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Chief Executive

AGENDA

Committee:	**DEVELOPMENT CONTROL**
Date and Time:	**Tuesday 2nd August 2016 at 7.30 p.m.**
Venue:	**Council Chamber**
	N.B. This meeting will be webcast live on the internet.
Membership:	**Councillors Hart (Chairman), Smith (Vice Chairman), Acott, Anderson, Blackwell, Mrs King, Mumford, Sharp, Sheldon, Varker, Mrs Wass, N. Watson and Wood.**
	Canvey Island Town Councillors : Greig and Tucker
Officers attending:	**Steve Rogers – Head of Regeneration and Neighbourhoods** **Fiona Wilson – Head of Legal Services** **Rob Davis – Planning Development and Enforcement Manager**
Enquiries:	**Cheryl Salmon, ext. 2454**

PART I (Business to be taken in public)

1. **Apologies**

2. **Members' Interests**

3. **Minutes**
   A copy of the Minutes of the meeting held on 5th July 2016 is attached.

4. **Public Speakers**
   The Chairman will announce the names of those persons who wish to speak in support /objection under Agenda Item No. 5 (if any).

5. Deposited Plans

Report of the Head of Regeneration and Neighbourhoods is attached.

	Application No.	Address	Page
1.	16/0350/FUL	450 Rayleigh Road, Benfleet (Victoria Ward)	1
2.	16/0106/FUL	Oikos Storage Ltd Hole Haven Wharf, Haven Road, Canvey Island, Essex (Canvey Island West Ward)	7

DEVELOPMENT CONTROL COMMITTEE

5TH JULY 2016

PRESENT: Councillors Hart (Chairman), Smith (Vice-Chairman), Acott, Anderson, Blackwell, Mrs King, Mumford, Sharp, Sheldon, Varker, Mrs Wass, N. Watson, Wood and Canvey Island Town Councillors Greig and Tucker.

Councillors Campagna, Cross, Ladzrie, Palmer, Riley and Walter also attended.

There were no apologies for absence.

35. MEMBERS' INTERESTS

There were none.

40. MINUTES

The Minutes of the meeting held on 7th June 2016 were taken as read and signed as correct.

41. DEPOSITED PLANS

(a) 16/0188/FUL – 130 KILN ROAD, THUNDERSLEY, BENFLEET, ESSEX, SS7 1TE (BOYCE WARD) – DEMOLITION OF EXISTING OUTBUILDINGS. CONSTRUCTION OF SINGLE STOREY REAR/SIDE EXTENSION TO RETAIL UNIT, EXTERNAL PLANT AREA AND FENCING TO REAR YARD. EXTERNAL ALTERATIONS INCLUDING EXTERNAL STAIRCASE TO FLAT ABOVE AND ALTERATIONS TO SHOP FRONT – THE CO-OPERATIVE GROUP FOOD LTD

The proposal was a revised submission which sought to address the reasons for refusal for a previous similar application 15/0702/FUL. The revised proposal still sought to extend and develop the ground floor retail area but differed from the previous scheme in important respects.

It was considered that the revised scheme satisfactorily addressed the reasons for refusal previously identified and as a consequence it was recommended that planning permission be granted subject to conditions and the following mitigation measures:

- Limitation of hours of deliveries to the site
- Requiring delivery vehicle radios to be switched off before arriving at the site,
- Allowing vehicle horns to be sounded only under safety critical conditions

- Turning vehicle engines off when stationary
- Limiting cage trolley movements and introducing rubber matting between the store service entry and loading area in order to limit sound
- Advising staff of the noise sensitivity of the location and requiring appropriate behaviour
- Providing signs within the unloading/delivery area to remind staff of the noise sensitivity requirements.

The application was presented to the Committee at the request of Councillor Smith, in order to assess the impact of the proposal on surrounding residential properties.

Mr Block, a local resident spoke in objection to the application.

Mr Beebe, a representative for the applicant, spoke in support of the application.

Members noted the objections raised by local residents that the use of the premises as a convenience food store would increase traffic and create parking problems in the immediate vicinity however it was recognised that the site already had consent for retail use and could operate as a convenience store without further consent from the Local Planning Authority. Furthermore any perceived issues relating to licensing matters were for the consideration of the Licensing Authority and not a matter for the Local Planning Authority. The application before the Committee was only concerned with the proposal for the demolition of outbuildings and the construction of an extension.

During discussion some Members continued to raise concern about highway issues at the site, particularly in regard to parking for customers and the impact this would have on the surrounding streets. Other Members stated that whilst they recognised the potential issues at the site they could not see any valid planning reasons for refusing the extension and associated works. It was felt that the conditions recommended by the Planning Officer would regulate activity on the site to protect the amenity of the surrounding residential occupiers as much as possible.

Following debate a vote was taken and there was an equality of votes for and against the recommendation in the report. The Chairman used his casting vote in favour of the recommendation and it was:-

> **Resolved –** That the application be approved subject to the conditions as set out in the Planning Officer's report.

(b) 16/0302/FUL – THE GREEN ROOM REAR OF COUNCIL OFFICES, KILN ROAD, THUNDERSLEY, BENFLEET (CEDAR HALL WARD) – CHANGE OF USE TO MIXED OFFICE USE (CLASS B1) AND COFFEE SHOP (CLASS A3) – MR PAUL RAMSDEN

Permission was sought to provide a small café/coffee shop facility in an existing temporary building at the rear of the Civic Offices complex, to be run by

volunteers. It was considered that such a use would be low-key in nature and unlikely to have a significant impact on the surrounding area through parking or noise and disturbance. It was therefore recommended that permission be granted.

The application was presented to the Committee as the building and land were owned by the Borough Council.

During discussion Members welcomed the proposal and could not see any issues in terms of its impact on the local area. It was therefore:-

> **Resolved** – That the application be approved subject to the conditions as set out in the report.

(c) 16/0306/FUL – 57 WOODSIDE AVENUE, THUNDERSLEY, BENFLEET, ESSEX, SS7 4NX (ST GEORGE'S WARD) – PART SINGLE PART TWO STOREY SIDE/REAR EXTENSION AND REPLACE CONSERVATORY WITH A SINGLE STOREY REAR EXTENSION – MR V CHUMROO

Planning permission was sought for part two storey side/rear extension and single storey rear extension. The proposal complied with all relevant Council Policies and guidance and it was recommended that permission be granted.

The application was presented to Committee at the request of Councillor Walter in order for the Committee to consider the effect of the development on the access to the neighbouring garage area.

Mr Gibbard, the agent for the applicant, spoke in support of the application.

Councillor Walter, a Ward Member, raised concerns about the application.

Mrs Jennings, a local resident, raised concern about access to her property during the construction works.

During discussion Members noted the concerns of local residents regarding the impact of the construction works on the communal garage area regarding access to the garages as well as noise and parking. They also noted the assurances given by the applicant that the access road to the garages would not be blocked during the works, noise would be kept to a minimum and that there would be no additional vehicles parked in the communal garage area.

Following discussion it was:-

> **Resolved** – That the application be approved subject to the conditions as set out in the Planning Officer's report.

(d) 16/0336/FUL – LAND ADJ 81 MAY AVENUE, CANVEY ISLAND, ESSEX, SS8 7EY (CANVEY ISLAND SOUTH WARD) – ERECTION OF TWO DETACHED

DORMER BUNGALOWS AND RELOCATION OF FOOTPATH – D.R. BULLOCK BUILDERS LTD.

The application sought to erect two dwellings within the existing street frontages of May Avenue and Handel Road, which would complete an otherwise built up frontage. The proposal was compliant with all relevant Local Plan policies and Residential Design Guidance and therefore it was recommended that planning permission be granted. The application was presented to the Committee at the request of Councillor Campagna.

Mr Oliver, a local resident, spoke in objection to the application.

Mr Lee-Sang, a local resident, spoke in objection to the application.

Councillor Campagna, a Ward Member, spoke in objection to the application.

Canvey Island Town Councillor Greig spoke in objection to the application.

Canvey Island Town Councillor Tucker spoke in objection to the application.

During discussion Members raised concern that the development would result in the loss of an attractive area of greensward and open space to the detriment of the character and amenity of the area. Furthermore the Committee considered that the proposed development would be overdominant to the surrounding area.

A number of Members were also concerned that the proposed development could lead to an increase in surface water flooding in the area and the limited information provided by the applicant regarding the proposed drainage system was not sufficient to ease these concerns.

Following debate the Committee voted against the officer's recommendation of approval. A further motion was put and seconded and following debate by the Committee it was:-

> **Resolved** – That the application be refused due to the loss of an attractive area of greensward, to the detriment of the character and amenity of the area, overdominance of the proposed dwellings to surrounding properties and issues in relation to surface water run-off not being resolved to the satisfaction of the Local Planning Authority.

(e) 16/0402/FUL – 6 BEACHWAY, CANVEY ISLAND, ESSEX, S88 0BD (CANVEY ISLAND SOUTH WARD) – DEMOLISH EXISTING DWELLING AND ERECT DETACHED DORMER BUNGALOW WITH INTEGRAL GARAGE – MR SCOTT SMITH

The application was a revised scheme for a replacement dwelling on the site, following refusal of an earlier scheme on design grounds. It was considered that

the objections to the previous scheme had been overcome and it was therefore recommended that planning permission be granted.

The application was presented to the Committee at the request of Councillor Palmer, in order for the Committee to assess the effect of the development on neighbouring property and the surrounding area.

Mr Spalding, a local resident, spoke in objection to the application.

Ms Bullock, a representative of the applicant, spoke in support of the application.

Councillor Palmer, a Ward Member, spoke in objection to the application.

Canvey Island Town Councillor Greig spoke in objection to the application.

During debate a Member stated that he did not believe that the issue of surface water drainage on the site had been addressed satisfactorily.

The majority of Members felt that the revised scheme had been suitably amended to overcome the previous objection on the grounds of design. Following consideration of the report it was:-

> **Resolved –** That the application be approved subject to the conditions as set out in the Planning Officer's report.

Chairman

ITEM 1

Application Number:	**16/0350/FUL**
Address:	**450 Rayleigh Road Thundersley Benfleet Essex SS7 3SU (Victoria Ward)**
Description of Development:	**Erect dormer windows and porch to front and ground and roof level extensions to rear of existing bungalow to form four-bedroomed dwelling and erect two detached three-bedroomed houses to rear**
Applicant:	**Mr Mark Beckford**
Case Officer	**Mr Keith Zammit**

Summary

The application seeks to extend and alter an existing bungalow to convert it to a four bedroomed property and also to erect two new three-bedroomed dwellings to the rear. It is not considered that in the context of the local area this form of development may be said to be out of character. There are no other reasons for refusal that can be found. The proposal is therefore recommended for **APPROVAL**.

The application is presented to the Committee at the request of the Chairman in order that it may assess the impact of the extensions to the existing dwelling, and the impact of the two new dwellings, on the surrounding area.

Site Visit

It is not considered necessary for Members to visit the site prior to the determination of the application.

Introduction

The application relates to a site on the east side of Rayleigh Road, opposite its junction with Deerhurst. It currently contains a detached bungalow. It is bordered to the north, south and east by other residential properties. It has an existing vehicular access to Rayleigh Road.

The Proposal

Permission is sought for the extension and alteration of the existing bungalow to form a four bedroomed dwelling and the erection of two new dwellings to the rear of the site, each having three bedrooms. These would have a proposed ridge height of some 6.7m.

A mixture of brick, render and Hardie Plank cladding are proposed as external materials.

Supplementary Documentation

There is no supplementary documentation with this application.

Planning History

None

Relevant Government Guidance and Local Plan Policies

National Planning Policy Framework
Section 7 – Requiring good design

Current Local Plan
EC2 – Design
T8 – Parking standards

New Local Plan
H1 - Housing Strategy
H3 – Established Residential Areas
H12 – Location of Housing Development
DES1 - Design

Residential Design Guidance
RDG1 – Plot size
RDG2 – Space around dwellings
RDG3 – Building lines
RDG5 – Privacy and living conditions
RDG6 – Amenity space
RDG7 – Roof development
RDG8 – Detailing
RDG11 – Landscaping
RDG12 – Parking and access
RDG13 – Refuse and recycling storage

Consultation

Highways
No objection subject to conditions

Rochford Council
To be reported

Public Consultation

There were eight responses to the original neighbour notification, all objecting to the proposal on the basis of overlooking, dominance, light loss and highway safety issues.

A second notification was sent out on 28th June 2016 following receipt of amended plans which revised the design of the alterations to the existing dwelling at the front of the site, to a dormer bungalow rather than a full two storey house, in addition to changes to the car parking layout. Five responses were received following this, with three in objection, one neutral and one in support.

Comments on Consultation Responses

The impacts of the proposal on adjacent residents and highway safety are discussed in the evaluation of the proposal.

Evaluation of Proposal

The site is allocated for residential purposes on the Proposals Map accompanying the Local Plan. There can therefore be no objection in principle to a residential redevelopment of this site. The issues to be considered are therefore:

- whether a backland development is an acceptable form of development
- the design of the proposed dwellings and alterations to the existing one
- the impact of the proposal on nearby residents' living conditions
- parking and traffic implications

Whether backland development is acceptable

The proposed construction of dwellings to the rear of the existing one would introduce what may be termed as 'backland' development, inasmuch as it would not have a direct road frontage. In some locations around the borough such a form of development has been held to be out of character with the surrounding layout of housing. In this particular instance, however, Members may recall that a similar but more intensive scheme was permitted a short distance to the south at 426-428 Rayleigh Road (now known as Walnut Mews) which provided flats on the site frontage and three single family dwellinghouses to the rear. The cul-de-sac Copper Beeches, immediately to the south of this site, also appears to be the result of a redevelopment at some time in the past, albeit in the form of frontage development with a new public road provided. In light of this, it is not considered that backland development may be said to be out of character with the surrounding area, certainly not to the degree where an objection would be upheld on appeal, and no objection is raised to this aspect of the scheme.

Design

The proposed dwellings to the rear of the site are considered of acceptable appearance in themselves and would not be unduly tall in relation to the surrounding development. The plot sizes would not be out of keeping with the surroundings. There is felt to be a satisfactory standard of landscaping forming part of the scheme.

Following receipt of amended plans, the alterations to the existing bungalow to provide enlarged accommodation are felt to be acceptable in terms of their scale and visual impact on the existing dwelling and surrounding area. No objection is therefore raised to the scheme on the basis of Policy EC2, RDG1, RDG2, RDG3, RDG7, RDG8 or RDG11.

Impact on nearby residents' living conditions

The proposed dwellings at the rear of the site are of relatively modest height and are considered to be positioned such that they would not cause undue loss of amenity to surrounding properties by way of obtrusiveness or dominance. Subject to a condition requiring first floor side windows to be obscure glazed as appropriate, it is considered that adjacent residents' privacy would be adequately protected.

Following receipt of amended plans, the roof alterations and rear extension to the existing bungalow are not considered to be of a scale where adjacent residents' amenity would be adversely affected through obtrusiveness or dominance. Subject to a condition requiring that the proposed first floor side window be obscure glazed, it is not considered that there would be an adverse impact on privacy.

The vehicular access and parking area may have the potential to cause noise and disturbance to adjacent residents both in Rayleigh Road and Copper Beeches; however the vehicle movements associated with two dwellings are not considered to be so great that an objection on this basis could be robustly defended at appeal. Furthermore, it is noted that a landscaped buffer is offered along the northern site boundary to provide separation of the vehicular access from the adjacent property at No.454 and also along the southern boundary to separate the car parking area from the rear aspects of properties on Copper Beeches. Under these circumstances it is not felt that adjacent residents would experience undue loss of amenity from the provision of vehicular access and car parking.

No objection is therefore raised to the proposal on the basis of RDG3, RDG5 or RDG12.

Parking and traffic implications

The proposed dwelling would provide two car parking spaces per property which is acceptable in numerical terms. The highway authority has raised no objection to the intensification of use of the existing vehicular access subject to a condition requiring it to be widened. There is therefore no objection on parking or highway grounds under Policy T8 or RDG12.

It is noted that the highway authority has requested a number of conditions. Where appropriate these will be incorporated into any recommendation of approval.

The highway authority's suggested conditions include a requirement for areas for loading/unloading *et cetera* to be identified clear of the highway. Given the location of the site on the A129 it is considered that this is a valid concern. The applicant has been advised of this and it is anticipated that a construction management plan to address this matter will be received in time for the Committee meeting.

Other matters

Occupants of the rear houses will need to place their refuse at the end of the shared drive in order for it to be collected. There is space for this to take place, so no objection is raised under RDG13.

The existing and proposed dwellings are considered to have adequately sized rear gardens for the accommodation offered so there is no objection on the basis of RDG6.

Conditions

On the matter of whether any permission granted should be subject to conditions, in addition to those highways conditions that have been previously referred to and also those in respect of obscure glazing, it is noted that the precise finishes of the brick, render and roof tiles have not been specified. In some instances the local planning authority would ask to see details or samples of these; however, this is a location which displays a mixed character, where the local planning authority's detailed assessment of such items is not necessary.

Conclusion

The proposed development of this site is not considered to be a form of development that would cause undue harm to the character of the area or the amenity of surrounding residents. It is therefore recommended that planning permission be granted.

I have taken all other matters raised by interested parties into consideration, but none are sufficient to outweigh the considerations that led to the recommendation.

My Recommendation is Approval with the following conditions

1 The development hereby permitted shall be begun on or before the expiration of three years beginning with the date of this permission.

REASON: This condition is imposed pursuant to Section 91 of the Town and Country Planning Act 1990.

2 Prior to commencement of development, a construction management plan shall be submitted to and approved in writing by the local planning authority including, with reference to an accurately scaled plan, area(s) for the loading, unloading, reception and storage of building materials clear of the highway.

REASON: In order to ensure that the highway is not obstructed during the construction period in the interest of highway safety and maintaining the free flow of traffic. Approval of the plan prior to commencement of development is necessary because the contents of the plan will inform the manner in which the site is to be developed.

3 The approved construction management plan shall be implemented for the duration of the construction of the development.

REASON: In order to ensure that the highway is not obstructed during the construction period in the interest of highway safety and maintaining the free flow of traffic.

4 Prior to first occupation of the new or extended development, the approved car parking and vehicular access areas shall be provided, hard surfaced and drained in accordance with SuDS principles. Thereafter, these areas shall be retained for the parking and manoeuvring of vehicles and not used for any other purpose.

REASON: To make and retain satisfactory provision for parking off the highway in the interest of highway safety, for the amenity and convenience of surrounding residents and in the interest of sustainable drainage.

5 Prior to first use of any approved car parking area, the existing vehicular access shall be widened as shown on drawing 3034-04 Rev C sheet 1 of 2 prepared by DK Building Designs Ltd. The width of the access at its junction with the highway shall not be less than 5.5 metres and shall be provided with an appropriate vehicular crossing of the footway.

REASON: To ensure that vehicles can enter and leave the highway in a controlled manner in the interest of highway safety

6 Prior to first use of any approved car parking area, the vehicular access at its centre line shall be provided with a clear to ground visibility splay with dimensions of 2.4 metres by 43 metres, as measured from and along the nearside edge of the carriageway in both directions. Such vehicular visibility splays shall thereafter be retained free of any obstruction at all times.

REASON: To provide adequate inter-visibility between vehicles using the access and those in the existing public highway in the interest of highway safety.

7 The proposed windows serving the landings at first floor level in the side elevations of the proposed dwellings and the proposed window serving a bedroom at first floor level in the side elevation of the existing dwelling to be extended shall be:

(i) obscure-glazed; and
(ii) non-opening, unless the parts of the window which can be opened are more than 1.7m above the floor of the room in which the window is installed

and permanently retained as such thereafter.

REASON: To prevent overlooking and loss of privacy being caused to adjacent residential properties.

Informative

1 The Local Planning Authority has acted positively and proactively in determining this application by identifying matters of concern within the application (as originally submitted) and negotiating, with the Applicant, acceptable amendments to the proposal to address those concerns. As a result, the Local Planning Authority has been able to grant planning permission for an acceptable proposal, in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.

ITEM 2

Application Number:	**16/0106/FUL**
Address:	**Oikos Storage Ltd Hole Haven Wharf Haven Road Canvey Island Essex (Canvey Island West)**
Description of Development:	**Construction of a new deep water jetty facility consisting of the refurbishment of and extension to the existing OSL Jetty, refurbishment of an existing 12 tank storage compound and the undertaking of related operational and site infrastructure works.**
Applicant:	**Oikos Storage Ltd**
Case Officer	**Ms Kim Fisher**

Summary

The application has been submitted by Oikos Storage Ltd (OSL) and seeks planning permission for the construction and operation of a new deep water jetty and associated infrastructure including the replacement of 12 tanks at its site at the southern end of Haven Road, on Canvey Island.

The proposed development is consistent with national, sub regional and local economic policy and subject to appropriate mitigation would have no adverse impact on ecology, landscape or visual amenity, the historic environment, commercial or recreational navigation, highway considerations or flood risk.

Furthermore, appropriately mitigated the proposal would have no significant adverse impact on the environment in terms of noise, vibration, air quality or contamination and would have no adverse impact on the safety of local residents or workers on the site.

The proposed development would not give rise to any significant cumulative or in combination effects when considered with other permitted developments.

The proposal is therefore recommended for conditional **APPROVAL**.

It should be noted that the proposed development also requires consent/licence from the following bodies:

- The Marine Management Organisation
- Environment Agency
- Port London Authority.

The issue of a licence from the MMO is imminent and likely to be provided prior to determination of this application by the Planning Authority.

It should further be noted that the jurisdiction of the Planning Authority only extends to the low water mark, beyond that point control rests with the Marine Management Organisation and the Port Authority.

Introduction

The application has been submitted by Oikos Storage Ltd (OSL) and seeks planning permission for the construction and operation of a new deep water jetty and associated infrastructure including the refurbishment of 12 existing tanks within the confines of Compound 4 which lies within the north-eastern part of the site.

The proposal, hereafter referred to as the Oikos Deep Water Jetty, (ODWJ), seeks to facilitate the berthing of larger vessels at the site by extending Jetty No.2 into deeper water and carrying out improvements to the safety of operations on the site through the replacement and renewal of infrastructure within the site to current safety standards.

Once the ODWJ proposal is in operation it will have a berth facility able to accommodate a range of vessels up to and including 120,000 deadweight tonnage (DWT) tankers. It is estimated that as a result of the ODWJ proposals, approximately 36 vessels per year, on average 3 vessels per month, will use the new extended Jetty 2 when it becomes operational.

The overall operation of the terminal will remain the same, product will continue to be unloaded from the berthed vessels via pipelines that run along the jetties, pumped into storage tanks and then transferred from the site by underground pipeline. Jetty 2 and Compound 4 will operate on a 24 hour/seven day a week basis, which is consistent with the operation of the rest of the OSL terminal.

Although it will be necessary for an amendment to the existing Hazardous Substances Consent to be made, to incorporate the extended Jetty 2, the ODWJ proposals do not alter the type of product, the amount of those products that can be stored or the locations where those products can be stored.

In general, local authority jurisdiction coincides with the authority's administrative boundary. It is clear, and has been consistently agreed in the past, that coastal local authorities have administrative control and jurisdiction over areas down to low water mark.

A significant element of the proposed development which will generally consist of the refurbishment and extension to Jetty 2 will occur below the low water mark. The proposed development will therefore also require the applicant to obtain the consent of the Marine Management Organisation (MMO) and the Port of London Authority (PLA).

The development has been determined to have the potential for significant impacts on a designated European site, either individually or in combination with other projects. As such the proposal needs to be considered in the context of the EC Habitats Directive, the EC Birds Directive and the Ramsar Convention.

The proposed development has also been determined to be for a form of development which has the potential to have significant impacts on the environment.

The proposal has therefore been the subject of an Environmental Impact Assessment and an Environmental Statement accompanies the application.

The COMAH Safety Report for the site will need to be updated prior to the project becoming operational to include reference to the jetty extension and bigger import flow rates.

The Need for Habitat Regulations Assessment

The UK is bound by the terms of the EC Conservation of Habitats and Species Regulations 2010, as well as the EC Birds Directive and the Ramsar Convention. These are contained in the Habitats Regulations (2010) as amended.

The aim of the Directive is to conserve natural habitats and wild species across Europe by establishing a network of sites known as Natura 2000 sites. The Habitats Regulations refer to these as European sites and contains a detailed schedule of protected sites and species. Within the UK protected sites are known as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and RAMSAR sites.

Habitats Regulation Assessment (HRA) is a process which helps to determine the likely significant effects of plans or projects and, where appropriate, assess adverse impacts on the integrity of European sites, examine alternative solutions and provide justification for imperative reasons for over-riding public interest (IROPI).

The 2010 Habitats Regulations do not specify the methodology for carrying out a HRA but they do specify the obligations of both the competent authority and the developer.

Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken when a plan or development project is likely to have a significant effect upon a European site. This effect might be from an individual project or from a project in combination with others.

Article 6(4) requires that where an appropriate assessment has been carried out and results in a negative assessment, i.e., any proposed avoidance or mitigation is unable to reduce the potential significant impacts, or if uncertainty remains over the significant effects, than consent will only be granted if:

- there are no alternative solutions
- there are imperative reasons of overriding pubic interest (IROPI) for the development and
- compensatory measures have been secured.

The regulations make reference to 'competent authorities'. These are relevant public bodies, government ministers and statutory undertakers etc who are able to carry out the 'Appropriate Assessment' of impacts in relation to the Habitats Regulations.

In the case of the current application a request for a screening opinion was made of the Marine Management Organisation (MMO), which is the competent authority in respect of the proposed Jetty. In concluding upon the need for EIA, the MMO recommended that there should be a separate section within the ES to address the impacts upon the European and Ramsar sites, in order to assist the MMO in determining whether the proposal would have a significant impact on the European sites and to undertake an appropriate assessment if required.

Regulation 61 further makes clear that in light of the conclusions of such an appropriate assessment, the competent authority may agree to the plan or project only after it has determined that it will not adversely affect the integrity of the European site. If an appropriate assessment, however, concludes that the development will adversely affect the integrity of the site (despite any proposed avoidance or mitigation measures or if uncertainty remains), Regulation 62 makes clear that agreement can only then be given if there are no alternative solutions and that the project

must be carried out for Imperative Reasons of Overriding Public Interest (IROPI). Agreement under these circumstances must be accompanied by the securing of necessary compensatory measures to ensure that the overall coherence of the network of European sites is protected.

Protected areas considered within the HRA document are:

- Thames Estuary and Marshes SPA/Ramsar
- Holehaven Creek SSSI.

Impacts on Holehaven Creek SSSI have been assessed by the applicant because the site regularly supports internationally important numbers of black-tailed godwit which are thought to be part of the population protected within the Thames Estuary and Marshes SPA. As such the SSSI enjoys international protection in the context of the application.

The Benfleet and Southend Marshes SPA is not considered in the submitted report. This is because the applicants consider that the proposed development is at a sufficient distance from the site for impacts on protected species and habitats to be negligible.

Pre application discussion with the MMO and Natural England indicated that on the basis of the information available at that stage regarding the final timing and proposed methodology of the project, there was a risk to overwintering and migratory birds and intertidal habitats and as a consequence Natural England was initially of the view that a significant effect on protected sites could not be discounted.

Further information was therefore requested to assist appropriate assessment in the context of the submitted planning application.

Following the receipt of further information Natural England, together with the MMO is satisfied that the proposed development, if carried out in strict accordance with the details now submitted, and specific conditions imposed on the planning permission and marine licence, as well as in accordance with the various agreed strategies, would not have a significant effect on the designated sites, either individually or in combination with other plans or projects. Consequently, no Appropriate Assessment is required.

Natural England further comments that provided the proposed works are carried out in strict accordance with the details submitted it is not likely to damage the interest features for which the site has been notified.

The Need for Environmental Impact Assessment

Developers of projects that may have significant effects on the environment are required by the Environmental Impacts Assessment (EIA) Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) to provide information about the project's environmental effects.

The aim of Environmental Impact Assessment is to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process. (National Planning Practice Guidance, Paragraph: 002 Reference ID: 4-002-20140306).

The EIA Directive has been incorporated into UK legislation in the form of various regulations and those most relevant to the ODWJ proposals are the Marine Works (Environmental Impact Assessment) Regulations 2007 and the Town and Country Planning (Environmental impact Assessment) Regulations 2011.

At an early stage in the process of determining the form of its proposals, OSL sought an opinion from the MMO as to whether the marine elements of the ODWJ proposals required EIA, and if they did what the scope of the Environmental Statement should be. In its formal screening and scoping response the MMO indicated that the marine elements would require EIA because they were considered to constitute a form of development described in Annex 1, paragraph 8(b) of the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU), for which EIA is mandatory.

An Annex 1, 8(b) development consists of “trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) which can take vessels of over 1350 tonnes”.

This would clearly include the proposed jetty development.

The Planning Authority is of the view that the terrestrial elements of the proposal, which primarily concern the replacement of existing plant and equipment, would not have a significant effect on the terrestrial environment as to require independent EIA. However, detailed consideration has been given to the terrestrial impact within the submitted ES.

<u>The availability of alternative solutions.</u>

The Marine Works (Environmental Impact Assessment) Regulations 2007 and the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 make it clear that in determining an application which is the subject of an ES, consideration must be given to the availability and practicality of alternatives to the proposed development and an indication of the main reasons for the applicant’s choice of preferred action and location, taking into account the environmental effects.

The starting point for any consideration of alternative solutions is the identification of a problem that requires resolution.

In this case the applicants have identified a need to ensure that fuel supplies within the country are maintained at appropriate levels, both in terms of capacity and cost, to serve the demands of customers.

The applicants have identified that recent contraction in UK refinery output has meant that demand for fuel products now significantly outstrips nationally derived supply, resulting in the UK increasingly relying on imported fuel products. It is considered unlikely that this situation will be reversed.

Furthermore changes in the structure of the Global fuel market means that imports now arrive in the UK from increased distances.

The increased significance of fuel imports and the increasing distance to the source of the product is generating a move towards the use of bigger ships by importers in order to achieve economies of scale. In order to accommodate the larger vessels deeper water jetties are required.

The Government has made it clear that any importation capacity provided must be in the right place. (National Policy Statement for Ports 2012).

Government published data (Sub–national road transport fuel consumption 2005 – 2013 data, DECC 2015) demonstrates that in 2013 the south-east and eastern regions of the UK had the highest demand for road transport fuels (approximately 5.7 million and 3.9 million tonnes of oil equivalent respectively). The demand from these two regions, in combination with the demand from Greater London, amounted to approximately 32% of the total UK demand.

Government Aviation data also demonstrates that in 2014 the three airports which can be served by the OSL Terminal – Heathrow, Gatwick and Stansted – accounted for just over 42% of all UK air transport movements.

A recent report for the UK Petroleum Industry Association (UKPIA 2013) considered, amongst other things, the robustness and resilience of the UK refined product supply system (Section VIII). In respect of the South East of England and London, it was highlighted that with the closure of the Coryton refinery there were no refineries left in these parts of the country meaning that refined product supply is entirely dependent on imports from other locations outside of these areas. Furthermore, when considering robustness and resilience, it highlighted that the East of England, Greater London, the South East and the South West (which the report collectively refers to as the 'South Fuels Supply Envelope') is short of all refined products and that the import facilities within this envelope are running at or close to their maximum capacity and could not bridge the gap if supply were lost from the one remaining refinery in this area – Fawley. The overall conclusion reached is that the south envelope is considered to be high risk with supply in the envelope being neither robust nor resilient.

Against this background the facility at OIKOS would appear to be well placed to contribute to national fuel security.

Having identified a need and the strategic importance of the application site to contribute towards meeting that need, the applicant has taken a staged approach to the consideration of possible alternative solutions to meeting the need identified by the applicant for enhanced fuel storage facilities in the South of England; this included the identification and analysis of potential alternative solutions that might be available to meet the identified need, identification of the main physical requirements which any potential alternative solution would have to meet and the analysis and consideration of the potential alternative solutions, including the potential environmental effects of such options. From this a preferred solution could be identified which could be developed into a detailed proposal.

<u>Stage 1 - The Consideration of Alternative Solutions</u>

Option 1: The option of doing nothing

The potential option of doing nothing, if taken forward, would mean that the identified need set out above would not be met. This, in turn, would mean that the OSL terminal would be unable to meet the market demand for the types of facilities required by those who wish to import refined product into the UK. This would be inconsistent with Government objectives and against the wider public interest.

For these reasons OSL did not consider Option 1 to be a realistic proposition.

Broad Option 2: The option of development at other locations remote from the OSL terminal site

The applicants consider that the provision of import facilities remote from the OSL site and the south east generally would not meet the need which has been identified.

In this regard the applicants point out that, amongst other guiding principles on the consideration of alternatives, the National Policy Statement for Ports (NPSfP) makes it clear that *'suggested alternative proposals which mean the primary objectives of the application could not be achieved ….can be excluded on the grounds that they are not important and relevant to the decision'.*

It is the view of the applicant that developing fuel import infrastructure on other sites and facilities remote from the OSL terminal would not meet the primary objectives of the proposals for which consent has been applied.

Broad Option 3: The option of development at or close to the existing OSL terminal

The applicants are of the view that based on the identified need for port related facilities in the south, the demand for product, the availability of key facilities on site and the need for sustainable development, the only realistic broad option for meeting the need identified is to undertake development at the OSL terminal or at a location close to it with the ability to serve the terminal.

Stage 2: - Identification of Initial Potential Alternatives

In order to be considered a potential alternative site for a new deep water jetty, the site must have access to a body of water suitable for the transport of imports, the potential to accommodate vessels of the size used by importers and sufficient infrastructure and storage capacity to hold such imports prior to forward transportation to the final user.

In respect of the marine requirements the applicants identified the following initial potential alternative solutions –

(i) the improvement and use of the unused 'Chainrock' jetty located within Holehaven Creek to the west of the OSL Terminal site;

(ii) the improvement and use of the existing operational OSL Terminal Jetty 1;

(iii) the improvement and use of the existing unused OSL Terminal Jetty 2;

(iv) the improvement and use of the existing unused OSL Terminal Jetty 3; and

(v) the improvement and use of the existing operational jetty serving the Calor Gas import terminal located to the east of the OSL Terminal.

In respect of the landside requirements, the applicants identified following initial potential alternatives were identified:

(i) the renewal and updating of an existing storage compound / compounds at the Terminal site; and

(ii) the provision of an entirely new storage compound or compounds at the Terminal site.

Stage 3 – Analysis of Initial Potential Alternatives

The Chainrock Option

With regard to the use of the Chainrock jetty, this raised several practical and logistical issues which may be summarised as follows:

(i) The jetty and adjoining land/water is in a variety of ownerships

(ii) The structural integrity of the jetty cannot be guaranteed

(iii) Development and use of the jetty is likely to have a significant impact on the adjoining SSSI and wildlife site, during both the construction and operational phases.

(iv) The provision of necessary infrastructure would be likely to narrow the entrance to Holehaven Creek

(v) Localised dredging may be required to ensure depth of water.

(vi) The provision of pipelines between the Chainrock jetty and OSL site would be problematic. Such pipelines would be in the order of some 850m long and if provided overland would be required to cross the Canvey Wick SSSI or the Canvey Village Marsh Local Wildlife site, and pass under Haven Road. If provided underwater problems with product flows within the pipeline are envisaged as well as potential problems for navigation within Holehaven Creek and OIKOS Jetty No.1.

(vii) The maintenance of underwater pipelines is also more problematic.

(viii) The proposal would involve development on land allocated for Green Belt purposes and

(ix) The economic cost of this option is likely to be prohibitive.

For the reasons summarised above, OSL did not consider that this potential alternative was a physically or environmentally suitable solution to meeting the need identified. It was, therefore, not taken forward for further consideration.

The Jetty 1 Option

With regard to the option of improving and using Jetty 1 within the OIKOS site, the following considerations were identified:

(i) Jetty 1 is currently the only operational jetty which serves the OSL site.

(ii) The jetty is within the control of OSL and connects back into the existing operational OSL Terminal site

(iii) In order to accommodate the size of vessel required, the existing berth pocket alongside the jetty would have to be enlarged in terms of length, width and depth. A capital dredge would, therefore, be required, along with subsequent maintenance dredging.

(iv) Further mooring piles would need to be provided to both the east and the west of the jetty head and additional infrastructure would be required on the head to handle product from the size of vessel envisaged. Such works would not take place within a designated site, but would be in close proximity to the Holehaven Creek SSSI

(v) Of all of the alternatives considered, this alternative is located the closest to existing residential properties.

An alternative to developing the existing jetty head that has been considered is the provision of a new jetty head located further out in the River Thames which is then connected back to the existing Jetty 1 structure.

To provide the necessary depth of water alongside, such a new jetty head would need to be located some distance out into the River Thames and could create navigational issues for vessels accessing other jetties in the vicinity. Works would likely also be needed at the existing head of Jetty 1 to accommodate such an extension.

Such works would again be in close proximity to a designated site and could cause issues with access into the creek and the flow regime at the mouth of the creek.

Leaving all of these points aside, however, a fundamental issue with any suggested solution involving Jetty 1 is that it would leave the OSL Terminal with no marine access during the time period the works were being undertaken – which is estimated could be in the order of two years. During this period, the OSL Terminal would not be able to operate, meaning that commercial contracts could not be served and the terminal would effectively lie dormant. This is not a practical, economically viable way forward from OSL's perspective, or from the perspective of fuel supply needs.

Post construction it would also leave OIKOS in the position of having only one operational jetty which is currently, and would remain, a resilience issue.

This option has not therefore been pursued.

The Jetty 2 Option

With regard to the option of improving and using Jetty 2 within the OIKOS site, the following considerations were identified:

(i) The jetty is unused and within the control and ownership of the applicants.

(ii) Jetty 2 connects back into the OSL terminal site at its landing and space is available within the OSL site to provide the infrastructure that would be needed.

(iii) The current alongside water depth at the jetty head is shallow and capital dredging would be required to provide the required alongside depth and the necessary approach access channel to the berth in its current location. The need to undertake such extensive dredging, combined with the type of infrastructure to be provided on the jetty head means that, in reality, the existing jetty head would effectively have to be removed and a new one built in its place if Jetty 2 in its current form were to be utilised.

An alternative to rebuilding the existing jetty head and undertaking dredging is the provision of a new jetty head further out into the River Thames with a connection that links back into the Jetty 2 structure. In comparison to the suggested OSL Jetty 1 extension, such an extension to Jetty 2 would take place further away from the Holehaven Creek SSSI, and the residential properties at Haven Quays.

The extension of Jetty 2 was considered by the applicant to be worth further consideration.

The Jetty 3 Option

With regard to the option of improving and using Jetty 3 within the OIKOS site, the following considerations were identified:

(i) Jetty 3 is in the control of OSL and connects back into the OSL Terminal site at its landing point which, as with the OSL Jetty 1 and Jetty 2 options, has significant operational and land use benefits.

(ii) At the landing point of Jetty 3, the OSL terminal has space available to provide the infrastructure that would be needed.

(iii) This jetty contains the outfall elements of the land use drainage system that serve the wider OSL site, which would have to be removed, or incorporated into any refurbishment scheme as necessary.

(iv) As with Jetty 2, the current alongside water depth at the jetty head is shallow and capital dredging would be required to provide the required alongside depth and the necessary approach access channel to the berth in its current location. The need to undertake such extensive dredging, combined with the type of infrastructure to be provided on the jetty head means that, in reality, the existing jetty head would effectively have to be removed and a new one built in its place if Jetty 3 in its current form were to be utilised.

This option was therefore rejected because the rebuilding and dredging works required to bring Jetty 3 in to operation would be too extensive.

The extension of Jetty 3 further out into the River Thames along with a new jetty head – along similar lines to that considered in respect of Jetty 1 and Jetty 2 - was also considered. Whilst this potential alternative is similar to the suggested extension to Jetty 2 discussed in the preceding sections, OSL concluded that it was not preferable to an extension to Jetty 2 for the following main reasons:

(i) Whilst Jetty 3 is further away from the OSL Jetty 1, it is closer to the nearby Calor jetty than Jetty 2, and OSL consider that any vessel conflicts could more easily be managed between different OSL related movements in comparison to OSL / Calor movements;

(ii) Due to the layout of the existing Jetty 3, an extension to it would involve works to the existing head of Jetty 3, which would make the scale of works more extensive than for a similar extension to Jetty 2;

(iii) Whilst Jetty 3 is further away from the nearby designated Holehaven Creek SSSI and the residential enclave at Holehaven point than Jetty 2, the increase in distance is relatively minor such that no material environmental benefits are considered likely.

(iv) Jetty 3 already contains drainage infrastructure which the wider OSL terminal currently relies upon, where as Jetty 2 does not contain any such infrastructure.

On the basis of these considerations the applicants concluded that the use the Jetty 3 was not a viable, realistic and physically suitable potential alternative to meet the need identified. This potential alternative was thus not taken forward for further detailed consideration.

The Calor Jetty Option
With regard to the option of using the Calor Jetty, the following considerations were identified:

(i) The jetty is not within the control or ownership of the applicants

(ii) This existing jetty is operational located to the east of the OSL terminal and is controlled and used by Calor in connection with their import terminal

(iii) As the jetty is still in active use by Calor, it is unlikely that OSL would have ultimate control over when they would be able to use the jetty, which has the potential to generate significant operational difficulties in terms of when vessels could discharge their cargo.

(iv) It would be necessary to add additional operational infrastructure specific to the OSL operations – such as Marine Loading Arms (MLAs) – to the head of the jetty and along the jetty approach. This would require the jetty to be strengthened and altered to accommodate both existing gas and additional liquid import infrastructure.

(v) It is likely that undertaking such work to the jetty would also result in the jetty being out of action for a period of time whilst the work was undertaken.

(vi) The depth of water alongside the jetty head is insufficient. Whilst it may be possible to dredge the alongside berth – with consequential implications – the structure of the jetty is such that there exists the possibility that a vessel using such a berth could impact with structural elements of the jetty.

(vii) Import pipelines and support infrastructure would need to be constructed through the Calor site from the jetty to the OSL terminal.

(viii) Joint use of the Jetty may create resilience issues.

On the basis of these considerations the applicants concluded that the use the existing Calor jetty was not a viable or physically suitable alternative to meet the need identified. This alternative was thus not taken forward for further detailed consideration.

Landside element initial potential alternatives
Two options were considered:

(i): The renewal and updating of an existing storage compound within the OSL terminal, and

(ii): The provision of a new storage compound within the terminal.

Both of these initial alternatives to meeting the landside requirements were considered to be suitable options. OSL, however, chose to proceed with the alternative of renewing and updating an existing storage compound within the terminal because it had a number of benefits.

The main benefits were that:

(i) such a compound was available. Compound 4 in the north east corner of the terminal already benefits from Hazardous Substances Consent to store the required amount and range of petroleum products if physically brought up to the required standard; and

(ii) there were likely to be practical and environmental benefits in effectively renewing something that already exists – for example, once the refurbishment work had been undertaken there would not be any material alteration in the appearance of the terminal or the way in which the terminal operates.

The Preferred Option

Based on the above analysis the applicants determined to proceed on the basis of a scheme which sought to improve and extend Jetty 2 and improve existing landside facilities to meet the identified need.

Site Visit

It is recommended that Members visit the site prior to determination of the application.

The Site

The Oikos Storage Ltd (OSL) Terminal lies within the south west part of Canvey Island on land which is owned by the Port of London Authority and leased to OSL on a long term basis. It has been used for the storage of fuel and other bulk liquid products since the 1930's and at one time occupied a much larger site. Today the terminal covers an area of approximately 27.5 hectares fronting the northern bank of the River Thames.

The site constitutes port operational land as defined by the Town and Country Act 1990 and is in operational use as a terminal handling fuel and other bulk liquid products. The operations at the OSL facility are controlled and regulated by the Health and Safety Executive (HSE) and the Environment Agency (EA) under the Control of Major Accident Hazards Regulations 2015 (COMAH Regulations). The OSL facility is designated as an upper tier COMAH site in terms of storage capacity and is fully compliant with the relevant requirements of the COMAH regulations.

The OSL facility has three existing jetties. However, only one of these jetties – Jetty 1 located at the south-western end of the site – is currently operational. Through this jetty the facility is able to accommodate tanker vessels of up to 55,000 Dead Weight Tonnage (DWT) with a draft of -12.5m chart datum (CD) - (CD - A chart datum is the level of water that charted depths displayed on a nautical chart are measured from. A chart datum is generally a tidal datum; that is, a datum derived from some phase of the tide. Common chart datums are lowest astronomical tide and mean lower low water).).

Jetty 2, the subject of this application, was constructed in the 1950s and extends some 200m out into the river. This jetty has not been operational since the 1970s.

Bulk liquid products are imported to the facility by ship, pumped ashore along Jetty No.1 and stored in storage tanks before onward distribution. At present, the onward distribution of product takes place by underground pipeline. This is because the facility is well connected to both the Compania Logistica de Hidrocarburos – Pipeline System (the CLH-PS which was formerly known as the Government Pipeline Storage System - GPSS) and the independent UKOP fuel distribution pipeline network.

The site is accessed from Haven Road, which leads to Roscommon Way and links to the A130, A13 and ultimately the M25 motorway.

The Surrounding Area

The Lobster Smack public house and the residential development known as Haven Quays is located the south of the site. The Calor Gas LPG import terminal and HBC vehicle services facility are located to the north and east. Further to the north is open grazing land and a small collection of farm buildings which form part of Brick House Farm. Part of this open farmland area is designated as a Local Wildlife Site.

Land to the west of Haven Road consists predominantly of open marshland and grazing land designated as the Canvey Village Marsh Local Wildlife site and Holehaven Creek and Canvey Wick Sites of Special Scientific Interest (SSSI).

To the south of the site the site is bounded by a public footpath (CANV_8).

The proposed development is located in close proximity to the following designated sites:

- The Thames Estuary and Marshes Special Protection Area (SPA) (European site);
- The Thames Estuary and Marshes Ramsar (European site);
- The Southend and Benfleet Marshes Site of Special Scientific Interest, Special Protection Area and Ramsar site (European site)
- The Holehaven Creek Site of Special Scientific Interest (SSSI);
- The South Thames Estuary and Marshes Site of Special Scientific Interest, and
- The Thames Estuary recommended Marine Conservation Zone (rMCZ).

The Proposal

Oikos Storage Ltd (OSL) is seeking consent for the construction and operation of a new deepwater jetty (ODWP). This will take the form of an extension to Jetty 2, and associated land storage infrastructure improvements, including the demolition of the existing storage tanks within Compound 4 located on the northern part of the site and their replacement with 12 new storage tanks, a new bund wall to Compound 4 and new connecting pipelines from Jetty 2. Additional pipe work will link the new works to the existing network of pipelines and will be supported by new operational infrastructure, lighting and a new drainage system in the area of the proposed works. Redundant pipe work and buildings will be demolished/removed.

In greater detail, the proposal may be broken down into two main parts – the marine elements, which consist generally of those works in the area that stretches from the existing seawall out into the River Thames, and the terrestrial elements, which generally consist of those works taking place in the area extending from the existing seawall north into the OSL terminal site.

Marine elements

The marine elements of the proposals consist of:

A new jetty approach way.

This will be approximately 5m wide and extend out into the River Thames in a roughly southwards direction for a distance of approximately 260m from a point on the existing Jetty 2 approach way out into the River Thames to where the water depth is approximately 14.5m below CD. The new jetty approach way will be supported on 18 steel piles and will accommodate new product and service pipelines on a framed structure, and a pedestrian access way. The piles will be approximately 0.61m in diameter and approximately 45m in length and inserted in pairs along the

approach way at approximately 32m intervals. The piles are expected to be inserted in a raked manner away from the walkway.

The new approach way deck will be at a nominal height of approximately 8.7m above CD. A handrail, approximately 1.2m high above the approach way deck, will be provided along both sides of the approach way. A steel truss will mark the outer edge of the approach way.

A new jetty head platform.

This will consist of a concrete platform (approximately 32m wide by 12m deep) located at the end of the new jetty approach way. The platform will also be positioned at a nominal height of approximately 8.7m CD although a slight fall (front to rear) will be provided for drainage/containment purposes. The platform will be supported on 29 steel piles each with a diameter of approximately 0.61m and length of approximately 38m.

A metal safety barrier/hand rail will be erected around the sides and rear of the platform, which will extend to a height of approximately 1.2m above the platform.

Marine Loading Arms (MLA).

Provision will be made for up to four MLAs to be positioned on the jetty head platform, however, only two 16" MLA's (approximately 40cm) and one 12" MLA (approximately 30cm) will be constructed as part of the ODWJ proposals. At its highest point in a stowage position, a 16" MLA will measure approximately 22.4m high from the jetty platform level. (Approximately 31m from Chart datum).

Gangway tower and fire monitor columns.

A steel gangway tower including fire monitor column will be provided on the jetty platform. A second fire monitor column will be placed on a separate support tower. The gangway tower will measure approximately 17.4m high from the jetty platform level in its highest position, and will provide pedestrian access between the jetty platform and the vessels moored alongside. The height of the fire monitor columns will be similar to that of the gangway tower.

Ancillary jetty head equipment and infrastructure.

A small shelter (approximately 3m by 2m by 2m high), drainage, CCTV equipment, mooring equipment, lighting and other ancillary infrastructure will also be provided on the jetty head platform. A small mooring berth for maintenance vessels will also be created on the rear of the platform, serviced by a small davit crane.

Four fender dolphins.

Four monopile berthing fender dolphins will be installed, two east of the jetty head platform and two to the west. Each monopile will be a hollow steel pile with a diameter of approximately 2.5m and length of approximately 45m. A platform, fender panels, mooring hooks, lighting, CCTV equipment and an emergency escape ladder will be
provided, as necessary, on the dolphins.

(A dolphin is a man-made marine structure that extends above the water level and is not usually connected to shore. A fender dolphin is a form of bumper used to absorb the kinetic energy of a

vessel berthing against a jetty, quay wall or other vessel. Fenders are used to prevent damage to boats, vessels and berthing structures).

Six mooring dolphins.

Six monopile mooring dolphins in total will be installed, three to the east and to the rear of the jetty head platform and fender dolphins and the remaining three to the west and to the rear of the jetty head platform and fender dolphins. The inner four mooring dolphins on each side will be a hollow steel pile with a diameter of approximately 2.5m and length of approximately 46.5m. The outer two mooring dolphins will be the same approximate diameter but be slightly shorter at approximately 45m. A platform, mooring hook, lighting, CCTV equipment and an emergency escape ladder will be provided as necessary on the dolphins.

Access walkways.

Steel access walkways, approximately 1m wide, will be created from the jetty head platform out onto all of the fender and monopole dolphins. The walkways will be positioned at a nominal height of 8.7m CD. In addition to the 10 fender / mooring dolphins there will be a further 12 intermediate support piles, six on each side but provided in pairs.

Each bearing pile will be a hollow steel pile with a diameter of approximately 0.61m and a length of 45m.

New product and service pipelines.

Two new 24” product pipelines (approximately 60cm) and a number of service pipelines will be installed from the jetty head platform along the new jetty approach way. The pipelines will be contained within a steel support structure that will be constructed on the deck of the new jetty approach way. The top of this support structure will be approximately 2.4m above the approach way deck level and will be future proofed by having the capability to accommodate additional product and service pipelines if necessary in the future. In addition to the steel support structure, additional piped services may well also be provided along the outer truss of the walkway.

Replacement product and service pipelines.

Existing redundant pipelines and associated infrastructure along the existing Jetty 2 approach way will be removed and replaced with a continuation of the pipelines and services that will be created along the new jetty approach way. It may also be necessary to incorporate surge prevention measures into the pipelines.

The existing jetty approach way is at a nominal deck height of 8.23m CD. Towards its tie in point with the new jetty approach way (which is to be provided at a nominal deck height level of 8.7m CD) the existing jetty approach way, walkway, pipelines and services will be ramped up as necessary to overcome the height difference between the two deck levels. This will be done over an extended length so that visually there will not appear to be a marked elevation difference.

Maintenance and renewal activity, such as repairs to rectify corrosion, will also be undertaken to the existing Jetty 2 approach way, as necessary. Access along the existing Jetty 2 approach way, beyond its junction with the new jetty approach way will be closed off.

Works to the existing head of Jetty 2.

Two existing structures located on the existing head of Jetty 2 will be demolished and removed. On the cleared eastern end of the jetty head, a small control room (in the order of 3m by 6m by 2.5m high) and a fire fighting area (3m by 4m and containing foam storage, a pump and control equipment) and other necessary infrastructure will be constructed. The eastern area of the jetty head containing these facilities will be demarcated via a fence and made secure.

Pedestrian Link Bridge between the head of Jetty 2 and the new jetty approach way.

A short length of new access walkway will be provided between the facilities provided at the eastern end of the existing Jetty 2 head and the new jetty approach way.

Lighting.

New lighting for operational, safety, security and navigational purposes will be installed along the jetty approach ways, the jetty head, the access ways, the mooring and fendering dolphins, the MLAs and the gangway tower.

Terrestrial Elements

The terrestrial elements of the proposal consists of:

Pipelines and walkway gantry.

A new combined pipeline and personnel walkway gantry will be constructed at the point where the existing Jetty 2 approach way meets the shore. The gantry will be a steel framed structure consisting of a mesh decking walkway, support structures containing the pipelines and service lines, with stepped access at either end. The gantry will span the existing flood defence wall (with a clearance of approximately 2.8m) and the adjacent public footpath (at a height of approximately 4.45m), and provide a secure and separate operational link from Jetty 2 into the OSL terminal.

At its highest the gantry will be approximately 7.85m above the level of the footpath and will measure approximately 24.5m in length. The staircases will extend for a further approximate 8m either side of the main gantry structure down onto the existing jetty 2 and an existing walkway within the operational terminal. The gantry structure will be approximately 4.4m wide and approximately 3m high to accommodate personnel and the pipe and service support structures. The structure will be supported on six driven steel piles (four within the OSL terminal site and two within the foreshore area beyond the sea wall). These piles will be approximately 0.45m in diameter and in the order of 25m long.

The two 24” import pipelines will then extend from the gantry into a pipeline manifold area located just inside the boundary of the OSL facility, in the vicinity of the former operator’s mess-room building (which is being removed).

Removal of redundant pipelines and infrastructure.

Existing redundant pipelines and infrastructure that run along the existing jetty approach, through the existing flood defence wall, under the existing public footpath and on into the operational OSL terminal site will be removed. The flood defence wall and public footpath will be made good following the removal of such infrastructure.

New product and service pipelines within the terminal site.

Two new 18" product pipelines (approximately 45cm) will be provided from the pipeline manifold/pigging station area just inside the terminal boundary through the OSL site and into a further newly created pipeline manifold area located to the south of Compound 4. The product pipeline route, in general terms, consists of the new pipes being laid in a north / south alignment within the eastern part of the existing bunded Compound 5 area before turning west at the south eastern corner of Compound 4.

These pipelines will vary in height above the surrounding ground level within the terminal site to enable them to span site access roads and existing bund walls as necessary. It is envisaged that the range in height will be between approximately 0.5m and 8.5m above the surrounding ground level. The maximum height of approximately 8.5m will be in locations where it is necessary to provide sufficient clearance for emergency vehicles where the pipe runs over existing or proposed vehicle access routes within the terminal site. In these locations the pipelines will be carried on pipe-bridges. The pipelines will be supported as necessary with pipe supports at appropriate locations along their route.

To provide operational flexibility within the OSL facility, two new 12" product pipelines will be laid along the southern perimeter boundary of the terminal to provide connections between the new pipeline manifold just inside the terminal boundary and the existing Jetty 1 import lines at the base of the existing southern pipe bridge. A short section of terminal boundary fence and gates will be repositioned to accommodate these pipelines, which in this location will run underground.

Pipeline manifold and distribution plant area.

A new pipeline manifold and distribution plant area will be created to the south of Compound 4. This area will contain necessary operational infrastructure such as pumps, additive injection system and filtration plant, and 'pipeline pig' management equipment. The equipment and infrastructure within this area will be positioned on a concrete platform or a series of concrete platforms, with areas of gravel and shingle located between as necessary.

Operational infrastructure.

In addition to the pipeline manifold and distribution plant infrastructure, other operational infrastructure will also be provided. This will include immediately to the south-east of Compound 4 a Motor Control Centre (MCC) and switchroom kiosk (approximately 11m by 4m by 4m high), a compressor house (approximately 11m by 4m by 4m high) and transformer compound all located on concrete hardstanding, bunded as necessary. Operational infrastructure will also be provided close to the landing point of Jetty 2 and will include facilities such as, pipeline pig management equipment, nitrogen storage, local MCC and switchroom with associated transformer and associated works and services.

Demolition of buildings and infrastructure.

To enable the new pipelines and associated infrastructure to be constructed, and to remove certain redundant elements at the site, a number of existing buildings and infrastructure will be removed. These include an old pump house adjacent to Compound 4, existing pipework, switchroom, foam store, an old operator's mess-room and existing wastewater treatment infrastructure.

Renovation of tank storage Compound 4.

This part of the ODWJ proposals involves a number of different elements. The first main element includes the removal of the 12 existing storage tanks located within the Compound and their replacement with 12 new tanks positioned in the same location following works to the compound area. The replacement tanks will be of the same diameter as the existing tanks (approximately 27.5m) and have an approximate overall height of 16.25m above the surrounding ground level. The tank itself would be approximately 11.75m high, the coned roof of the tank would be some 2.75m high at its maximum point and associated deluge pipework and handrail above the roof would be approximately 1m high. The tank would sit on a base which is likely to be in the order of 0.75m in height.

The foundation base or berm of the new tanks will consist of compacted material and incorporate 'under tank' leak detection measures. A concrete apron will fit around the berm covering the interface between the tank and the berm.

The overall maximum height of the new tanks in Compound 4 will be consistent with the existing tanks in the adjacent Compound 2 storage area and a maximum of approximately 3.5m higher than the tanks to be replaced.

The second main element includes the removal of the existing secondary containment bund walls that serve Compound 4. The existing walls will be removed and replaced by a single reinforced concrete wall around the entire compound at a height of approximately 1.65m above the level of the ground adjacent to the compound. The new wall will be on a slightly different alignment at the south-east and north-east corners of the compound in comparison with the existing wall arrangement. This is required to create necessary space outside of the bund wall to allow for maintenance and provide access for emergency vehicles.

The third main element includes the creation of an impervious base across the whole of the Compound 4 area. This involves the removal of existing material within the compound area down to a depth of approximately 0.5m and the placement of an impervious bentonite / clay base mat layer. The tank foundations, on which the berm sits, are then constructed on this impervious base and the remaining compound area will then be backfilled with sand, ballast and gravel back up to an appropriate level.

The fourth element includes the installation of a new compound wide drainage system. This drainage system will be created in the infill material area within the compound and drain to newly created sump chambers, from which the water can be then be pumped into the site wide drainage system when appropriate to do so.

The fifth element includes the provision of necessary product pipework, associated infrastructure and fire / safety infrastructure within the compound area.

A new access road around the compound.

A new approximate 4m wide access road will be created all of the way around the perimeter of the renewed compound – using, wherever possible, parts of existing access roads. This road will provide access to all parts of the compound perimeter for maintenance, safety and security reasons. Minor works, including the provision of a short retaining wall structure, may be necessary to link this new access road into the wider terminal access road network. Along the

southern side of the compound, this access road will be constructed from either concrete or tarmac, whilst elsewhere the road will likely consist of rolled aggregate.

At the south-east corner of the renewed compound, the new product pipelines will be taken up and over the access road. In this location the alignment of the access road will take advantage of the space created by the relocation of the new bund wall to ensure that an existing body of water located in this part of the site is not directly affected by the works.

Minor support works may be necessary to prevent slippage of the access road in this location.

Extension of an existing access road.

The existing internal access road, known as south road will be extended by approximately 50m to the east, running underneath the proposed new product pipelines from Jetty 2 (which will be located on a pipebridge in this location); this extension will ensure vehicle access is retained to the south eastern corner of the OSL operational site.

A new product pipeline and pumps to serve Compound 10.

A new 16" import / export pipeline will be provided between Compound 4 and Compound 10. This pipeline will run under the new Compound 4 access road in a new pipe culvert and then under the existing access track between Compound 4 and 2 (requiring the extension of an existing pipe culvert) before then running within an existing pipe track alongside the eastern edge of Compound 2 and then around the northern edge of the terminal site to Compound 10. A further set of pumps will then be provided at Compound 10 to enable this pipeline to be utilised.

Drainage work improvements.

In addition to the installation of a new drainage system within Compound 4, the opportunity is being taken to carry out other drainage works outside the Compound. These include the removal or abandonment of some sections of the existing drainage infrastructure and the installation of new below ground drains, a replacement interceptor and attenuation infrastructure with associated outfall pumps and discharge pipework.

Site wide lighting improvements.

In addition to the installation of lighting along the jetty, further additional lighting within the terminal site will be provided.

General Construction Methodology

The construction methodology can be assessed in two parts: the construction of the marine elements and the construction of the terrestrial elements of the proposal.

Both elements will be constructed at the same time and some aspects of the methodology such as hours of working, access arrangements, compounds and storage areas and the construction programme will be consistent across the site and are detailed below:

Hours of working

In terms of the hours of working, the applicant advises that due to the specialist nature of the activity involved in constructing the ODWJ proposals, it is likely that a large proportion of the construction workforce will be sourced from other parts of the country – most likely to be the north-east of England. This will, therefore, require the workforce to travel down and stay temporarily in the locality for periods of time.

To accommodate such working arrangements it is envisaged that the construction activity generally will be undertaken across a 12 day fortnight, whereby shifts start on a Monday and continue through to the second Friday. Working hours Monday to Friday would generally be 10 hours (8am to 6pm) and generally 8 hours (8am to 4pm) on the Saturdays and Sundays worked in the middle of the 12 day shift. No deliveries to site would be allowed on Saturdays after 12.00 and none allowed on Sundays.

It is noted however that some equipment maintenance or set up work may need to take place outside of the hours specified.

The exception to these working hours is in respect of piling activities. The applicants have indicated within the Environmental Statement that the vibration generated by simultaneous use of separate piling rigs for the monopiles and the smaller piles, would require that such combined activity be restricted to normal day time hours of working during the week and on Saturdays between the hours of 8am and 1pm.

Impact piling of the smaller piles in isolation would be less noisy and could take place during the evenings and at weekends.

No night time piling would be undertaken.

The applicants identify that such working arrangements have the advantage of reducing the overall length of the construction process.

Access arrangements during construction

Access to the site will be via both the main entrance to the OSL facility and the secondary / emergency access point, both of which provide access from Haven Road.

Once on the site, traffic associated with the movement of construction materials and waste materials will use the central access road which runs through the site from the main entrance gate to the south-east corner of the site, or the north and east access tracks that run around Compound 2. The majority of movements will be along the central access road.

Construction workers will use the existing site access road that runs from the main entrance gate to the terminal office building in the south-west corner of the site. An existing area of hardstanding close to the existing office will be used for the parking of construction workers vehicles and they will then be transported to the main construction area. This will be undertaken to ensure safety and security within the Terminal site. The Terminal will remain active during the construction of the ODWJ proposals and so a safety plan will be prepared by OSL and agreed with the principal contractor/contractors and the HSE as necessary.

Outside of the site, HGV construction traffic and, where practicable, construction worker traffic to and from the site will be routed via Haven Road, Roscommon Way (A130), Canvey Way (A130) and then the A13. The routing arrangements have the advantage of avoiding passage through residential areas and will be formalised through a Construction Traffic Management Plan (CTMP).

Sufficient parking and vehicle waiting areas are available within the OSL facility to ensure that no HGV's or other vehicles associated with the ODWJ construction park on Haven Road.

Construction compounds and storage

The primary construction compound for the works will be located in the vicinity of the existing former terminal office building and surrounding area in the south-east part of the site. This building will be used as the site office for the works and will include welfare and mess facilities. Additional temporary portacabin type buildings will be required at various locations within the area of the works.

An existing concrete hardstanding to the north and east of the old office building will be used as the primary lay down and materials storage area during the construction phase. Other areas within the site of the works will also be used as appropriate.

Specific Construction Methodology for the Marine Elements

The construction phase for the marine elements of the works is envisaged to take approximately 18 months.

The main elements will consist of:

- the installation of the mono piles and the bearing piles;
- the construction of approach way and access walkways,
- the construction of the jetty head platform;
- the removal of redundant infrastructure along the existing jetty;
- works to the existing head of Jetty 2;
- topside works on the new jetty head platform including the provision of infrastructure, the MLAs and the gangway tower;
- topside works on the new jetty approach way including the provision of new pipelines and services and
- topside works on the existing jetty approach way including the provision of pipelines and services.

Construction activity on the marine elements of the proposal are likely to be multi-phased with several activities being undertaken at the same time. The following statement should not therefore be assumed to be an accurate chronology of likely events.

Installation of the monopiles and the conventional bearing piles.

These will be installed from a large barge using a percussive hammer. The monopiles are expected to arrive on site in two separate sections. The first section will be pitched and driven down to near the water level when the second section will then be welded on top and driving of the pile will continue. The procedure for the smaller bearing piles will be similar.

A guide frame may be required to ensure accurate positioning of the piles. This will comprise of smaller temporary piles with beams between them adjusted to the positions of the pile being driven. It is likely that the monopiles will be driven first, and the smaller bearing piles after, although the exact sequence of pile driving will be determined at the time to best suit the barge movements required.

It is possible that piling associated with the monopiles and piling associated with the smaller bearing piles will take place at the same time. It is envisaged that the piling will take 85 days to complete in total – although the actual piling activity itself will not be taking place for the entirety of this period.

Construction of the access and approach ways.

The truss section bridge units that make up the approach walkway will be delivered by barge and lifted into place by a crane barge onto prepared cross-head supports located on the smaller bearing piles. When operating closest to the shore, the crane barge doing this work and the associated dumb barge (the hull of a barge in tow of a tug), holding the units to be installed, will potentially rest on the intertidal area at low tide.

Once in place the operational pipe work and other services will be installed.

Similarly, the access walkways located between the fender and mooring piles will be delivered by barge in sections and lifted into place by a crane barge.

Installation of the deck and infrastructure on the new jetty head.

The precast concrete beams and slabs that comprise the deck of the jetty head platform will be craned into position onto the steel load bearing piles. Reinforcement will then be laid over the precast deck elements and a topping of concrete poured over it to lock the whole deck structure together. Holding fixings will be cast into the concrete deck to which the main operation plant items (marine loading arms, access tower, etc) will then be bolted. These plant items will be delivered to the site by barge and lifted into place by a crane barge.

Removal of the existing pipelines and laying the new ones.

The existing disused pipes on the existing section of the approach jetty will be cut into sections in-situ and will then be lifted onto a waiting barge for transport for disposal.

New pipe lengths (envisaged to be typically around 12m long) will be transported to the site via dumb barge where they will be lifted into place and then welded together in-situ on the approach jetty.

New steel pipe support racks will be bolted into position on the new approach jetty and the existing jetty as necessary in advance of the new pipework being installed.

Works to the existing jetty head.

The existing Jetty 2 head is to be used as a platform to locate certain operational equipment and infrastructure. All of these items will be transported to the site in prefabricated form by crane barge

In advance of this, the existing brick shelters will be demolished and removed by barge.

A short link bridge will be provided from the main approach jetty for access and to support any services required. This will again be installed by crane barge.

Quantities of construction materials and waste (marine)

It is estimated that something in the order of 12 tonnes of material will need to be removed from the site as a result of the marine elements of the project. This will primarily consist of the lengths of redundant pipework that extend along the existing jetty.

The construction of the marine elements will require the delivery of the pre-fabricated sections of the jetty head and approach and access walkways, the gangway tower, the MLAs, pipework, piles, steel pile tops, concrete beams and planks, the fenders and dolphins, control cabin and other topside infrastructure.

It is envisaged that the majority of this material will be delivered to the site by barge. This is consistent with the provisions of Policy T15 of the adopted Local Plan.

Construction traffic generation and construction workers (marine)

It is estimated that delivery of materials associated with the construction of the proposed marine works will generate a maximum of 5 barge movements to the site per week (7 days) during the busiest period.

It is anticipated that some small-scale materials will arrive at the terminal by road and it is further estimated that the maximum number of construction workers that will be working on the marine elements at any one time will be in the order of 25.

Specific Construction Methodology for the Terrestrial Elements

The construction phase of the terrestrial works is scheduled to take approximately 20 months. The main elements are envisaged to consist of:

(i) the setting up of contractors compound area;

(ii) the removal of the Compound 4 bund walls and tanks;

(iii) the removal of base material within Compound 4,

(iv) the laying of an impermeable base layer and the back filling of the Compound area including the provision of a drainage system;

(v) the erection of the 12 new tanks within Compound 4;

(vi) the construction of the new bund wall around Compound 4;

(vii) the installation of new infrastructure to the south of Compound 4;

(viii) the construction of new pipelines and associated infrastructure between Jetty 2 and Compound 4;

(ix) the construction of a new pipe / pedestrian gantry bridge linking the jetty and the OSL terminal site;

(x) the construction of new pipelines between Jetty 1 and Jetty 2;

(xi) the construction of a new pipeline between Compound 4 and Compound 10 and associated pumps; and,

(xii) the undertaking of necessary mechanical and electrical installation and testing.

Construction activity on the terrestrial elements of the proposal is likely to be multi-phased with several activities being undertaken at the same time. The following statement should not therefore be assumed to be an accurate chronology of likely events.

Demolition of the Compound 4 bund walls.

There are currently two existing bund walls in the area of Compound 4. One surrounds eight tanks and another surrounds four tanks. The bund walls currently occupy a perimeter of approximately 486m and 405m respectively. Each bund wall is approximately 100mm thick and approximately 600mm from ground level, and made from concrete and ballast reinforced with steel bar. Each wall extends below ground to a depth of approximately 400mm. The joints in each section of bund wall are sealed using steel fire plates, which are bolted into place.

The applicant advises that the bund wall will be chopped into sections, using a machine with hydraulic breaker or jaw attachments. The concrete will be graded and separated from the steel. The steel will be sent away for scrap whilst the concrete will be put through a crusher located on site, and re-used.

Demolition of the existing 12 tanks.

Conventional methods for tank demolition will be used to affect a controlled collapse of each tank. Such conventional practice involves the mechanical collapse of the roof into the body of the tank as a first step. This will be achieved by use of a conventional excavator machine fitted with a mechanical shear/ripper tooth. The tank will be pierced close to roof level and the shear / ripper tooth will then be moved towards the base of the tank. With this first cut achieved, the procedure will be repeated, part way around the circumference of the tank, in effect peeling back the tank's skin. From here the machine will also be used to shear the tank skin into manageable sections and in doing so will expose the roof spider/steel framework.

The machine operator will systematically remove and shear the spider and roof into manageable sections before eventually shearing the remaining outer skin. All sections of the dismantled tank will be further cut up or folded as necessary to enable it to be removed off site.

Construction of the Compound 4 floor.

The existing ground within Compound 4 will be excavated down to approximately 0.5m below its existing level and the material removed off site as necessary to enable an impervious membrane to be provided, before fill is placed to bring the site back to the required level. A drainage system will be installed within the fill material above the impermeable membrane including the installation of two sumps at a depth of approximately 1.5m to collect surface water drainage falling within the Compound.

These operations will be carried out using hydraulic excavators, road haulage wagons, dumpers and tandem rollers.

Construction of 12 tank bases.

The existing bases will be trimmed down until firm material is exposed. New stone (possibly containing some recycled material), placed by excavator and dumper, will be rolled on top to raise the base level to the designed finish level. An impervious membrane will be inserted under the whole of the tank position which will join to the impervious membrane under the compound floor to provide a continuous membrane across the whole compound. Each base will then receive a top layer of bitumen-sand as a base for the new steel tanks. Tank leakage detection measures will be placed in the berm beneath the tank.

Twelve tanks to be reconstructed on top of the new bases.

The applicants advise that new tanks are most likely to be constructed via the jacking method, which involves each of the rings of wall plates that make up the completed tank being constructed in sequence and then lifted into position.

Firstly steel plates containing a central sump are installed onto the new bases to create the floor of the tank, then two rings of wall plates and the roof will be constructed at ground level. The roof will be lifted onto the first two rings and welded into place. This structure is then jacked up and the next ring of wall plates is constructed underneath and then welded into place. This structure is then jacked up again and the process continues until all rings are in place and the tank has reached its design height.

Interconnecting walkways and spiral stairways are then attached to the outside of the erected tank.

It is estimated that a total of approximately 1870 tonnes of carbon steel will be required to construct the tanks. It is also estimated that approximately 37 tonnes of waste scrap metal will be produced during the tank construction. This scrap will be transported from the site via four 12 tonne skips.

Other general and consumable waste associated with the tank build will be removed from the site via 8 yard skips at an estimated rate of one per month.

Construction of a single bund wall surrounding the entire compound.

The new bund wall around the perimeter of Compound 4 will be of reinforced concrete construction and have movement joints at appropriate intervals. The applicant advises that the joint material is a specially designed product, which allows thermal expansion and contraction while retaining the watertight integrity of the containment bund. Traditional formwork methods will be adopted to complete the reinforced concrete wall works. Movement of formwork panels will be by hand and hydraulic excavator, with concrete placement being undertaken via a mobile concrete pump. The foundations of the bund walls will require excavation to a depth of approximately 1m.

Alteration to the drainage system.

The proposal includes alterations and the upgrading of the existing drainage system on the site. This activity is anticipated to take place at intervals throughout the construction process.

Installation of pump bund and pipe supports.

In order to contain any minor spillages that may occur during maintenance operations a reinforced concrete platform or platforms with small upstand plinths are proposed under the pumps and equipment located to the south of Compound 4. Traditional formwork methods will be adopted and concrete placement will be by mobile concrete pump. Upon completion of the pump bund and pipe supports, necessary pumps, pipework and
associated infrastructure will be erected.

Tank Painting.

As the construction work and testing of each tank is completed, a painting squad will prepare and paint the outside of the new steel tanks. Preparation of the tanks may include grit blasting to remove rust. This will be undertaken with operatives working from mobile elevated work platforms (MEWP).

Mechanical and electrical installation and commissioning.

Most of this work is at ground level and involves connecting the new tanks with pipework to the pumps on the pump skid. The pipework will be supported on low-level concrete bases located in and around Compound 4.

In addition other items of equipment to be installed in and around Compound 4 and at the base of Jetty 2 include:

- a nitrogen storage facility
- transfer pumps,
- pipeline pig management equipment,
- a compressor house
- a switchroom with transformer
- new pipework and
- electrical and control cabling.

Where possible the applicant advises that these will come to site preassembled and will be lifted/bolted into position to limit the amount of on site working hours.

This work will be ongoing throughout the whole construction programme.

Removal of the existing pipes from the seawall.

This work will be completed during the latter stage of the project. If possible it is proposed to drag each pipe out of its existing culvert to avoid the closure of the public footpath.

If this is not possible then the public footpath will be closed for a temporary period while the pipes are exposed and lifted out and the footpath and seawall is made good as necessary.

This work will require the consent of the Environment Agency.

Construction of a joint pedestrian access and pipeline gantry.

This element of the proposal will be delivered to the site in prefabricated steel sections and craned into position from within the terminal. The gantry will be bolted onto piled foundations previously provided. The applicants advise that the public footpath that runs under this proposed structure will need to be closed for a temporary period during installation of this structure. This activity is anticipated to take a relatively short period of time to complete once the piled foundations are in place.

Installation of the product pipelines to Compound 4.

Two separate 18“ pipelines will be laid from the jetty/landside interface northwards to Compound 4. Steel supports, which will be bolted into raised concrete foundations, will be installed at appropriate intervals along the pipeline route.

Installation of product pipelines between Jetty 1 and Jetty 2.

Two separate 12” pipelines will be laid between the landing point on the renewed Jetty 2 and the base of the existing southern pipe-bridge. Necessary works to the terminal boundary fence and to lay the pipelines underground within a short section will be undertaken as part of this process.

Installation of new pump work and pipelines to serve Compound 10.

Two new pumps and the Compound 10/Compound 4 connecting import and export pipework will be installed. This may require minor amendments to existing pipe supports and connections.

Demolition of buildings and removal of redundant infrastructure.

As part of this proposal a number of buildings within the site and redundant pipeline infrastructure to the east of Compound 4 will be removed. Demolition spoil, such as brick rubble and concrete, will be crushed on site and reused as part of the new works wherever possible, thereby reducing the number of HGV movements to and from the site.

Construction of the Compound 4 access/fire road and extension of existing access road.

A new access/fire road will be constructed around the eastern and southern boundaries of the new Compound 4 bund wall. This will connect into existing access roads to the north and west of the compound to provide access to all areas of the compound perimeter in case of an emergency. The process of creating this road will consist largely of the levelling of the ground and a compacted stone surface will be laid. The process of creating the extension to the existing access road in the south-east corner of the site will largely be the same but potentially with a concrete or tarmac surface

Lighting.

The proposed lighting will then be installed.

Quantities of construction materials and waste (Terrestrial)

It is estimated that something in the order of 42,500 tonnes of material will be removed from the terminal as a result of the terrestrial works. This includes steel, concrete, brick

and excavated material generated from the tanks, bund wall and floor of Compound 4, the area south and east of Compound 4, and the areas around the landing point of Jetty 2.

During the construction phase of the terrestrial works it is envisaged that approximately 50,000 tonnes of concrete, stone and gravels and steel will be transported onto the site. In addition pipework, support steelwork, walkways and pipe bridges will need to be delivered to the site.

Some of the material generated by works on the site will be re-used. This is likely to include the operation of a concrete crushing facility.

Construction traffic generation (Terrestrial)

It is anticipated that construction materials and waste produced as part of constructing the terrestrial elements of the scheme will be transported to and from the OSL site, primarily via HGV. The applicants advise that it is not practically possible for such materials to be transported via the river as the existing Jetty 1 will remain in operational use for the import of fuel products during the construction process and, in any event, does not have the physical capability of handling bulk goods of the type that would be used during the construction process.

Jetty 3 is not structurally sound and, even if it were, would similarly be physically incapable of handling bulk goods of the type that would be used or generated during the construction process.

Jetty 2 cannot be used because it forms a part of the ODWJ proposals and will be the site of construction activity itself.

General Construction Mitigation Measures

The applicants advise that the construction process will be undertaken in accordance with a Construction Environment Management Plan (CEMP). This document will be submitted to and approved by the Planning Authority and will effectively govern how construction of the proposals will take place, ensuring that the appropriate construction mitigation measures are implemented.

A draft framework of a proposed CEMP has been submitted as part of the submitted Environmental Statement. The applicants anticipate that he appointed contractor(s) will be responsible for producing the final CEMP prior to commencement of development on the site.

The CEMP will set out the general information relevant to the control and management of the construction activities, for example, it will set out the hours within which construction activity may take place, how the site is to be accessed and how movement of workers through the site is to be managed.

It will also set out the measures and processes that will be put in place to manage the implications of construction processes on terrestrial ecology and nature conservation features and traffic and transport measures such as a routing agreement, site control and security, parking and unloading arrangements, pedestrian access requirements and such traffic management measures as are considered necessary.

The CEMP will also detail the specific requirements relating to noise and vibration, providing information on noise level limits, hours of working, details of noise reduction systems, particularly in respect of piling , dust suppression measures and techniques, site cleanliness (to prevent trackout) contamination prevention measures.

Sections of the CEMP will also address issues relevant to the protection of landscape and visual amenity, flood risk and safety.

The submitted draft framework for the CEMP would appear to be appropriate in scope and range and the submission of the final CEMP can be required by condition attached to any consent.

The Operational Phase

At the present time, via Jetty 1, the OSL facility handles approximately 65 vessels per year of a maximum weight of 55,000 DWT. Actual annual vessel figures vary, with the period between January to December 2013 seeing 84 vessels berth at the facility, which is in comparison to 48 vessels during the same period in the following year (January to December 2014). Vessels currently spend between 6 and 48 hours berthed at the OSL terminal.

Activity on Jetty 1 is predicted to increase in a phased manner, due to new commercial contracts and changes to existing contracts. OSL consider that the maximum number of vessels which could realistically be accommodated on Jetty 1 is 104 per annum.

The construction of the new deep water jetty and associated infrastructure would enable the terminal to handle a range of vessels up to and including a 120,000 DWT tanker (approximately 277m length overall with a beam of 44.7m and with a maximum draft of 16.2m when fully laden). It is estimated that as a result of the ODWJ proposals, approximately 36 vessels of varying sizes per year, on average three per month, would use extended Jetty 2. Such vessels would be likely to spend up to 24 hours berthed at the terminal, which is comparable with vessels that currently use the terminal.

The overall operation of the terminal will remain the same as a result of the ODWJ proposals. The product will continue to be unloaded from the berthed vessels via pipelines that run along the jetties, pumped into storage tanks and then transferred from the site by underground pipeline.

The project does not contemplate the movement of product off site by road on a commercial basis.

Once completed Jetty 2 and Compound 4 would operate on a 24 hour/seven day a week basis, which is consistent with the operation of the rest of the OSL terminal and the vast majority of port facilities generally.

At present, movements to the OSL terminal are limited to OSL employees, visitors and maintenance staff. Typically 15 to 20 staff enter and leave the site on daily basis. The majority of these movements are spread throughout the day, reflecting shift patterns and 24 hour working. On average the site generates around 30 – 40 movements per day. It is envisaged that as a result of the ODWJ proposals, an additional 5 shift based jobs will be created.

Current operations generate approximately 2 HGV movements per week. This compares favourably with historic levels of HGV movements which saw as many as 60 movements per day occurring in 2005.

It is anticipated that the level of HGV traffic will not materially change in comparison with current levels as a result of the ODWJ proposal.

Although it will be necessary for an amendment to the existing Hazardous Substances Consent to be made, this will only be to incorporate the extended Jetty 2 into the boundary of the area covered. The ODWJ proposal does not alter the type of product that can be stored on site, the amount of those products that can be stored on site or the locations where those products can be stored.

The COMAH Safety Report for the site will need to be updated prior to the project becoming operational to include reference to the jetty extension and bigger import flow rates.

Supplementary Documentation

The following documents accompanied the application and can be viewed on the Council's website.

- Supporting Statement
- Design and Access Statement
- Environmental Statement Volumes 1 – 3

Relevant Planning History

The site has been used for the storage of what is now known as hazardous substances since the 1930s.

The OSL terminal has an existing Hazardous Substances Consent (HSC) granted by Castle Point Borough Council in November 2013 in its capacity as the Hazardous Substances Authority. The HSC permits the storage of 242,391 tonnes (292,237m^3) of petroleum and related products. This storage capacity is provided in a variety of tanks that range in size from 1,514m^3 up to 19,333m^3.

The tank locations where consent has been granted for the storage of such products are those located in the northern, central and eastern part of the facility.

It should be noted that at the present time the terminal cannot actually store this amount of petroleum product because it does not benefit from sufficient physical storage capacity that, having regard to the recommendations that have emerged out of investigations into the Buncefield incident (as set out in the Process Safety Leadership Group Final Report 2009), is in a form suitable to store this amount of product. Although the total shortfall in this regard is currently in the region of 96,940m^3, it is considered by OSL that it is currently only necessary to bring approximately 75,000m^3 of this shortfall into a position where it is physically suitable to meet identified needs.

Local Plan Allocation

The site is allocated for oil storage purposes on the adopted Local Plan.

The new Local Plan (2016) identifies the site for port related purposes.

The proposed development would be consistent with the provisions of both plans.

Relevant Policies and Government Guidance

National Policy and Guidance
Control of Major Accident Hazards Regulations 2015 (COMAH)

National Policy Statement for Ports (NPSfP) (Department for Transport 2012)

National Policy Statement for Energy (DECC 2011)

National Planning Policy Framework(NPPF)
Paragraphs 6, 21, 29, 32, 94, 100, 105, 109, 120, 121 and 172.

Energy Security Strategy (Department for Energy and Climate Change, 2012)

Water Framework Directive (Directive 2000/60/EC of the European Parliament)

Thames Estuary 2100 Plan (November 2012).

UK Marine Policy Statement (March 2011)

Noise Policy Statement for England (March 2010).

Natural Environment and Rural Communities Act (2006)

Adopted Local Plan
EC4 Pollution
EC13 Protection of Wildlife and their habitats
EC14 Creation of new wildlife habitats
ED9 Hazardous Installations
T8 Car Parking Standards
T15 Waterborne freight
RE10 Water Recreation
RE12 Public Rights of Way

Emerging Local Plan
Whilst of limited weight it is worth noting that the New Local Plan (2016) states the following:

1. Applications for development that support existing operations at the existing port facilities at South Canvey will be permitted subject to compliance with the following criteria:
a. There must be no increase in the level of hazard or risk posed by the facility as a consequence of the proposals. The advice of the Health and Safety Executive will be sought in relation to this matter;
b. The design of the proposed development must not cause significant harm to the landscape, having regard to the scale of existing development on the site;
c. Public access to the coastal path adjacent to the site must be retained; and
d. The future operation of the site will not result in adverse impacts on water quality in the Thames Estuary, or have a significant adverse affect on European Sites.

2. Applications for the change of use, change of materials handled, or for redevelopment of the existing port facilities at South Canvey will be permitted subject to compliance with the following criteria:

a. It can be demonstrated that the proposal is in the national interest;
b. The level of hazard and risk posed by the site must be reduced compared to existing levels at the time of application, as a consequence of the proposals. The advice of the Health and Safety Executive will be sought in relation to this matter;
c. The design of the proposed development must not cause significant harm to the landscape, having regard to the scale of existing development on the site;
d. Public access to the coastal path adjacent to the site must be retained; and
e. The future operation of the site will not result in adverse impacts on water quality in the Thames Estuary, or have significant adverse affects on European Sites.

3. In the event that a proposal in relation to port facilities on Canvey Island is of a sufficient size to be considered a National Infrastructure Project for determination by the Planning Inspectorate, the Council will support applications that comply with the requirements of this policy.

Consultation

Natural England
Initial Response 28.04.2016

Town & Country Planning (Environmental Impact Regulations) 2011
NE confirmed that the proposed works will take place **adjacent** to designated sites and identified key impacts of concern with respect to the designated sites as follows:

Marine and Coastal Access Act 2009
The proposed works are sited within a recommended Marine Conservation Zone (rMCZ) which provides the following features of interest:

- Intertidal sand/muddy sand
- Intertidal mixed sediments
- Subtidal coarse sediments
- Subtidal sand
- Subtidal mud
- Sheltered muddy gravels
- Tentacled lagoon worm (*Alkmaria romijni*)
- Smelt (*Osmerus eperlanus*)

However NE also confirm that the Thames rMCZ is not currently a material consideration when determining licence applications.

The Conservation of Habitats and Species Regulations 2010 (as amended)
Insufficient information provided to exclude the conclusion that that the application will have a significant effect on the SPA and Ramsar.

The 2010 Habitats Regulations (as amended) require the competent authority, before deciding to authorise a project which is likely to have a significant effect on a European site “to make an appropriate assessment of the implications for that site in view of that site’s conservation objectives”.

In accordance with the 2010 Habitats Regulations (as amended) 61(2) anyone applying for development consent for a project must provide the competent authority with such information as

may reasonably be required "for the purposes of the assessment" or "to enable them to determine whether an appropriate assessment is required."

Further information is required to enable a more robust assessment of likely significant effect on the designated sites. In summary the following information is required:

- Information on the importance of the foreshore area for bird species from nearby designations;

Wildlife and Countryside Act 1981 (as amended)
The proposed works are located in close proximity to Holehaven Creek SSSI. In its current form, the information provided is insufficient to assess the impact of the proposal on this site. The information requested as above will assist Natural England in determining if the proposal is not likely to damage the interest features for which the site has been notified.

Other Relevant Matters

Protected species (terrestrial)
NE has not assessed this application and associated documents for impacts on protected species. The LPA should refer to Standing Advice.

Appendix 1 – Detailed NE comments on the ES and information for HRA
General Comments
This is a complex application which has the potential to result in a number of different impacts, some of which are discussed in more detail below in relation to nature conservation. NE would welcome further discussions with the applicant, the MMO and Castle Point Borough Council.

NE comments on Marine Ecology and HRA
1) The HRA has considered the impacts of the proposal within a 5km buffer however Southend and Benfleet Marshes SSSI, SPA and Ramsar fall within this buffer, but have not been considered. Natural England would like to have a further explanation as to why this designation was not included within the assessment.

2) It is suggested that an increase in dredging activity at jetty 1 is likely to occur in the first year of construction of the proposed jetty. The potential impact of this activity has not been taken into consideration within the HRA. Although Natural England was consulted last year on a proposed capital dredge at jetty 1, further information on the anticipated increased maintenance dredging is required to allow an in-combination assessment of these works.

3) Natural England agrees that the intertidal foreshore area (not designated within SSSI or SPA) is likely to provide feeding mudflat areas for birds most likely to be from populations designated within a protected site.

4) There are a number of underlying assumptions within the HRA and Marine Ecology chapter which are not explored or explained fully. For example; it is suggested that birds are able to be displaced to nearby mudflats as a result of increased human presence. There is no explanation of how much mudflat is available for the birds, whether there are sufficient food sources available and whether this habitat is of suitable and good condition.

5) Cumulative impacts are not considered within the HRA, for example birds may be impacted due to human presence, noise and lighting combined. Natural England requires further

consideration of this cumulative impact to ensure no likely significant effect of the proposed works on the designated features of the nearby designations.

6) The ES should have recognised the need for overwintering bird surveys to enable assessment and appropriate avoidance, mitigation and/or compensation measures to be proposed. Natural England is aware of previous bird data that was collected with a previous submission of an Environmental Statement for proposed jetty works at the same location. There is no inclusion of this data within the desk top study provided for this application and Natural England suggests this data may provide some indication to the use of the foreshore area. The best available evidence should be used to aid with the assessment of the project.

7) Natural England suggests that there is little research on the effects of lighting on the nocturnal use of inter-tidal area by birds so caution should be exercised when making assumptions for a number of waterfowl species. As a general principle it is suggested that light pollution into the intertidal area be minimised. This may be achieved, wherever possible, by directing light into terrestrial or within-development areas, rather than outward into the River zone.

8) In-combination effects have not been adequately assessed within the document. It has been suggested that there is a medium disturbance risk around barge movements; however this has not been taken into consideration in their in-combination assessment. It appears that the in-combination assessment has only considered larger infrastructure projects of which the applicant has indicated that there are none.

NE comments on Piling Noise

9) Piling activity will take place for 85 days and the exact timings of when this activity will take place is unclear, however it is understood that the piling activity will not take place during the period April to September to avoid the fish migration period. It is therefore likely that piling activity will take place during the overwintering period for birds using the designated areas. Natural England requests further details about the timing of the piling works and welcomes further discussions around any mitigation methods required.

10) Natural England defers to the Environment Agency for further advice on the potential impacts to fish and migratory fish species (for example Eels and Smelt).

11) Natural England advises the developer should follow the guidance available from the JNCC for minimising the risk of injury to marine mammals particularly during piling activity.

12) There are no further details or references provided for the comments relating to acceptable noise levels of 71dB in other marine licence consents. Evidence should be provided to establish whether these SPA mudflats and bird species are comparable to those within the present application, different bird species have different sensitivities to noise and the features will be more sensitive at different times of the year (such as over winter). The type of noise (continuous or intermittent) will also affect sensitivity. Whilst 85 days may be a short term impact Natural England recommends that it should not automatically be screened out as being insignificant due to duration alone, other factors need to be considered.

13) The levels of noise at Holehaven Creek are within the range of 50- 70dB and therefore regarded as likely to cause ‘Moderate Effects’. Unfortunately there is no bird survey data available within this Environmental Statement for the adjacent non-SPA mud flats to enable consideration of how significant the effect is on the SPA bird features. The elevated noise in foreshore areas

around the OSL site are in the range of 63-89, which is regarded as likely to cause 'Moderate-High Effects'.

14) Natural England welcomes the proposal for 'soft-start' piling and where possible vibro-piling, and support their use to minimise noise disturbance to birds and suggest they do so to seek to reduce the noise to Low levels (ie, <50 dB) within Holehaven Creek SSSI (supporting significant numbers of SPA black-tailed godwits). Natural England advises that this mitigation measure is provided as a condition on any licence granted.

15) In the absence of any detail about the significance of bird populations using the nearby non-SPA mudflats, Natural England recommends a further condition for 'no piling' to be undertaken during the overwintering period 1 October to 31 March.

16) Subject to the submission of further bird survey information as requested and appropriate assurances via the required EIA assessment, Natural England may be minded to agree to some piling works during the winter, subject to avoidance of the severe weather period as defined by the JNCC.

Comments on hydrodynamics

17) Natural England acknowledges the value of the hydrodynamic modelling undertaken at this location in seeking to predict change. Noting the trends indicated in 7.242, it seems likely that the foreshore west of the new Deep Berth Jetty to the Hole Haven areas will be subject to an increased sedimentation rate which may affect the quality of the supporting habitat for the SPA features. Unfortunately the applicant has submitted no overwintering bird survey data for the adjacent non-SPA muds within the ES and therefore it is difficult for all parties (including regulators & planning authority) to be able to adequately assess the significance of the effect on the SPA bird features that may be foraging in these supporting habitats.

18) A targeted pre-construction bathymetric survey (if necessary beyond ES submissions) and an adequate period of post-construction bathymetric monitoring (for example Years 1, 3 and 5 over a five year period) should be undertaken to help validate the model predictions. The key areas that require monitoring would include a suitable number of samples within the adjacent foreshore (between Jetty No1 and Hole Haven) and within Holehaven Creek SSSI (between the Chainrock Jetty and the eastern half of the Holehaven Creek SSSI southern boundary).

19) NE acknowledge the intention that the ODWJ berth should be self-maintaining but note the presence of contaminated sediment and therefore suggest a condition to be attached to any permissions granted that requires sediment monitoring (pre- and post-construction) to be undertaken to ensure the pollution risk to Holehaven Creek SSSI and SPA features is adequately informed and managed, either through berth management and/or a future berth dredge, if required.

20) Hydrodynamics (other than dredging) should be considered within the HRA even if the impact has been screened out. This is in order to demonstrate that there are not significant changes in accretion or erosion of the intertidal of designated sites.

21) Impacts arising from changes in sediment flows and hydrodynamics on the rMCZ might need to be assessed in the future if the site becomes a material consideration / designated.

Comments about Terrestrial Works

Invertebrates

Appendix 8.8 sets out the proposed Mitigation for the loss of habitat for invertebrates. Supporting habitat for notable invertebrates will be either directly lost or impacted by the development proposals. There are no firm proposals within the ES setting out how the scale or quality of loss can be effectively delivered and maintained to ensure no net loss consistent with IEEM sustainability principles.

Mitigation proposals do not clearly set out an assessment of what invertebrates are the key species for target conservation effort; which habitats are most and least valuable; which habitats will be reduced/effected/ enhanced by mitigation and if so, with details of methodology, monitoring and aftercare management linked to locations on a Map.

Any retained habitat should be managed in perpetuity for the target habitat and notable invertebrate interest to a plan agreed with the planning authority, in consultation with Natural England.

It is likely the invertebrate assemblage of the application site is enhanced due to its proximity to the notable invertebrate hub of Canvey Wick SSSI and West Canvey Village Marshes LWS. In this respect it contributes valuable habitat that has either been colonised or conserved within remnant landscape features. The Invertebrate Assessment indicates that there are nine species that merit attention but does not specifically name which nine. Natural England suggests a number of species that might also be noteworthy.

Notable Vegetation
Natural England notes the presence of nationally endangered and rare and scarce species on the site. It also notes the presence of the county notable species and suggests that other nationally scarce species are likely to be present due to their presence within grassy sea walls on the adjoining site.

Natural England notes that supporting habitat for these notable plants will be either directly lost or impacted by the development proposals. There are no firm proposals within the ES setting out how the scale or quality of loss can be effectively delivered and maintained to ensure no net loss consistent with IEEM sustainability principles. Any retained habitat should be managed in perpetuity for the target habitat and notable plant interest to a plan agreed with the planning authority, in consultation with Natural England.

The applicant subsequently met with NE and undertook additional work/submitted further information which generated a revised response to the application by NE as follows:

Further comments following consideration of additional information. 20.06.2016

The works, as set out in the information supplied by the applicant, *are not sited within or near to a Marine Conservation Zone.* Natural England *has not identified a pathway by which impacts from the development would affect the interest features of the site(s).* Therefore confident that the works *will not hinder the conservation objectives of such a site.*

The Conservation of Habitats and Species Regulations 2010 (as amended)
Confirm that the proposed works are located adjacent to the Thames Estuary and Marshes SPA and Ramsar. Natural England advises that providing the works are carried out in strict accordance with the details of the application which have been submitted, *it can be excluded that the application will have a significant effect on Thames Estuary and Marshes SPA or Ramsar site, either individually or in combination with other plans or projects. Therefore it is our view that an*

Appropriate Assessment of the implications of this proposal on the site's conservation objectives should not be required.

Recommend that the following conditions are attached to the planning and marine licences to ensure that the activity is undertaken in accordance with the details of the application which have been submitted and therefore compliant with the above legislation:

Condition 1:
Working programmes are planned to take account of stoppages due to severe weather. No piling should be undertaken during either a voluntary or statutory suspension of wildfowling, known as a 'winter wildfowling ban' or 'severe weather alert for the shooting of wildfowl and waders', during the duration of the licence. Information on when this is in force can be found on both the Joint Nature Conservation Committee (JNCC) and The British Association for Shooting and Conservation (BASC) websites.

Reason: The scheme, which runs from 9 November until 21 February, is designed to aid conservation of waterfowl by reducing disturbance to them during periods of prolonged cold weather. Works should be postponed/ceased after 7 days of freezing weather and should only start again after 3 days of thaw. These months are when bird populations are likely to be stressed and disturbance can cause the birds to cease feeding and start flying around, using up their limited energy reserves more quickly. Information on the scheme can be found at: http://jncc.defra.gov.uk/page-2894.

Natural England also suggests that the applicant gives notice to the LPA, MMO and NE when piling has occurred during winter.

Condition 2:
Natural England wishes to be consulted by Castle Point Borough Council on the proposed Landscape Ecology Management Plan (LEMP) which is to be submitted by OSL.
Reason: To ensure Natural England's concerns regarding the terrestrial aspects of the project are adequately addressed within the strategy.

Condition 3:
Natural England understands the final design for lighting at the proposal have not yet been agreed, however the applicants should ensure that the lighting is arranged in the most environmentally sensitive way as far as possible.
Reason: To minimise the risk of disturbance to wintering birds whilst feeding on the designated sites, or of disorientation of birds whilst in flight.

Wildlife and Countryside Act 1981 (as amended)
Confirm that the proposed works are located in close proximity to Holehaven Creek SSSI and advises that the proposal, if undertaken in strict accordance with the details submitted, *is not likely to damage the interest features for which the site has been notified.*

Recommend that the *conditions as detailed above are attached to the marine licence* to ensure that the activity is undertaken as per the application and therefore compliant with the above legislation.

If your authority is minded to grant consent for this application contrary to the advice relating to Holehaven Creek SSSI contained in this letter, we refer you to Section 28I (6) of the Wildlife and

Countryside Act 1981 (as amended), specifically the duty placed upon LPA / MMO requiring that you;
• Provide notice to Natural England of the permission, and of its terms. This notice should include a statement of how (if at all) your organisation has taken account of Natural England's advice; and
• Shall not grant a permission which would allow the operations to start before the end of a period of 21 days beginning with the date of that notice.

Further comments following consideration of additional information. 18.07.2016
The applicant submitted a draft Landscape Ecology Management Plan (LEMP) which was submitted to Natural England for consideration. In response Natural England made the following comments.

The LEMP report addresses most of the concerns about the terrestrial biodiversity issues raised in the letter of the 28th April 2016 and subject to the proposed mitigation and aftercare management being undertaken in full, Natural England broadly accepts the conclusions of the report. In particular the direction provided in Section 6.2 of the LEMP with regard to accommodating the mitigation works in the operational site management is noted. In seeking to demonstrate that he notable conservation interest is being maintained consistent with good sustainable development practice, Natural England recommends that he applicant be required to submit a brief annual statement to Castle Point Borough Council and Natural England recording the completion of the required LEMP mitigation works and after care management for years 1 – 10 with a review of performance at year 5.

MOD Offshore Safeguarding
No safeguarding objection

Environment Agency
Comments on Ecology
No objection subject to a condition being imposed to protect sensitive fish from the impact of piling.

Confirm that works will not have a detrimental impact on the chemical status of the Thames Lower water body.

Confirm that protected elements under the Water Framework Directive will not suffer significant adverse impacts arising from construction of the jetty. No objection subject to mitigation outlined in the submitted Environmental Statement.

Comments on Flood Risk
No objection on Flood Risk ground, provided LPA is satisfied development will be safe for its lifetime.

Proposal must take account of the future defence requirements set out in the TE2100 Plan. Essential that adequate land is safeguarded so as not to inhibit future defence raising and widening.

The Council should consider whether the proposal would prejudice the achievement of TE2100 Plan objectives.

Council must be satisfied with the emergency flood plan. In the absence of an appropriate emergency flood plan permission should be refused on the grounds of safety in a flood event as users would be exposed to flood hazards on access/egress routes.

Permit likely to be required for the removal of pipes currently passing through the seawall.

RESPONSE FROM APPLICANT 24.06.2016
In principle, OSL do not have any objection to an appropriately worded condition that controls piling activity being attached to any relevant authorisation or consent. Having regard to the guidance within the National Planning Practice Guidance in respect of the imposition and form of planning conditions, and on the details of the environmental assessment of the ODWJ proposals that has been undertaken, the following is, however, noted in respect of the precise wording being suggested by the EA.

First Bullet Point: The assessment of the ODWJ proposals undertaken by the EA has proceeded on the basis that piling activity would not take place between April to September for reasons relating to migratory fish. In respect of this matter, however, the EA's Fisheries Team has advised that given the location of the proposed marine works in the wider estuary, the risks to migratory fish are likely to be lower as they can disperse away from noise more than if they were further upstream.

OSL are also aware that in respect of other projects in the marine environment that require percussive piling, a more flexible approach than an outright restriction on piling between the months April to September has been taken.

Recognising the conflicting desires of the EA and Natural England in respect of potential piling timeframe restrictions, OSL would wish to discuss further with relevant parties, including the EA whether there is the scope for a more flexible condition to be imposed rather than a simple outright restriction on piling during the period April to September.

Second Bullet Point: In respect of vibration-piling (silent piling) the ODWJ assessment makes clear that this may be used on the smaller bearing piles where it is practicable to do so (see ES Volume 2 paragraph 12.145). Such a methodology is not a practicable option in respect of the larger monopiles. In respect of the smaller bearing piles, the characteristics of the river bed material is such that it is considered unlikely that vibro piling will provide a practicable engineering solution. The assessment was undertaken on this basis, i.e., it considered percussive piling only. As there is no certainty that vibration / silent piling can be used it has not been relied on in terms of mitigation or in reaching the conclusions of the assessment. OSL therefore argue that any form of condition which seeks to require silent or vibration piling does not meet the 'planning condition tests' which are set out in National Planning Practice Guidance in that it is not necessary or reasonable.

Piling in the intertidal area will be very limited, likely to consist of the two marine side support piles for the proposed pipeline walkway gantry (located very close to mean high water) and the most northerly pair of bearing piles for the new jetty approach way (located very close to mean low water). Any benefit to migrating fish of restricting this very limited piling activity to low tide periods as suggested is, therefore, going to be, at best, negligible. Such a suggestion could also, arguably, be said to have a corresponding
negative implication in respect of birds using the intertidal area – a matter of concern to Natural England.

Furthermore, the practicality of such a suggestion is queried. Adhering to such a requirement could well result in piling activity having to be halted 'mid pile' with consequential time, cost and disturbance implications.

OSL would, therefore, suggest that any form of condition which seeks to require piling in the intertidal to be undertaken at low tide does not meet the 'planning condition tests' which are set out in National Planning Practice Guidance in that it is not necessary or reasonable.

Fourth Bullet Point: Subject to the points made above, OSL has, in principle, committed to avoiding the sensitive fish migratory period and undertaking piling between October to March. . Natural England in their response to the consenting authorities has also suggested a severe weather restriction on piling in the winter. The number of daylight hours over this autumn/winter period is far reduced compared to the spring/summer months. Therefore, adhering to a requirement where no piling can take place one hour either side of dawn and dusk is not practical as it would extend the piling programme disproportionately with consequential cost and disturbance implications.

OSL therefore, argues that any form of condition which restricts piling in the hours around dawn and dusk as suggested does not meet the 'planning condition tests' which are set out in National Planning Practice Guidance in that it is not necessary or reasonable.

Fifth Bullet Point: The specific sizes of the piles have been determined and are detailed in the application documentation. The sizes determined are considered to be the smallest that can be for the purposes for which they are needed. The size of piling hammer used will be as small as is practicably possible.

Sixth Bullet Point: Impact piling is necessary for the proposals to be constructed, and the assessment has proceeded on this basis.

The installation of all piles will commence using a soft-start procedure over a 5 minute period. Such a procedure will allow any fish to move away from the source of the noise and avoid sustaining behavioural disturbance, temporary injury or permanent injury.

Whilst the use of compressible, non-metallic material between the pile head and the hammer can dull the sharp impact noise, it also has the effect of reducing the peak impact load, i.e., the hammer becomes less efficient. The result is that it is highly likely that a larger hammer would be needed, which would then likely have additional noise implications.

The assessment undertaken has not taken account of the use of such a pad, and has reached appropriate conclusions in terms of impacts and effects. For these reasons, OSL consider that a condition requiring the use of a non-metallic pad to be used between the pile and the hammer does not meet the 'planning condition tests' which are set out in National Planning Practice Guidance in that it is not necessary or reasonable.

OSL welcomes the EA's comments in that the submitted FRA provides the necessary information on which the local planning authority can assess the development on flood risk grounds. The various assessments undertaken have concluded that the ODWJ proposals (and the wider OSL terminal site) are at a low risk of flooding from fluvial, pluvial, groundwater and artificial sources. It is further considered that the vulnerability of the site to flood risk, or the OSL workforce, will not be increased as a result of the proposals. In addition, the proposals will not increase flood risk elsewhere.

OSL has in place a site specific flood plan which forms part of the On Site Emergency Plan for the OSL terminal site. This is in line with the EA's site specific guidance to COMAH sites in respect of flooding risk in '*A guide for sites regulated under EPR and COMAH'* (June 2015), which provides advice on flood warnings, flood resilience and preparation of a flood plan.

As part of its flood plan, OSL are signed up to receive advance adverse weather and possible tidal surge warnings (Flood Warning Direct) from the Port of London Authority and the EA, which allows OSL time to implement the flood plan if necessary. This could ultimately involve shutting down the site, isolating equipment and evacuating personnel. Procedures are also in place to ensure that post flooding, the correct checks are made to remove all floodwater and begin operations after the integrity of plant and equipment has been verified.

The new infrastructure that forms part of the ODWJ proposals is designed so that in the event of a flood it remains operational in terms of there being no loss of containment from the storage tanks. Other associated infrastructure, such as the pipework is also designed to remain in place and fixed in the event of flooding. Although some electrical equipment could temporarily be disrupted, the site's systems are designed so that such an occurrence would not affect the sites primary operational function, namely the safe storage of product.

It is concluded that, in accordance with current OSL terminal wide practice and procedures, flood risk associated with the ODWJ proposals will be appropriately managed to ensure safety. The residual effect of this potential risk is, therefore, considered to be of minor significance, albeit reduced to as low as reasonably practicable.

An assessment of pluvial flood risk is included in paragraphs 16.92 to 16.98 of the ES and concludes that the risk of flooding to the development from surcharged sewers or overland surface water runoff is low. A separate surface water drainage management plan providing details of improvements to be made to the existing drainage system at the site has been provided. The overall likely effect of the proposals upon surface water drainage is anticipated to be beneficial of minor significance. The surface water drainage management plan is included in Appendix L of the FRA (refer to Appendix 16.1 of the ODWJ ES Volume 3).

The surface water drainage management plan shows that that there have been no records of groundwater flooding at the site. Therefore, the overall risk of groundwater flooding at the development is considered to be low (paragraph 16.102, ODWJ ES Volume 2) and once completed, the effect of the proposals is considered to be negligible (paragraph 16.138, ODWJ ES Volume 2).

The EA mapping (Appendix 16.1 ODWJ ES Volume 3) shows that the site is not at risk of flooding due to failure of any reservoirs in the area. As there are no other artificial bodies of water within close proximity to the site, the risk of flooding from artificial sources if therefore considered to be negligible (paragraph 16.139, ODWJ ES Volume 2).

The ODWJ proposals include the construction of a new combined pipeline and personnel walkway gantry at the point where the existing Jetty 2 approach way meets the shore. The gantry will be a steel framed structure consisting of a mesh decking walkway, support structures containing the pipelines and service lines, with stepped access at either end. The gantry will span the existing flood defence wall (with a clearance of approximately 2.8m) and the adjacent public footpath (at a height of approximately 4.45m), and provide a secure and separate operational link

from Jetty 2 into the OSL terminal. New operational pipelines linking Jetties 1 and 2 are also proposed along the southern boundary of the operational site.

The ODWJ ES recognises that in line with the TE2100 Plan and to provide additional protection to the site from tidal flooding, the flood defences adjacent to the site will need to be at a minimum height of 6.70m AOD by 2040 (which is not likely to require any work due to the current considered level of the defences being at 6.95m AOD) and 8.10m AOD by 2070 (an increase of 1.15m over current levels). These requirements have been allowed for in the design of the walkway gantry over the existing flood defence.

Prior to designing the proposed walkway gantry in the vicinity of the existing flood defences, OSL's advisors sought advice from the EA's Flood and Coastal Risk Management Officer in 2014 and again in 2015. In response, the EA requested that the proposed works incorporated a horizontal clearance to the River Thames defences of 1m, and a vertical clearance of a minimum of 2m.

The proposed combined pedestrian access and pipe bridge will have a minimum horizontal offset of 2.5m, and a vertical offset of 2.8m (set at 9.75m AOD). The easements provided, therefore, exceed the EA's requirements and allow for future raising of the defences and any necessary maintenance requirements. This clearance allows for a level of 8.10m AOD to be achieved in line with the advice received from the EA and the TE2100 Plan.

The EA currently has a right of access to the flood defences through the OSL site and the ODWJ proposals retain this access and, do not further restrict the ability of work to be carried out to the defences in comparison with the existing situation.

The EA states that the TE2100 Plan is an aspirational document and OSL is aware that the emerging Castle Point Local Plan includes reference to the suggested 19m easement for the delivery of "*well designed and landscaped defences*". OSL has previously made representations to Castle Point Borough Council through the Local Plan process that land within the operational OSL Terminal that is within this aspirational 19m easement is not, and cannot be made, available for the purposes of landscaping the existing sea defences. This 19m easement, in part, already contains operational infrastructure. To provide a 19m corridor adjacent to and within the OSL Terminal is an aspiration that simply cannot be delivered. Furthermore, the necessity and benefits of providing a landscaped sea defence alongside an industrial shoreline is questionable. Finally, as an active Upper Tier COMAH site, operations at the OSL Terminal are strictly controlled by the Health and Safety Executive (HSE) and the provision of landscaping close to such an operational site may well create safety and fire implications.

Whilst OSL cannot offer land within or adjacent to its working terminal for the 19m easement (or an additional 4m wide vehicular access) as set out in the aspirational TE2100 Plan, the ODWJ proposals do provide the ability to raise and improve the flood defences underneath the proposed walkway gantry when needed to the levels required, as advised by the EA during pre-application discussions.

Following implementation of the current proposals, the facility will continue maintain the current high standards of safety and environmental performance that already apply at the site. The benefits that arise from the operation of a technologically advanced site will provide the regulators, statutory authorities and members of the public with extra reassurance that the correct controls are being exercised over the use and storage of hazardous substances on this site. OSL

intend to ensure that all measures necessary will be employed to provide the highest standards of safety, environmental and security to the local population and the environment.

FURTHER RESPONSE FROM EA
The EA agrees that, as stated in paragraph 2.2 of the report, given the location of the proposed works within the wider estuary, the risks to migratory fish are likely to be lower than in narrower upstream parts of the river. The amount of piling proposed is also regarded to be less of a concern to us than other developments have been. The EA therefore agrees that, a more flexible approach than requesting a complete restriction on piling between April and September may be taken.

In respect to the type of piling undertaken, the EA notes that silent piling will be used where it is practicable. The EA accepts that silent piling may not be possible on larger piles, in which case, the months of April to September should be avoided for this piling, as far as possible.

The EA accepts that Natural England may have concerns about piling at low tide in intertidal areas. Given that that EA considers this to be a lower risk area with respect to impacts on fish than other parts of the estuary, it accepts that earlier advice about piling at low tide may not be able to be adhered to.

In light of the above, we no longer request that our condition on piling is appended to any permission granted. We instead offer this as advice on potential mitigation measures that could be accommodated wherever possible and which are known to have been successful elsewhere in the estuary. The EA would welcome the inclusion of an informative stating that it expects these mitigation measures to be adopted as much as possible, if the Planning Authority consider it appropriate.

The EA advise that a flood risk activity permit will only be required for works within 16m of the tidal defences, as the river Thames is not designated as a ‘main river’ in this location.

In conclusion therefore, the EA raise no objection to the proposal but would wish the applicant to adopt sensitive construction methods where possible,

It should be noted that conditions to achieve such sensitivity within the marine environment would be attached to the grant of any licence by the MMO.

National Grid
Apparatus comprising:

- High or Intermediate pressure (above 2 bar) Gas Pipelines and associated equipment
- Above ground gas sites and equipment

have been identified as being in the vicinity of the proposed works. The matter has therefore been referred to the Gas Distribution Pipelines Team for further comment.

Gas Distribution Pipelines Team
No response received

British Pipeline Agency
No response received

Calor Gas
No response received

HBC Vehicles
No response received

Marine Management Organisation
Following receipt of the application the MMO sought clarification and further consideration of the impact of the proposal on the following matters:

- Benthic Ecology
- Underwater Noise
- Coastal Processes
- Fisheries

Following receipt of this further information the MMO has advised that it is content that the clarifications and reasonings provided by the applicant have addressed the issues and that conditions to be imposed on the Marine Licence would appropriately mitigate any potential imparts.

Port of London Authority
Supportive of the principle, however, confirmation of alignment of Jetty and Jetty head modelling required. ES should identify increased maintenance dredging at Jetty 1.

Submission of full details of lighting should be required by condition.

Use of River for transportation of materials should be encouraged.

The applicant subsequently submitted further information as follows:

The form of the Jetty was confirmed to be slightly differently aligned to that previously discussed with the PLA; in detail the revision provided a minor realignment of the outer two mooring dolphins. This enables the mooring loads to be shared more evenly between the various mooring dolphins, because the mooring ropes are more uniform in length.

This minor change does not alter the location of the jetty head, berthing platform, the size of vessels that can be accommodated, the position of the vessel when it is berthed at the jetty, or the way in which the vessel will move onto and off the Jetty from the position considered in the Navigation Risk Assessment (NRA). As such the outcomes and the conclusions of the NRA, undertaken in January 2015 and reported in the submitted Environmental Statement (ES), are unaffected by the very minor alteration in the jetty design.

OSL note the request by the PLA for a condition on any grant of permission relating to the use of the river for the transport of materials to and from the site during construction and would be content with an appropriately worded condition relating to the movement of materials associated with the construction of the marine works provided that it was consistent with the position outlined and assessed in the ES. Paragraphs 11.63 and 11.64 of Volume 2 of the ES confirm that the majority of marine construction materials will be transported via the river and that the level of deliveries by road are likely to be modest and small scale.

ES has identified that the proposal will generate an impact in respect of maintenance dredging at OSL's existing Jetty 1. This is as a consequence of changes to the sediment transport regime resulting from localised flow changes around the vessel and the structure combined with the existing sensitivity of Jetty 1 to sedimentation. Although no mitigation is available to reduce the

potential for these effects to occur, it is agreed that the temporary increase in maintenance dredging of Jetty 1 is to mitigate the effects of the short term increase in sedimentation at this existing jetty.

Due to the natural variability of the estuary bed levels, the detailed circumstances in which the increase in dredging would take place and the associated quantity of dredged material are very difficult to predict. However, having regard to the acceptability of the existing maintenance dredging regime at Jetty 1 any short term increase in maintenance dredging activity at Jetty 1 is unlikely to generate significant effects.

The proposal does not include any proposals to undertake a dredge alongside the new berth. The new berth is likely to remain self maintaining, subject to the natural variability whereby, for short periods, depths can reduce.

The ES further makes clear that in such cases episodic dredging may be required which would need to be approved as necessary at the time. The impacts of such dredging, although depending on various matters, are considered unlikely to be significant.

The more the berth is used the less likely dredging will be required.

Final details of necessary lighting of the proposals will need to be the subject of detailed design. Whilst safety, operational and navigation issues will need to be satisfactorily addressed, such final detailed design work will also seek to ensure that the negative implications of lighting will be minimised as far as practicable.

Crown Estate
No response received

Maritime and Coastguard Agency
No response received

Health and Safety Executive
Does not advise on safety grounds, against the granting of permission in this case.

This advice is based on the developments which are proposed within the Development Proximity Zone (DZP) of the OSL relating to the refurbishment of storage tanks and the provision of additional plant and equipment associated with the proposed jetty. These satisfy the criteria for ‘not normally’ occupied development set out in paragraph 11 of SPC/Tech/Gen 43. (HSE publication: ‘Land use planning advice around large scale petrol storage sites’).

As the Jetty 2 control room will be sited beyond the DPZ boundary, within the middle zones of OSL and Calor Gas Ltd, HSE does not advise against this aspect of the proposed development.

Essex County Council - Highways
No objection subject to conditions.

Essex County Council – Fire and Rescue
Additional water supplies may be required.
Sprinkler systems recommended.

Kent County Council

Medway Council
No objection

Royal Yachting Association
No objections to the proposals, subject to the proposed mitigation measures being put in place.

Trinity House
No objection subject to fixing of appropriate navigational lights to the proposed dolphins.

Chapman Sands Sailing Club
No response received

Island Yacht Club
No response received

RSPB
Objects to the proposal for the following reasons:

- The applicant has not provided sufficient information to enable Castle Point Borough Council and the Marine Management Organisation (MMO), as the competent authorities, to ascertain whether there will be a likely significant effect on the Thames Estuary and Marshes Special Protection Area (SPA) 2, Benfleet and Southend SPA or Holehaven Creek Site of Special Scientific Interest (SSSI).

- The applicant has not conducted any surveys of the inter-tidal area around the development site in order to establish whether this land is functionally-linked to the aforementioned designated sites. This does not accord with the MMO's Scoping Opinion (paragraph 6.5) which asks that the bird data "*should be of sufficient quality and current enough to be able to determine the level of impact of the development*".

- As no data has been provided, it is neither of sufficient quality or current. Without this information the competent authorities will not be able to make an informed decision in accordance with the Habitat Regulations and should therefore refuse planning permission until it is presented.

- The RSPB agrees with the sites identified in Chapter 7 (Marine Ecology and Conservation), paragraph 7.6 of the applicant's Environmental Statement (ES) but disagrees that the Benfleet and Southend Marshes SPA was excluded from the assessment, as one of the designated features is the wintering population of dunlin. This species is also a designated feature of the Thames Estuary and Marshes SPA. Without its inclusion in the Environmental Statement, the Council, as the competent authority, will not be able to consider the impacts on its designated features.

- WeBS Alerts3 compiled by the British Trust for Ornithology (BTO) for dunlin in the Benfleet and Southend Marshes SPA indicate a 57% decline in the medium-term and 52% decline in the short term for this species and in the Thames Estuary and Marshes SPA, a 28% decline in the short-term.

- Holehaven Creek supports internationally important numbers of black-tailed godwits between the months of September and April and should be considered functionally-linked to the Thames Estuary and Marshes SPA. We welcome recognition of this in the ES (Appendix 7.2, paragraph 2.1.3). Counts conducted by AMEC Foster Wheeler in January 2014, recorded 5,500 black-tailed godwits in Holehaven Creek, which represents over 9% of the world population.

- Wetland Bird Surveys (WeBS)4 over the last two winters have also identified that Holehaven Creek supports nationally important numbers of dunlin (a designated feature of the neighbouring SPAs) and that the population here is increasing and becoming more important, particularly in the context of the SPA declines outlined above. Recent counts include 3,840 in December 2014 and 4,870 in December 2015.

- It is not clear where these birds congregate to feed or loaf outside of the high tide periods. We have spoken with four experienced local surveyors, and none have been able to provide any judgement on the level of usage of the inter-tidal mudflats around the application site which highlights that there is an even greater need for this information to be provided. Paragraph 7.182 (Appendix 7.2) refers to the mudflats that extend through the application site, but no evidence has been presented to indicate what level of use by SPA species occurs on them. This gap in knowledge needs to be filled.

- Without the applicant providing up to date survey information detailing use of these mudflats, the Council cannot make an informed decision, in accordance with the Habitat Regulations as to whether these mudflats are functionally-linked and therefore whether there will be a likely significant effect on the designated sites.

- Would like to draw the Council's attention to paragraph 119 of the National Planning Policy Framework (NPPF) which states:

- *The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directive is being considered, planned or determined.*

- Given the clear lack of data, the RSPB recommends that, as a minimum, a series of counts (August to April) outside of the high-water period are conducted of the inter-tidal mud around the application site to assess their usage by SPA species. Results of these surveys will enable the Council to make an informed decision in accordance with the Habitat Regulations.

Essex Wildlife Trust
No response received.

Southend Airport
No response received.

Holehaven Fishermen's Association
No response received.

Canvey Town Council
Initially advised it was unable to comment due to insufficient information, however in a subsequent submission objected to the proposal for the following reasons:

- Fear of Terrorism
- Incompatible with the surrounding developments.
- Traffic
- Strain on current infrastructure.

Members also wished to raise concerns over the safety of neighbouring residents and the increase in the number of larger vessels in the shipping lane.

Environmental Health Officer
No objection subject to the following conditions and informatives being attached to the grant of any consent.

1. *All works and strategies which are identified within Appendix 14.2 - Contamination land Assessment and remediation Strategy, prepared by Waterman Infrastructure & Environment Limited are to be followed.*

   Reason: To ensure that the risks associated with any contamination are reduced to acceptable levels.

2. *The development shall not be commenced until a scheme specifying the provisions to be made to control dust emanating from the site has been submitted to and approved in writing by the local planning authority. The agreed scheme shall then be implemented in full before the proposed development is started, including demolition and site clearance.*

   Reason: To protect the amenity of the locality, especially for people living and/or working nearby.

3. *The lighting scheme should comply with the Institution of Lighting Professionals Guidance Note for the reduction of obtrusive light 2011(or later versions). It should be designed so that it is the minimum needed for security and operational processes and be installed to minimise potential pollution caused by glare and spillage.*

   Reason: To protect the amenity of the locality, especially for people living and/or working nearby.

4. *Prior to the submission of a S.61 prior consent notice this Service requests a noise management plan to be submitted; succinctly detailing desired times for noisy works and clear identification of the location (Marine/Terrestrial). Any necessary mitigation should also be highlighted.*

   Reason: To protect the amenity of the locality, especially for people living and/or working nearby.

Informatives

1. *To protect the amenities of occupiers of other premises in the vicinity, attention is drawn to the provisions of Section 60 of the Control of Pollution Act 1974 in relation to the control of noise from demolition and construction activities. The applicant is also advised to seek approval for any proposed piling operations.*

2. *In the interests of maintaining and improving air quality within the borough and compliance with the law, there should be no burning of any waste or other materials.*

Anyone who produces, imports, keeps, stores, transports, treats or disposes of waste must take all reasonable steps to ensure that waste is managed properly. This duty of care is imposed under section 34 of the Environmental Protection Act 1990. It also applies to anyone who acts as a broker and has control of waste. A breach of the duty of care could lead to an unlimited penalty upon conviction.

Further to the above, under the Clean Air Act 1993 it is an offence to emit dark or black smoke or burn material that is likely to give rise to dark or black smoke on industrial and trade premises, or on premises not so used but if burnt in connection with any industrial or trade process. If a bonfire is producing or likely to produce dark or black smoke by the burning of trade or commercial waste, then the persons responsible may be liable to fines of up to £20,000.

Public Consultation
13 Letters have been received in respect of the proposal from the following sites:

Haven Road:	34 (x3)
Keer Avenue:	26
Atherstone Road	7
Vicarage Close	13
Hawkesbury Road	26b
Green Lane	3 (x2)
Tantelen Road	62
Surig Road	66
Janette Avenue	22
Harvest Road	29

These raise the following objections:

- Object as scheme carries a high risk of explosion.
- Inadequate information on application.
- Lack of consultation.
- No evacuation Plan in respect of major incidents.
- Traffic.
- Environmental impact.
- Works will create noise.
- Construction/demolition works will create dust.
- Construction work should be resourced locally.
- No specific noise mitigation measures are specified for piling or construction works. Hours of construction should be restricted to limit impact on residents.
- Wheel washing facilities should be provided.
- Measures to prevent vehicles accessing Haven Road should be imposed.
- Proposal should be accompanied by a Traffic Management Plan.
- No account taken of the cumulative impact arising from other proposed development, (eg Roscommon Way Industrial site and proposals at Morrisons).
- Greater use should be made of the river for transporting materials and debris.

- Increased traffic likely to intimidate riders using the bridleway adjacent to Roscommon Way.
- Public footpath adjacent to site should not be closed for the duration of the works.
- Employees/Contractors should be encouraged to use public transport.

Comments on Consultation Responses

- The proposed scheme does not carry a higher risk of explosion than the current operations.

- Additional information has been submitted in respect of the impact the proposal on local designated sites. Subject to appropriate conditions no objection is now raised to the proposal by Natural England.

- Extensive consultation was undertaken in respect of the proposal with letters sent to some 118 individual properties in close proximity to the site. In addition the proposal was the subject of both Press and Site Notices.

- It should be noted that an External Emergency Plan does exist and is operated by Essex County Council as the Essex Civil Protection and Emergency Management body. This is a restricted access document for security reasons but is regularly tested on a multi-agency basis, (Police, Fire Service, Ambulance Service, EA, etc), the last test being successfully completed in 2015.

- Chapter 20 of the submitted Environmental Statement provides a detailed analysis of the in combination and cumulative impacts of the proposed development.

All other relevant comments will be addressed in the evaluation of the proposal.

Evaluation of Proposal

Consideration of the proposal will reported under the following headings:

1. Principle of development
2. Ecology
3. Water Environment
4. Noise
5. Vibration
6. Traffic and Transport
7. Air Quality
8. Contamination
9. Health and Safety
10. Flooding and Drainage
11. Landscape and Visual Impact
12. Historic Environment Impact
13. Socio economic Impact
14. In Combination and Cumulative Impact

1. PRINCIPLE OF DEVELOPMENT

The OIKOS facility is a top tier COMAH site. It therefore constitutes a hazardous installation for the purposes of Policy ED9 of the adopted Local Plan which states that except for cases where the expansion of existing hazardous installations is required in the National Interest the Council will refuse planning permission for the expansion or intensification of such uses on Canvey Island. No further criteria are appended to the Policy which relies entirely therefore on the identification and satisfaction of national need.

Policy ED9 finds some support in current Government advice, as set out in the *National Policy Statement (NPS) for Ports,* but is, in the current national policy context, unduly negative and therefore inconsistent with the wider policy framework.

The National Policy Statement for Ports (NPSfP), forms the primary basis for decisions on applications for nationally significant port developments that fall to be determined by the Secretary of State; however, it also provides useful advice to Local Planning Authorities in the consideration of such matters and is therefore a material planning consideration in the determination of planning applications for such development.

Paragraph 3.3.1 of the Statement sets out the Government's fundamental policy in relation to ports. This states that the Government will:

"Encourage sustainable port development to cater for long-term forecast growth in volumes of imports and exports by sea with a competitive and efficient port industry capable of meeting the needs of importers and exporters cost effectively and in a timely manner, thus contributing to long-term economic growth and prosperity; allow judgements about when and where new developments might be proposed to be made on the basis of commercial factors by the port industry or port developers operating within a free market environment; and ensure all proposed developments satisfy the relevant legal, environmental and social constraints and objectives, including those in the relevant European Directives and corresponding national regulations".

In relation to ports used for energy supply, paragraph 3.1.5 of the NPSfP confirms that ports have a vital role to play in the import and export of energy supplies. It goes on to state that ensuring security of energy supplies through ports will be an important consideration, and that ports will need to be responsive both to changes in different types of energy supplies needed and to possible changes in the geographical pattern of the demand for fuel.

Against this background, the New Local Plan (2016) adopts a more positive approach to the presence of hazardous installations within the Borough and states that development within such sites will be permitted subject to the satisfaction of stated criteria. Whilst it is recognised that the New Local Plan carries limited weight at this time, it is considered that its approach is more consistent with that of Central Government.

The applicants have clearly identified within their submissions that the global fuel market is changing and that the opportunities for importing such materials in the quantities now being shipped are limited, particularly in the south of the Country.

The Government has identified that it is critical that the UK continues to have a secure, affordable and reliable energy supply and that limitations imposed on port development would limit economic growth, choice and the availability of goods. Such limitation is clearly identified as not being in the public interest.

In this context the current proposal would provide an opportunity for maintaining energy supplies into this part of the country and would add resilience to a relatively restricted import facility network. As such it is considered that the provision of a new deep water jetty at the Oikos site would be in the national interest and to that extent therefore the proposal meets the requirements of Policy ED9.

No objection is therefore raised to the principle of the proposed development on this site.

The National Policy Statement for Ports however makes it clear that even where a national interest is identified all proposed developments are required to satisfy the relevant legal, environmental and social constraints and objectives, including those in the relevant European Directives and corresponding national regulations.

The remainder of this report will seek to determine whether the current proposal satisfies these requirements.

2. ECOLOGY

A matter of particular concern in the consideration of this proposal is that of the impact of the proposal on the marine and terrestrial ecology of the site and surrounding area.

Section 11 of the NPPF, 'Conserving and Enhancing the Natural Environment' encourages the planning system to contribute to and enhance the natural and local environment. This should be achieved by, amongst other things:

• "*protecting and enhancing valued landscapes, geological conservation interests and soils;*

• *recognising the wider benefits of ecosystem services;*

• *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; and*

• *preventing both new and existing development from contributing to or being put at an unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability".*

The NPPF further highlights that LPAs should seek to conserve and enhance biodiversity by applying a series of principles, including the following:

• "if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

• proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the

features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;

• development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;

• opportunities to incorporate biodiversity in and around developments should be encouraged; and

• planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss".

These principles are generally reflected in the National Policy Statement for Ports.

Policy EC13 (Protection of Wildlife and their Habitats) of the adopted Local Plan states:

"The council will refuse development which is prejudicial to the interests of all wildlife and the retention and management of important habitats" –

However, this policy has been found to be inconsistent with the hierarchical approach set out in paragraph 118 of the NPPF. As such, applications affecting biodiversity are more appropriately considered in the context of paragraphs 118 and 119 of the NPPF.

Policy EC14 (Creation of New Wildlife Habitats) of the adopted Local Plan is considered to be consistent with the NPPF and states:

"The council will encourage proposals for further nature reserves. It will also promote the creation of new wildlife habitats in conjunction with development proposals. In considering planning applications, the Council will take into account the potential for the creation of wildlife habitats, particularly where these would enhance and complement existing elements of nature conservation on adjoining land."

The New Local Plan (2016) retains these principles.

The proposed development is located in close proximity to a number of designated sites; however, as has already been established, the proposal does not generate a requirement for appropriate assessment under the Habitats Directive. Nevertheless, consideration of the ecological impact of the proposal is required in order to ensure compliance with local and national biodiversity objectives.

<u>The Marine Environment</u>
The marine environment may be described to be of two distinct zones: the sub-tidal zone and the intertidal zone.

The sub-tidal zone is the area below the low tide water line. This area is always covered by water. The organisms here cannot tolerate very long exposure to the air or sun.

The intertidal zone is the area that is exposed to the air at low tide and submerged at high tide. Organisms in the intertidal zone are adapted to harsh extremes. Water can be high due to tides,

rain and run off, and this water can be very salty or very fresh. These areas can also become very dry when tides are low for extended periods of time. Temperatures can range from very hot with full sun to freezing. Examples of organisms that live in the intertidal zone include: shore birds, marsh grasses, snails, mussels and oysters and burrowing worms.

The Thames Estuary exhibits both sub tidal and intertidal zones and in the vicinity in the application site is described by the applicant as a well-mixed, highly dynamic, macro tidal estuary (Macrotidal estuaries are defined as estuaries having tides greater than 2 metres), the historic embankment of which has increased the speed of tidal currents which have the capability to mobilise large volumes of suspended sediment.

The area around Canvey Island and Holehaven Creek, in the vicinity of the application site is identified by the applicant as being subject to deposition of suspended sediment moving along the river from west to east, with deposition occurring at low water. This deposition has led to a rise in river bed levels and the conversion of saltmarsh within parts of the creek system to grassland.

The combination of tidal conditions, sediment deposition and wave action in the Estuary has created a series of habitats that are ecologically important nationally and internationally. For this reason significant areas adjacent to the Thames Estuary have been designated as Special Protection Areas (SPA), Special Areas of Conservation (SAC), or Sites of Special Scientific Interest (SSSI).

No part of the ODWJ proposals is located within one of these identified sites although the marine element of the proposal is located within a recommended Marine Conservation Zone (rMCZ) and the site is in close proximity to:

- The Thames Estuary and Marshes Special Protection Area (SPA) (European site);
- The Thames Estuary and Marshes Ramsar (European site);
- The Southend and Benfleet Marshes Site of Special Scientific Interest, Special Protection Area and Ramsar site (European site)
- The Holehaven Creek Site of Special Scientific Interest (SSSI); and
- The South Thames Estuary and Marshes Site of Special Scientific Interest.

These areas support internationally important numbers of bird species such as Dunlin, Black tailed Godwit, Redshank and Knot which are attracted to the sheltered estuary conditions and good food supplies.

In addition the recommended MCZ has been identified as the best site in the region for tentacled Lagoon Worms, Smelts and European Eel stocks and provides an important nursery ground for ecologically and commercially important fish such as Sea Bass, Herring, Plaice, Sole, Thornback Rays, Whiting, Sprat and Lemon Sole. Nationally rare Allis and Twaite Shad are also present.

Mammals present in the Thames include harbour porpoise, harbour and grey seal and the occasional bottlenose dolphin.

<u>The ecological Implications of development in the marine environment</u>

<u>Loss of Habitat</u>
Loss of habitat by smothering or direct removal are identified within the Conservation objectives for the Thames Estuary and Marshes Special Protection Area (SPA) and Ramsar site, as disturbances to which the site and interest features are vulnerable (EN 2001).

The construction of the ODWJ proposal requires the installation of piles to support the jetty head and approach way. The installation of these piles will result in the loss of some 65m^2 of subtidal habitat, composed of coarse or mixed sediments and mud, and the loss of any associated benthic species (those living at the lowest level of the river, including the sediment surface and some sub-surface layers). The applicant identifies that none of the benthic species present on the site are listed as being nationally rare or scarce.

Within the Thames Estuary rMCZ subtidal coarse sediment and subtidal mud are listed as Broad Scale Habitats. The applicant has identified the extent of these habitats within the Thames Estuary rMCZ is 14 km^2 and 20 km^2 respectively.

The loss of some 65m^2 subtidal habitat represents 0.00047% of the area of subtidal coarse sediment in the Thames Estuary rMCZ, or 0.00033% of the area of subtidal mud. The applicant does not consider the area directly affected by the proposed development to be significant in the context of the extent of these habitats within the Thames Estuary rMCZ and as such does not consider the impact of this element of the proposed development is be significant.

The applicant opines that even this limited impact could be reversed should the piles be removed.

The process of placing the piles may have a greater impact on the subtidal zone than the piles themselves as the equipment necessary to install the piles may temporarily disturb the subtidal zone. However, such disturbance is likely to be limited in duration and the applicants consider that the habitats, and associated benthic communities, would recover quickly as they show high recoverability from anthropogenic disturbances including substratum loss, smothering, and increases in turbidity.

The applicants concede that this impact will have a long-term, negative effect on the subtidal habitat, but considers that in the context of the Thames Estuary, the importance of this subtidal habitat, and associated communities, is only of local value and the impact would be of minor significance.

Given the limited loss of habitat the applicant does not consider any mitigation of this impact necessary.

Four of the piles required to support the new jetty approach way and the pipeline/walkway gantry that connects the jetty with the terminal site will be installed in the intertidal foreshore area and will result in the direct loss of approximately 0.9 m2 of intertidal habitat. The intertidal habitat in this area, characterised by sandy mud flats, is found extensively throughout the Thames Estuary.

As with the installation of the Jetty piles, an additional area will be temporarily disturbed as a result of the placement of equipment necessary to install the piles. However, such disturbance is again considered likely by the applicant, to be limited in duration and the applicants consider that the habitats and associated communities are considered likely to recover quickly from this impact as they are adapted to withstand change in the dynamic nature and environment of the Thames.

The intertidal area directly impacted by the installation of the piles is considered by the applicant to be negligible and as such an adverse effect of negligible significance would occur.

Given the limited loss of habitat the applicant does not consider any mitigation of this impact necessary.

Natural England initially considered that the proposal would be likely to result in increased sedimentation rates, but stated that in the absence of data on overwintering birds for the non SPA muds, it could not assess the significance of this effect on the SPA. The lack of monitoring and water quality data was also a concern.

Following the receipt of further information however Natural England no longer has concerns in respect of this element of the proposal.

No objection is therefore raised to the proposal on this basis.

Sediment Suspension - Impact on fish, marine mammals and benthic fauna.
The construction of the jetty will result in disturbance to the river bed and consequently a temporary increase in local suspended sediment concentrations.

It is the view of the applicant that the volume of sediment that would be suspended by piling and vessel movement would not cause an increase in suspended sediment that would be above natural background levels in the Thames.

Furthermore the applicant is of the view that benthic fauna have high levels of recoverability from events such as smothering and increases in turbidity and that most fish and marine mammals would be able to move out of any sediment plume, although it is conceded that spawning fish and juveniles would be less able to do so.

It is the applicant's view that the impact of increase sediment suspension and turbidity during the construction period would result in an adverse effect of negligible significance.

Given the negligible level of adverse impact identified the applicant does not consider any mitigation of this impact necessary.

Natural England confirmed that the proposal would be likely to result in increased sedimentation rates but in the absence of data on overwintering birds for the non-SPA muds, initially stated that it could not assess the significance of the impact on the SPA and consequently could not determine whether the applicant's response to sedimentation is appropriate.

In the absence of a clear demonstration that the proposal would not have an adverse impact on marine ecology, a holding objection was raised to the proposal.

However, following the receipt of additional information, including survey data on overwintering birds in the area, Natural England has removed its holding objection.

No objection is therefore raised to the proposal on this basis.

Impact of piling noise in birds within protected areas.
The applicants identify that the noise associated with piling operations will disturb birds in proximity to the site, but that the level of disturbance will diminish with distance from the site. For birds within Holehaven Creek SSSI and the Thames Estuary and Marshes SPA/Ramsar and South Thames and Marshes SSSI, the adverse impact is considered by the applicants to be of minor significance.

Birds feeding on the foreshore adjacent to the site are however likely to be significantly disturbed due to their proximity to activity.

In mitigation the applicants have indicated that the installation of all piles will commence using a soft-start procedure, whereby the piling power starts low and increases to full power over a five minute period. Based on past experience gained from other marine construction projects the applicant states that such operation allows any birds to move away from the source of the noise and avoid sustaining behavioural disturbance or temporary or permanent injury.

In addition to soft-start piling, low noised piling methods (vibro-piling) may be used on the smaller 610 mm bearing piles if it is practicable to do so. Vibro-piling is known to produce less noise than impact piling. However, as it cannot be guaranteed that this method of piling will be used it has not been relied on in terms of mitigation.

Natural England has recommended that soft start piling, and where possible, vibro-piling be utilised, in order to reduce noise levels to less than 50dB within Holehaven creek, in order to minimise noise disturbance to birds.

In view of the lack of information provided in respect of bird populations in areas outside the designated sites, Natural England originally recommended that a condition be attached to the grant of any consent requiring that no piling be undertaken in the period October to March.

This conflicted with the applicant's fish impact mitigation measures, which sought to restrict piling in the period April to September and effectively would have prevented piling on the site.

However following the receipt of further information on overwintering birds the Environment Agency has withdrawn its requirements in respect of piling and Natural England has accepted a more limited exclusion period.

Such limitation can be the subject of a condition imposed on the grant of any consent. Subject to such a condition no objection is raised to the proposal on this basis.

Impact of piling noise on fish

The extent to which intense underwater sound might cause an adverse environmental impact in a particular fish species is dependent upon the level of noise, its frequency, duration and/or the repetition rate of the sound. The range of potential impacts from intense sound sources, such as pile driving, includes immediate death, permanent or temporary tissue damage and hearing loss, behavioural changes and masking effects.

Pile-driving activities are of special concern as they generate very high sound pressure levels and are relatively broad-band in frequency.

Work carried out by the applicants indicates that a lethal impact on fish may occur within 2m of the source and risk of physical injury could occur within 62m of the source.

For fish with particularly acute hearing, such as herring, the zones of influence may be significantly greater.

Noise at the levels anticipated could lead to avoidance behaviour and the EA were initially concerned that this would create a barrier to fish movement within the Thames during the piling period. However, following further discussion the EA are of the view that the width of the river at this point would facilitate fish movement and no objection is raised to the proposal on this basis.

The construction programme will, however, potentially overlap with the migration periods of Sea Lamprey, River Lamprey, European Eel, Herring, Sprat, Whiting and Plaice.

As stated above the installation of all piles will commence using a soft-start procedure over a 5 minute period. Based on past experience it is the applicant's view that such a procedure should allow any fish to move away from the source of the noise and avoid sustaining behavioural disturbance or temporary or permanent injury.

As with the response to birds in the protected areas, the applicant suggests that low noised piling methods (vibro-piling) may be used on the smaller 610 mm bearing piles if it is practicable to do so.

It is the applicant's view that the noise benefits of soft-start piling sufficiently mitigate the effect of this impact on fish to within acceptable levels.

Natural England has raised no objection to such mitigation measures.

Following the receipt f further information, the EA no longer requires a condition to be imposed on the planning permission in respect of the impact of piling on fish.

Impact of piling noise on marine mammals

Most marine mammals use sound in social interactions as well as to forage, to orientate themselves and to respond to predators.

As sound production in marine mammals is integral to so many important behaviours, interference with these communicative functions is considered to have particularly adverse consequences.

Underwater noise modelling undertaken of the ODWJ proposals predicts that permanent damage to hearing may occur in seals within 10m of the source of the noise and temporary damage could be caused within 30m of the source of the piling noise. Disturbance will be experienced by seals up to 3km from the site. Beyond this distance seals will not be adversely affected. The proposal is not therefore considered likely to create a barrier to movement of seals within the Estuary.

The hearing of harbour porpoises may be permanently damaged within 3m of the noise source and temporarily damaged within 6m of the source. However major and minor disturbance may occur within 3.7 km and 14 km respectively. This indicates that major disturbance may occur within harbour porpoise across the width of the Estuary, possibly creating a barrier to movement up and down stream.

The proposal will therefore have a significant effect on marine mammals. However, the applicants consider that the limited nature of the piling activity coupled with the relatively low number of sightings of such mammals within the Thames mitigates this impact so that it may recorded as being of moderate significance only.

In mitigation the applicants intend to use soft start piling and possibly vibro piling, although for reasons previously stated this will not be relied upon as mitigation.

Natural England has raised no objection to such mitigation measures in the context of impact on marine mammals.

No objection is therefore raised to the proposal on this basis.

Impact of increased vessel traffic associated with construction on birds

Activity and associated noise generated by shipping and cargo handling associated with construction of the jetty has the potential to cause disturbance to protected bird species, particularly on the foreshore adjacent to the OSL terminal where vessels would be visible to waterfowl and waders.

Little information is available on the impact of noise on waterfowl and waders, although habituation of birds to noise, light and traffic disturbance (becoming accustomed to such events) is reported to be considerable and the applicant considers that the birds may tolerate the disturbance because the quality of feeding and roosting grounds.

On this basis the applicant suggest that the impact of increased vessel traffic on birds will be of minor significance.

The applicant is of the view that vessel movement and noise throughout the construction period will have a negligible impact on protected bird species on the intertidal area adjacent to the terminal, within Holehaven Creek and the Thames Estuary and Marshes SPA/Ramsar/SSSI. As such no mitigation is proposed.

Natural England was not initially persuaded that the assumptions made by the applicant were robust and has requested additional evidence to support the applicant's position.

Following the receipt of such additional information, Natural England now raises no objection to the proposal on this basis.

No objection is therefore raised to the proposal on this basis.

Impact of increased vessel traffic associated with construction on marine mammals

Increased traffic can put marine mammals at risk through direct impact and disturbance arising from increased noise. Issues concerning noise have been discussed above and will not be repeated.

The potential for increased impact is a concern; however the applicants point out that the number of vessels attending the site will represent a small proportion of the vessels that use the Thames annually and that the number of marine mammals sighted is low. As a consequence the applicants consider the potential risk of a collision between vessels and marine mammals to be low.

The applicants state that potential collisions between shipping and marine mammals are an unavoidable consequence in any marine, coastal or estuarine area. No mitigation is considered to be required due to a minor adverse effect being predicted.

Natural England has made no comment on the potential for collision or its mitigation.

No objection is therefore raised to the proposal on this basis.

Operational Impacts

Impact of changing hydrodynamics on protected species
Once constructed the proposed jetty will have an impact on current flow, sedimentation and scour. Modelling undertaken by the applicants indicate that these changes will not be so significant as to have a significant adverse impact on intertidal and subtidal areas in proximity of the site, the Thames Navigation Channel or the Thames Estuary and Marshes SPA and Ramsar site on the south side of the Thames.

Following construction of the jetty the applicants indicate that increased maintenance dredging may be required at Jetty 1 for approximately one year after construction of the new Jetty. Such dredging is not considered to significantly adversely impact on protected bird species in the area or the subtidal community.

The applicants are of the view that no mitigation is required due to the fact that only negligible effects are predicted.

Natural England initially indicated that the lack of data on overwintering birds precluded an assessment of the significance of the impact on the SPA bird features that may be foraging in these supporting habitats.

However following the receipt of data on overwintering birds, Natural England is now of the view that provided the works are carried out in strict accordance with the details of the application the proposal will not have a significant adverse impact on the SPA bird features.

No objection is therefore raised the proposal on this basis.

Shadowing
The proposed jetty will throw a shadow which has been estimated by the applicants as potentially extending across some 1725m^2 of benthic habitat. The applicant does not anticipate that the shadowing caused by the structure will have a significant adverse impact on mobile invertebrate or fish communities. However, sessile invertebrate species may be adversely affected and any algal communities may be lost from the area of river bed continuously shaded from direct sunlight. These are considered to be of local value within the Thames Estuary; however the limited area affected, in the context of the broad scale habitat offered by the wider Thames is considered to mitigate this impact, in the opinion of the applicant, to one of negligible significance.

The applicant considers that no mitigation is required due to the negligible effect being predicted.

Natural England has not objected to the proposal on the basis of overshadowing.

No objection is therefore raised to the proposal on this basis.

Disturbance to protected bird species from increased shipping levels
Approximately 72 vessels per year will use the new extended Jetty 2. This creates the potential for disturbance to wintering birds due to the movement and noise associated with these vessels, particularly those feeding on the intertidal area adjacent to the terminal. However the applicant is of the view that such birds will, over time, accept the presence of such activity and consequently predicts an adverse effect of negligible significance on protected bird species.

The applicant considers that no mitigation is required due to the negligible effect being predicted.

Natural England initially did not consider that the evidence provided by the applicants was sufficiently robust in this regard and requested further information to support the applicants view point.

Following the receipt of data on overwintering birds, Natural England is now of the view that provided the works are carried out in strict accordance with the details of the application the proposal will not have a significant adverse impact on the SPA bird features.

No objection is therefore raised the proposal on this basis.

Effect of increased vessel traffic on marine mammals

An increase in the number of vessels visiting the site each year will increase the risk of damage and disturbance to marine mammals. However, the proposed increase in shipping movements as a proportion of total movements within the Thames would be some 04%. Given the low level of increased movements and the low level of sightings of marine mammals on this area the applicants consider the risk to protected species to be of minor significance.

The applicant is of the view that potential collisions between shipping and marine mammals are an unavoidable consequence of traffic in busy waterways. No mitigation is therefore proposed due to the minor adverse effect being predicted.

Natural England had made no comment on the impact of increased traffic on marine mammals.

No objection is therefore raised to the proposal on this basis.

Effect of lighting on birds and marine animals

The ODWJ proposals will operate on a 24 hour/seven days a week basis, which is consistent with the operation of the rest of the OSL terminal and will therefore rely to some extent on the availability of artificial light.

The applicants suggested that the presence of artificial lighting may increase foraging opportunities for intertidal waders and consequently consider that this element of the proposal will have a beneficial effect of minor significance.

Due to the natural high turbidity in the Thames the applicants consider it unlikely that the lighting for the ODWJ proposals will penetrate far enough into the water column, to have a significant adverse effect on fish or marine mammals.

In view of the beneficial impact identified by the applicant no mitigation is considered necessary.

Natural England has stated that there is little research on the effect of lighting on the nocturnal use of inter-tidal areas by birds, so caution should be exercised when making assumptions for a number of waterfowl species. As a general principle Natural England consider that light pollution to the intertidal area should be minimised. The applicant is not resistant to such a requirement and a condition to this effect can be attached the grant of any consent.

Subject to such a condition no objection is raised to the proposal on this basis.

Deterioration in water quality through pollution events

The presence of an increased number of vessels at the site increases the risk of pollution events through the accidental discharge of fuel oils and refined petroleum products. This could potentially

affect water quality in the area and subsequently cause adverse impacts on marine animals and water birds in the area.

The applicants advise that the ODWJ proposal does not alter the fundamental operation of the site which will still be required to operate in accordance with all necessary safety and environmental requirements for such sites.

It is not possible to quantify the impact of any pollution event as any incident would vary in size, distribution and effect. Therefore, there could potentially be an adverse effect of major to minor significance on all marine animals and water birds if a pollution incident occurred during the operational phase.

OSL is regulated by the Health and Safety Executive and the Environment Agency under the Control of Major Accident Hazards Regulations 2015 (COMAH). The site is fully compliant with these COMAH regulations and a thorough risk and consequence analysis is carried out as required by these regulations which are regularly reviewed.

In terms of emergency or crisis management, OSL has effective procedures in place to handle potential emergency scenarios as required under the COMAH Regulations.

It is considered that the control provided by such regulation is sufficient to mitigate the impact of any pollution event.

No objection is therefore raised to the proposal on this basis.

<u>The ecological implications of development in the terrestrial environment</u>
The terrestrial development site is not subject to, or adjacent to, any statutory nature conservation designations. However, there are two statutory nature conservation designations within 2km of the development site boundary

Furthermore the development site is not subject to any non-statutory nature conservation designations, although there are six non-statutory nature conservation designations within 2km of the development site boundary, all of which are identified as being of County importance.

The terrestrial application site has been surveyed and the habitat identified is stated to comprise fuel storage tanks, related industrial buildings, fuel storage infrastructure, bare ground and hard standing, dense scrub, scattered scrub, semi-improved neutral grassland, semi-improved neutral grassland/scattered scrub mosaic, marshy grassland, poor semi-improved grassland/marshy grassland mosaic, coarse grassland, coarse grassland/scattered scrub mosaic, standing water, ephemeral short perennial and dry ditches.

In such habitats bats, birds, Great Crested Newts, Water Voles, reptiles and invertebrates were considered likely to be present and appropriate desk top studies and surveys have been undertaken.

The surveys revealed that bats are likely to be absent from the site but that birds, including some species listed as Species of Principal Importance (SoPI) under S41 of the Natural Environment and Rural Communities Act 2006 (NERC) and therefore required to be taken into consideration by a public body when performing any of its functions, were present, particularly within the scrub, marshy grassland, standing water and ditches with associated marginal scrub and reed vegetation. A colony of house sparrow was also confirmed in one of the buildings.

A desk study found records of Great Crested Newt within 1km of the development site and the development site and land within 250m was found to have standing water and terrestrial habitats with the potential to support Great Crested Newts, however, whilst three water bodies within the 250m survey buffer were found to support small populations of adult Great Crested Newts, none were recorded on the application site.

An assessment of habitat connectivity was undertaken to determine the likelihood that Great Crested Newts breeding within the 250m survey buffer could be utilising terrestrial habitat within the development site, but limited connectivity between the development site and offsite water bodies and terrestrial habitats could be identified. It was subsequently concluded that the absence of breeding Great Crested Newts on the site and the lack of connectivity between water bodies indicated this species was likely to be absent from the development site. The impact of be development on Great Crested newts was therefore considered to be negligible.

The Planning Authority has no evidence to refute these findings.

With regard to Water Vole, the desk study undertaken by the applicant provided records of three populations within 2km of the development site, the nearest being at the Canvey Village Marsh Local Wildlife Site (LWS) to the west of the development site. Suitable habitats for water vole were identified on the development site during the 'Extended' Phase 1 Habitat Survey; however, no sightings or evidence of Water Voles were recorded. The applicants conclude therefore that Water Vole is absent from the site.

The Planning Authority has no evidence to refute these findings.

The desk study recorded two non-statutory designated local wildlife sites within 2km of the site, Brick House Farm Marsh Local Wildlife Site and Thorneycreek Fleet Local Wildlife Site, which are known to support populations of Common Lizard. Canvey Village Marsh Local Wildlife Site is also known to support Adders.

The 'Extended' Phase 1 Habitat Survey of the development site identified the presence of Common Lizard and Grass Snake with good, poor and negligible quality habitat present on the site.

Population sizes were estimated as medium size for both species in good quality habitat areas and low for Common Lizard in poor quality habitat areas.

The site was determined to be of local significance for reptiles.

The development site supports a diverse assemblage of invertebrates including a reasonably high number of species of formal conservation interest, which is not unsurprising given the presence of the nearby Canvey Wick SSSI. Many species recorded at the development site require a larger landscape scale habitat mosaic in order to maintain viable populations.

The development site is not considered by the applicant to support any populations of conservation significance that do not occur outside the development site boundary, or encompass the greater part of such populations, but the site was considered to contribute towards the viability of such local invertebrate communities and was ascribed County significance.

Having determined the baseline ecological interest on the site, the impact of the proposed development on such features of interest must be assessed.

The applicants have predicted that the following effects will arise during the demolition and construction phases of development:

- Habitat loss from construction areas, plus fragmentation and isolation through land-take and the effect on species that depend on them;
- Disturbance from construction associated activity, including traffic, noise, lighting, dust, and vibration;
- Pollutants, which may include dust, mud, runoff of suspended solids, fuel oils, transmission fluids, concrete liquor, chemicals, and litter;
- Change in local hydrology (including ditch flow, runoff, soil water) from construction activities; and
- Risk of physical injury to, or mortality of, animals from direct contact with construction activities.

Impact within the Site

The proposed ground maintenance programme for the terminal and the proposed Compound 4 development will lead to the loss of areas of value to reptiles, invertebrates and breeding birds:

In order to compensate for the loss of these habitat the applicant has identified two areas of existing habitat within the Terminal which it intends to enhance and maintain to provide appropriate mitigation The applicant has specifically selected these areas because they provide areas of taller rank grassland and/or scattered scrub: therefore reptiles, invertebrates, breeding birds and notable plants will benefit from replacing some of this lower value habitat with a more valuable habitat mosaic. Furthermore, these habitats are not currently managed for wildlife, rather they have been left largely unmanaged, and, therefore, appropriate future management – having regard to the wider function of the Terminal and its operations - can be developed to provide a net gain for biodiversity.

Mitigation Area 1 measures approximately 1,800m2 and is located adjacent to the eastern site boundary, to the east of Compound 4. This area currently comprises scattered scrub adjacent to a wet ditch colonised by reeds. The southern 400m^2 portion of this mitigation area will initially act as a construction enclosure for the Compound 4 works, but on completion of those works this area will form part of the wider mitigation area.

Mitigation Area 2 measures approximately 13,700m2 and is located in the south-east of the terminal to the east of Compound 5. This area is currently dominated by coarse grassland. A ditch and surrounding dense scrub is present within the north-west of this mitigation area.

Proposed enhancements in Mitigation Areas 1 and 2 will comprise the creation of a mosaic of grassland types and sward heights maintained by mowing regimes to create areas of shorter grass and bare areas alongside areas of longer grass, which will provide ecological enhancement for reptiles, invertebrates and breeding birds.

Although not a formal area designated for ecological mitigation, the area to the west of Mitigation Area 1, measuring approximately 1,500m^2 will comprise managed short grassland. Whilst additional, ecological enhancement cannot occur in this area for fire safety reasons, this short sward will contribute to the overall habitat mosaic.

Given the size of the reptile population on site and the lack of immediate suitable reptile habitat surrounding Compound 4, it is considered that reptile translocation will be the best option for reptile mitigation. Reptiles will be moved from the development site to Mitigation Areas 1 and 2

between April and September, during suitable weather conditions. This period is considered the best period for reptile translocation. Such translocation will be undertaken in accordance with best practice and under ecological supervision.

Once translocated reptile exclusion fencing will be erected around the mitigation area in order to prevent migration into the construction zone.

To provide suitable habitat within the Mitigation Areas for invertebrates, the following measures will be undertaken:

- The emergent fringe of rush (*Bolboschoenus)* adjacent to the ditch in Mitigation Area 1 will be retained;

- The wet ditches will be retained;

- Creation of a varied topography to create a range of microclimates, wet and dry areas and diverse vegetation communities;

- Some patches of scrub will be cleared to provide open areas

- Provision of patches of gravel and sand;

- planting of suitable plant species such as Sea aster, clovers, knapweed and thistles to provide food sources and habitat

With regard to the presence of birds on the site, the applicants have advised that as far as possible site clearance will take place outside of the bird nesting season. Where that is not possible then pre-construction bird nest surveys will be carried out by an experienced ecologist immediately ahead of vegetation clearance / building demolition to make sure that no nesting birds are present. If an occupied nest is detected, then an appropriate buffer zone should be created around the nest, and clearance of this area delayed until the young have fledged.

The mitigation areas have been designed principally for reptiles and invertebrates. However, the mix of habitat to be retained and created will provide suitable breeding and foraging habitat for a range of bird species, including linnet, dunnock, whitethroat (all three requiring low scrub) and reed bunting (wet fringes, reedbeds). Nest boxes for species such as house sparrow and starling will be erected on appropriate buildings elsewhere on Site.

The introduction of these measures is considered by the applicant to have a beneficial impact on the ecology of the site.

The proposal will also result in the loss of a dry ditch owing to the requirement for a new drainage system as part of the proposal. The loss of this ditch would have a direct, permanent, adverse impact; however, the limited extent of the drainage ditch has led the applicants to conclude that its loss would be of minor significance.
The implementation of these measures prior to commencement of works on the site is stated by the applicant to be essential in order to limit the offsite impacts

Natural England initially appeared to have a less positive view of the proposed mitigation measures, particularly in respect of invertebrate habitat loss, identifying that there is no firm

proposal within the ES setting out how the scale and quality of loss will be effectively delivered and maintained to ensure no net loss.

There was also concern that the mitigation proposals did not identify key species invertebrates for target conservation effort, which habitats are least and most valuable and which habitats will be reduced, affected or enhanced by mitigation. Furthermore concern was raised in respect of the limited detail on methodology and aftercare management, linked to locations on a map.

Natural England discussed this concern with the applicants who agreed to provide a more detailed terrestrial ecology strategy (Land Ecology Management Plan or LEMP), which would look to the long term management of the target habitat and notable plant interest. .

This document was submitted in June 2016 and Natural England have confirmed that it addresses most of the concerns about the terrestrial biodiversity issues raised in the letter of the 28th April 2016. Subject to the proposed mitigation and aftercare management being undertaken in full, Natural England broadly accepts the conclusions of the report. In particular the direction provided in Section 6.2 of the LEMP with regard to accommodating the mitigation works in the operational site management is noted. In seeking to demonstrate that the notable conservation interest is being maintained consistent with good sustainable development practice, Natural England recommends that the applicant be required to submit a brief annual statement to Castle Point Borough Council and Natural England recording the completion of the required LEMP mitigation works and after care management for years 1 – 10 with a review of performance at year 5.

This requirement can be attached to the grant of any consent in the form of a condition and is acceptable to the applicant.

Subject to the imposition such a condition, no objection is raised to the proposal on the basis of its impact on terrestrial ecology.

Impact on Statutory Designated Sites

The applicant has identified that the development site supports habitats of value to invertebrate species associated with Canvey Wick SSSI and that the proposal will result in the permanent loss of the habitats of value to invertebrates within the construction areas at the development site. This may have an indirect adverse effect on the species associated with Canvey Wick SSSI owing to a loss in local supporting invertebrate habitats which contribute to the viability of populations associated with Canvey Wick SSSI. However, as stated above, it is intended that areas which are currently of less value to invertebrates on the development site will be enhanced. Owing to the large distance of the development site from Canvey Wick SSSI (approximately 850m west), together with the scale and quality of the habitats to be lost and enhanced at the development site, the applicant considers the effect on the SSSI to be negligible.

However, as noted above, the limited detail available in terms of onsite enhancement limits the weight that may currently be attached to this statement.

Impact on Non-Statutory Designated Sites

In proximity of the application site are the following Non-Statutory Designated Sites:

- West Canvey Marshes Local Wildlife Site (CPT4)
- Brick House Farm Marsh Local Wildlife Site (CPT38)

- Northwick Farm and Seawall Local Wildlife Site (CPT36)
- Thorney Creek Fleet Local Wildlife Site (CPT35)
- Canvey Village Marshes Local Wildlife Site (CPT5) and
- The Lake Local Wildlife Site. (CPT19)

These provide coastal marsh, reed-beds and associated marginal grass habitats and are located between 0.03km and 1.84km from the site.

In terms of indirect effects upon fauna on other sites as a result of habitat loss, habitat creation, fragmentation and isolation at the development site, the applicants are of the view that the lack of connectivity between water courses on the various sites and the proposed mitigation works on site as described above, will be sufficient to reduce the off-site impact to a negligible level.

The lack of connectivity also limits the potential for offsite pollution events arising from demolition and construction works.

In terms of dust noise and disturbance, whilst the majority of demolition and construction activities will be located some distance from the designated sites, increased dust and noise from demolition and construction traffic could indirectly and temporarily cause disturbance, particularly to the Brick House Farm and Canvey Village Marshes sites. However, the applicants intend to implement a Construction Environmental Management Plan which will provide a framework within which to monitor, avoid and/or minimise likely impacts to the environment and sensitive valued ecological receptors arising from the works, as far as reasonably practicable.

It is the applicant's view that compliance with the CEMP will ensure that the impact of dust and noise on nearby designated sites is of a low magnitude

In respect of lighting the applicants suggest that as works will usually take place during the day the impact of additional terrestrial lighting at night would be limited.

During the operational phase the applicants state that the enhanced mitigation areas will be managed to ensure their long term biodiversity. Such management can be secured through the imposition of appropriate conditions on the grant of any consent.

In all other respects operational activity on the site post construction is not expected to be significantly different from that currently experienced. The impact of the operational phase on features of conservation significance is therefore considered to be negligible or of minor beneficial impact.

Natural England has made no specific comment in respect of the impact of the proposed development on non statutory designated sites.

Given the relatively limited extent and nature of the terrestrial works proposed, and having regard to Natural England's Standing Advice, it is not considered that the proposal will have a significant adverse impact on the identified sites.

3. WATER ENVIRONMENT

The extension of the jetty will result in changes to the water environment within the Thames. This will arise during the construction phase as a result of the works required to construct the Jetty and during the operational phase as a consequence of vessels visiting the site.

In order to determine the impact of the proposal on the water environment, the applicants have undertaken baseline surveys within a defined study area and then, based on the requirements of the proposed development, has predicted the potential impact and the significance of such impact both in the area around the Jetty and further afield.

Pre application consultation with the PLA, MMO, Natural England and the Centre for Environment (CeFAS), Fisheries and Aquaculture Science suggested that the proposal has the potential to impact the physical processes of the area through alterations to the hydrodynamic regime and transport of sediment, and in particular there is:

• Potential for increases in suspended sediment concentrations during construction and future dredging works and therefore the potential for smothering of sensitive habitats;

• Potential impacts on intertidal habitats in the area due to local changes in hydrodynamic regime and

• Potential effects of additional boat wash as a result of more heavily laden vessels.

The approach that the applicants have taken to the assessment of effects has been limited to exclude consideration of sediment quality and the potential for effects on water quality through suspension of contaminated sediments, direct and indirect effects on designated sites, protected species and habitats (including migratory fish), direct and indirect effects on local fisheries and the implications for designated waterbodies under the Water Framework Directive, much of which has been discussed elsewhere in this report.

The assessment here is therefore limited to consideration of the impact of the proposal in terms of potential for increases in suspended sediment concentrations during construction and future dredging works and the potential for smothering of sensitive habitats, potential impacts on intertidal habitats in the area due to local changes in hydrodynamic regime and included Natural England's recommendation for hydrodynamic modelling; and potential effects of additional boat wash as a result of more heavily laden vessels on the erosion of the intertidal habitats in the area.

The PLA also required consideration of the possible requirements for increased future dredging, as it was noted that bed levels were rising in the vicinity of the application site and local effects on the structure of the river bed profile.

The assessment has been developed with reference to a number of guidance documents and regulations, including the criteria listed in Annex III of the EC Environmental Assessment Directive (2011/92/EU). The evaluation particularly draws on the assessment process developed by statutory nature conservation bodies (e.g. Natural England, Natural Resources Wales, Scottish Natural Heritage etc.) to provide advice on operations within European marine sites and on an Environmental Risk Assessment approach developed by ABP R&C (1997, which is based on the former Department of Environment's (DoE) guide to risk assessment for environmental protection (1995), updated with regard to the Town and Country Planning (EIA) Regulations 2011, the Marine Works (Environmental Impact Assessment) Regulations 2007 and the 2015 BSI guide for

Environmental Impact Assessment for offshore renewable energy projects (BSI, 2015), as well as seabed charts of the OSL frontage numerical modelling.

The assessment identifies a number of receptors which are considered to be capable of being affected by the potential changes. These include the navigation channels, coastal infrastructure such as the adjoining jetties, non designated intertidal areas adjacent to the site and the adjoining Ramsar, SPA and Sites of Special Scientific Interest.

The applicant has assessed the impact of the proposed development on the identified receptors and has concluded that the potential for significant effects are limited, arising from localised operational changes in sediment transport and associated effects on maintenance dredge commitments at OSL Jetty 1.

Perhaps the most significant implication in an environmental context is the exposure of the adjacent intertidal zone on Canvey Island to changes in sediment transport arising from the construction and use of the Jetty. The impact has been assessed by the applicant as large, as it is likely to result in erosion of a few centimetres before a new equilibrium is reached and may change the position of the intertidal zone within the tidal frame. The habitat is considered to be functionally important to other designated areas and as a result the sensitivity of the intertidal zone has been classified by the applicant as moderate having a low capacity to accommodate the proposed form of change. The applicants consider that the result of this large exposure with a moderate sensitivity is an effect of minor significance (against a low importance receptor) which, in accordance with the approach set out, is not considered to be significant in EIA terms.

The other significant impact identified by the applicant was the need for increased dredging around OSL1 which currently has little to no capacity to accommodate any increase in sedimentation without an associated increase in dredge commitment.

Natural England initially commented that post construction the foreshore west of the extended jetty would be subject to increased sedimentation which may affect the quality of supportive habitat for the SPA. However, following the receipt of data on overwintering birds, this is no longer considered a matter of concern.

No objection is therefore raised to the proposal on this basis.

4. NOISE

Noise and vibration impacts arising from the proposed development may be identified in both the terrestrial and the marine environment and will fall to be considered under the headings of construction noise and vibration and operational noise and vibration.

The impact of noise on wildlife has been considered in the section on ecology. This section of the report seeks to consider only the ‘above water level’ noise impacts of the proposal on local residents.
The ES considers construction noise associated with piling for the proposed jetty; demolition and construction noise for the storage compound redevelopment; off-site HGV noise on the local road network during the demolition and construction phase and operational noise from the proposed jetty with the loading and unloading of vessels.

The findings of the ES are based on both day time and night time surveys which were undertaken in April and June 2015. The data gathered in respect of on-site noise was obtained at three

locations representative of the location of the residential development at Haven Quays, north of Brickhouse Farm and at Thorney Bay Park.

For off-site road noise and vibration, data was gathered at Great Russell Farm and at Waterside Cottages.

Local residents have expressed concern over the potential impact of noise and vibration on their amenity and quality of life. It is a fundamental premise of the planning system that noise from new development should avoid giving rise to significant adverse impacts on health and quality of life.

Paragraph 109 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to, or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Paragraph 123 states that planning policies and decisions should aim to avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development.

The NPPG provides further guidance on the consideration of noise in the determination of applications stating that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. This guidance is consistent with the provisions of the Noise Policy Statement for England (March 2010).

Policy EC3 of the adopted Local Plan states that development proposals which would have a significant adverse effect upon the residential amenity of the surrounding area by reason of traffic, noise, fumes or other forms of disturbance will be refused.

Policy EC4 of the adopted Local Plan states that development which would have a significant adverse effect on the health, the natural environment, or general amenity by reason of releases of pollutants to water, land, air or by reason of noise, dust, vibration, light or heat, will be refused.

Constructional Noise Implications

As explained in the section on Construction Methodology above, it is envisaged that the construction activity generally will be undertaken across a 12-day fortnight, whereby shifts start on a Monday and continue through to the second Friday. The exception to this will be piling activity which will be discussed below.

Working hours for demolition and construction activity on Monday to Friday would generally be 10 hours (08:00 to 18:00) and generally 8 hours (08:00 to 16:00) on the Saturdays and Sundays worked in the middle of the 12 day shift.

No deliveries to site would be allowed on Saturdays after 12.00 or at any time on Sundays. Some equipment maintenance or set up work may, however, need to take place outside of the hours specified

In order to ensure that noise generated by works on the site are limited as far as reasonably possible Threshold Values for construction and demolition noise have been identified for the working periods, based on the average ambient noise levels for three periods namely:

Weekdays (07:00-19:00) and Saturday morning (07:00-13:00);

Weekday evenings (19:00-23:00) and Saturday afternoon and evening (13:00- 23:00) and Sundays (07:00-23:00); and

Night-time (23:00-07:00).

Threshold values would be highest in the first period, reducing during the other periods.

The applicants have identified that where construction and demolition activities cannot comply with the Threshold Values for the different periods, mitigation measures will be introduced to reduce the noise levels to the Threshold Values or the construction and demolition activities would not occur in that particular working period.

Constructional Noise Implications - Piling

The consultants have identified that the effects of noise associated with piling for the proposed jetty are direct, negative and potentially cumulative with the noise from the construction works associated with the storage compound redevelopment.

The applicants have advised that noise reduction at source will be implemented as necessary for the piling operations and have identified a commercial piling noise system (IHC IQIP) which can be implemented to secure limitations on noise arising from piling.

The use of soft start procedures is also proposed.

The noise level associated with driving steel piles is generally in the range of 96 – 102 dB(A) when measured at 10m from the pile.

The noise associated with pile driving is derived from two sources – the impact of the hammer on the head of the pile and the vibration of the pile as the energy from the hammer blow passes down its length. The noise generated by the vibration will exceed that generated by the hammer blow. The most effective means of reducing piling noise is therefore to limit vibration of the pile.

Use of noise reduction systems (NRS) such as that identified by the applicant can achieve this objective.

The data associated with the identified NRS states that use of such systems will enable a reduction from the stated 96 – 102 dB(A) at 10m from the hammer to a safe noise level of 80dB(A) at a distance of 20m from the hammer.

The proposed piling operations will take place a minimum of 400m from the nearest residential receptor. At this distance it is not considered that noise arising from the piling operations would have a significant adverse impact on the health and quality of life of local residents.

Furthermore it should be noted that operations associated with piling for the proposed jetty are temporary with an indicative duration of 25 days for the installation of the larger mono piles and an indicative duration of 60 days for the installation of the smaller diameter piles.

Concern has been raised about the hours during the installation period when piling would occur. The vibration generated by the simultaneous use of separate piling rigs for the monopiles and smaller piles would require that such combined operations be undertaken during the weekday daytime period (08:00 to 18:00) and Saturdays (08:00 to 16:00).

The impact piling of smaller piles could take place on evenings and weekends.

Night time piling would be precluded.

It may be noted that the applicants have advised that the time taken to install each pile is in the order of 6 hours.

Constructional Noise Impacts – Compound 4.
The effects of noise associated with the storage compound redevelopment are direct, negative and potentially cumulative with the noise from the piling for the proposed jetty. The effects of noise associated with the storage compound redevelopment are however again temporary as the overall construction period has an indicative duration of 20 months.

Given the limited construction period and the measures to be introduced to control the periods of work, the impact of noise associated with the Compound 4 redevelopment is not considered to give rise to significant adverse effects on the health or quality of life of local residents.

Constructional Noise Impacts – off-site HGV movements
The effects of noise associated with off-site HGV noise on the local road network during the demolition and construction phase are identified by the applicant as direct, negative and temporary with an indicative duration of 20 months.

Off-site road traffic noise and vibration has been assessed by the applicants by determining the change in road traffic noise levels, using the methodology contained in the Calculation of Road Traffic Noise Memorandum 1988.

The magnitude of noise impact has been determined by reference to the noise change and the classification given in the Design Manual for Roads and Bridges Volume 11 Environmental Assessment Section 3 Environmental Assessment Techniques Part 7 HD 213/11 – Revision 1 Noise and Vibration.

There are no residential dwellings immediately adjacent to Roscommon Way or that part of Haven Road between the wider OSL terminal entrances and Roscommon Way. There are also very few dwellings (the only ones being Great Russell Head Farm and 5-6 Waterside Cottages) that are adjacent to the access route between the wider OSL terminal and the A130 / A13 junction. The applicants have formed the view that there is no requirement for assessment beyond the A13 / A130 junction due the high traffic flows that already occur on the roads leading from this junction. The assessment has, therefore, considered only the dwellings at Great Russell Head Farm and 5-6 Waterside Cottages.

This appears a reasonable position to adopt.
The calculated change in road traffic noise level for the A130, with the addition of the peak construction traffic flows, is 0.1 dB LA10, 18 hour for Great Russell Head Farm and 5-6 Waterside Cottages. This level of increase is categorised by the Design Manual for Roads and Bridges as negligible.

Achievement of this objective can be secured through the submission, approval and enforcement of a Traffic Management Plan (TMP). Submission of a TMP can be secured by the imposition of a condition on the grant of any consent.

On the basis that HGV traffic is limited to that part of Haven Road between the terminal entrance and the junction with Roscommon Way and can be controlled, it is not considered that an objection on the basis of the impact of traffic noise on local residents could be sustained.

Operational noise implications

The effects of noise associated with operation of the proposed jetty with the loading and unloading of vessels at any time are direct, negative and potentially cumulative with the noise from loading and unloading of vessels at any time at the existing operational jetty.

Furthermore such effects are long-term and permanent for the life of the site.

Currently, via Jetty 1, the wider OSL terminal handles approximately 65 vessels per year of a maximum weight of 55,000 DWT.

Activity on Jetty 1 is predicted to increase in a phased manner due to new commercial contracts and changes to existing contracts and it is estimated that as a result of the ODWJ proposals, approximately 36 vessels per year will use the new extended Jetty 2 when it becomes operational, although for assessment purposes the applicants have made the assumption that 72 vessels will visit the Jetty.

The overall operation of the wider OSL terminal will remain the same as a result of the ODWJ proposals. The product will continue to be unloaded from the berthed vessels via pipelines that run along the jetties, pumped into storage tanks and then transferred from the site by underground pipeline. Jetty 2 and Compound 4 will operate on a 24 hour/seven day a week basis, which is consistent with the operation of the wider OSL terminal.

Noise measurements of a vessel unloading at Jetty 1 were taken on Monday 15 June 2015 on the flood defence wall adjacent to the site, the Public Footpath running alongside the flood defence wall and at a point close to the park homes south of Haven Quay, off Haven Road adjacent to the south west corner of the OSL terminal. This data has been used to calculate noise likely to be generated by the unloading of vessels at Jetty 2.

The calculated noise levels for "*Jetty 2 Vessel Unloading*" are between 1 and 9 dB LAeq, T higher than the calculated noise levels for "*Jetty 1 Vessel Unloading*" at four of the five receiver locations, (Haven Road/Coker Road, Brooklands Square, Hawkesbury Road and at Thames Road). This is because the nominal noise source height was set at 20m for a vessel unloading at the proposed Jetty 2 compared to a nominal noise source height of 10m for a vessel unloading at the existing Jetty 1. This increase in height reduces the barrier attenuation attributable to structures on the site between the Jetty and the receptor sites.

For the dwellings at Haven Quay, (the fifth receptor site), the much greater separation distance to Jetty 2 than Jetty 1 and barrier attenuation attributable to the seawall for the vessel unloading noise sources at both Jetty 1 and Jetty 2, resulted in the calculated noise level for "*Jetty 2 Vessel Unloading*" being 11 dB LAeq, T lower than for "*Jetty 1 Vessel Unloading*".

The opportunity for simultaneous unloading at Jetty 1 and Jetty 2 will exist if consent is granted and the implications of this also need to be considered.

For four of the five receiver locations, the calculated noise levels for "*Combined Vessel Unloading*" are below 35 dB LAeq, T. For the dwellings at Haven Quay, the calculated noise level is 39 dB LAeq, T but this noise level is controlled by the contribution for "*Jetty 1 Vessel*

Unloading", which is an existing operation. Residents at Haven Quays will therefore perceive no increased noise as a result of the proposed development.

For the dwellings at Haven Road, Coker Road, Brooklands Square, Hawkesbury Road and at Thames Road, the calculated noise level for "*Combined Vessel Unloading*" demonstrates that noise associated with the operation of Jetty 2 will have a low impact on local residents.

As well as the noise generated from a vessel unloading at the proposed jetty, there will be new plant at Compound 4 associated with movement of product within and off the site. This plant is to be positioned to the south of the tanks in Compound 4 at about 450m to the nearest dwellings at Haven Quay and screened by existing tanks and structures to all of the nearest dwellings.

Mitigation in the form of the selection of pumps with an overall sound power level of 105 dB LWA, or local enclosures, are proposed to be used to achieve appropriate noise attenuation. The use of such mitigation measures would ensure no significant adverse impact on local residents.

It should be noted that the Council's Environmental Health Officer (EHO), has raised no objection to the proposal on the basis of impact of noise, subject to conditions. No objection is therefore raised to the proposal purely on the basis of noise impact on local residents.

5. VIBRATION

The consultants preparing the noise and vibration section of the ES have identified that all demolition and construction works within the site will take place a minimum of 400m from the nearest residential development. At this distance it is considered that vibration associated with non piling works at the dwellings would be insignificant with negligible impact.

As previously stated the vibration generated by the simultaneous use of separate piling rigs for the monopiles and smaller piles would require that such combined operations be undertaken during the weekday daytime period and Saturday mornings.

The impact piling of smaller piles could take place on evenings and weekends.

The night-time Threshold Value at Haven Quay would effectively preclude impact piling at night.

With regard to vehicular traffic serving the site, based on research by the Transport Research Laboratory (TRL), any change in vibration associated with peak traffic flows is negligible. Increased traffic levels serving the site will not therefore have a significant adverse impact on local residents.

With regard to vibration associated with the unloading of vessels associated with Jetty 2, the applicants have identified that no vibration was discernible during unloading operations of a vessel at Jetty 1. None are therefore anticipated in respect of the same operations at a greater distance from the nearest receptor at Jetty 2.

It should be noted that the Council's EHO has raised no objection to the proposal on the basis of vibration. No objection is therefore raised to the proposal on this basis.

6. TRAFFIC AND TRANSPORT

Several residents have objected to the proposal on the basis of increased traffic associated with the construction and operational phases. Concerns have principally been focused on congestion (also known as driver delay) and noise.

Whilst these concerns are clearly evident, an assessment of traffic on the long term health and quality of life of local residents must also consider issues such as severance, pedestrian delay and amenity, accidents and safety, hazardous loads and fear and intimidation and must balance these considerations against the sensitivity of the receptor.

At present, operational movements to the site are limited to OSL and maintenance staff. Details from a typical week confirm around 15 – 20 staff enter and leave the site on a daily basis. The majority of these movements are spread throughout the day, reflecting shift patterns and 24 hour working. On average therefore the site has around 30 – 40 two way car movements per day. Around 2 – 3 HGV movements occur per week relating to maintenance, deliveries and refuse collection.

As has already been indicated, the traffic generation associated with the operation of the site will generally remain unchanged following the construction of the ODWJ proposals, with a potential increase of 2 additional staff employed on site per day. The focus of the assessment, therefore, relates primarily to the construction traffic associated with the proposals.

Construction traffic – Marine

Precise details of the road-based flows will vary across the construction period, but for the purposes of assessment, the applicants have forecast a peak flow of 10 HGV loads (20 movements) per week associated with the marine works.

Around 25 construction workers are expected on site on a typical day. A combination of car sharing and mini-bus use, along with some accessing the site by boat, will result in around 30 movements per day (15 in and 15 out). These will all use the main site entrance.

HGV construction traffic and, where practicable, construction worker traffic to and from the site will be routed to and from the terminal site via Haven Road, Roscommon Way (A130), Canvey Way (A130) and the A13. The routing arrangements will be formalised through a Construction Traffic Management Plan (CTMP) which is envisaged will form part of the Construction Environmental Management Plan. (CEMP).

Sufficient parking and vehicle waiting areas are available within the OSL terminal site to enable HGV's or other vehicles associated with the ODWJ construction to park up off Haven Road.

Construction traffic – Terrestrial

It is expected that the majority of the construction materials for the terrestrial works will be delivered to the site by road. Access to the strategic road network from the terminal is good and construction traffic will be routed to and from the site via Roscommon Way (A130) onto Canvey Way (A130) and the A13.

For the terrestrial construction, around 70 workers per day will be required. Assuming a level of car sharing and mini-bus use, it has been assumed there will be 70 daily movements per day. In combination with marine worked it is estimated that this equates to 100 staff movements per day. These will use the main site entrance.

Construction traffic movements will vary over the construction programme, with some periods of relatively low movements and others of higher activity however, adopting a 'worst case scenario', it is forecast that at peak times, the construction works could generate in the order of 175 movements per day, of which 75 will be HGVs and the remainder vans and cars.

Sufficient parking and vehicle waiting areas are available within the OSL terminal site to enable HGV's or other vehicles associated with the ODWJ construction to park up off Haven Road.

In terms of the impact such traffic would have the capacity of the highway network generally, it should be noted that the level of traffic related to the construction proposals results in a percentage increase of less than 7% for the peak period on the local or strategic road network. In terms of HGVs the maximum percentage increase will be 38% on Roscommon Way south of Northwick Road. This is due to the fact that base flows are relatively low and that Roscommon Way, at this location, is currently under utilised and was designed to accommodate substantially higher levels of HGV traffic than it currently carries.

In terms of severance, it should be noted that with the exception of the dwellings at Haven Quays, the route serving the site skirts the residential areas of the Island. It is not therefore considered that the proposal would result in issues of severance.

In terms of driver delay, which is a significant concern for local residents, it should be noted that the Institute of Environmental Management and Assessment (IEMA) Guidelines note that driver delay is only likely to be significant when the traffic on the highway network is at or close to the capacity of the system. Each of the roads considered within the assessment operate well within capacity threshold levels for future years, particularly on Roscommon Way where the majority of traffic will be routed. The applicant therefore concludes that there will be negligible impact in respect of driver delay.

During the typical site peak periods (07:00-08:00 and 18:00-19:00) traffic generation is forecast at a maximum of 58 movements of which 8 are likely to be HGVs. This equates to one additional vehicle a minute on the surrounding road network. The existing traffic generation on Haven Road and Roscommon Way is well below the capacity thresholds for the nature of the road and there will be no significant material impact in terms of driver delay on the local or strategic network.

In addition, the construction works will occur on a temporary basis.

Under the circumstances it is not considered that any delay in traffic flows caused by construction traffic would give rise to significant adverse impacts on other road users, either pedestrian or vehicle borne.

As stated above, it will be necessary, during the construction period to temporarily close footpath CANV_8 which to the south of the site along the sea wall. The applicants have advised that any closure of the footway will be kept to a minimum during the construction phase and it is anticipated that the footway may be closed for a maximum of 7 days in total. Site observations show around 70 people use the footpath on a Saturday during the summer holidays. 12 cyclists were recorded and the remainder of the users were pedestrians.

Given the relatively low level of usage and the limited period of closure it is not considered that the temporary loss of this facility would result in a significant impact on the health or quality of life of local users.

In terms of accidents, a full review of personal injury accidents within the vicinity of the site has been undertaken. Two accidents involved a HGV, one of which was serious. The serious accident did not, however, occur within the vicinity of the site and was not related to OSL operations.

Regardless of this fact, the limited number of accidents demonstrates that the chosen access route is not a disproportionately hazardous route for HGVs.

It is not considered that the potential increase in HGV traffic on this route would result in a significant change in accident reports on the route.

No hazardous loads are expected as part of the construction process. With regard to abnormal loads, the escorted movement of large items, if required, will be managed in consultation with the highway authority and police. As a result of the subsequent slow vehicle speeds involved, it is considered that the movement of such loads is unlikely to result in a significant adverse impact on other road users.

Abnormal loads and high levels of HGV traffic tend to be regarded with greater caution by others and as a consequence fear and intimidation is a matter for consideration. One respondent to the application has identified that Roscommon Way is bounded by a bridle path on its northern side and that users of this path are likely to be intimidated by the additional vehicles using Roscommon Way.

It must first be stated that Roscommon Way was constructed as a major traffic route with the intention that it should carry relatively high volumes of traffic. Given the relationship of the Route to industrial facilities, it is reasonable to assume that a significant proportion of this traffic would be Heavy Goods Vehicles.

The EIMA Guidelines indicate that the average traffic flow over an 18 hour day on the majority of road links resulting from construction is above the threshold at which fear and intimation can be triggered, however, such traffic will not be close to major pedestrian routes and those using the paths are provided with protection in the form, of a wide path and verge.

Under the circumstances it is not considered that the use of Roscommon Way and the associated links to the site would have a significant adverse impact on the health and amenity of other users of the route.

In conclusion, it is considered that the proposed development would have no significant impact in terms of road traffic generated as a result of the proposals during either construction or operational phases.

The traffic generation for the operation of the site will remain unchanged to the present base traffic levels. The construction phase will result in a temporary minor impact which will be mitigated through the Construction Traffic management Plan (CTMP).

It should be noted that the Highway Authority has raised no objection to the proposal on the basis of highway capacity.

7. AIR QUALITY

There are no formal assessment criteria for dust and particulate matter during demolition and construction. In the absence of formal criteria, the approach developed by the Institute of Air

Quality Management (IAQM) has been used by the applicants in assessing impact on air quality. (The IAQM is the professional body for air quality practitioners in the UK).

The construction dust assessment considers the potential for impact within 350 m of the site boundary; or within 50 m of roads used by construction vehicles.

The main air pollutants of concern in the context of the current applications are oxides of nitrogen (NOx), nitrogen dioxide and fine particulate matter (PM10 and PM2.5) associated with vehicle emissions and NOx, nitrogen dioxide, PM10, PM2.5 and sulphur dioxide which are associated with shipping

The main air pollutant of concern related to heating and energy plant is NOx, nitrogen dioxide, PM10 and PM2.5.

The Assessment states that construction works for both the marine elements and terrestrial elements of the proposals will give rise to a risk of dust impacts during demolition, earthworks and construction, as well as from trackout of dust and dirt by vehicles onto the public highway.

In the context of demolition the marine elements of the proposal will require demolition of two buildings (constructed from brick, concrete and wood) from the head of the existing jetty 2 with an approximate total volume of 60 m3. It will also be necessary to remove redundant pipework and infrastructure which is estimated to total approximately 12 tonnes of material.

The final method of demolition has yet to be decided but there will be no crushing or screening equipment used in the context of the marine development. The dust emission class for this demolition activity is considered by the applicant to be small in the context provided by the IAQM assessment methodology.

During the terrestrial elements of the proposals five buildings constructed of brick, concrete and wood, will be demolished generating some 1,125 m^3 of material.

In addition, 12 storage tanks will be removed, together with a bund wall. Demolition of these structures will take place alongside construction. A mobile crusher will be used on site in the terrestrial context and appropriate crushed material from the demolition works will be reused within the construction.

The dust emissions class for this demolition is considered by the applicant to be small in the context provided by the IAQM assessment methodology.

During the terrestrial elements of the proposals there will be a requirement to remove the floor of the existing compound and the existing bund walls, to dig foundations for the bund walls and to provide replacement ballast for the compound. These works result in a total of approximately 50,000 tonnes of material to be removed. It is anticipated that a certain amount of the material will be re-used on site.

The dust emission class for these works is considered by the applicant to be large in the context provided by the IAQM assessment methodology.

Construction
The new buildings, tanks and infrastructure (pipework, steelwork etc.) for both the marine and terrestrial elements of the proposals will, as far as practicable, be pre-constructed offsite and delivered as either in one piece or in modular form.

The dust emission class for construction is considered by the applicant to be small in the context provided by the IAQM assessment methodology.

Trackout
Barges and tugs will be used to deliver materials to the site of the marine elements, with crane barges and tugs used to lift material into position. Such transportation will leave no trackout on adjoining roads.

As stated above, during the construction works, there will be a peak of 175 (two-way) vehicle flows a day accessing the site of which 43% will be HGVs (75 two-way flows). These flows, however, only occur on roads with no relevant receptors (in this instance residential dwellings). On those roads with relevant receptors (Haven Road and Canvey Road) there will be additional peak flows of 50 two-way vehicles accessing the site, none of which will be HGVs.

Having regard to the EPUK and IAQM guidance a detailed assessment of road traffic impacts associated with the construction process is not required; however, the dust emission class for trackout is considered to be large in the context provided by the IAQM assessment methodology.

The IAQM guidance explains that residential properties are ‘high’ sensitivity receptors to dust soiling. The bulk of the earthworks will occur over 350 m from the closest residential properties which, according to the Southend Airport meteorological data for 2014 is, for the majority of the time, upwind of the main construction activities. As a consequence the area surrounding the onsite works is considered to be of ‘low’ sensitivity to dust soiling.

As stated above dust emission magnitude for trackout is ‘large’ and there is a risk that material could be tracked up to 500m from the site exit. The construction vehicles will travel from the site exit, up Haven Road and then onto Roscommon Way. There are no sensitive human receptors within 50m of the roads along which material could be tracked, thus the area is considered to be of ‘low’ sensitivity to dust soiling due to trackout.

Residential properties are also classified as being of ‘high’ sensitivity to human health effects; however the existing residential properties are well away from the preferred route local roads and the areas surrounding the onsite works and surrounding roads along which material may be tracked from the site are also considered to be of ‘low’ sensitivity to human health effects.

The guidance only considers designated ecological sites within 50m to have the potential to be impacted by the construction works. The bulk of the construction works will occur over 500m from the Holehaven Creek SSSI and Canvey Wick SSSI is located more than 1 km from the site access point. The Canvey Village Marsh and Brick House Farm Marsh LWSs are located within 50m of the construction works; however in the context of the guidance of the IAQM these locally designated sites are considered to be of ‘low’ sensitivity to ecological effects.

Assessing all of the potential pollutant sources and quantities, the applicants have demonstrated, using the guidelines provided by the IAQM that the construction phase of the proposed development will not have a significant harmful impact on air quality and will not therefore adversely affect human health or quality of life.

In terms of the operational phase of the development, DEFRA advises that that the air quality impacts of ports (shipping) only require detailed assessment if the port serves more than 5,000 movements per year and there are residential properties within 250 m of the ships. The closest residential receptors are located more than 400 m from the proposed new jetty and the number of vessel movements is well below the threshold of 5,000. No detailed assessment is therefore required, however, given the specific location of the site and the fact that there are no relevant receptors (both human and ecological) within 250 m of the proposed jetty, the applicants consider that any air quality impacts associated with the increase in vessels using the proposed jetty will be *insignificant*.

In terms of road traffic no significant increase in road traffic is anticipated as a result of the proposed development, (other than that required to accommodate the movements of five new members of staff). Consequently the impact of operational use on the site is considered to be insignificant in terms of air quality.

Despite the identified low levels of impact the applicants have however indicated the implementation of a range of mitigation measures to reduce the impact on nearby receptors. These include:

- Displaying of the name and contact details of person(s) accountable for air quality and dust issues on the site boundary

- Recording all dust and air quality complaints, identify cause(s), taking appropriate measures to reduce emissions in a timely manner and recording the measures taken

- Making the complaints log available to the local authority

- Recording any exceptional incidents that cause dust and/or air emissions, either on- or offsite and the action taken to resolve the situation

- Carrying out regular site inspections to monitor compliance with the relevant measures, recording inspection results, and making an inspection log available to the Local Authority

- Increasing the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions

- Planning the site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible

- Erecting solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site

- Avoiding site runoff of water or mud

- Ensuring all vehicles switch off their engines when stationary – no idling vehicles; and minimising the use of diesel- or petrol-powered generators through the use of mains electricity or battery-powered equipment, where practicable

- Only using dust generating equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction systems

- Ensuring an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate

- Minimising drop heights from loading or handling equipment and use fine water sprays on such equipment wherever appropriate

- Avoiding bonfires and burning of waste materials

- Ensuring effective water suppression is used during demolition operations;

- Bagging and removing any biological debris or damp down such material before demolition

- Ensuring bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.

- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust

- Using water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use

- Avoiding dry sweeping of large areas

- Ensuring vehicles entering and leaving sites are covered to prevent escape of materials during transport

- Implementing a wheel washing system.

The mitigation measures will be written into the Dust Management aspects of the CEMP.

It should be noted that, subject to conditions, the Councils Environmental Health Officer (EHO) has raised no objection to the proposal on the basis of impact on air quality.

On the basis of the implementation of an appropriate pollutant mitigation Plan, no objection is raised to the proposal on the basis of air quality concerns.

8. CONTAMINATION

The site is known to be subject to low levels of contamination and disturbance of the soil at depth provides potential for contact between contaminants and humans and in this case contaminants and aquifers present in the substrate, which could have potentially adverse consequences for human health as well as ecology.

Detailed assessment undertaken by the applicants has identified however that the level of risk arising from contamination is small and that the removal of material from the site will have a minor beneficial impact.

Despite the low level of risk however a number of mitigation measures will be implemented on site which is detailed in the Contaminated Land Assessment and Remediation Strategy, a copy of which is included within the appendices the ES.

The principal objectives of the remedial works are summarised below:

- to undertake the works in a sustainable manner ensuring identified contamination linkages are broken and new linkages are not created;
- to ensure adequate management of excavated materials;
- to monitor the works to ensure they are carried out in line with the remediation strategy;
- to ensure the development will be suitable for the proposed end use;
- to ensure unforeseen contamination will be reported, managed and remediated effectively
- ensuring suitability for proposed end use; and
- to inform the project team including the contractor of measures required to mitigate the impact of the development on the wider environment.

The Contractor will undertake mitigation works in accordance with the Remediation Strategy. Following completion of the development the Contractor will provide the necessary information for a Validation Report to be prepared and submitted to Castle Point Borough Council.

The Validation Report will include the following information;

- The source of any imported materials and chemical test results, volumes of imported materials and locations they have been placed on site;

- Details of any unforeseen contamination encountered during the works and subsequent remedial actions;

- Copies of duty of care waste transfer notes and / or hazardous waste consignment notes and chain of custody documents relating to the disposal of soils and asbestos containing materials from the Site;

- Waste disposal records, including a soil and liquid disposal summary, copies of waste consignment notes and tip tickets. The data will be separated based on the waste classification of the materials

- disposed e.g. asbestos, hazardous, non-hazardous and inert;

- Records of any consents, authorisations, permits or licences obtained;

- Backfill records, comprising chemical and geotechnical data for Site derived and imported fill material and imported fill summary records;

- As-built drawings showing final levels, backfilled areas and other relevant details;

- Progress photographs;

- Relevant approvals from, for example, Castle Point Borough Council the Environment Agency for the works carried out.

It is considered that the implementation of the Remediation Strategy will ensure that no adverse impacts on the environment will arise as a result of the proposed development.

It should be noted that the Council's Environmental Health Officer has raised no objection to the proposal on the basis of contamination. No objection is therefore raised to the proposal on this basis.

9 HEALTH AND SAFETY

A number of risks associated with the proposed development have been identified by local residents and the applicants. These will be considered in turn:

Construction Risks

In addition to the risks associated with the operation of the new deep water jetty, there are risks associated with the execution of construction works within an operational fuel storage site and in proximity to a gas line.

The OSL facility operates in compliance with the COMAH regulations and guidance relevant to fuel storage sites. Compliance with these Regulations will ensure that construction work has no significant impact on the facility or the wider area.

Any works undertaken in proximity of the gas pipeline will be undertaken by specialist contractors in accordance with National Grid safety protocols.

In addition the applicant will carefully manage personnel and traffic movements through the site and will have in place appropriate signposting, and health and safety protocols and plans to identify and limit risks as far as possible.

There are also risks associated with the demolition and removal of tanks and pipelines.

Tanks within Compound 4 and the associated pipelines, which are to be removed from the site are empty. There is therefore no risk of spillage/ignition arising from the removal of these tanks and pipelines.

Ordnance Risks

The proposal includes works to the river bed and there is some potential for encountering unexploded ordnance (UXO). A survey undertaken by OSL has identified 10 potential UXO and a series of potential UXO exclusion zones around the site.

If a potential UXO or any exclusion zone that is ultimately defined is found to interfere with a specific work area, inspection of the area by divers will be undertaken to confirm the presence of a UXO and co-ordinate appropriate disposal. In this way, whilst the risk will still exist, it will be reduced to as low as reasonably practicable.

Risk to a public right of way

An existing public footpath (Reference CANV_8) is located immediately to the south of the OSL facility. The proposal will involve works taking place within the area of this footpath and in order to limit the risk when works take place over or under the public footpath, the applicant will seek, the

appropriate approvals and authorities to close the relevant section of public footpath temporarily. Construction activity directly within the area of the footpath and in close proximity to the footpath will be undertaken in accordance with relevant health and safety legislation and guidance.

Under this regime risk to users of the footpath would be reduced to as low as reasonably practicable.

Operational Risks

A number of local residents have objected to the current proposal on the basis of concerns over health and safety, the perception being that the introduction of a new deep water jetty and new replacement storage tanks would increase the operational risks associated with the site.

The first point to note in this regard is that the site already benefits from consent for the storage of 242,391 tonnes (292,237m^3) of petroleum and related products within the existing tanks. The current proposal does not alter this consent, although it will be necessary to enlarge the area of consent to include the extended jetty in due course.

The primary means by which the risk of a major accident hazard is controlled at the OSL facility is through 'Inherent Safety' measures which are essentially appropriately designed and maintained infrastructure to prevent a major incident.

These measures are supported by additional measures such as appropriate containment and detection systems. These same measures will be used to control risk when the ODWJ becomes operational.

The replacement of the existing Compound 4 storage tanks will incorporate the most advanced safety and environmental features currently available, such as robust overflow prevention systems, fire safe shut-off valves and upgraded fire fighting systems. The incorporation of these features will limit risks of spillage around the new tanks to the lowest possible level and represents a significant improvement in terms of safety for the storage of product in Compound 4.

In additional to physical means of risk limitation, as an Upper Tier COMAH establishment, the OSL facility is required to have a suite of policies and procedures in place to control and manage the operation of the site. These can generally be categorised under the three main headings of engineering procedures, operations procedures and safety procedures.

The two main procedures in place at the site are:

(i) the Control of Work procedure, which ensures that day-to-day mechanical maintenance and engineering work at the facility is carefully controlled and undertaken, and

(ii) the Management of Change procedure, which ensures that any change affecting the facility is fully reviewed to ensure that the change does not introduce a new hazard or remove an existing safeguard or control measure.

The OSL facility is subject to regular visits and inspections by the Competent Authority. As part of these inspections the Competent Authority check to ensure that:

(i) relevant policies and procedures are in place and adequate for the purposes required;

(ii) people carrying out the procedures are competent, which includes ensuring that they are appropriately trained, and

(iii) the procedures are then actually carried out and adhered to.

In addition, OSL themselves carry out their own regular checks and audits to ensure that necessary processes and procedures are being adhered to. The OSL audits can themselves be checked by the Competent Authority during their inspections.

The ODWJ proposals will be subject to the same site management processes and procedures as the rest of the OSL facility.

The level of risk associated with the operational phase of the proposed development is subject to many policies, processes, procedures and audits and as a consequence of the control provided by these measures the level of risk associated with the operational phase of the development is not considered to be greater than that currently associated with the site.

Support for this assessment is found in the fact that the HSE has raised no objection to the proposal on the basis of safety.

Risk of Terrorist Threat

Local residents and the Town Council have identified the threat of terror attacks as an objection to the proposal.

The OSL facility has to comply with the requirements of relevant security related legislation, including the International Ship and Port Facility Security Code and the Aviation and Maritime Security Act 1990. The facility, once amended by the ODWJ proposals, will still be required to comply with relevant security legislation.

The ODWJ proposals will be located within the wider high security OSL facility or on infrastructure accessed solely from the OSL facility site. Access to the OSL facility is controlled via a security controlled entrance which is manned 24 hours a day 7 days a week. The facility is subject to 24 hour CCTV surveillance, security patrols and alarm systems.

OSL operate an On-Site Emergency Plan which is regularly tested and consultation takes place with the local emergency services and regulators in line with current COMAH and other procedures for such establishments. The ODWJ proposals will, when operational, fall within the scope of the plan. It is, therefore, considered that the risks associated with a security or terrorist threat are not significantly increased as a result of the ODWJ proposals.

Navigation Risks

The applicants have engaged with the Port of London Authority in the preparation of a Navigational Risk Assessment (NRA). This Assessment identifies the level of risk the proposed works would pose to commercial and recreational vessels during both the construction and operational phases of development.

During the construction phase the Assessment identifies the following potential ‘impact pathways’:

- Manoeuvring construction craft results in heavy contact with works during site construction.

- Passing vessel (commercial, recreational or fishing) in contact with construction works during the build phase.

- Passing vessel (commercial, recreational or fishing) in collision with construction craft on the boundary of the navigation channel or working within the site.

- Vessel collision (commercial, recreational or fishing) with the construction plant/vessel en route to the site.

The following potential 'impact pathways' have been identified in the operational phase:

- Tanker on transit to the berth in collision with other river traffic (commercial, recreational or fishing)

- Vessel (including assisting tugs) manoeuvring at berth in collision with passing traffic (commercial, recreational or fishing)

- Manoeuvring vessel or tug in contact with jetty as a result of collision avoidance or interaction with a passing vessel.

- Passing traffic in contact with empty jetty.

- Passing traffic in contact with vessel on jetty.

- Mooring breakout (where a vessel breaks its moorings and leaves the berth due to stress of weather, passing vessel or mooring equipment failure).

- Parted moorings and/or cargo Line (where some of the vessel's mooring break resulting in movement of the vessel and loss of cargo).

Each of these scenarios are considered in depth within the ES and 23 mitigation measures have been identified as follows:

Construction mitigation

- Contractor operating procedures and marine risk assessments to be produced and agreed with the Harbour Authority prior to commencement of work;

- Enhanced broadcasting of manoeuvring intentions;

- Enhanced CCTV surveillance;

- Effective marker lights on fixed marine works;

- Mandatory local weather monitoring and planning to be undertaken ;

- Mandatory use of AIS on all construction vessels.

- Mandatory use of congestion monitoring tool (as applied by the Vehicle Traffic Service (VTS) at the PLA);

- Manoeuvring plan exchange (between the Haven Pilot and Duty Port Controller (DPC) at the PLA);
- Manoeuvring weather restrictions/parameters to be identified and adhered to;
- Notice to Mariners issued by the Harbour Authority;
- The provision of a safety zone during construction; and
- The provision of a vessel capable of rescuing persons from the water on-site during the construction phase.

Operational mitigation includes:

- Berth Monitoring of moorings;
- Effective marker lights along the length of the approach jetty structure;
- Enhanced broadcasting of manoeuvring intentions;
- Enhanced CCTV surveillance;
- Dynamic mooring load monitoring
- Facility berth planning
- High intensity white light (restricted visibility) on both ends of the Jetty;
- Mandatory local weather monitoring and planning;
- Mandatory use of congestion monitoring tool (as applied by Vehicle Traffic Service at the PLA);
- Manoeuvring plan exchange (between the Haven Pilot and DPC at the PLA);
- Manoeuvring weather restrictions/parameters;
- Passing/overtaking restrictions on vessels passing one another off the berth,
- Provision of a safety zone during manoeuvring (the provision of a safety zone during manoeuvring is monitored and managed by Vehicle Traffic Service (at the PLA) in liaison with the tanker's embarked Pilot);
- Speed restrictions when the berth is occupied;
- Weather monitoring (berth and Port of London Vehicle Traffic Service);
- Weather restrictions on stopping cargo transfers; and
- Weather restrictions, vessel remains alongside the berth.

It is considered that if these measures are implemented the level of risk to river users would be reduced to as low as reasonably possible. The attainment of this level of risk would meet the requirements of the Port Marine Safety Code.

It should be noted that neither the Port of London Authority (PLA) or the Royal Yacht Association have objected to the proposal subject to the introduction of the identified mitigation works.

No objection is therefore raised to the proposal on this basis.

10 FLOODING AND DRAINAGE

The marine elements of the proposal lie outside the area of flood risk and are considered to be compatible with the water environment in which they need to be located. The design of these elements has taken account of the environment in which they will be located, having due regard to existing and future water levels within the River Thames. The design work undertaken to date, and the final detailed design work, will ensure that flood risk during the construction and operation stages associated with the marine elements will be low and no further consideration is therefore given to the flood risks associated with this element of the proposal.

The terrestrial element of the application site is located within Flood Zone 3a, an area of high flood risk.

The NPPF states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where alternative sites are not available and the development is necessary, making it safe without increasing flood risk elsewhere.

It further states that local planning authorities should only consider development appropriate in areas at risk of flooding following the Sequential Test, and if required the Exceptions Test.

The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding.

If, following application of the Sequential Test, it is not possible, consistent with wider sustainability objectives, for the development to be located in zones with a lower probability of flooding; the Exception Test can be applied if appropriate. For the Exception Test to be passed:

When determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where, informed by a site-specific flood risk assessment following the Sequential Test, and if required the Exception Test.

The Sequential Test

In terms of the sequential test, the terrestrial element of the proposal seeks to replace existing storage tanks to facilitate the efficient and economic continued use of the site for its consented purpose. Such works could not take place on an alternative site.

Since the whole of the site is located within Flood Zone 3 it is not considered that there are reasonably available alternative sites within the area with a lower probability of flooding that could

accommodate the proposed development. Under the circumstances it is considered that the proposal passes the sequential test.

The Technical Guidance to the NPPF states that where there are no reasonably available sites in Flood Zones 1 and 2, sites in Flood Zone 3 may be considered, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

Table 2 attached the Technical Guidance classifies development according to vulnerability. This identifies Docks, Marinas and Wharves as water compatible forms of development. The terrestrial element of the proposal is considered to represent part of a port development. Such development is exempt from the need for exception testing.

However, the Guidance further identifies infrastructure which has to be located in a flood risk area for operational reasons as essential infrastructure. Such development requires exception testing.

A judgement needs to be made as to which category the proposal falls within. Whilst either could be appropriate, it is clear that the proposed development must be located at this location for operational reasons and that storage will occur on the terrestrial area of the site, this would suggest that a more precautionary approach is adopted and an exceptions test undertaken.

In order to satisfy the exceptions test, it must be demonstrated that:

● within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and

● development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems.

The Exception Test

The proposal seeks to replace twelve storage tanks. The replacement tanks will, for operational reasons, and to minimise the visual impact of the proposed development, be located in the same location as those they replace.

In terms of the exceptions test, no part of the operational site is at a lower risk of flooding than any other and as such, no advantage in flood risk terms would be gained from an alternative location. This element of the exception test is therefore considered to have been passed.

In terms of flood resilience and resistance, the proposed site is at risk from fluvial, tidal, pluvial and groundwater flooding. Each will be considered in turn:

Fluvial Flooding

Modelling undertaken by the applicants using data provided by the EA has established that as a consequence of local topography there is a low risk of fluvial flooding across the site.

Any such flooding that does occur will naturally drain, via existing dykes and water courses within the site to the River Thames. The proposal would not therefore result in increased risk of off-site fluvial flooding.

Tidal Flooding

In terms of surge tidal flooding, the existing seawall provides 1 in 1000 year protection and modelling indicates that even under 1 in 1000 year conditions the site would be protected by the existing seawall during its lifetime (60 years). It is not therefore considered that the site is significantly at risk from surge tide flooding. The residual risk of tidal flooding in the event of the breach of the seawall must however be considered.

The Castle Point Strategic Flood Risk Assessment (SFRA) indicates that during a 1 in 200 annual probability event, including allowances for climate change, water depth on site due to a breach would be between 0.5m and 1m. During a 1 in 1000 annual probability event, the depth of water (including allowances for climate change) would be between 1m and 2m.

This level of inundation will not be affected by the proposed development which seeks to replace existing tanks and enclosure with tanks and enclosure of similar size, in the same local. The vulnerability of the site would not be increased as a result of this proposal

Furthermore, it is not considered that the proposal would give rise to any increased off site flood risk as a result of the proposed development.

In terms of increased risk to life, the proposal will result in the creation of five new employment opportunities; this equates to one additional person being present on the site at any time and does represent a small increase in risk. However, as an upper tier COMAH site, there is already a site specific Flood Response Plan in place which is assessed and verified by the Environment Agency. This Plan will remain in place and will incorporate the current proposals.

Subject to such action, no significant increase in risk is identified.

A significant feature of the continued protection of Canvey Island is the continued maintenance and improvement of the sea defences.

The Policy paper Thames Estuary 2100 (TE2100) is an aspirational document which sets out how the Environment Agency is planning to manager tidal flood risk in the Thames estuary until the year 2100.

TE2100 identifies the aspiration of the EA to increase the height of the seawall to a minimum of 8.1m (from 6.8m) by 2070.

New pipework serving the proposed jetty will pass over the seawall, rather than through it as is presently the case. The EA has asked that horizontal clearance to the defence wall be a minimum of 1m and vertical clearance be a minimum of 2m. The proposed pedestrian and pipeline bridge has been designed to exceed these clearances. The proposal will not therefore impact on the ability of the EA to improve the defences in the future.

TE2100 also identifies the need to maintain adequate land along the length of the sea defence in order to facilitate the raising of the sea defences should the need and finances be identified for such works in the future.

The current proposal does not have any additional direct impact on the land immediately adjacent to the defences and would not therefore prejudice such works in the future.

Pluvial
The site is in an area which has been identified by the Environment Agency as being at very low risk of surface water flooding. Any 'ponding' that may occur within the proposed bund will be dealt with as part of the site's overall drainage system, which essentially discharges into the River Thames. Such ponding will not result in an increased risk of flooding offsite.

Groundwater
The proposal does not incorporate any significant subterranean structures and will not therefore impact on groundwater or cause groundwater flooding on site.

It is clear that the proposed development would be safe for its lifetime taking account of the vulnerability of its users and would not increase flood risk elsewhere. The proposal will also safeguard the opportunity for improvements to the sea defences in the future. The NPPF however also requires that where possible proposed development should reduce flood risk overall.

It is not considered that potential exists within the confines of the proposed development to achieve a reduction in flood risk overall, however proposed works to upgrade elements of the existing surface water drainage network, including the provision of a new interceptor, are likely to result in minor benefits to the water environment.

No objection is therefore raised to the proposal on the basis of flood risk.

11. LANDSCAPE AND VISUAL IMPACT

The applicant has submitted a landscape and visual impact assessment which considers the effects of the ODWJ proposals on the landscape character of the site and on the surrounding area.

The assessment also considers the potential effects of the proposal on night-time views and incorporates consideration of the lighting strategy.

The applicants have considered impact on the landscape during both the construction and operational phases.

The Assessment was undertaken within a study area which extended some 3 miles from the boundary of the site, the proposal being considered difficult to perceive beyond this distance.

For the purposes of selecting viewpoints for the Assessment the potential receptor groups that were considered to be sensitive to proposed changes included;

- Customers of the Lobster Smack Pub, (to the southwest of the site).
- Residents of the Hole Haven Caravan Park, (to the southwest of the site).
- Residents of the Coastguard cottages fronting Haven Quays, (to the southwest of the site).
- Users of the existing public footpath which follows the seawall bounding the River Thames, (to the south of the site).
- Residents of Thorney Bay Caravan Park, (to the east of the site).
- Residents of properties on the southern edge of Canvey Island, (to the north of the site).
- Users of footpaths on Benfleet Downs and Hadleigh Castle Country Park, (on higher ground to the north of the site).

Following detailed analysis of the landscape and the proposed development the applicant concludes that due to the relatively flat, low-lying and often exposed landscape of both the site and much of its surrounding environs some adverse effects on landscape character and visual amenity would occur as a result of the construction phase of the proposals. The significance of these effects is however tempered by the temporary nature the construction phase and can be limited by adopting the following strategies:

- Adoption of a Construction Environmental Management Plan (CEMP) to ensure good site management and housekeeping;

- Careful siting and containment of construction machinery, materials and welfare facilities to avoid unnecessary intrusion of landscape character or visual amenity outside the site; and

- Lighting during the construction period will conform to the requirements of the CEMP to minimise light spillage and negative effects on local visual receptors.

During the operational phase, the applicant concludes that the terrestrial development will closely resemble the development it replaces and will have no perceptible impact on the landscape. The marine elements of the development will have an impact on the landscape but the practicalities of the marine environment limits opportunities for further mitigation measures than those stated above.

The introduction of further lighting into the area and particularly along the extended Jetty introduces the opportunity for significant disruption to the evening/night landscape. However it is intended that the lighting scheme will be designed to eliminate excessive light spill; provide shielded directional lighting and incorporate the use of automated controls to enable lighting to be switched off when not required, so minimising the duration and frequency of any obtrusive light spill or visual intrusion. It is also intended to replace existing luminaires in certain locations with improved luminaires in order to reduce intensity and light spill.

The proposed development would, on the terrestrial side, seek to replace that which already exists with structures of similar scale and height. As such it is not considered that the proposal would have a significant adverse impact on the landscape or visual amenity of local residents. No objection is therefore raised to this element of the proposal on this basis.

The marine elements of the scheme would have an impact on the landscape; however, the extended Jetty would be viewed in the context of other Jetties and against a backdrop of other storage facilities on the south side of the Thames. In this context, appropriately mitigated to limit impact on ecology, it is not considered that the impact on the landscape would be so harmful as to provide a robust reason for refusal.

No objection is therefore raised to the marine elements of the proposal in landscape impact terms.

12. THE HISTORIC ENVIRONMENT IMPACT

There are two designated Heritage Assets in close proximity to the site boundary: the Lobster Smack Public House and Numbers 1 (and 1A), and 2 – 8 Haven Road (The Coastguard Cottages).

The Lobster Smack is located approximately 160m to the west of the closest part of the ODWJ application boundary, and is bounded to the south by the seawall, to the east by the development at Haven Quays and to the west by grazing land.

The building is visually isolated from the proposed development and as a consequence it is not considered to have any adverse impact upon the significance of the Lobster Smack or its setting.

The Coastguard Cottages are located immediately outside the western edge of the OSL terminal boundary. As with the Lobster Smack Public House the position of these cottages on the coast, with access to the sea was essential for their original purpose. However, their historic setting has been significantly eroded by the construction of the existing OSL terminal and its subsequent expansion. Given the current proposals are within the footprint of existing development it is not considered that the proposal would result in a significant adverse impact to the historic setting of these buildings.

Whilst two Scheduled Monuments are located in reasonable proximity to the site, at Cedar Road (WWII gun emplacement) and east of Great Russell Head Farm, (Roman saltern), it is not considered that the setting of these heritage assets will be affected, due to their distance from the site boundary and the nature of the development
.
There are no designated wreck sites, archaeological sites, historic landscape areas or conservation areas in close proximity to the site, although the site has been identified as a potential Marine Conservation Zone as identified above.

No recorded find spots monuments or events have been recorded within the application site; however, the site has been identified as having potential for palaeo-environmental, medieval and potentially Saxon deposits surviving in areas of undisturbed land. Such evidence is considered to be of low significance.

Geophysical surveys undertaken on the seaward side of the site failed to identify any archaeological remains within the area of proposed installation activities. The likelihood of encountering significant archaeological remains within the marine environment is therefore assessed as negligible.

Based on the above assessment and the known details of the scheme, the application does not include any mitigation measures for the renovation of existing areas of the storage tanks within Compound 4. The existing structures will have already truncated any archaeological remains and as such no mitigation is proposed in these locations.

Where new structures are proposed in the areas that have not been subject to development of any kind, it is proposed that an archaeological watching brief on ground works will be sufficient to mitigate archaeological impacts.
The area of the deepwater jetty has the potential to impact on unknown marine or maritime archaeological remains that may be buried in the intertidal mud. It is proposed that prior to construction a dive to visually confirm the results of the marine geophysical survey is undertaken within the proposed built footprint. This would assist in identifying any unknown archaeological remains that may be present within the footprint of the proposed jetty. This will only be undertaken where there is a conflict between the buffer zone of each proposed pile and a recorded anomaly on the geophysical survey. Provision can then be made for an appropriate scope of recording works should any archaeological assets be identified.

The analysis of the historic record and surveying of the site has been thorough and provides a robust history for the site. The level and form of mitigation proposed appears appropriate in the context of a developed site and subject to a condition requiring a watching brief on the terrestrial site and a requirement to dive identified geophysical anomalies, no objection is raised the proposal on the basis of impact on the historic environment.

13 SOCIO ECONOMIC IMPACT

The EIA process requires developers to consider the socio economic impacts of a proposal at the local, sub regional and national level.

As has previously been stated, the OIKOS site represents a significant element of the national energy infrastructure which is essential to maintain a resilient, cost-effective and reliable UK fuel distribution system. The Government, in its National Policy Statement for Ports, seeks to encourage sustainable port development such as is represented by the current proposal, to enable contribution to the long term economic growth of the Country by facilitating international trade, foreign direct investment and employment.

Investment in and the improvement of such nationally significant infrastructure is clearly in the national interest.

At the sub regional level, the Strategic Economic Plan identifies ports within the South East Local Enterprise Partnership's area, (which includes Castle Point), as the most important international gateway, accommodating 25% of England's sea freight. Investment in port related development the area is therefore in the sub regional economic interest.

At the local level the adopted Local Plan seeks to encourage investment in employment areas and encourage the use of the river for freight, whilst the NPPF seeks to secure sustainable economic growth. The proposed development would be consistent with these objectives.

The local socio economic impact of the proposed development will fall into two phases. During the construction phase additional employment will be generated temporarily as a result of the construction works, which are anticipated to last some 20 months. The employment benefits will include direct construction jobs as well as further induced and indirect jobs that will be supported through supply linkage and income multiplier effects. This includes firms supplying construction materials and equipment and construction workers spending part of their wages in the local economy.

The construction phase is considered likely to result in a maximum of 95 workers on site at any one time. Due to the specialist nature of the activity involved in constructing the proposed development, it is likely that a large proportion of the construction workforce will be sourced from other parts of the country. This will require the workforce to travel down and stay temporarily in the locality for periods of time, providing a boost to the local economy and induced employment in the form of additional consumption on food, accommodation and leisure by the visiting construction workforce. In this way, the proposals will provide important opportunities in jobs requiring a wide range of skill levels.

In addition, supply chain linkages from the construction phase will create indirect jobs at the local and sub-regional scale. This could include surveyors, construction and plant material manufacturing employment and employment involved in transport of materials for the jetty. The

level of local and sub-regional indirect job creation is dependent on presence of the required skills and businesses. OSL seeks to use local, Thames-based companies where possible.

Furthermore, involvement of a mix of non-local and local construction workers could result in a transfer of knowledge and skills to local workers. Improving local skills was an area identified by the South East LEP as in need of attention.

During the operational stage it is envisaged that about five additional shift based jobs will be created on the site. Whilst this is a relatively low number, further jobs are likely to be created by economic multiplier and supply chain linkage effects.

The proposed Jetty will extend out into deeper water and will result in increased water traffic during both the construction and operational phases. This has the potential to impact on local commercial fishing, which currently accounts for less than 0.1 of local employment.

Assessments undertaken by the applicants have not identified any adverse impacts on navigation or ecology that would significantly affect commercial fishing in the area. Although the applicants concede that some disruption to commercial fishing is possible during the construction phase, such disruption will be temporary and is considered to be of minor significance in terms of environmental impact.

In the scoping opinion for the proposed jetty prepared by the MMO, that Organisation concluded that the proposed works were likely to result in a permanent loss of ground to the fishing industry and during the construction period was likely to disrupt local fisheries as a consequence of increased suspended sediment and noise pollution.

The MMO further identified that any maintenance or capital dredging of the berths had the potential to increase suspended sediment and result in the smothering of local grounds.

A change in the local flow dynamics associated with the berth construction was also considered to have potential to smother and to scour local fishing grounds.

As a consequence of these findings the MMO recommended that the EIA should consider the potential impact on the local commercial fishing industry and to this end it was stated that the ES should contain details of how liaison with local fisheries, to address these potential concerns would be undertaken.

The applicant has confirmed that liaison with the local fishing fleet will take place during the construction period.

With regard to the fishing fleet, the boats operate out of Holehaven Creek and do not fish in the area where the planned work is due to take place. The fleet is described by the Kent and Essex Inshore Fisheries and Conservation Authority as a part time fleet that tends to fish during the summer.

Given that the fleet is not full time, and that the area the subject of the current proposal is not an area fished by the fleet, whilst some disruption is considered to be experienced, the scale of likely disruption is not considered to be so extensive as to have a significant adverse impact on the economic viability of the fleet.

No objection is therefore raised to the proposal on the basis of economic impact. It is however recommended that a condition be attached to the grant of any consent requiring appropriate liaison between the applicant and the fleet in order to limit disruption as far as reasonably possible.

Following consideration of the economic circumstances, it is clear that the works proposed at the Oikos site will have a positive economic impact at the national and sub-regional level. The direct economic impact at local level is relatively small and carries limited risk of harm to the local fishing industry which may be mitigated by liaison.

15. IN COMBINATION AND CUMULATIVE IMPACT

In all proposals for development which are considered to have a potentially significant impact on the environment consideration must be given to the cumulative effect of the proposal and any other proposals current or planned.

For information it should be noted that cumulative effects are references to occasions where another plan or project could have an impact via the same pathway as the ODWJ proposal and could, therefore, result in an overall effect that is of greater or lesser significance than the effect of the ODWJ proposal in isolation.

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In-combination effects are references to occasions where different effects of the ODWJ proposal may combine or interact with each other to affect the same receptor.

In undertaking the analysis the applicants considered the following projects:

- Thorney Bay Caravan Park (Application CPT/707/11/OUT)
- Thorney Bay Caravan Park (Application 14/0620/FUL)
- Land South of Roscommon Way (Application 14/0707/OUT)
- Land South of Northwick Road (Application 15/0293/RES)
- Land East of Canvey Road (Application 15/0496/OUT)
- OSL Compound 10 Works (Permitted development)
- London Gateway Development (15/00931/LDOPND)
- Oikos Navigational Dredging (MLA/2015/005291)

A detailed analysis of the cumulative impact of these plans, as contained in Section 20 of the submitted ES, did not identify any significant cumulative effects.

The in-combination assessment of the proposal seeks to determine whether the impacts assessed individually within the ES would, in combination result in a different impact on identified receptors. For the purpose of the ES the receptors have been identified as the designated nature conservation sites/ecological habitats, protected species and residential amenity.

A detailed analysis of the in combination impact of these plans, as contained in Section 20 of the submitted ES, did not identify any significant in combination effects.

Following careful analysis of the provisions of the Environmental Statement, and in the light of the responses received from interested parties, the Planning Authority would concur with this view.

No objection is therefore raised to the proposal on the basis of cumulative or in combination impact.

Conclusions

Following a detailed analysis of the submitted application the following conclusions have been drawn:

1. The proposed development is consistent with national, sub regional and local economic policy

2. That subject to the implementation of appropriate mitigation the proposed development would have no adverse impact on ecology

3. That subject to the introduction and implementation of appropriate mitigation the proposed development would have no significant adverse impact on the environment in terms of noise, vibration, air quality or contamination

4. That subject to the introduction and implementation of appropriate mitigation the proposed development would have no adverse impact on the safety of local residents or workers on the site

5. That subject to the introduction and implementation of appropriate mitigation the proposed development would not give rise to significant flood risk issues.

6. That subject to the introduction and implementation of appropriate mitigation the proposed development would have no adverse impact on highway considerations

7. That subject to the introduction and implementation of appropriate mitigation the proposed development would have no adverse impact on commercial or recreational navigation

8. That subject to the introduction and implementation of appropriate mitigation the proposed development would have no adverse impact on landscape or visual amenity

9. That subject to the implementation of appropriate mitigation the proposed development would have no adverse impact on the historic environment

10. That subject to the introduction and implementation of appropriate mitigation the proposed development would not give rise to any significant cumulative or in combination effects

I have taken all other matters raised by interested parties into consideration, but none are sufficient to outweigh the considerations that led to the recommendation.

My Recommendation is Approval with the following conditions

1 The development hereby permitted shall be begun on or before the expiration of three years beginning with the date of this permission.

REASON: This condition is imposed pursuant to Section 91 of the Town and Country Planning Act 1990.

2 The proposed development shall be undertaken in strict accordance with the approved plans from which there shall be no deviation without the prior formal consent of the Local Planning Authority.

REASON: To ensure the appropriate development of the site, and to mitigate the constructional impact of development on local residents and the ecology of the area.

3 Prior to the commencement of development on site, (including demolition of any tank, structure or other feature present on the application site) a Construction Environment Management Plan shall be submitted to and approved by the Local Planning Authority.

The CEMP shall set out the general information relevant to the control and management of the construction activities, for example, it will set out how the site is to be accessed and how movement of materials and workers through the site is to be managed.

Within the CEMP, priority will be given to the transportation of construction materials and waste arising from the marine elements of the proposal by water.

The CEMP will also set out the measures and processes that will be put in place to manage the implications of construction processes on ecology and nature conservation features and traffic and transport measures such as a routing agreement, site control and security, parking and unloading arrangements, pedestrian access requirements and such traffic management measures as are considered necessary.

The CEMP will also detail the specific requirements relating to noise and vibration, providing information on noise level limits, hours of working, details of noise reduction systems, particularly in respect of piling , dust suppression measures and techniques, site cleanliness (to prevent trackout) contamination prevention measures and arrangements for the storage of plant and materials used in constructing the development .

The CEMP will also address issues relevant to the protection of air quality, landscape and visual amenity, flood risk and safety.

Any approved document shall thereafter be implemented in its entirety, unless otherwise formally agreed with the Local Planning Authority.

REASON: To ensure the appropriate development of the site, and to mitigate the constructional impact of development on local residents and the ecology of the area.

4 The proposed mitigation and aftercare management described in the draft Landscape and Ecology Management Plan dated June 2016 shall be undertaken in full.

In seeking to demonstrate that the notable conservation interest is being maintained consistent with good sustainable development practice, the applicant is required to submit a brief annual statement to Castle Point Borough Council and Natural England recording the completion of the required Landscape and Ecology Management Plan mitigation works and after care management for years 1 to 10 with a review of performance at year 5.

REASON: To ensure the appropriate development of the site, and to mitigate the constructional impact of development on the ecology of the area.

5 The mitigation measures identified at Chapter 12 of the submitted Environmental Statement, produced by Adams Hendry Consulting Ltd in respect of noise and vibration shall be implemented in their entirety, unless otherwise formally agreed with the Local Planning Authority.

REASON: To ensure that the risks associated with any contamination are reduced to acceptable levels.

6 From 9 November until 21 February, dates inclusive, and within any given year, the applicant must ensure that no piling is undertaken if temperatures of zero degrees Celsius (or lower) occur on site for seven consecutive days leading up to or during any instance of piling works.
Once temperatures have been above zero degrees Celsius for three consecutive days then piling works can be resumed.

The Marine Management Organisation must be informed no more than 2 days after these triggers have been met.

REASON: to minimise the risk of potential impacts to birds.

7 The installation of all percussive piles shall commence using a soft-start procedure, whereby the piling power will start low and increase to full power over a twenty minute period.

Should piling cease for a period greater than 10 minutes, the soft start procedure shall be repeated.

REASON: In order to limit the impact of construction on sensitive fish

8 Prior to the commencement of operations on site, a lighting strategy, providing details of all new lighting required for operational, safety, security and navigational purposes shall be submitted and approved by the Local Planning Authority. All lighting shall be designed to minimise light spill and glare .
Any approved document shall thereafter be implemented in its entirety, unless otherwise formally agreed with the Local Planning Authority.

REASON: To ensure the appropriate development of the site, and to mitigate the impact of development on local residents and the ecology of the area.

9 The Contaminated Land Remediation Strategy provided at Appendix 14.2 of the submitted Environmental Statement, prepared by Waterman Infrastructure and Environment Ltd shall

be implemented in its entirety, unless otherwise formally agreed with the Local Planning Authority

REASON: To ensure that the risks associated with any contamination are reduced to acceptable levels.

10 The Risk Control Measures identified in Appendix 10.1 to the submitted Environmental Statement, prepared by Adams Hendry Consulting Ltd shall be implemented in their entirety, unless otherwise formally agreed with the Local Planning Authority

REASON: To ensure that the risks associated with the proposed development, to recreational and commercial navigation are reduced to acceptable levels.

11 The prefabricated sections of the jetty, the piles, the marine loading arms, the pipework, the gangway tower and ancillary construction materials associated with the construction of the jetty shall, as far as practicable, be transported to the site by vessel.`

REASON: To limit the impact of the construction phase of the development on local residents and the ecology of the area.

12 Prior to commencement of development on the site a statement setting out the liaison arrangements with the local fishing industry, shall be submitted to and approved in writing by the Local Planning Authority

REASON: In order to minimise disruption to the activities of the local fishing fleet and limit the impact of the construction phase of the development on the economic vitality and viability of local fishing fleet.

13 Bunding and/or storage facilities must be installed to contain and prevent the release of fuel, oils and chemicals associated with plant, refuelling and construction equipment, into the marine environment. Secondary containment must be used with a capacity of no less than 110% of the containers storage capacity.

REASON: In order to minimise the risk of marine pollution incidents. This condition is imposed at the request of the Marine Management Organisation

14 All wastes must be stored in designated areas that are isolated from surface water drains and open water and bunded to contain any spillage.

REASON: To minimise the risk of waste entering the marine environment. This condition is imposed at the request of the Marine Management Organisation

15 If concrete is to be sprayed, suitable protective sheeting must be provided to prevent rebounded or windblown concrete from entering the water environment. Rebounded material must be cleared away before the sheeting is removed.

REASON: To ensure that hazardous chemicals that may be toxic, persistent or bio accumulative are not released into the marine environment. This condition is imposed at the request of the Marine Management Organisation

16 Waste concrete, slurry or wash water from concrete or cement works must not be discharged, intentionally into the marine environment. Concrete and cement mixing and washing areas must be contained and sited at least 10m from any watercourse or surface water drain.

REASON: To avoid damage to the marine environment by concrete wash water contamination which is highly alkaline and contains high levels of suspended sediment. This condition is imposed at the request of the Marine Management Organisation.

Informatives

1 The Local Planning Authority has acted positively and proactively in determining this application by identifying matters of concern within the application (as originally submitted) and negotiating, with the Applicant, acceptable amendments to the proposal to address those concerns. As a result, the Local Planning Authority has been able to grant planning permission for an acceptable proposal, in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.

2 In order to maximise employment benefits generated in the Construction Phase of the proposals, the applicant is requested to:

- Encourage local recruitment and knowledge and skill transfer between local and non-local construction workers where possible.

- Ensure that where possible visiting construction workers are accommodated in the local area during their period of employment on the proposals, so that they spend their wages in the local economy hence increasing income multiplier effects.

- Exploit local supply linkages where possible.

In addition the applicant is requested to minimise disruption to local residents and businesses can by taking into account residents and businesses when detailing construction phasing and by encouraging construction workers' car-sharing and mini bus use.

3 The applicant is reminded that additional water supplies for fire fighting may be necessary for this development. The architect or applicant is urged to contact the Water Technical Officer at Service Headquarters, telephone 01376-576342.

There is clear evidence that the installation of Automatic Water Suppression Systems (AWSS) can be effective in the rapid suppression of fires. Essex County Fire & Rescue Service (ECFRS) therefore uses every occasion to urge building owners and developers to consider the installation of AWSS. ECFRS are ideally placed to promote a better understanding of how fire protection measures can reduce the risk to life, business continuity and limit the impact of fire on the environment and to the local economy.

Even where not required under Building Regulations guidance, ECFRS would strongly recommend a risk based approach to the inclusion of AWSS, which can substantially reduce the risk to life and of property loss. ECFRS also encourage developers to use them to allow design freedoms, where it can be demonstrated that there is an equivalent level of safety and that the functional requirements of the Regulations are met.

4 All works affecting the highway to be carried out by prior arrangement with, and to the requirements and satisfaction of and at no cost to the Highway Authority. Application for the necessary works should be made to Essex Highways, Unit 36, Childerditch Industrial Estate, Childerditch Hall Drive, Brentwood, CM13 3HD e-mail: development.management@essexhighways.org

5 The Public Right of Way network is protected by the Highways Act 1980. Any unauthorised interference with any route noted on the Definitive Map of PROW is considered to be a breach of this legislation. The public's rights and ease of passage over public footpath no 8 shall be maintained free and unobstructed at all times to ensure the continued safe passage of the public on the definitive right of way. The grant of planning permission does not automatically allow development to commence. In the event of works affecting the highway, none shall be permitted to commence until such time as they have been fully agreed with Essex County Council. In the interests of highway user safety this may involve the applicant requesting a temporary closure of the definitive route using powers included in the aforementioned Act. All costs associated with this shall be borne by the applicant and any damage caused to the route shall be rectified by the applicant within the timescale of the closure.

The above is required to ensure the proposal complies with the County Council's Highways and Transportation Development Control Policies February 2011.

6 The applicant must notify the UK Hydrographic Office to permit the promulgation of maritime safety information and updating of nautical charts and publications through the national Notice to Mariners system.

7 Any consented pipeline protection works must ensure existing and future safe navigation is not compromised. The MCA would accept a maximum of 5% reduction in surrounding depth referenced to Chart Datum but under no circumstances should depth reductions compromise safe navigation.

8 Any jack up barges/vessels utilised during the works, when jacked up, should exhibit signals in accordance with the UK Standard Marking Schedule for Offshore Installations.

9 The site is within port limits and the applicant should gain the approval/agreement of the responsible local navigation authority or the Harbour Authority/Commissioners/Council. They may wish to issue local warnings to alert those navigating in the vicinity to the presence of the works, as deemed necessary.

10 If in the opinion of the Secretary of State the assistance of a Government Department, including the broadcast of navigational warnings, is required in connection with the works or to deal with any emergency arising from the failure to mark and light the works as required by the consent or to maintain the works in good order or from the drifting or wreck of the works, the owner of the works shall be liable for any expense incurred in securing such assistance.

11 The applicant should consult with the local navigation authority or Harbour Authority/Commissioners/Council to discuss what impact the proposed work will have on oil spill risk and pollution mitigation measures. The relevant oil spill contingency plan(s) will need to be amended to reflect the additional risk.

12 To protect the amenities of occupiers of other premises in the vicinity, attention is drawn to the provisions of Section 60 of the Control of Pollution Act 1974 in relation to the control of noise from demolition and construction activities. The applicant is also advised to seek approval for any proposed piling operations.

13 In the interests of maintaining and improving air quality within the borough there should be no burning of any waste or other materials.

14 Anyone who produces, imports, keeps, stores, transports, treats or disposes of waste must take all reasonable steps to ensure that waste is managed properly. This duty of care is imposed under section 34 of the Environmental Protection Act 1990. It also applies to anyone who acts as a broker and has control of waste. A breach of the duty of care could lead to an unlimited penalty upon conviction.

Further to the above, under the Clean Air Act 1993 it is an offence to emit dark or black smoke or burn material that is likely to give rise to dark or black smoke on industrial and trade premises, or on premises not so used but if burnt in connection with any industrial or trade process. If a bonfire is producing or likely to produce dark or black smoke by the burning of trade or commercial waste, then the persons responsible may be liable to fines of up to £20,000.