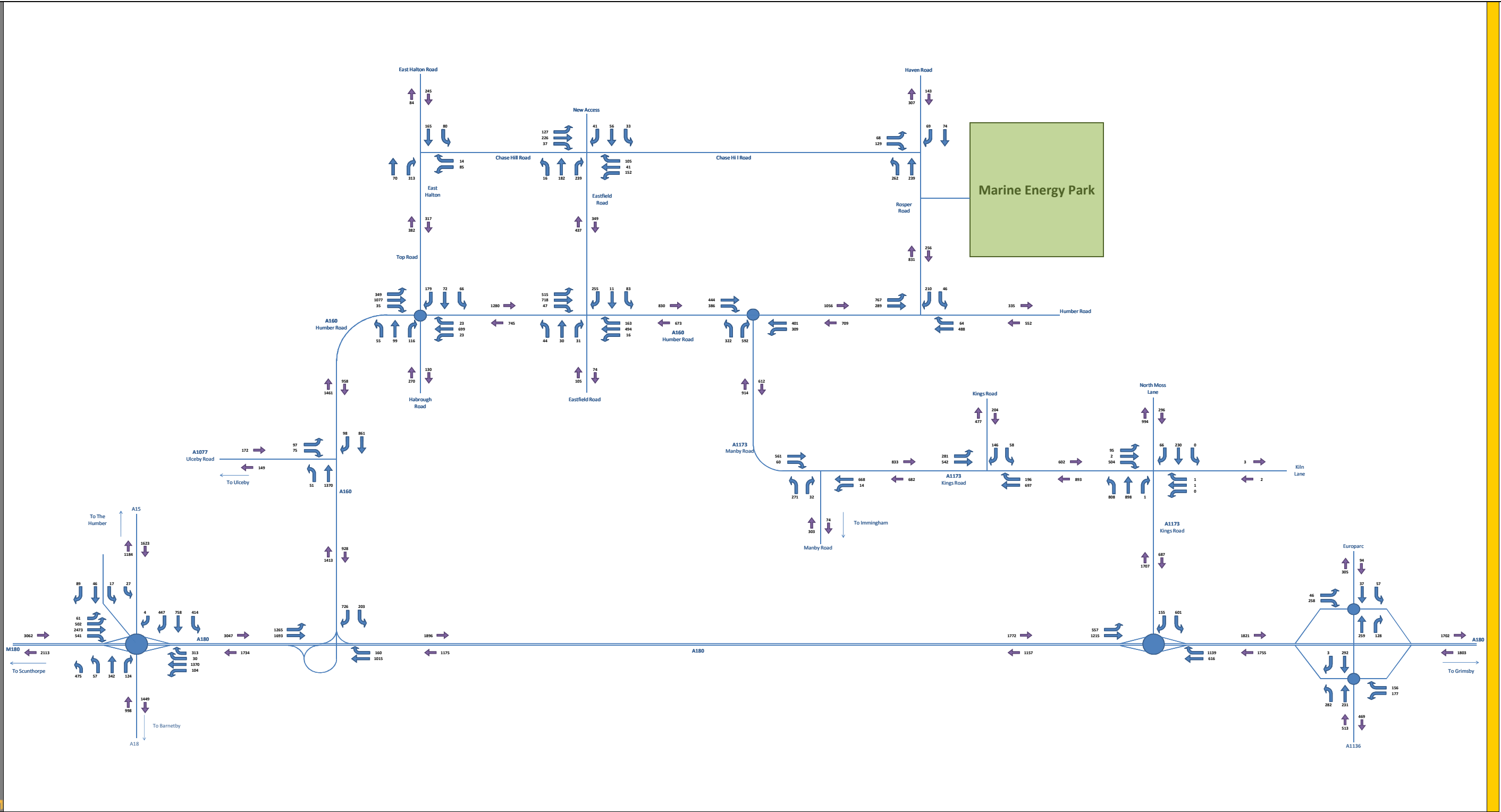


Client: Able UK Ltd

Project: NEA1114 Marine Energy Park, Kingsholme

Title: Base committed development & Marine Energy Park flows after netting off - 5-6pm

Figure 2

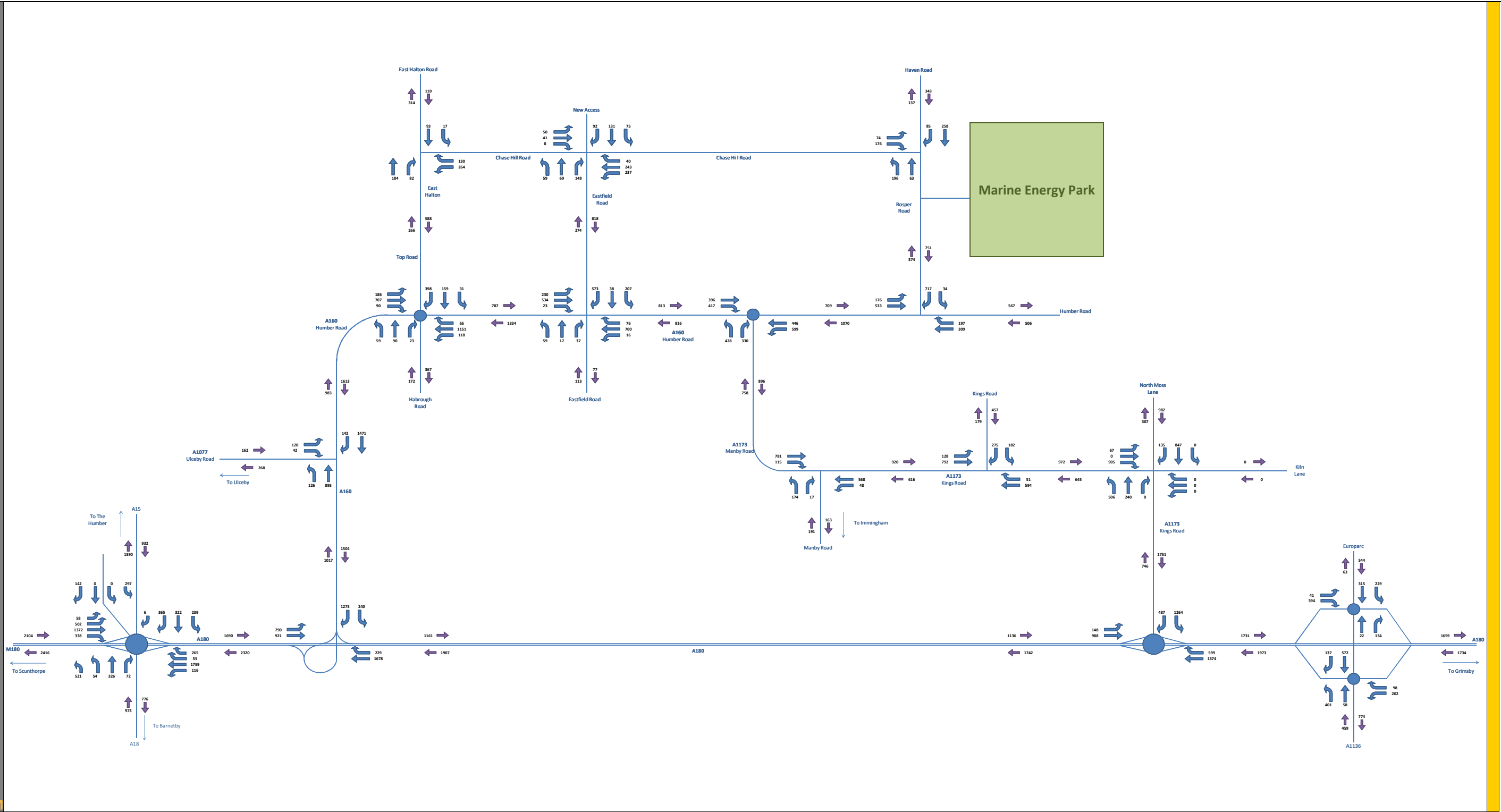


Client: Able UK Ltd

Project: NEA1114 Marine Energy Park, Kilingholme

Title: Base committed development & Marine Energy Park flows after netting off - 8-9am

Figure 3



Client: Able UK Ltd

Project: NEA1114 Marine Energy Park, Kingsholme

Title: Base committed development & Marine Energy Park flows after netting off - 5-6pm

Figure 4