

11 Traffic and Transport

Introduction

- 11.1 This chapter of the PEIR sets out the preliminary findings of the assessment of Traffic and Transport environmental impacts of the OMSSD project. This chapter has been prepared by David Tucker Associates.
- 11.2 The preliminary assessment has been carried out in accordance with the Institute of Environmental Assessment Guidance Note No 1 “Guidelines for the Environmental Assessment of Road Traffic” (1993) (the ‘IEMA Guidelines’)³¹⁰ and takes account of the relevant traffic and transport assessment aspects contained within section 5 of the National Policy Statement for Ports (2012) (NPSfP)³¹¹ (section 5.4).
- 11.3 Assessment of the impacts on commercial and recreational navigation is dealt with in Chapter 10 of this PEIR. In addition, the impacts associated with traffic in relation to air quality and noise are set out in chapters 12 and 14 of this PEIR respectively.
- 11.4 A preliminary Transport Assessment (Appendix 11.1) has been prepared to support the assessment reported in this chapter. The assessment reviews the impact on both the local and strategic road network and addresses the queries raised by both Essex County Council (ECC) and Highways England (HE) during the Scoping Opinion process.

Definition of the Study Area

- 11.5 Canvey Island is situated in the administrative area of Castle Point Borough Council in Essex, immediately north of the River Thames. The Oikos Facility lies in the south-west corner of Canvey Island around 12km south of Basildon.
- 11.6 Canvey Island predominately consists of residential land uses, with associated retail and commercial uses. On the western edge of the residential area of the Island there is an industrial, commercial and residential area.
- 11.7 The Oikos Facility is located to the south of the main settlement of Canvey Island, immediately adjacent to the River Thames.
- 11.8 The location of the Oikos Facility in relation to the surrounding network is shown on Figure 11.1. The study area for the OMSSD traffic and transport assessment consists of the network described above up to the A13 junction and also the M25 at junction 30. The extent of the study area is shown on Figure 11.2.

³¹⁰ Institute of Environmental Assessment Guidance Note No 1 Guidelines for the Environmental Assessment of Road Traffic (1993)

³¹¹ Department for Transport (DfT) (2012) National Policy Statement for Ports.

Assessment Methodology

- 11.9 Chapter 5 of the National Policy Statement for Ports (NPSfP), states that if a project is likely to have significant transport implications, the ES for that project should include a Transport Assessment (TA). Although preliminary considerations indicate that the OMSSD project is unlikely to have significant transport implications, for completeness a preliminary TA has been prepared. The production of such an assessment has been requested by officers at Essex County Council, and consultation with the County – which is further discussed below – has included discussions over the scope of such an assessment.
- 11.10 The preliminary TA conforms with current practice and guidance related to such assessments contained within the National Planning Practice Guidance³¹² as well as DfT Circular 02/2013 – “*The strategic road network and the delivery of sustainable development*”³¹³.
- 11.11 Any increase in traffic movements predicted to occur as a result of the OMSSD project has been assessed against the relevant sections of the IEMA Guidelines. Table 2.1 of the IEMA Guidelines recommends that the following environmental effects may be important when considering development proposals:
- Severance;
 - Driver delay;
 - Pedestrian delay;
 - Pedestrian amenity;
 - Accidents and safety; and
 - Hazardous loads.
- 11.12 Matters relating to traffic and climate change are considered within Chapter 13 of this PEIR. Human health matters are incorporated into the assessment undertaken of the above effects.

Data and Information Sources

- 11.13 Traffic count data was collected on the local road network at several locations during late 2018 as shown on Figure 11.3. The data was continuously counted over the course of a 7-day period from 21 November 2018 at several locations on the A130, Roscommon Way and Haven Road.
- 11.14 Traffic flow data is also available from the Department for Transport for the A130 between the A13 and Canvey Road, for the A13 to the west of Canvey Way and to the east of the

³¹² Secretary of State for Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework. Available: <https://www.gov.uk/government/collections/planning-practice-guidance>.

³¹³ DfT Circular 02/2013 – The strategic road network and the delivery of sustainable development.

M25 J30 on the strategic road network for a base year of 2018. The data is summarised in this chapter within the section which describes the existing environment.

- 11.15 Personal Injury Accident data has been obtained from ECC for the latest 5-year period. The study area included Haven Road, Roscommon Way, Canvey Road and Canvey Way from the site access to the A13 roundabout. The data is included in full in the preliminary TA and a summary is provided in the section in this chapter which describes the existing environment

Determining Significance of Effects

- 11.16 The IEMA Guidelines also sets out when traffic related environmental impacts can be scoped out for further assessment. It notes that:

“To assist the assessor it is suggested that two broad rules of thumb could be used as a screening process to delimit the scale and extent of the assessment. The rules are described and justified in the following paragraphs:

Rule 1 include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%).

Rule 2 include any other specifically sensitive areas where traffic flows have increased by 10% or more.”

- 11.17 This ‘rule of thumb’ has been used as a general guide in undertaking the preliminary assessment rather than a hard and fast rule. The assessment of the significance of an effect will be determined by the interaction of the following two factors:
- the magnitude, scale or severity of the impact or change; and
 - the value, importance or sensitivity of the environmental resource or receptor being affected.

- 11.18 The IEMA Guidelines make it clear that:

“For many effects there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed up by data or quantified information wherever possible” (paragraph 4.5).

- 11.19 The approach to determining the significance of identified effects has regard to the guidance given in the Design Manual for Roads and Bridges - ‘DMRB LA 104 Environmental assessment and monitoring’ (LA 104)³¹⁴. in terms of defining the environmental value / sensitivity of the receptor (Table 3.2N of LA 104) and the magnitude of the impact (Table 3.4N of LA 104). The overall significance of effects will be determined using the matrix set out in Table 11.4 (which is based upon the tables listed above from LA 104).

³¹⁴ Highways England (2020) ‘DMRB LA 104 Environmental assessment and monitoring’ (LA 104)

11.20 The categorisation of the magnitude of the impact brought about by the proposals varies depending upon the impact area being considered e.g., severance, driver delay etc. In considering the impacts on the different topic areas regard has been had to the relevant guidance contained within the IEMA Guidelines. This guidance is further discussed in the following paragraphs.

Table 11.1: Environmental value (or sensitivity) and typical descriptors

Value (sensitivity)	Typical Descriptors
Very High	Facility of international or national significance.
High	Close proximity to schools, colleges, accident black-spots.
Medium	Close proximity to congested junctions, hospitals, community centres, conservation areas.
Low (or Lower)	Close proximity to public open space, nature conservation areas, and residential areas with adequate pavements.
Negligible	Receptors of low sensitivity.

Table 11.2: Magnitude of the Impact and typical descriptors

Magnitude of Impact	Typical Criteria Descriptors
Major/ substantial	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (Adverse). Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial).
Moderate	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements (Adverse). Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial).
Minor/ slight	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (Adverse). Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial).
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse). Very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial).

Table 11.3: Descriptors of the significance of effect categories

Significance Category	Typical Descriptors of Effect
Major	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor.

Minor	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project.
Insignificant	No effects on those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Table 11.4: Significance of effect categories matrix

		Magnitude			
		Negligible	Minor	Moderate	Major
Sensitivity	Very High	Minor	Minor or Moderate	Moderate or Major	Major
	High	Minor	Minor or Moderate	Moderate or Major	Major
	Medium	Minor or insignificant	Minor	Moderate	Moderate or Major
	Low	Minor or insignificant	Minor or insignificant	Minor	Minor or moderate
	Negligible	Insignificant	Minor or insignificant	Minor or insignificant	Minor

11.21 As the matrix in Table 11.4 demonstrates, the sensitivity of the receptor and the magnitude of impact for each environmental effect has been considered to determine the significance of the effect. In EIA terms the impacts which are defined as moderate or major are taken to be significant.

Severance

11.22 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic route. Whilst the IEMA Guidelines refer to the effect of traffic on severance of 30%, 60% and 90% producing “slight”, “moderate” and “substantial” changes in severance respectively, it is suggested that caution be applied to relying on these quantum of change. The consideration of severance in this assessment has had due regard to specific local conditions, in particular, the location of pedestrian routes to key local facilities and whether crossing facilities are provided or not.

Driver Delay

11.23 Traffic delays to ‘non-development’ traffic can occur:

- at the site entrances where there will be additional turning movements;
- on the highways passing the site where there may be additional flow; and
- at key junctions on the nearby highway network.

11.24 Impact on driver delay is based on the quantum of change in traffic levels against interpretation of the local highway link capacity expressed in terms of predicted flows.

Pedestrian Delay

- 11.25 The proposal will bring about increases in the number of vehicle movements during the construction phase. In general terms, increases in traffic levels are likely to lead to greater increases in delay to pedestrians seeking to cross roads. The IEMA Guidelines recommend that, rather than rely on thresholds of pedestrian delay, the assessor should use judgement to determine whether pedestrian delay is a significant impact. This is the approach which has been adopted for the purposes of this preliminary assessment.

Pedestrian Amenity

- 11.26 This is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic. The IEMA Guidelines cite a doubling of traffic flow (or its lorry component) as representing a threshold for impact evaluation. This measure is considered within the preliminary assessment that follows.

Fear and Intimidation

- 11.27 This again relates to pedestrians, and shares characteristics with pedestrian amenity. There are no commonly agreed thresholds for estimating danger, but research work is cited setting out “degree of hazard” levels relating to 18 hour average traffic flow, 18 hour HGV flow and average vehicle speed. These levels are considered within the preliminary assessment that follows in terms of impact.

Accidents and Safety

- 11.28 The Personal Injury Accident (PIA) record for the local highway network has been obtained from Essex County Council for the most recently available 5-year period. The impact of additional traffic from the proposals is considered in terms of the magnitude of traffic increase and existing accident record data.

Hazardous Loads

- 11.29 The IEMA Guidelines acknowledge that most developments will not result in increases in the number of movements of hazardous/dangerous loads.

Consultation

- 11.30 As part of the ES Scoping exercise, responses on traffic and transport related matters were received from Essex County Council (ECC) and Highways England (HE). Relevant comments from the Scoping Opinion are summarised in Table 11.5.
- 11.31 In addition, separate discussions have also taken place with ECC and HE in respect of the overall impact on the local and strategic network. These are also summarised in Table 11.5.

Table 11.5 Summary of consultation to date

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter
Planning Inspectorate	May 2020	Non-Motorised Users (NMUs) and Cyclist: The ES should include cyclists and other road users in the assessment of significant effects and specifically include users of the footpath that runs south of the site.	This is set out further in paragraph 11.81-11.82.
Planning Inspectorate	May 2020	Operational traffic movements additional jobs: The ES should state the number of additional traffic movements associated with the Proposed Development and assesses any likely significant effects that will occur as a result.	Additional staff movements are set out in paragraph 11.69 and the impact of this are set out in paragraphs 11.74-11.80.
Planning Inspectorate	May 2020	Affected Road Network (ARN): The ES should include a definition of the ARN in line with relevant guidance and effort should be made to agree the approach with the relevant consultation bodies.	The study area is defined in Figure 11.2 and has been agreed with the relevant authorities.
Planning Inspectorate	May 2020	Current practice and guidance - The Applicant should consider the using the Guidelines for the Assessment of the Environmental impact of Road Traffic (GEART) and the relevant traffic and transport assessment aspects contained within section 5 of the National Policy Statement for Ports (2012) to inform their assessment.	The assessment is based on the Guidelines for the Assessment of Road Traffic and has taken account of the guidance in the National Policy Statement for Ports as defined in paragraphs 11.33-11.38.
Planning Inspectorate	May 2020	Consultation: The Applicant should make effort to agree the approach to the assessment of traffic and transport with relevant consultation bodies including Highways England.	The scope of the assessment has been agreed with the relevant authorities.
Planning Inspectorate	May 2020	Baseline data and existing Environment: The	The baseline information and data

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter
		<p>ES should describe how the baseline has been established and provide details of any desk-studies or field surveys used/undertaken for this purpose. Any field surveys the location, dates and times should be detailed along with any modelling software used in the assessment. The Applicant should make effort to agree surveys and the approach to data collection with relevant consultation bodies.</p>	<p>sources used are set out in the Assessment Methodology section of this chapter.</p>
<p>Planning Inspectorate</p>	<p>May 2020</p>	<p>Worst-case scenario: Where uncertainty exists, the ES should assess the maximum parameters of the Proposed Development to ensure a worst-case scenario has been captured and this should reflect the maximum parameters permitted in the dDCO.</p>	<p>A worst-case assessment has been undertaken on the basis the facility will operate 24 hours a day at full capacity</p>
<p>Planning Inspectorate</p>	<p>May 2020</p>	<p>Future baseline: The ES should establish exactly when the Proposed Development is expected to be fully operational following completion of construction and determine a future baseline based on an appropriate methodology. Effort should be made to agree the approach to determining the baseline with relevant consultation bodies from which operational impacts can be assessed.</p>	<p>An opening year is forecast to be 2024 and this has been tested within the air quality and noise assessments. A future year assessment of the local road network has been undertaken in the TA for 2026 with the development in place.</p>
<p>Planning Inspectorate</p>	<p>May 2020</p>	<p>Preliminary conclusion: The ES must base conclusions on a robust assessment supported by appropriate Figures, guidance, data sources, field surveys, an appropriate study area and methodology and consultation.</p>	<p>All conclusions have been determined using appropriate study area, methodology, consultation and data sources</p>

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter
Planning Inspectorate	May 2020	Cross-referencing: Impacts from traffic and transport overlap with impacts from other aspects such as air quality, noise and vibration and ecology. It should be clear within the ES how the outcomes of the traffic modelling have informed other relevant assessments and appropriate cross referencing should be made to other relevant aspect Chapters explaining the nature of the interaction and where potential impacts are assessed.	Data has been provided to the noise and air quality consultants to allow their assessment to be progressed and this is referred in paragraph 11.56.
Essex County Council	7th May 2020	The applicant will need to include a Transport Assessment (TA) and a Construction Management Plan as part of the submission documents. The scope of the TA needs to be agreed with the Highway Authority and in line with the principles of the EIA scope to include A130 / Canvey Road / B1014 Sommes Avenue up to the A13 junction at Sadlers Farm.	To assist with the TA, further traffic survey data is in the process of being collected at the A130 / Canvey Road / B1014 Sommes Avenue following an agreed approach with ECC. The preliminary conclusions on the environmental impact of the proposals on the ECC road network is set out in this chapter
Highways England	7th May 2020	HE is interested in the potential impact that development might have upon the A13, in particular the Junction with the A13 and A130, and the wider impact on the M25 at Junction 30. HE is interested as to whether there would be any adverse safety implications or material increase in queues and delays on the SRN during construction and operation.	The preliminary conclusions on the environmental impact of the proposals on the HE road network is set out in this chapter
Meeting with ECC and HE	5th November 2020	Trip generation discussed and agreed. More detail to be provided to HE in	Assuming a worst case scenario, the preliminary conclusions

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter
		respect of overall distribution of trips.	on the environmental impact of the proposals on the HE road network is set out in this chapter.

Implications of Legislation, Policy and Guidance

11.32 Relevant transport related policy and guidance is summarised in the following paragraphs:

National Policy Statement for Ports (2012)

- 11.33 As the OMSSD project is a harbour facility NSIP, the National Policy Statement for Ports (NPSfP) is the key policy document of relevance to the project.
- 11.34 Traffic and transport impacts are considered within section 5.4 of the NPSfP. It is made clear that *“if a project is likely to have significant transport implications, the applicant’s ES should include a transport assessment, using the WebTAG methodology stipulated in Department for Transport guidance, WeITAG for developments in Wales, or any successor to such methodology”* (Paragraph 5.4.4).
- 11.35 It is further made clear that *“Applicants should consult the Highways Agency and/or the relevant highway authority, as appropriate, on the assessment and mitigation. The assessment should distinguish between the construction, operation and decommissioning project stages as appropriate.”* (Paragraph 5.4.4).
- 11.36 The policy goes on to state that, *“Where appropriate, the applicant should prepare a travel plan, including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.”* (Paragraph 5.4.5).
- 11.37 *“Transport assessment should include private traffic accessing and leaving the port, where significant, even where not generated by the development under application.”* (Paragraph 5.4.8).
- 11.38 This chapter and the accompanying preliminary TA have been prepared in consultation with ECC and HE following their initial advice. The nature of the development is such that a Travel Plan is not appropriate as the vast majority of the traffic will consist of HGVs.

Overarching National Policy Statement for Energy (2011)³¹⁵

- 11.39 The Overarching National Policy Statement for Energy (EN-1) is also considered to be of relevance to the OMSSD project. This policy statement includes a section relevant to transport at section 5.13. The policy guidance contained within section 5.13 is, however, not materially different from that included within the National Policy Statement for Ports which has been referred to above.

National Planning Policy Framework (2019)³¹⁶

- 11.40 Although primarily of relevance to planning applications and not NSIP DCO applications, regard has, nonetheless, been had to relevant guidance contained within the National Planning Policy Framework.
- 11.41 In February 2019, the Government published a revised National Planning Policy Framework (NPPF). Paragraph 109 of the NPPF makes clear that: *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe"*.
- 11.42 Within this context, the NPPF identifies in Paragraph 110 that applications for development should:
- "a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
 - b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
 - c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
 - d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
 - e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."*
- 11.43 Paragraph 111 of the NPPF goes on to state that:

³¹⁵ Department for Energy and Climate Change (2011) National Policy Statement for Energy

³¹⁶ Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework

"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed".

Preliminary Description of the Existing Environment

- 11.44 This section describes the existing transport network and the location of the Oikos Facility within the transport environment.

Access to the Oikos Facility

- 11.45 The Oikos Facility benefits from two existing access points onto Haven Road. The primary access to the Oikos Facility is via the main gate off Haven Road. The access currently directs heavy goods vehicles (HGVs) and other vehicles to a secure waiting area with security facilities. Immediately north of this waiting area lies the access for vehicles to enter the existing road loading facility. It is proposed to amend the internal access and road layout as part of the OMSSD project. An existing secondary / emergency site access is located to the north of the main gate by approximately 200m and also provides the exit for vehicles leaving the road loading facility. This secondary access / egress is also gated. No amendments to this site access are proposed as part of the OMSSD project.

Surrounding traffic and transport network

- 11.46 The wider transport network is shown on Figure 11.1. An existing LPG gas import terminal (owned and operated by Calor) and Thorney Bay Village, a static caravan park, are situated to the east of the Oikos Facility and also front onto the River Thames. Immediately to the east and to the north of the Oikos Facility is an existing damaged vehicle storage and sales operation, run by IAA Vehicle Services. This vehicle services facility covers an area of approximately 9.5ha and is accessed from Haven Road to the north of the Oikos facility boundary. To the north of the access to IAA Vehicle Services there is an access also from Haven Road to the Calor import terminal for HGVs. This private access is known as Howards Way.
- 11.47 The Calor LPG import terminal, located to the east of the Oikos Facility, contains LPG storage tanks and benefits from a deep-water jetty that extends out into the River Thames.
- 11.48 The closest residential properties to the Oikos Facility are located to the south west at Haven Quays and includes former Fishermans Cottages, modern housing and static mobile homes. Access to this residential enclave is via Haven Road, which runs from the Haven Quays area in a roughly northerly direction to its junction with Canvey Road within the main residential built up area of the Island.
- 11.49 North of the Roscommon Way / Haven Road junction lie residential properties along Haven Road with the built-up area of Canvey Island beyond. Roscommon Way and Haven Road are not located within close proximity to schools/ colleges or accident blackspots, nor are

they close to congested junctions, hospitals, community centres or conservation areas. On this basis, these routes are classified as being of low sensitivity.

- 11.50 Haven Road is subject to a 30mph speed limit, has street lighting and benefits from a footway on the western side which extends north and continues south of the Oikos site access. At a point approximately 400m north of the Oikos Facility main entrance, Haven Road links with Roscommon Way, via a priority T-junction. At this junction, dropped kerbs and tactile paving are provided for an uncontrolled pedestrian crossing facility. The footway on Haven Road continues north of the junction on the western side. On Roscommon Way the footway continues on the northern side set back behind a grass verge. Street lighting is provided at the junction with Haven Road.
- 11.51 Roscommon Way links Haven Road with the A130 to the north of Canvey via a route which runs around the western edge of the built-up area. This route, therefore, provides a bypass around the built-up area for traffic moving to and from the south western part of the Island.
- 11.52 Roscommon Way has a 50mph speed limit for its entire length. It is single carriageway from Haven Road to Romainville Way where it provides access to Charfleets South Industrial Estate. To the west of this junction, Roscommon Way is dual carriageway linking with a second roundabout immediately to the west before continuing north to link with a four-arm roundabout junction with Northwick Road. Footway provision continues on the eastern side of Roscommon Way to this junction where it continues east along Northwick Road allowing access to the Northwick Retail Park.
- 11.53 Further north Roscommon Way links with the A130 Canvey Road via a 3-arm roundabout. The A130 Canvey Road continues north linking with the A130 Canvey Way/ B1014 Somnes Avenue via a 4-arm roundabout junction.
- 11.54 Beyond this junction the A130 Canvey Way continues further north and is single carriageway with no footway provision. This route links with the A13 and London Road at the Sadlers Farm gyratory junction to the south of North Benfleet. The A13 provides access to the wider strategic road network including the M25 some 20km to the west.
- 11.55 A public right of way is situated immediately to the south of the Oikos Facility and runs along the sea wall. The right of way continues east of the site to Canvey Point and continues west of the site adjacent to Holehaven Creek before heading inland prior to East Haven Creek. Site observations (2015) 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. This data was recorded within the immediate vicinity of the Oikos site.

Traffic Flow Data

- 11.56 The 2018 data has been used as a base year for the assessment as it provides a worst case scenario against which to compare a percentage increase and has no regard to any increases that have occurred on the local network in the last 2 years. The base traffic data to inform the air quality and noise assessment is for 2019 with a forecast opening year of 2024.

- 11.57 Traffic data for these assessments has been uplifted from the 2018 position using local TEMPro growth factors. TEMPro is the industry standard tool for estimating traffic growth, which is required when assessing the traffic impact of a development on the local highway network. The model forecasts the growth in trip origin to destination up to 2051 for use in transport modelling taking into account population, employment, housing, car ownership and trip rates.
- 11.58 The 2018 base data for the local and strategic road network is set out in Table 11.6.

Table 11.6: Base Traffic Data (2018)

Location	AADT	HGVs
A13 (West of Canvey Way)	77,512	4.3% or 3,328
A13 (East of M25 J30)	96,997	12.3% or 11,968
A130 Canvey Way (North of Canvey Road)	26,472	2.9% or 776
A130 Canvey Road (North of Roscommon Way)	20,104	3.2% or c650
Roscommon Way (North of Northwick Road)	5,207	4.6% or c242
Roscommon Way (South of Northwick Road)	2,752	5.9% or c165
Roscommon Way (East of Romainville Way)	2,195	4.5% or c98
Haven Road (North East of Roscommon Way)	2,157	1.0% or c22
Haven Road (South West of Roscommon Way)	1,311	8.7% or c114
A130 (North of Roscommon Way)	20,104	3.2% or c650
Roscommon Way (North of Northwick Road)	5,207	4.6% or c242

Road Safety

- 11.59 Accident data for the latest 5 year period has been obtained from ECC for the roads within the vicinity of the site. A total of 36 accidents were recorded including 5 “serious” and 31 “slight”. No “fatal” accidents were recorded.
- 11.60 One “serious” accident took place on Haven Road around 500m south of the junction with Roscommon Way. The accident was not related to Oikos operations and involved a single motorcyclist who fell off the vehicle and collided with a lamp post (reported vehicle was stolen).
- 11.61 Two further “serious” accidents occurred on Roscommon Way during the study period. One of the accidents involved a single car where the driver lost control at the roundabout and

collided with a lamp post. The second accident involved a collision between two motorcycles near the roundabout. One “slight” accident on Roscommon Way involved the collision of a car and a HGV which was parked on the carriageway.

- 11.62 Two of the accidents at the Canvey Road/ Canvey Way/ Somnes Avenue were “serious” and 14 were “slight”. A number of accidents involved rear shunt collisions, which is fairly typical for large scale roundabout junctions, however there were no patterns in the causal factors or specific locations of incidents and none were related to deficiencies in highway layout or design. None of the accidents at this junction involved HGVs.
- 11.63 A total of 14 accidents occurred along the A130 Canvey Way of which 3 were classed as “serious”. The incidents occurred at a number of locations along the route and no clusters can be identified. Two “slight” accidents involved HGVs, however there were no patterns in the causal factors or specific locations of incidents, and none were related to deficiencies in highway layout or design.
- 11.64 No fatal accidents have been recorded on the roads within the vicinity of the site on the main route to and from the Oikos Facility.

Environmental Change without the OMSSD Project

- 11.65 In the absence of the OMSSD proposals, it is expected that the Oikos Facility would continue to operate with traffic levels broadly similar to existing whilst taking account of demand from customers. Changes on the network as a result of other developments is accounted for in TEMPro growth assumptions.

Preliminary Consideration of Likely Impacts and Effects

Operational Phase

- 11.66 The OMSSD project proposes up to five additional road loading bays, which could be operational 24 hours a day, 7 days a week, 365 days per year. Each road loading bay could operate by providing two tanker loads per hour (i.e. four HGV movements per hour per bay) which equates to 96 HGV movements per day per bay. For five bays, the theoretical maximum throughput would, therefore, be an additional 20 HGV movements per hour and 480 HGV movements per day.
- 11.67 For the purposes of the preliminary assessment, it is proposed that this is the level of operational traffic which is considered – even though in reality it is highly unlikely that all five bays will be operating at this level every hour over a year.
- 11.68 By way of example, the two existing loading bays operating on site during 2019 resulted in the order of 10,000 movements during the year. This equates to an average per bay of 7 loads (14 movements) per day. Adopting this profile would result in an increase of only 35 loads (70 movements) per day for the five new loading bays.

- 11.69 Staff numbers are proposed to increase by around 10 people. Census 2011³¹⁷ journey to work data for the middle super output area within which the site is located (Castle Point 011) shows that around 65% of people drive to work. This equates to 7 car movements in and 7 car movements out per day. As a worst case, it is assumed around 50% of staff could arrive and leave during peak periods this equates to 3-4 movements during the peak periods.
- 11.70 The distribution of HGV traffic has been reviewed in detail in the preliminary TA and is based on data provided by Oikos for transport of product to airports and petrol filling stations. All HGV traffic will access the site via Haven Road, Roscommon Way and Canvey Way to gain access to the A13 / A130 at the Sadlers Farm roundabout and onto the wider network. At this junction, it is assumed that there will be a split of traffic broadly 54% on the A13 to the south west towards the A13 / M25 strategic road network and 46% on the A130 to the north east towards the A127.
- 11.71 It is assumed that the majority of staff will originate from within Canvey Island itself, however as a worst case 50% are assumed to arrive from further afield on the A13 and A130. This equates to a total of 7 movements per day. The remainder are likely to use Haven Road or Canvey Road north of Canvey Way to gain access to the site.

Severance

- 11.72 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic route. Whilst the IEMA Guidelines refer to the effect of traffic on severance of 30%, 60% and 90% producing “slight”, “moderate” and “substantial” changes in severance respectively, it is suggested in the guidance that caution be applied to relying on these quantum of change as each case depends on specific local conditions.
- 11.73 The percentage change for total vehicles and then also, for completeness, for HGVs are shown in Table 11.7 for the proposed operational traffic flows.

Table 11.7: Traffic impact on the surrounding road network for proposed traffic flows

Location	Base Traffic Flow (2018)			Proposed Traffic Flow		Total Percentage Increase	HGV Percentage Increase	
	Totals	All HGVs	Larger HGVs	Totals	HGVs		All HGVs	Larger HGVs
A13 (West of Canvey Way)	77,512	3,328	3,328	258	252	0.33%	7.57%	7.57%
A13 (East of M25 J30)	96,997	11,968	11,968	237	231	0.24%	1.93%	1.93%
A130 Canvey Way (North of Canvey Road)	26,472	776	776	476	468	1.80%	60.31%	60.31%

³¹⁷ Nomis (2021) 2011 Census. Available at: https://www.nomisweb.co.uk/sources/census_2011

Location	Base Traffic Flow (2018)			Proposed Traffic Flow		Total Percentage Increase	HGV Percentage Increase	
	Totals	All HGVs	Larger HGVs	Totals	HGVs		All HGVs	Larger HGVs
A130 (North of Roscommon Way)	20,104	650	355	494	480	2.46%	73.85%	135.21%
Roscommon Way (North of Northwick Road)	5,207	242	167	494	480	9.49%	198.35%	287.43%
Roscommon Way (South of Northwick Road)	2,752	165	118	494	480	17.95%	290.91%	406.78%
Roscommon Way (East of Romainville Way)	2,195	98	67	494	480	22.51%	489.80%	716.42%
Haven Road (North East of Roscommon Way)	2,157	22	8	7	0	0.32%	0.00%	0.00%
Haven Road (South West of Roscommon Way)	1,311	114	45	494	480	37.68%	421.05%	1066.67%

11.74 Taking total traffic volumes – in accordance with the IEMA Guidelines - the level of traffic related to the operational phase is less than 30% on all links with the exception of the short section of Haven Road between Roscommon Way and the main access into the Oikos Facility. The magnitude of overall traffic increase can, therefore, in accordance with Table 11.2 be defined as negligible for the majority of links. Combined with the fact that Haven Road is – in accordance with Table 11.1 - defined as a receptor of negligible / low sensitivity means that the overall effect is insignificant on this stretch of road.

11.75 For completeness, a similar exercise has been undertaken in respect of HGVs only. For HGVs, the increase is above 30% on Haven Road, Roscommon Way and the A130. This increase is, however, due to the fact that base flows along this road are very low and Roscommon Way, at this location, is currently under-utilised. The road was specifically designed and developed to improve HGV access to the south west part of Canvey Island and can accommodate substantially higher levels of HGV traffic than it currently carries. The sections of the A130 also carry a relatively low number of HGVs compared with overall traffic flow.

- 11.76 As indicated previously, Roscommon Way and Haven Road are defined as receptors of negligible / low sensitivity (Table 11.1). The same can be applied to the A130. The magnitude of the impact is considered to be major (Table 11.2). Overall, therefore, just considering HGV flows alone results in an effect considered to be, at worst, of moderate significance (Table 11.4). However, this assessment is based on the assumption that all road loading bays will be operating at full capacity at the same time which is unlikely to be the case. Therefore, a minor impact is more likely. In common with standard assessment practice, minor effects are not considered to be significant in environmental assessment terms.
- 11.77 The impact on the strategic network is dealt with further in the preliminary Transport Assessment. In terms of the impact on the A13 on the strategic road network, the daily percentage change will be 0.24%. The magnitude of overall traffic increase can, therefore, in accordance with Table 11.2 be defined as negligible. Combined with the fact that the A13 is – in accordance with Table 11.1 - defined as a receptor of negligible / low sensitivity means that the overall effect is insignificant.

Driver Delay

- 11.78 The 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. It can, therefore, be concluded that there will be negligible impact in respect of driver delay. As part of the preliminary Transport Assessment the operation of the A310 Canvey Road / Canvey Way roundabout has been assessed during peak periods as requested by ECC. There are no operational impacts associated with the OMSSD proposals.
- 11.79 During the typical network peak periods (08:00-09:00 and 17:00-18:00) traffic generation from the proposals is forecast to be a maximum of 23-24 movements an hour, of which 20 would be HGVs. Some of the light traffic will disperse onto Haven Road north of the site with the remainder using Roscommon Way. 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.
- 11.80 Adopting the methodology set out in Tables 11.1 - 11.4, the overall network, particularly Roscommon Way, are negligible / low sensitivity receptors (Table 11.1). The magnitude of the impact is minor / slight (Table 11.2) and overall this is considered to be an insignificant / minor effect (Table 11.4). As already indicated, in common with standard assessment practice, minor effects are not considered to be significant in environmental assessment terms.

Pedestrian Delay and Amenity

- 11.81 Given the range of local factors and conditions which can influence pedestrian delay, the guidance suggests it is not considered wise to set down any thresholds, but instead it is recommended that assessors use their judgement to determine whether pedestrian delay is a significant impact. There are no footways on the A130. On site observations confirm that

pedestrian activity on Roscommon Way and the short stretch of Haven Road is relatively low. There is a public right of way immediately to the south of the site. 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. There will be no impact on the use of this right of way during the construction or operational phase. It is, therefore, concluded that the proposals will have an insignificant effect on pedestrian delay and amenity.

- 11.82 Adopting the methodology set out in Tables 11.1 - 11.4, the pedestrian routes within the vicinity of the site are considered to be a low sensitivity receptor (Table 11.1). The magnitude of the impact is minor / slight (Table 11.2) and overall this is considered to be an insignificant / minor effect (Table 11.4). As already indicated, in common with standard assessment practice, minor effects are not considered to be significant in environmental assessment terms.

Accidents and Safety

- 11.83 A review of personal injury accidents within the vicinity of the site has been undertaken. One serious accident took place on Haven Road within the vicinity of the site in 2016, however, it did not involve a heavy goods vehicle, nor was it related to OSL operations. Two further “serious” accidents occurred on Roscommon Way during the study period. One of the accidents involved a single car where the driver lost control at the roundabout and collided with a lamp post. The second accident involved a collision between two motorcycles near the roundabout. A low number of slight accidents are recorded on Roscommon Way, one of which involved an HGV. This demonstrates that the route is not a disproportionately hazardous route for HGVs. None of the accidents occurred at the site access.
- 11.84 Further afield, two of the accidents at the Canvey Road / Canvey Way / Somnes Avenue were “serious” and 14 were “slight”. A number of accidents involved rear shunt collisions, which is fairly typical for large scale roundabout junctions, however, there were no patterns in the causal factors or specific locations of incidents and none were related to deficiencies in highway layout or design. None of the accidents at this junction involved HGVs.
- 11.85 A total of 14 accidents occurred along the A130 Canvey Way of which 3 were classed as “serious”. The incidents occurred at a number of locations along the route and no clusters can be identified. Two “slight” accidents involved HGVs, however there were no patterns in the causal factors or specific locations of incidents, and none were related to deficiencies in highway layout or design.
- 11.86 Adopting the methodology set out in Tables 11.1 - 11.4, the low sensitivity of the receptor (Table 11.1) and negligible magnitude of impact (Table 11.2) results in an insignificant effect (Table 11.4) of the proposals on highway safety.

Hazardous or Abnormal Loads

- 11.87 Hazardous loads are expected as part of the proposals as the project will result in the transport of petroleum and associated products. This will be managed through regulations both on site and when the vehicle is travelling on the public highway.

- 11.88 The loading of fuel on site is the responsibility of Oikos and will be covered under the COMAH regulations³¹⁸. The COMAH safety report will be updated as necessary prior to the facilities becoming operational to cover the additional road loading operations.
- 11.89 Once a loaded vehicle leaves the site the transport of the fuel is the responsibility of the haulier and prospective clients under the European Agreement concerning International Carriage of Dangerous Goods by Road (ADR)³¹⁹ to ensure compliance with the regulations set out within that agreement.
- 11.90 On this basis, procedures will be in place for loading fuel within the site and transporting fuel on the local road network to ensure any risks are minimised.
- 11.91 There will be no abnormal loads associated with the proposals.
- 11.92 Adopting the methodology set out in Tables 11.1 - 11.4, the low sensitivity (Table 11.1) and negligible magnitude of impact (Table 11.2) results in an insignificant effect of hazardous or abnormal loads as a result of the proposals (Table 11.4).

Fear and Intimidation

- 11.93 The IEMA Guidelines identify indicative levels of traffic and HGV flows at which point fear and intimidation is considered to be notable. Whilst the average traffic flow over an 18 hour day on the majority of road links resulting from the proposals is above the threshold identified in the IEMA Guidelines, the existing footfall on Roscommon Way and the southern section of the A130 (Canvey Road) is relatively low following on site observations and there are no footways on the northern section of the A130 (Canvey Way). Therefore such traffic will not be close to major pedestrian routes and it is not considered that there will be a lack of protection, for example caused by narrow pavements widths. It is also important to note that the traffic flows on Roscommon Way are unusually low for this type of road and it is capable of accommodating significantly higher levels of traffic.
- 11.94 Adopting the methodology set out in Tables 11.1 – 11.4, the low sensitivity (Table 11.1) and minor/slight magnitude of impact (Table 11.2) results in a minor / insignificant effect (Table 11.4) of the proposals on fear and intimidation.

Construction Phase

- 11.95 The construction phase of the OMSSD project is, at present, envisaged to take approximately 24 months, albeit that the precise hours of and timeframe for construction are still to be determined.
- 11.96 Precise details of the road-based flows generated by construction activity will vary across the construction period, but based on previous experience on the site, it is assumed, a peak flow

³¹⁸ Control of Major Accident Hazards Regulations 2015 (as amended).

³¹⁹ United Nations Economic Commission for Europe (2021) European Agreement concerning International Carriage of Dangerous Goods by Road (ADR) - <https://unece.org/about-adr>

of approximately 80 HGV loads (160 movements) per day will be associated with the construction of the works, including any off-site ecological works. There are likely to be periods when HGV traffic will be less than this, but this assumes a worst case assumption in traffic and transport terms.

- 11.97 Around 120-150 construction workers are expected on site on a typical day. The Census 2011 journey to work data for the middle super output area within which the site is located (Castle Point 011) shows that around 65% of people drive to work. Applying this to the maximum number of staff indicated above equates to 98 trips (196 two-way light vehicle movements).
- 11.98 In total, therefore, forecast construction traffic movements are 196 light vehicles on a typical day and a maximum of 160 heavy vehicle movements per day.
- 11.99 All HGV movements associated with the construction of the project will route via Roscommon Way and the A130 to and from the site in order to avoid the residential built up areas on Canvey Island.
- 11.100 Overall, even if staff numbers were slightly higher on a peak day, the daily construction traffic movements will be lower than the operational traffic level set out in the preceding paragraphs. Furthermore, this level of traffic will be occurring for a temporary period of time. The environmental impacts will therefore be reduced from those set out above for the operational phase.

Mitigation Measures

- 11.101 At present there are no specific mitigation measures required to ensure the proposals are acceptable in highway terms subject to ongoing discussion with the Highway Authorities.

Limitations

- 11.102 It was anticipated that the 2018 background data for the local road links would be updated in 2020 to provide a current baseline, however, this was not possible due to the Covid-19 pandemic. In any event, and as already explained, the 2018 base data provides a worst-case assessment position.

Preliminary Conclusions on Residual Effects

- 11.103 The preliminary assessment undertaken has considered the impact of the maximum daily traffic associated with the proposals. The scope of impact, matters to be assessed and impact significance have been based upon IEMA Guidelines and best practice techniques.
- 11.104 From the preliminary assessment undertaken, it is concluded that there will be no residual adverse significant impacts on the free flow of traffic and road safety as a result of the proposals.