OTTERPOOL PARK

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ENVIRONMENTAL STATEMENT

OP5 CHAPTER 16 – **TRANSPORT**

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OTTERPOOL PARK

Environmental Statement Volume 2: Main ES
Chapter 16: Transport

MARCH 2022

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16 Transport

16.1 Introduction

16.1.1 This chapter of the ES assesses the impact of construction and operation of the proposed Development with respect to Transport.

16.1.2 This chapter should be read in conjunction with Chapters 1-4 (the introductory chapters).

16.1.3 It has also been prepared alongside and informed by ES Appendix 16.1 to 16.6 and Figures 16.1 to 16.6 which are found in ES Appendix 16.1. ES Appendix 16.4 comprises the Transport Assessment, ES Appendix 16.5 the Transport Strategy and ES Appendix 16.6 the Framework Travel Plan.

Relevant Aspects of the Proposed Development

16.1.4 A full description of the proposed Development is given in Chapter 4. Specific aspects that relate to the transport topic include the impacts upon highways, pedestrian and cycle infrastructure, and local public transport services that would result from the delivery of up to 8,500 homes along with retail, commercial, leisure, education, health and community facilities, green infrastructure, highway infrastructure and public open space. The assessment represents the worst-case scenario in terms of transport and traffic impacts. Further details pertinent to this transport assessment are provided in section 16.4.

16.2 Assessment Method

Legislation, Policy and Guidance

16.2.1 This impact assessment has been undertaken in accordance with current legislation, national and local plans and policies. Outlined below are those elements of current legislation, policy and guidance relevant to transport in the context of the Development.

National Planning Policy Framework, 2021

16.2.2 The National Planning Policy Framework (NPPF) (Ref 16.2) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF provides a framework within which locally-prepared plans for housing and other development can be produced.

16.2.3 Paragraph 104 sets out the transport issues which should be addressed within Development Plans and decisions. So that:

- "*The potential impacts of development on transport networks can be addressed*
- *Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated*
- *Opportunities to promote walking, cycling and public transport use are identified and pursued*
- *The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*
- *Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places*".

16.2.4 Paragraph 105 of Section 9 'Promoting sustainable transport' states:

"Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health".

16.2.5 Whilst considering sites for specific development proposals, paragraph 110 outlines that it should be ensured that:

- "*Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- *Safe and suitable access to the site can be achieved for all users; and*
- *Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree".*

16.2.6 Paragraph 111 states 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".

16.2.7 Within this context Paragraph 112 finds that applications for development should:

- *"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.*
- *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport.*
- *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.*
- *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
- *Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations".*

16.2.8 Paragraph 113 sets out that:

"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".

The Strategic Road Network and the Delivery of Sustainable Development – Department for Transport Circular 02/13, 2013

16.2.9 The Department for Transport (DfT) Circular explains how the Highways Agency (now National Highways (NH)) will participate in all stages of the planning process with Government Offices, regional and local planning authorities, local highway/

transport authorities, public transport providers and developers to ensure national and regional aims and objectives can be aligned and met (Ref 16.3).

16.2.10 The Circular sets out that proposals should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

16.2.11 It is identified that a robust travel plan that promotes use of sustainable modes is an effective means of managing the impact of development on the road network and reducing the need for major transport infrastructure. NH expects the promoters of development to put forward initiatives that manage down the traffic impact of proposals to support the promotion of sustainable transport and the development of accessible sites.

16.2.12 Further guidance on engagement with NH on planning matters is contained in the document 'The strategic road network: Planning for the Future', published in September 2015 (Ref 16.4).

Decarbonising Transport, Department for Transport, 2021

16.2.13 The DfT published this document in July 2021 which sets out the UK Government's commitments and actions needed to decarbonise the entire transport system in the UK.

16.2.14 This document includes the pathway to net zero transport in the UK and includes commitments towards the following:

- Increasing walking and cycling;
- Delivering decarbonisation through places
- Future transport – more choice better efficiency.

Travel Plans, Transport Assessment and Statements, 2014

16.2.15 A set of National Planning Practice Guidance (NPPG) has been published to inform how the principle of the NPPF should be practiced (Ref 16.5). Those that specifically relate to transport matters are:

- Travel Plans, Transport Assessments and Statements in Decision-Taking (March 2014); and
- Transport Evidence Bases in Plan Making and Decision Taking (October 2014).

16.2.16 These guidelines provide a common approach which are aimed at ensuring that all relevant issues have been addressed within an assessment. The Transport Assessment presented in ES Appendix 16.4 adopts the national guidelines and approaches where possible, taking account of the specific nature of the development.

16.2.17 KCC guidelines for the preparation of Transport Assessments for development[1] have been archived along with the national guidelines[2] produced by the DfT.

[1] *Guidance on Transport Assessments and Travel Plans (Kent County Council, October 2008).*
[2] *Guidance on Transport Assessment (DfT, 2007).*

Kent Local Transport Plan 4: Delivering Growth without Gridlock 2016-2031, 2016

16.2.18 The Kent Local Transport Plan (LTP) (Ref 16.6) sets out how the County will achieve its transport vision over the coming years, bringing together transport policies and local and nationally significant schemes.

16.2.19 Kent's transport policies identify a series of improvements (strategic, countywide and local) to increase the overall capacity of transport networks and systems, enabling them to accommodate the additional trips generated by development.

16.2.20 Relevant to this development the LTP states:

"There is substantial future housing growth in the district, including the proposed Otterpool Park garden town, which will require considerable infrastructure investment to support this new town, including upgrading Westenhanger Station".

16.2.21 Transport priorities identified for Folkestone & Hythe relevant to the development are:

- Upgrading of Westenhanger Rail Station;
- Upgrades to Junctions of the M20; and
- Newingreen junction highway improvements.

Kent Rail Strategy, 2021

16.2.22 The Rail Strategy sets out how Kent will influence train services for their passenger network over the next 10 years. It aligns with both local and national transport policies, which recognise rail as a key part of Kent's transport priorities.

16.2.23 This document presents a proposed train service plan that includes High Speed service at Westenhanger Station to meet the increased demand which will arise from the Otterpool Park Development.

Folkestone & Hythe District Council Transport Strategy, 2011

16.2.24 The Transport Strategy (Ref 16.8) published January 2011, provided a robust evidence base which informed the Core Strategy document. The role of the Transport Strategy has been to inform the District Council of the transport related issues and opportunities predicted to result from the delivery of the Core Strategy, identifying appropriate transport measures, where necessary.

16.2.25 The strategy considers both transport matters which relate to the existing district area, as well as those relating to the potential Strategic Site allocations which have been made for future development.

16.2.26 Four initial options were suggested for walking:

- Improvements to road crossing points;
- Improvements to signage and clutter reductions;
- Completions of selected links; and
- Enhancements of the environment of the town centres.

16.2.27 Six initial options were suggested for cycling:

- Creation of a comprehensive District wide cycle network;
- Enhancement of road crossing facilities;
- Enhancement of signage;
- Promotion of parking facilities at destinations;

- Consideration of cycle hire; and
- Promotion of safety awareness.

16.2.28 F&HDC, working with KCC as the highway authority for the district, provide and manage parking across Folkestone & Hythe. Key measures identified by the parking strategy included:

- Promotion of Workplace Travel Plans for existing sites;
- Promotion of balanced parking provision at new developments;
- Integration of management of on and off-street parking;
- Review of management of car parking at Westenhanger Rail station – including formalising parking at the station, reviewing parking management on Stone Street, and promoting access to station in connection with three local Core Strategy sites; and
- Promotion of 'visible' parking provision for use by tourists.

16.2.29 In relation to potential strategic development sites within the district, it is stated as necessary for the respective applicant team to prepare detailed Transport Assessments and Travel Plans, to be reviewed by Folkestone & Hythe District Council as the planning authority, KCC as the highway authority, as well as NH.

16.2.30 The Transport Strategy recommends:

"…that in parallel to the Transport Assessments being undertaken, site Travel Plans are also prepared. These documents should seek to set sustainable travel targets for the developments covering the delivery and early occupation of the site (usually a minimum of five years from first occupation)".

Places and Policies Local Plan, 2020

16.2.31 The Places and Policies Local Plan was adopted in September 2020 (Ref 16.10) to support the delivery of the Core Strategy.

16.2.32 The Places and Policies Local Plan identifies more than 50 sites across the district where the district's future needs in terms of housing, employment, community use and leisure could be met.

16.2.33 The Places and Policies Local Plan has two functions:

- "*To allocate enough land for future development to meet the requirements set out in the Core Strategy for residential, employment, community and other needs" and*
- *"To provide development management policies that will be used to assess planning applications and guide future development."*

16.2.34 The document re-iterates the expectations of new development to prioritise walking, cycling and public transport modes before private cars. Policy T1 Street Hierarchy

and Site Layout states that a safe environment for all street users is created, meeting the needs of all and not allowing vehicles to dominate.

Core Strategy Review, 2022

16.2.35 The Core Strategy Review 2022 (Ref. 16.7) policies include the provision for a garden settlement within the North Downs character area, comprising the Otterpool Park development.

16.2.36 Policy SS1 District Spatial Strategy states:

"The potential for significant sustainable development in the district is focused on maximising strategic infrastructure where landscape capacity exists, with the creation of a new settlement in the North Downs Area. This will be a major, long-term growth opportunity, developed on garden town principles during the plan period and beyond. Policies SS6-SS9 set out rigorous design requirements and ambitious environmental and sustainability targets that the new settlement must meet to ensure its potential is realised."

16.2.37 In addition, Policy SS6 finds that the Development would present the major opportunity to secure a high-speed rail service between Westenhanger and London St Pancras. F&HDC is pursuing this with train operating companies, infrastructure providers and stakeholders. A transport hub could be provided at the existing Westenhanger station, allowing easy transfer between walking, cycling, bus and train journeys.

16.2.38 The railway station upgrade and hub would deliver:

- Lengthening of the existing platforms;
- New and refurbished station buildings with improved customer facilities;
- A new footbridge between platforms; and
- Car parking to meet the needs of the new town and nearby villages.

16.2.39 Policy SS7 outlines the place shaping principles for sustainable access and movement for the new Otterpool Park settlement:

- "*The development shall be underpinned by a movement strategy which prioritises walking, cycling and access to public transport and demonstrates how this priority has informed the design of the new settlement. All homes shall be within 800 metres/10 minutes' walk of a local neighbourhood centre with an aspiration that all homes are within 400 metres/5 minutes' walk of such facilities.*
- *Development shall incorporate smart infrastructure to provide real-time and mobile-enabled public transport information in accordance with smart town principles (Policy SS9 (2)).*
- *A permeable network of tree-lined streets, lanes, pathways, bridleways, cycleways and spaces will be created that provides connections between neighbourhoods, the town centre, employment opportunities and public transport facilities. Footpaths, cycleways and bridleways should link to existing public rights of way, nearby villages and the wider countryside, including the North Downs Way and the SUSTRANS national cycle route network, taking account of the findings of the access strategy (Policy SS7 (1)).*
- *Road infrastructure should be designed for a low speed environment, with priority given to pedestrians and cyclists through the use of shared space in ultra-low speed environments and dedicated cycle routes and separate pedestrian*

walkways where appropriate. The use of grade separations, roundabouts, highway furniture and highway signage should be minimised.

- *A parking strategy shall be developed that balances the necessity of car ownership with the need to avoid car parking that dominates the street scene to the detriment of local amenity. The parking strategy shall deliver well-designed and accessibly-located cycle parking facilities within the town and neighbourhood centres, at Westenhanger Station and transport hub, as well as at employment developments.*
- *Westenhanger Station shall be upgraded at the earliest opportunity to provide a high-speed service ready integrated transport hub, in partnership with Network Rail, the rail operator and Kent County Council, which gives priority to pedestrians, cyclists, bus and train users. The council will continue to work with Network Rail to introduce high-speed rail services from Westenhanger to central London, subject to discussions with stakeholders; and*
- *The existing bus network that serves the surrounding towns and villages will be upgraded and new services provided as an integral element of the transport hub and settlement. All new homes shall be within a five-minute walk of a bus stop."*

A Charter for Otterpool Park, 2017

16.2.40 Although not planning policy, F&HDC has produced a Charter (Ref 16.11) setting out its aspirations for Otterpool Park (2017). The Charter included principles focusing on creating a place that is environmentally, socially and economically sustainable.

16.2.41 In relation to access and movement, the Charter suggests that Otterpool Park will aspire to comply the following four policies set out in the Core Strategy Local Plan Review (2020, with 2021 Main Modifications):

- SS6: New Garden Settlement – Development Requirements;
- SS7: New Garden Settlement – Place Shaping Principles;
- SS8: New Garden Settlement – Sustainability and Healthy New Town Principles; and
- SS9: New Garden Settlement – Infrastructure, Delivery and Management, Guidance.

Guidance

16.2.42 This chapter follows the assessment methodology set out in the document entitled, "*Guidelines for the Environmental Assessment of Road Traffic*" (Ref 16.1), published by the Institute of Environmental Assessment (IEA) in 1994. The IEA is now known as the Institute of Environmental Management and Assessment (IEMA), so this document will be referred to as the 'IEMA Guidelines' throughout the remainder of this Section.

Consultation and Scoping

Consultation

16.2.43 Table 16-1 provides a summary of the consultation undertaken for this chapter prior to and following the submission of the 2019 application (Y19/0257/FH). The table summarises how the comments have been addressed in this chapter, where relevant.

Table 16-1 Summary of Consultations held in respect of Traffic and Transport

Consultee/Contact/Date	Summary of Consultee Issue	Outcome
Principal Transport and Development Planner, Kent County Council, June 2017 Senior Planning Policy Specialist, Folkestone & Hythe / Spatial (town) Planning Manager and Managing Consultant Highway England, April 2017 – March 2018	Use of TRICS and other assumptions to derive trip rates	Discussions relating to the method of calculating trip generation were held with Kent County Council, Folkestone & Hythe District Council and Highways England (now NH). The trip generation method technical note[3] contained in the TA describes the agreed method. These assumptions were used in the ES assessment.
Principal Transport and Development Planner, Kent County Council, June 2017 Senior Planning Policy Specialist, Folkestone & Hythe Spatial (town) Planning Manager and Managing Consultant, Highway England, May 2017 – November 2017	Use of Census 2011, NTS and other sources and assumptions related to calculation of trips by mode	The method for the calculation of trips by mode was agreed with Kent County Council, Folkestone & Hythe District Council and Highways England (now NH). A technical note[4] describing the method of derivation of the mode splits in detail is contained in the TA. These assumptions were used in the ES assessment
Principal Transport and Development Planner, Kent County Council, June 2017 Senior Planning Policy Specialist, Folkestone & Hythe Spatial (town) Planning Manager and Managing Consultant, Highway England, July 2017 – March 2018	Use of Census 2011 and gravity modelling for the distribution of trips.	Discussions relating to the method for the distribution of trips were held with Kent County Council, Folkestone & Hythe District Council and Highways England (now NH) between July 2017 and March 2018. The agreed method is described in the technical note[5] contained in the TA. These assumptions were used in the ES assessment
Principal Transport and Development Planner, Kent County Council, August 2017	Modelling scenarios should include a base year of 2018 and the end of the Local Plan period (2037). Other scenarios to be agreed during further consultation.	The scenarios agreed during scoping, including 2018 and 2037, were included in the TA. A worst-case future year of 2044 has also been considered to assess full build-out of the proposed Development.

[3] Otterpool Park Trip Generation Calculation Method Technical Note (Arcadis, 2018), updated in 2020
[4] Otterpool Park Method for deriving Mode Splits (October 2018), updated 2020
[5] Otterpool Park Method for the Distribution of External Vehicle Trips

Consultee/Contact/Date	Summary of Consultee Issue	Outcome
Principal Transport and Development Planner, Kent County Council, August 2017	M20 junctions 9 and 14 should be included in modelling scope if the increase in traffic related to the development is significant M20 Junction 10A should be included in modelling scope A20 route to Ashford to be included in scope A261 route to Hythe plus the Hythe gyratory to be included in scope	These junctions were included in the assessment, as presented in Figure 16.1 in ES Appendix 16.1.
Principal Transport and Development Planner, Kent County Council, August 2017	Future year background flows are to be provided from the area wide strategic model owned by Highways England. Strategic modelling to be undertaken by Highways England.	Highways England (now NH) advised that the area wide strategic model is not suitable for use for generating future year background flows. TEMPro was used instead, as agreed with Highways England (now NH), Kent County Council and Folkestone & Hythe District Council.
Spatial (town) Planning Manager and Managing Consultant, Highways England, August 2017	The area wide strategic model is not suitable for use for generating future year background flows. TEMPro is to be used instead, with housing and job forecast inputs to be reviewed by the authorities.	TEMPro was used in the assessment with agreed housing and job forecasts, these are set out in Chapter 6.2: Background Traffic Forecasting in the TA.
Principal Transport and Development Planner, Kent County Council, August 2017	Additional traffic data to be collected in typical month (i.e. excluding school holidays) and validated against 2016 data.	The traffic data collected by Arcadis in June 2017 was validated against 2016 data.
Principal Transport and Development Planner, Kent County Council, August 2017	Impact on existing bridleways to be considered	The impact on existing bridleways has been considered in the TA and ES, in relation to transport, this is within the “Impact on PRoW” section in Section 16.5.
Principal Transport and Development Planner, Kent County Council, August 2017	The impact and mitigation of the Lorry Holding Area and Operation Stack should be considered.	Lorry Park proposals were in development at the time of the assessment and have not been assessed in the TA, as noted by NH. Operation Stack has been replaced by Operation Brock in December 2020. The currently available information regarding the new proposals have been
Spatial (town) Planning Manager and Managing Consultant, Highways England, December 2017	Since the Lorry Park is not a committed development it should not be included in the assessment. However, the impact and mitigation of	

Consultee/Contact/Date	Summary of Consultee Issue	Outcome
	Operation Stack should be considered.	considered in the TA and this ES Section.
Kent County Council/ Folkestone & Hythe District Council August 2017	Reduction of speed limit to 30mph and realignment of A20 through the site should be considered.	A speed limit reduction from 40mph to 30mph is proposed for the A20 between the existing 30mph speed limit at Sellindge through the site to the junction with the A261 Hythe Road and including the proposed Newingreen link road (now known as Otterpool Avenue).
Canterbury City Council June 2018	Committed growth in the Canterbury District Local Plan 2017 will need to be taken account of in the assessment if developments are within a reasonable distance of the Otterpool Park site and are considered likely to have the potential to generate significant traffic effects.	Forecast growth in Canterbury has been considered in the assessment through discussions with Kent County Council.
Consultations since 2019	**This mainly includes addressing the following LPA and key consultee comments to the previously submitted Outline Planning Application Otterpool Park (Y19/2057/FH)**	
Temple (on behalf of F&HDC), Interim Report Review, April 2019	Page S16-5 should be provided.	Page S16-5 is provided in the ES.
Temple (on behalf of F&HDC), Interim Report Review, April 2019	Justification of the assessment of construction traffic effects should be provided.	Justification of the assessment of construction traffic effects is provided in Section 16.5.
Temple (on behalf of F&HDC), Interim Report Review, April 2019	A table should be provided showing the non-negligible effects.	A table summarising transport effects is provided in Section 16.6 of this ES.
Temple (on behalf of F&HDC), Interim Report Review, April 2019	The Applicant should clarify whether the omission of the impact of PRoWs is because no closure to PRoW will occur	No PRoW or bridleways would be removed as a result of the proposed Development. Impact on PRoW is described in Section 16.5 Para 16.5.33. The proposed Development is considered to have a moderate beneficial (Significant) effect on PRoW and bridleways in the local area. Effects on PRoW are also considered in Chapter 12: Landscape and Visual and Chapter 11: Human Health.
Temple (on behalf of F&HDC), Interim Report Review, April 2019	The assessment of the impact of Public Rights of Ways and bridleways in the local area seems somewhat	The sensitivity of receptors using PRoWs was re-assessed as

Consultee/Contact/Date	Summary of Consultee Issue	Outcome
	disconnected from the rest of the assessment, and they do not appear in the summary table or in other tables. The sensitivity of receptors on these routes is considered 'minor'. Assuming this means 'low' sensitivity in accordance with the methodology, this is not agreed. Given the usage of these for dog walking and fitness purposes, key contributors to well-being, the sensitivity of these should be medium or high. Given that the effect attributed is of major magnitude and therefore a moderate beneficial effect, the overall significance of effect is considered acceptable. No action is required.	Medium and sensitivity of effect updated accordingly
Principal Transport and Development Planner, Kent County Council Senior Planning Policy Specialist and Planning Case Officer, Folkestone & Hythe District Council (February 2020)	Discussion over each comment relating to transport made by Kent County Council on the 2019 application and agreement of actions to provide further information and clarifications before submitting an amended application.	The Transport Assessment (ES Appendix 16.4), Framework Travel Plan (ES Appendix 16.6) and Transport ES Chapter incorporate the agreed position on these points following the conclusion of further consultation.
Managing Consultant (Transportation), Highways England (March 2020)	Discussion over comments relating to the base VISSIM model and 2019 Transport Assessment made by Highways England.	The base VISSIM model has been used to create forecast models to provide the inputs on which the Transport Assessment and Transport ES Chapter are based.
Principal Transport and Development Planner, Kent County Council (March 2020)	Discussions regarding the collection of new traffic data. KCC confirmed that the data used for the 2019 application can be used for the amended application.	Existing data for the 2019 TA was used as a baseline for forecasting future year traffic flows as confirmed by KCC. These were: Folkestone & Hythe District Council survey data collected in the district in October 2016; Corinthian Mountfield Ltd survey data collected in Canterbury in March 2014 and March 2018; Arcadis survey data collected in June 2017; and TRADS database survey data collected in October 2016 and June 2017.

Consultee/Contact/Date	Summary of Consultee Issue	Outcome
Senior Planning Policy Specialist and Planning Case Officer, Folkestone & Hythe District Council Principal Transport and Development Planner, Rights of Way Improvement Plan Officer, Transport and Development Manage, and Programme Manager (Infrastructure, Economic Development), Kent County Council (March 2020)	Discussions regarding KCC and Folkestone & Hythe DC comments on 2019 Transport Assessment: Summary of points: Further discussions to agree highway mitigation schemes once assessment has been updated. Proposed infrastructure mitigation to be subject to a 'monitor and manage' approach to implementation; A stand-alone Transport Strategy document to be produced to accompany EIA and TA; Further discussions to be held with KCC PRoW team and the F&HDC walking & cycling team to discuss mitigation schemes; Further discussions required to agree scope of assessment of rail trips; A stand-alone Spatial Vision document to be produced to outline Strategic Design Principles; Strategic housing forecasts to be updated for traffic forecasting.	A Transport Strategy (ES Appendix 16.5) has been produced. "Monitor and manage" approach to be agreed and adopted and included in within the Section 106 Agreement. Rail assessment methodology was agreed with F&HDC and KCC Rail Project Manager in July 2020. Spatial Vision document has been produced by Tibbalds Housing forecasts updated for traffic forecasting, following consultation with KCC and F&HDC, these are set out in Table 15 of the TA.

Scoping

16.2.44 A previous EIA Scoping Opinion was undertaken for the 2019 application, where relevant, the comments from this process have been incorporated within Table 16-1. For this amended application, a request for a Scoping Opinion was submitted to F&HDC in June 2020. This outlined the work that had been undertaken to date and sets out the proposed approach to the EIA. A Scoping Opinion was issued by F&HDC in July 2020. Table 16-2 provides a summary of the scoping opinion comments relevant to this chapter, and how they have been addressed

16.2.45 Additionally, a Scoping Addendum was submitted on 5 October 2021 to outline key changes to the application. These comprised additional land in the north-west corner of the site for provision of the waste water treatment works (WWTW), additional land for highway junction works at Newingreen Junction, minor amendments to clarify land ownership boundaries and a change in the assessment approach in relation to the future uses of Westenhanger Castle. A response was received from F&HDC on this Scoping Addendum as set out in Chapter 2: EIA Approach and Methodology. All

relevant changes since the submission of the scoping report have been assessed in this ES.

Table 16-2 Summary of Scoping Opinion

Consultee	Summary Scoping Opinion	Location in ES
Temple (on behalf of F&HDC)	There is minimal information on public transport assessment methodology, only that changes in public transport facilities and use will be assessed. It is recommended that the assessment of effects on public transport should include the local bus network and not just be focussed on the effects on rail passengers travelling to and from Westenhanger station. Public transport assessment should consider existing capacity and whether this is sufficient for the proposed Development. There should be a cumulative impact assessment on public transport where data on the predicted impacts of committed schemes on public transport is available.	Impact on public transport user delay is assessed in Section 16.5 of this ES. The assessment of public transport is outlined in Section 5 of the TA (contained within ES Appendix 16.3).
Temple (on behalf of F&HDC)	A forecast for the scheme during construction is not proposed, only the baseline, year of completion, and year of completion with cumulative developments. Later in the scoping report, it is stated that construction traffic effects will not be assessed in isolation, however construction vehicle flows will be assessed alongside operational traffic flows where construction is happening alongside early occupation of the scheme. This is likely to be an appropriate approach, however the years of assessment of construction effects should be fully justified in terms of how they represent the reasonable worst case scenario. This should address not just maximum total traffic numbers but also the proportion of generated traffic comprising HGVs, and the capacity of the roads for additional traffic.	Construction traffic forecasts are presented in Section 16.5. The assessment in Section 16.5 demonstrates that the 2044 'with' development scenario (based on 8,500 dwellings) represents the highest overall traffic and HGV flows on the local highway network, despite the peak construction year occurring earlier in 2030. The assessment of the construction phase 2030 (peak year of construction) includes the operational traffic generated from the residential, hotel, commercial employment uses and schools that are predicted to have been built out at this time.
Temple (on behalf of F&HDC)	The primary measure for forecasting traffic growth, as agreed with KCC and Highways England, will be TEMPro growth projections. HGV traffic growth on the M20 will be calculated using national freight traffic growth data. However, specific developments for which traffic data are available, to be agreed with F&HDC and KCC, will be included in the assessment separately.	Specific developments for which traffic generation and routing assumptions were available are included in the assessment separately and summarised in Section 16.2.

Consultee	Summary Scoping Opinion	Location in ES
Temple (on behalf of F&HDC)	Equestrian users have not been included in the list of key receptors; assessment of the effects on equestrian users, particularly of local bridleways, should be considered.	Equestrian users are included in the list of receptors (Table 16-1), and the effect on them considered in Section 16.5.
Temple (on behalf of F&HDC)	Effects associated with temporary and permanent changes to the Public Rights of Way (PRoWs) network should be scoped in.	No PRoW or bridleways would be removed as a result of the proposed Development. The proposed Development have been designed to complement and, where possible, enhance existing PRoW and bridleways within the site and to link in with external routes adjoining the site. At this stage it is not known if temporary PRoW closures/diversions would be needed as well as the length and nature of associated PRoW diversions during construction. All required PRoW closures and appropriate diversions would be agreed with KCC and F&HDC ensuring that the potential effect would not be significant.
Temple (on behalf of F&HDC)	The ES should be clear as to what mitigation has been assumed as embedded and what is in addition and will need to be secured by planning conditions e.g. construction logistics plans.	The ES has been updated to make it clear as to what mitigation has been assumed as embedded and what is in addition and will need to be secured by planning conditions in Section 16.4 Design and Mitigation.
Highways England, Spatial Planning Team, Spatial Town Planning Manager	Highways England will require that it should be consulted with regards any proposed site- specific and/or site-wide Construction Management Plans and Delivery and Servicing Plans, prior to their adoption. They should contain full details of their proposals, monitoring and management, including references to penalties or actions to be taken in the event of non- compliance.	A Construction Traffic Management Plan (CTMP) and Delivery and Servicing Plans have not been prepared at this stage. These would be secured through Condition at Reserved Matters Application Stage and agreed with the LPA. Highways England (now NH) will be consulted prior to their adoption.
Highways England, Spatial Planning Team, Spatial Town Planning Manager	The impacts from the development have not been assessed on the Strategic Road Network (SRN) i.e. Driver delay; Accidents and safety; Hazardous loads; and Dust and Dirt. These matters will need to be addressed via the Transport Assessment and reflected in the ES	Due to the high volume of traffic, the magnitude of impact on the M20 mainline is judged to be negligible. Given the lack of sensitive receptors, it is not considered that the effect on the M20 would be sensitive from an environment perspective. The impact on the SRN has there been scoped out of the assessment. The proposed Development is not anticipated to generate any hazardous/ abnormal loads. As such, these are scoped out of the assessment. The effects on dust and dirt are considered in Section 6: Air Quality and control

Consultee	Summary Scoping Opinion	Location in ES
		measures identified are included in the Code of Construction Practice (CoCP).
Temple (on behalf of F&HDC)	As this is an outline application, there will be flexibility in the parameters presented. The Scoping Report commits to assessing the worst case scenario in line with 'Rochdale Envelope' principles. The parameters for assessment of the outline scheme elements should be clearly set out and should consider flexibility in size, massing, unit mix, tenure mix, provision of community facilities such as healthcare and education, and flexibility in commercial/retail use classes.	The parameters for assessment are set out in Section 4.2 of this ES.
Temple (on behalf of F&HDC)	The 2020 Scoping Report notes that there is a relatively long construction timeframe (25 years) and phasing is not known. A reasonable worst case scenario approach should be taken to construction phasing, taking into account early phase occupation as well as the order in which retail and community infrastructure is delivered, which will have implications particularly for noise, air quality, traffic, socioeconomics, health, and landscape and visual impact. We recommend a section or broader commentary explaining how reasonable worst case assessments have been derived and whether any sensitivity testing has been applied to allow for flexibility within any future uses. Specific comments relating to phasing are provided in the topic sections below.	Construction traffic forecasts have been derived using the latest available phasing plan presented in Section 16.5. The assessment in Section 16.5 demonstrates that the 2044 'with' development scenario (based on 8,500 dwellings) represents the highest overall traffic and HGV flows on the local highway network, despite the peak construction year occurring earlier in 2030. As such, operational traffic assessment for year 2044 presented in Section 16.5 represents a reasonable worst-case assessment of the environment (traffic and transport) impacts associated with the proposed Development.
Temple (on behalf of F&HDC)	Baseline data used for the previous 2019 Application should be 'in date' and updated, if required.	Baseline data used for the previous 2019 Application has been updated for this ES.

16.2.46 Temple, on behalf of F&HDC, undertook a review of the Draft ES in December 2021. The topic specific comments and the responses are provided in Table 16-3.

Table 16-3 Responses to draft ES comments

Consultee	Comment	Response
Temple on behalf of F&HDC, 1 December 2021 Draft ES	Paragraph 16.4.30 refers to Otterpool Avenue being "delivered to serve the Phase 1 development, with the existing A20 tying into the link via a new junction at a point north west of Newingreen". This appears to be a reference to the phasing strategy, which is no longer in place.	RE Para 16.4.30 – removed reference to Phase 1, this was in error. RE Para 16.64 and 16.6.5 further justification has been provided in the cumulative section. RE 16.6.15 the OPFM refers to the Otterpool Park Framework Masterplan rather than the Permitted Waste Facility.

Consultee	Comment	Response
	In 16.6.4 and 16.6.5 the assessment assumes that the existing planning permission for the Permitted Waste Facility is not realised and that instead the Permitted Waste Facility site is replaced with 800 residential units and a primary school, which would be greater than those associated with the operation of the waste site, and would be "no worse than the existing assessment undertaken". The Applicant should justify whether this is considered a fair or reasonable assessment. Furthermore, 16.6.15 states that the "additional development for the OPFM would result in slightly exacerbated effects described for the identified links in the above sections", and it therefore appears contradictory.	This section is not considered to be contradictory.

The Study Area

16.2.47 The extent of the assessment study area for each mode has been defined by the routes people will travel using each mode between the site and off-site locations across the UK and was agreed with Kent County Council, Folkestone & Hythe District Council and Highways England (now NH).

16.2.48 The study area for walking and cycle trips includes all existing and proposed pedestrian routes within the application site boundary and destinations within walking distance of the site; Sellindge and Stanford, east towards Hythe, west along Aldington Road and south along Lympne Hill (Figure 16.1 in ES Appendix 16.1). The assessment of these trips considers the scale of increase in trips and the current and proposed condition of the routes.

16.2.49 The effect of the development on public transport, bus and rail, is considered on the routes and services that provide access to the on and off-site locations between which residents of and visitors to the site are expected to travel. For bus services, this includes services that route to the site and other connecting services. The scale of impact on existing services that are expected to experience an increase in patronage is considered. It is acknowledged that further investigation of the effects of impacts on these services and mitigation required would be undertaken by KCC and discussed with the County and local service providers as the development is delivered.

16.2.50 ES Appendix 16.1 presents the extent of the highway capacity study area agreed with KCC, F&HDC and Highways England (now NH). Existing and committed junctions are indicated by solid black circles while junctions proposed as part of the

proposed Development are coloured yellow. Each of these junctions has been assessed using the appropriate LinSig or Junctions 9 modelling software.

Methodology for Establishing Baseline Conditions

Overview of Assessment Years and Scenarios

16.2.51 The following forecast years have been assessed:

- **2018 Base Year:** pre-construction 'without development' baseline, selected to represent the original year of planning application submission, as agreed with F&HDC, KCC and HE.
- **2030:** Peak year of construction, the reasoning for the selection of 2030 as peak construction year is provided in Chapter 4: The Site and the Proposed Development.
- **2044 Main Assessment:** the forecast year of full build-out for the 8,500 homes and associated land uses. This represents the main assessment for the Outline Planning Application. Chapter 4: The Site and the Proposed Development identifies that the build out of 8,500 homes will be completed in 2042. However, 2044 has been used in this assessment because the 2044 assessment year represents a worst-case scenario in terms of background growth in traffic, this assessment year for 8,500 homes has also been used in the TA.

16.2.52 The future year assessment includes two scenarios:

- Do-Minimum (DM), which includes:
  - committed highway improvement schemes described in Chapter 6 of the TA; and
  - forecast baseline traffic flows.
- Do-Something (DS), which includes:
  - committed highway improvement schemes;
  - forecast baseline traffic flows; and
  - highway schemes proposed for the Otterpool Park Development as described in the TA ES Appendix 16.4;
  - Otterpool Park development traffic flows.

16.2.53 For each assessment year the TA focuses on a weekday morning peak hour (0800 to 0900) and a weekday evening peak hour (1700 to 1800). These time periods align with the local highway network peak periods as determined from analysis of traffic survey data, as described in Chapter 4 of the accompanying TA. The ES, in accordance with guidance, considers effects over 18-hour days (06:00 – 24:00).

16.2.54 Potential impacts associated with construction traffic were also considered. Construction traffic flows for year 2030 (the year with worst-case construction traffic) was compared to the 2044 forecast year. The assessment indicated that from a transport perspective (number of vehicles/congestion) 2044 would be worst case scenario compared to 2030.

Baseline 2018

Sustainable Modes

16.2.55 The assessment of baseline conditions for sustainable modes has been informed by site observations and audits, client liaison meetings and desktop-based analysis.

16.2.56 The assessment considers the condition of the existing walking and cycling environment, including access to local amenities, access to public transport services and service provision.

Highway Network

16.2.57 The assessment of existing highway conditions has also been informed by site observations and audits, survey data collection, client liaison meetings, as well as desktop-based analysis.

16.2.58 Traffic flow data from the following sources has been used in this assessment:

- F&HDC survey data collected in the district in October 2016;
- Corinthian Mountfield Ltd survey data collected in Canterbury in March 2014 and March 2018;
- Arcadis survey data collected in June 2017; and
- TRADS database survey data collected in October 2016 and June 2017.

16.2.59 The data collected in Canterbury in March 2014 was validated against data collected in March 2018. The comparison indicated that there has been little change in traffic flows along Old Dover Road and Nackington Road between 2014 and 2018, with results indicating a net decrease in traffic demand of 3.4% and 5.7% in the AM and PM peak hours respectively. It was agreed with KCC that the 2014 traffic data would be used to represent the 2018 baseline traffic flow for the two junctions in Canterbury included in the assessment. The Canterbury Operational Modelling Validation Report dated September 2018 is contained in the TA.

16.2.60 The data collected in June 2017 was validated against the October 2016 data collected by F&HDC. The AM and PM peak network peak hours were observed to be 08:00 to 09:00 and 17:00 to 18:00. The 2017 data was growthed to 2018 to provide the baseline for assessment using TEMPro growth factors as described later in this Section.

16.2.61 Given the ongoing COVID-19 situation there have not been opportunities to undertake any more recent traffic surveys. This was agreed with KCC.

16.2.62 Baseline highway capacity of the junctions within the study area requested for inclusion in the assessment by KCC, F&HDC and HE was undertaken using the latest available software versions, Junctions 9 for the non-signalised junctions and LinSig 3.2.39.0 for signalised junctions. The validation of the baseline models was agreed with KCC, F&HDC and HE as part of the 2019 TA.

16.2.63 Personal Injury Collision (PIC) data has been obtained from HE collision database for the period of five-years up until the end of December 2019, in order to identify any highway safety issues along study routes and detailed further in Section 16.3 below.

Forecasting the Future Baseline Case

Future Baseline Highway Network

16.2.64 Committed transport infrastructure/improvement schemes have been taken into account in the 'with' and 'without development' road network for the assessment. The schemes to be taken into account have been agreed with KCC and are described in full in Chapter 6 of the TA. The TA is contained within ES Appendix 16.4. These schemes are:

- New signalised site access junction on A20 Hythe Road for Willesborough Lees development;
- Traffic calming proposals and new site access points through Sellindge Village proposed for the Sellindge residential development;
- Adjustments to the flare length on the A261 Hythe Road at the junction with A20 Ashford Road required for the Land East of Ashford Road development;
- A2034 Cheriton Road/ A20 Cherry Garden Avenue junction and link proposals for the Folkestone Seafront masterplan; and
- Nackington Road/ Old Dover Road and Old Dover Road/ St Lawrence Road/ The Drive proposals for the Mountfield Park development.

Future Baseline Traffic Flows

16.2.65 Since detailed information of the scale, type and location of new development within the study area between 2018 and 2044 is not available at this stage, it was agreed during scoping with KCC and HE that the primary method for forecasting future traffic growth should be the application of growth factors derived from TEMPro, a program that provides projections of the total number of trips in an area over time based on the forecast number of households and jobs for use in local and regional transport models.

16.2.66 In addition to the use of TEMPro, the following specific developments for which traffic generation and routing assumptions were available are included in the assessment separately:

- Mountfield Park, South Canterbury;
- Former Rotunda Amusement Park, Marine Parade, Folkestone;
- Shorncliffe Garrison, Folkestone;
- Street Record, Hurricane Way, Hawkinge;
- Philbeach House, Tanners Hill, Hythe;
- Land Rear Rhodes House, Sellindge;
- Remainder of land at Aerodrome, Hawkinge;
- Nickolls Quarry, Dymchurch Road, Hythe;
- Land adjacent The Surgery, Sellindge;
- Land at Hurricane Way, Hawkinge;
- Land at Cheesemans Green, Kingsnorth;
- Land at Chilmington Green, Ashford Road;
- Former Rowcroft and Templer Barracks, Ashford;

- Waterbrook;
- Willesborough Lees;
- Eureka Park;
- Court Lodge Farm;
- Former Newton Works;
- Former Powergen Site, Ashford;
- Conningbrook, Willesborough;
- Plot 1, Hurricane Way, Hawkinge; and
- Land north-east of Willesborough Road, Kennington.

16.2.67 The Department for Transports recommends the method for determining the growth in HGV traffic is to use the Road Traffic Forecasts 2018 (RTF18).

16.2.68 A full description of the method used to forecast baseline traffic growth is provided in Chapter 6 of the TA. As described in the TA, the 'without development' future baseline does not include all forecast growth from housing and employment in Folkestone & Hythe. It is assumed that, if the Otterpool Park development does not go ahead, the District would not meet its housing and employment forecasts.

Forecasting Development Trips

16.2.69 Discussions relating to the method of calculating trip generation, mode split and trip distribution were held with KCC, F&HDC and HE to address comments received relating to the 2019 TA submission. The assessment applies worst-case trip rate assumptions as set out within the updated TA (ES Appendix 16.4) and Transport Strategy (ES Appendix 16.5). The details of the agreed methods are set out in the TA in Chapter 7 (Trip Generation), Chapter 8 (Mode Split) and Chapter 9 (Trip Distribution). Appendix O and Appendix P contained within the TA outline comments received relating to trip generation and mode split methodology respectively and how they were addressed.

Methodology for Assessing Impacts

16.2.70 The environmental effects of road traffic resulting from the Otterpool Park development have been assessed upon the local highway network in accordance with the IEMA guidelines. The assessment has been carried out for all routes within the identified study area.

16.2.71 Within the IEMA guidance, two broad rules are suggested that can be used as a screening process to define the scale and extent of the assessment:

- Rule 1: include highway links where traffic flows would increase by more than 30% (or the number of HGVs would increase by more than 30%).
- Rule 2: include any other specifically sensitive areas where traffic flows have increased by 10% or more.

16.2.72 Determination for the sensitivity of areas is defined below.

16.2.73 The IEMA guidance is based on knowledge and experience of the environmental effects of traffic. The threshold of 30% has been set based on experience that imperceptible changes in the environmental effects of traffic are generally experienced when there is less than a 30% increase in traffic. Additionally, projected

changes in total traffic flow of less than 10% create no discernible environmental effect, hence the second threshold as set out in Rule 2.

16.2.74 Assessments have been undertaken across a typical working day with the effects compared the peak morning and evening hours. On any link where increases in traffic flow are in excess of the above IEMA impact threshold rules, a detailed environmental assessment against the assessment criteria has been undertaken on this link.

16.2.75 In this instance it is considered that the resultant extent of the proposed Development and proximity to sensitive residential areas and communities, the 10% threshold should apply on all assessed links.

16.2.76 Consideration has also been given to the temporal scope of identified impacts. Impacts which would only occur over a short duration or infrequently have been reviewed using professional judgement to determine whether it would be appropriate to reduce the impact magnitudes suggested by the criteria identified.

Magnitude of Impact Criteria

16.2.77 The environmental effects as set out in the IEMA Guidelines and using professional judgement cover the following areas of concern:

- Severance;
- Pedestrian and Cyclist amenity;
- Pedestrian and Cycle delay;
- Fear and intimidation;
- Driver delay;
- Accidents and safety;
- Hazardous loads; and
- Air Pollution including Dust and Dirt.

Severance

16.2.78 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. Factors such as road width, traffic flow and composition, traffic speeds, number of crossing facilities and number of movements need to be considered when determining if severance is likely to become an issue. In general terms, according to the IEMA Guidelines, a 30% change in traffic flow is likely to produce a ‘slight’ change in severance, with ‘moderate’ and ‘substantial’ changes occurring at 60% and 90% respectively.

Pedestrian and Cyclist Amenity

16.2.79 The term ‘amenity’ is broadly defined as the relative pleasantness of a journey. It is considered to be affected by traffic flow, speed and composition, as well as footway width, lighting and quality and the separation/ protection from traffic. It encompasses the overall relationship between pedestrians/cyclists and traffic, including fear and intimidation which is the most emotive and difficult effect to quantify and assess.

16.2.80 The IEMA Guidelines reference the *Manual of Environmental Appraisal* (Department of Transport, 1983) which suggests that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or its

HGV component) is halved or doubled. Cycle amenity thresholds are assumed to be the same.

Pedestrian, Cyclist and Equestrian Delay

16.2.81 The delay incurred by pedestrians, cyclists and equestrians is generally a direct consequence of their ability to cross roads, which is influenced by volume as well as the general level of activity and visibility. Thus, the provision of crossing facilities, the geometric characteristics of the road, and the traffic volume, composition and speed are all factors that can affect pedestrian delay and have been considered when assessing this effect.

16.2.82 The IEMA Guidelines advise that in assessing levels of, and changes in, pedestrian delay, assessors do not attempt to use quantitative thresholds given the range of local factors and conditions which can influence pedestrian delay. Instead, the IEMA Guidelines recommend the use of professional judgement to determine whether pedestrian delay is a significant effect.

16.2.83 Studies have shown that, for a link with no crossing facilities and a two-way flow of about 1,400 vehicles per hour, a lower delay threshold of 10 seconds and upper threshold of 40 seconds could apply depending on other road and traffic flow characteristics.

Pedestrian and Cyclist Fear and Intimidation

16.2.84 There are no commonly agreed thresholds for estimating levels of danger or fear and intimidation. However, the IEMA Guidelines suggest the adoption of values from *Pedestrian Delay, Annoyance and Risk - Imperial College* (Crompton,1981) when considering any effect on pedestrian fear and intimidation. These thresholds are replicated in Table 16-4 and can be used as a first approximation of the likelihood of pedestrian fear and intimidation, although other factors need to be considered such as proximity to traffic and footpath widths.

Table 16-4 Assessing Magnitude of Impacts of fear and Intimidation

Magnitude of Impact	Average Traffic Flow over 18 Hour Day (Vehicle/hour)	Total 18 Hour Heavy Goods Vehicle Flow	Average Speed over 18 Hour Day (Mile/hour)
Major	1800+	3000+	20+
Moderate	1200 - 1800	2000 – 3000	15 – 20
Minor	600-1200	1000 - 2000	10 - 15

Source: IEMA Guidance

Driver and Public Transport User Delay

16.2.85 Delay to drivers and public transport users generally occurs at junctions where vehicle manoeuvres are undertaken, with vehicles having to give or receive priority depending upon the junction arrangement. Driver and public transport users delay could also occur on narrow roads if flows are increased (particularly those where it is difficult for vehicles to pass).

16.2.86 The proposed Development is anticipated to have an impact on junctions around the application site and operational assessments have been undertaken within the TA to ascertain the likely change in operation as a result of proposed Development

generated traffic. Driver and public transport users delay is determined through use of junction delay information.

16.2.87 For the purpose of this assessment, for junction along the assessed links, Practical Reserve Capacity (PRC)/Degree of saturation over 1.00 (100%) is judged to result in Major magnitude of impact, PRC/Degree of saturation between 0.9 (90) and 1.00 (100%) is judged to result in Moderated magnitude of impact, PRC/Degree of saturation between 0.85 (85%) and 0.9 (90) is judged to result in Minor and PRC/Degree of saturation less that 0.85 (85%) is judged to result in Negligible magnitude of impact.

Accidents and Safety

16.2.88 Due to the numerous local causation factors involved in personal injury collisions, the IEMA guidelines do not recommend the use of thresholds to determine significance. Instead, professional judgement should be applied to the assessment. If a particular accident cluster is identified, then this may also justify further analysis and the implementation of measures to mitigate effects.

Hazardous Loads

16.2.89 Paragraph 2.4 of the IEMA Guidelines acknowledges that most developments would not result in an increase in the number of movements of hazardous or dangerous loads.

16.2.90 The proposed Development is not anticipated to generate any hazardous / abnormal loads. These loads have therefore not been considered further within this assessment.

Air Pollution including Dust and Dirt

16.2.91 The effects on air quality, dust and dirt are considered in Section 6: Air Quality.

Construction Effects

16.2.92 Given the outline nature of the outline planning application, there is limited information available on the proposed construction works. The transport and access effects of the construction of the proposed Development would be dependent on various factors including, the final programme and phasing of construction works, import/export of materials and construction processes adopted.

16.2.93 Based on the available information (the accommodation schedule, ES Appendix 4.4) the number of construction vehicle HGVs has been calculated by considering the type and amount of construction and demolition material and waste arisings for each assessment year. The total yearly material and waste arising was calculated by volume and the corresponding total yearly number of HGVs required to transport the load was estimated.

16.2.94 A vehicular flow comparison of the worst-case construction traffic year (2030) and worst-case operational traffic year (2044) has been undertaken to show that 2044 ‘with’ development scenario (based on 8,500 dwellings) represents the highest overall traffic and HGV flows on the local highway network, and the worst-case scenario in terms of the transport and traffic related impact.

16.2.95 Potential effects associated with construction traffic have been assessed and suitable management and control measures have been identified which it is proposed should

be incorporated into an Outline CoCP (ES Appendix 4.17) and CTMP to manage the construction works.

16.2.96 The magnitude of impact for construction are based on the DMRB's LA 104 Environmental assessment and monitoring document, Table 3.4N Magnitude of impact and typical descriptions, replicated as Table 16-5.

Table 16-5 Assessing Magnitude of Impacts of Construction Effects

Magnitude of Impact		Typical Discription
Major	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Moderate	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	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.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.
No Change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Defining the Sensitivity of Resource

16.2.97 Resources are the assets and facilities which may be affected by the proposed Development such as the highway network. Receptors are the users or beneficiaries of those resources such as pedestrians and drivers who travel within the Study Area. This will include the areas along the highway routes that could be sensitive to changes in traffic volumes. Sensitive areas are defined by the presence of sensitive receptors, such as residential properties, community centres, schools, equestrian facilities or accident black spots.

16.2.98 The impacts of traffic may be on the following receptors (as set out in the 'Guidelines for the Environmental Assessment of Road Traffic') as:

- People at home;
- People at work;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations such as hospitals, churches, schools, and historical buildings;
- People walking;
- People cycling;
- Equestrians;
- Open spaces, recreational areas, shopping areas;
- Sites of ecological/nature conservation value; and
- Sites of tourist/visitor attraction.

16.2.99 The receptor appraisal sensitivity criteria based on IEMA Guidance and professional judgement is shown in Table 16-6.

Table 16-6 Receptor Sensitivity

Receptor Sensitivity	Receptor Type
High	Receptors of greatest sensitivity to traffic flow: schools, colleges, playgrounds, accident clusters, retirement homes, urban/residential roads without footways that are used by pedestrians.
Medium	Traffic flow sensitive receptors: doctors' surgeries, hospitals, shopping areas with roadside frontage, recreation facilities, cycle routes and roads used by pedestrians with narrow footways.
Low	Receptors with some sensitivity to traffic flow: places of worship, public open space, tourist attractions and roads with adequate footway provision.

16.2.100 Table 16-7 summarises the receptors and their corresponding sensitivity on the links that form part of the assessment in Section 16.5. Links are shown on Figure 16.6 in ES Appendix 16.1.

Table 16-7 Receptors and Sensitivity on Assessment Links

Link	Receptor	Receptor Sensitivity
B2067 Otterpool Lane	Pedestrian routing on proposed footpaths	Medium
	Private vehicle users	Medium
	Bus passengers	Medium
	Cyclists routing on proposed segregated cycleways	Low
	Residents and visitors of existing/Proposed residential properties segregated from road by hedges, green buffers, foot/cycleways or driveways (including Otterpool Manor)	Low
	Users of Green open spaces	Low
	Users of Lympne Industrial Park	Low
A20 Ashford Road b/w Otterpool Lane & Newingreen	Private vehicle users	Medium
	Bus passengers	Medium
	Pedestrians routing on proposed segregated footpaths	Low
	Cyclists routing on proposed segregated cycleways	Low
	Residents and visitors of existing /Proposed residential properties segregated from road by hedges, green buffers foot/cycleways or driveways	Low
	Users of green open spaces	Low
Proposed Otterpool Avenue	Primary school users	High
	Pedestrians routing on proposed footpaths	Medium
	Private vehicle users	Medium
	Buspassengers	Medium
	Shopping areas	Medium
	Health centre visitors	Medium
	Cyclists routing on proposed segregated cycleways	Low
	Residents and visitors of existing /Proposed residential properties segregated from road by hedges, green buffers foot/cycleways or driveways	Low
A20 Ashford Road b/w Newingreen & M20	Private vehicle users	Medium
	Bus passengers	Medium
	Pedestrians routing on proposed segregated footpaths	Low
	Cyclists routing on proposed segregated cycleways	Low
	Residents and visitors of existing /Proposed residential properties segregated from road by hedges, green buffers foot/cycleways or driveways	Low

Link	Receptor	Receptor Sensitivity
	Employees and visitors of proposed business properties segregated from road by hedges, green buffers foot/cycleways or driveways	Low
	Users of green open spaces	Low
A20 Ashford Road at Barrow Hill	Pedestrians routing on existing footpaths	Medium
	Cyclists routing on highway	Medium
	Private vehicle users	Medium
	Bus passengers	Medium
	Existing residential properties	Medium
	Equestrians using bridleways that connect to the highway	Medium
	Users of green open spaces	Low
Aldington Road b/w Otterpool Lane & Stone Street	Pedestrians routing on existing footpaths	Medium
	Cyclists routing on highway	Medium
	Private vehicle users	Medium
	Bus passengers	Medium
	Residents and visitors of existing residential properties directly off highway	Medium
	Equestrians using bridleways that connect to the highway	Medium
	Residents and visitors of existing residential properties segregated from road by hedges, green buffers footways or driveways	Low
Stone Street	Primary school users	High
	Pedestrians routing on existing footpaths	Medium
	Cyclists routing on highway	Medium
	Private vehicle users	Medium
	Bus passengers	Medium
	Residents and visitors of existing residential properties segregated from road by hedges, green buffers footways or driveways	Low
Lympne Hill	Cyclists routing on highway	Medium
	Private vehicle users	Medium
	Residents and visitors of existing residential properties segregated from road by hedges, green buffers footways or driveways	Low
Cheriton Road / Cheriton High Street	Grammar school users	High
	Pedestrians routing on existing footpaths	Medium
	Cyclists routing on highway	Medium
	Private vehicle users, including on-street parking	Medium
	Bus passengers	Medium

Link	Receptor	Receptor Sensitivity
	Visitors of A1/A2/A3/A4 Retail properties	Medium
	Residents and visitors of existing of residential properties, including above retail properties	Medium
	Places of worship visitors	Medium
	Graveyard visitors	Low
A261 Hythe Road	Pedestrians routing on existing footpaths	Medium
	Cyclists routing on highway	Medium
	Private vehicle users	Medium
	Bus passengers	Medium
	Equestrians using bridleways that connect to the highway	Medium
	Residents and visitors of existing residential properties segregated from road by hedges, green buffers footways or driveways	Low
	Users of green open spaces	Low
A20 Hythe Road west of Swan Lane	Primary school users	High
	Pedestrians routing on existing narrow footpaths west of Sellindge	High
	Pedestrians routing on existing footpaths at Sellindge	Medium
	Cyclists routing on highway through Sellindge Village	Medium
	Cyclists routing on highway west of Sellindge Village	Medium
	Private vehicle users, including on-street parking	Medium
	Bus passengers	Medium
	Visitors of A1/A2/A3/A4 Retail properties	Medium
	Sellindge Village Hall users	Medium
	Residents and visitors of existing residential properties segregated from road by hedges, green buffers footways or driveways	Low
	Users of green open spaces	Low

Determining the Significance of Effects

16.2.101 In order to determine the significance of effects, the following parameters have been considered:

- The sensitivity of each receptor on routes; and
- Magnitude of impact taking into consideration proposed mitigation measures as identified in Section 16.4.

16.2.102 The significance of transport effects has then been determined by considering the identified impact magnitudes in terms of traffic increase alongside the receptors affected by those impacts (taking account of their sensitivity) to determine the significance of effects. Moderate and major adverse/beneficial effects are assumed to represent significant effects. As there are no published standard criteria, Table

16-8 provides a matrix of magnitude of impact against sensitivity of receptors to identify where significant effects are anticipated to occur.

Table 16-8 Significance of Effect

Magnitude of Impact	Sensitivity of receptor		
	High	Medium	Low
Major	Major	Major	Moderate
Moderate	Moderate	Moderate	Minor
Minor	Moderate	Minor	Negligible
Negligible	Minor	Negligible	Negligible

Sensitivity Test

16.2.103 As mentioned in the ES Chapter 2, section 2.5. Assessment Scenarios, there is a necessity to undertake the Transport Assessment using the Illustrative Masterplan (ES Appendix 4.5) and Illustrative Accommodation Schedule (ES Appendix 4.4) to identify appropriate origins and destinations of trips. The quantum of development set out in the Illustrative Accommodation Schedule (ES Appendix 4.4), however, shows a lower quantum of development compared to the quantum for which approval is requested (which is as set out in the Development Specification). This sensitivity test has been undertaken to derive and assess the equivalent number of vehicle trips generated by the quantum set out in the Development Specification.

16.2.104 Furthermore, the sensitivity test accounts for the inclusion of an additional link road in the proposed town centre. This connects the high street by Westenhanger rail station to the road through the business park. The strategic transport model used for the main assessment did not include for this route to be connected for through traffic as it was not proposed at the time. See Chapter 2 for further details.

16.2.105 For this sensitivity test, the vehicle trips generated by the Development Specification quantum, on a pro-rata basis for each land use based on the Illustrative Masterplan (ES Appendix 4.5), has been determined. The strategic traffic model has then been run using these inputs, including the additional link road, to derive the resulting traffic generated at each junction assessed.

16.2.106 In order to confirm that the transport and transport related assessments are valid for the full quantum of development, for which approval is requested, sensitivity testing has been undertaken, for Scenario 1: Quantum for approval 2044 (proposed Development - 8,500 residential units) referred to in Chapter 2.

16.2.107 The resulting peak hour vehicle trips for the 2044 (8,500 homes) Scenario 1 at each junction have been compared to the 2044 (8,500 homes) main assessment. The resulting vehicle changes and corresponding percentage changes can be found in Chapter 10.6 of the TA (Appendix 16.4). The highest percentage increase in Passenger Car Unit (PCU) occurs in the AM peak hour at J33 (Otterpool Avenue (west) junction with A20) and J39 Otterpool Avenue junction with the High Street at 16% and 15% respectively. Aside from J34 A20 Ashford Road junction with the new High Street south of Otterpool Avenue with a percentage increase of 7%, all other junctions have a 4% percentage increase or less.

16.2.108 Based on the overall changes in vehicles and corresponding percentage change in traffic at each of the junctions assessed, it has been determined that there are no

material changes to the conclusions of the 2044 8.5k homes scenario when considering the values from the sensitivity test.

16.2.109 The area of influence, due to the additional link road, where traffic would be impacted the most, in terms of traffic movement for the surrounding highway network, are considered to be the following junctions, and the corresponding locations can be found in Figure 16-1:

- J11: A20 Ashford Road / Stone Street / Hythe Road (Newingreen Junction)
- J33: A20 Ashford Road Link Road west (Otterpool Avenue - west)
- J34: A20 Ashford Road access to P1a and P2A (New High Street south of Otterpool Avenue)
- J35: A20 Ashford Road Link Road east (Otterpool Avenue - east)
- J36: A20 Ashford Road Link Road / High Street (access road to business park)
- J39: Internal Link Road (Otterpool Avenue junction with High Street)

16.2.110 These junctions are located closest to the new link road. The capacity assessments for each of these junctions were re-run, with the sensitivity test vehicular flows, to provide a comprehensive assessment on this area of influence. The result of this analysis is reported in Chapter 10.6 of the TA (Appendix 16.4).

16.2.111 The results indicate that there are no significant changes between the Sensitivity Test and the main 2044 8.5k scenario and does not result in any material change to the current outcomes concluded for the main assessment.

16.2.112 Therefore, the sensitivity test concludes that the main assessment is appropriate and robust.

Limitations and Assumptions

16.2.113 The following assumptions and limitations are relevant to the assessment:

- The transport assessment process has been progressed over the course of the last two years, accordingly some data including the personal injury collision data (PIC) was collected up to December 2019. This age of data is not considered to be significant and the data collected provides an adequate basis for assessment, in addition any more recent data would be impacted by Covid-19, therefore this data is considered to provide an appropriate basis for the assessment;
- Detailed PIC data was collected for an identified Collision Study Area, outlined within the Collision Analysis Technical Note in ES Appendix 16.3. An analysis of accidents outside of this area was required in the case of the Cheriton Road as well as Nackington Road and Old Dover Road located in Canterbury. For this analysis, details of the cause of the accidents was not available. This is not considered to be significant and the data collected provides an adequate basis for the purpose for which it was intended;
- The future ‘with’ and ‘without’ development highway impact assessment includes committed network changes, some of which have yet to be implemented. Since these are committed schemes, it has been assumed that other proposed network changes have also been implemented. The impact assessment has been based on forecasts of how the future network will operate following implementation;
- The TA focuses on assessing effects during peak highway network hours (08:00 – 09:00 and 17:00 – 18:00), while the ES, in accordance with guidance, considers effects over 18-hour days (06:00 – 24:00). Peak hour traffic data from the TA has

been used to calculate 18-hour flows using a factor based on automatic traffic counters (ATCs) on roads within the study area;

- Since baseline traffic data was collected, traffic calming measures have been implemented on West Hythe Road. KCC suggests that traffic flows along West Hythe Road and Lympne Hill are expected to decrease as a result of less 'rat-running' traffic using this route. Traffic flows on Lympne Hill as well as Aldington Road and Stone Street on approach to Lympne Hill, are therefore expected to be lower than forecast. This is considered to be acceptable as this now represents a worst-case assessment in this regard;
- It has been assumed that construction HGV trips would occur outside of highway network peak hours, and that service and delivery trips made within peak hours can be minimised. These would be achieved through site-specific and/or site-wide Construction Management Plans and Delivery and Servicing Plans. The assessment assumes that these plans are in place;
- Growth rates derived from TEMPro for the 'with development' scenario assume that the housing and employment forecasts provided by the local authorities would be met in full. Growth rates derived from TEMPro for the 'without development' scenario assume that F&HDC would not meet their housing and employment forecasts if the Otterpool Park development did not go ahead as described in the Application. The 'with development' scenario therefore tests significantly greater household and job growth than the 'without development' scenario. This assumption is understood to be consistent with the Folkestone & Hythe District Council Core Strategy. This means that the comparison between the 'with' and 'without development' traffic flows and the results of 'with' and 'without development' capacity testing as presented in the TA show an absolute worst case in terms of any increases in traffic flow, highway network delay and queuing in the 'with development' scenario.
- Following consultation with HE (now NH), it was not possible to utilise the South East Regional Traffic Model to determine the likely re-distribution of forecast trips that would result from future congestion on the network. The use of VISUM (a industry accepted strategic modelling package) within the highway capacity modelling study area has allowed the anticipated re-distribution of traffic to be estimated on the main highway links within the study area but has not taken into account possible re-distribution of traffic away from main links. The assessment therefore represents a worst-case redistribution of traffic on the links included in the study area on which the assessed junctions are located;
- Increases in operational bus trips resulting from potential changes to local bus services proposed to be delivered with the proposed Development have not been included in future traffic flows, as such trips will not have a significant effect on the findings presented in this Section;
- Trip generation by mode has been based primarily on 2011 census data, which is heavily influenced by the fact that the area in the vicinity of Otterpool Park currently offers little alternative to travel by modes other than walk for short distances (travel within the site) or car for trips external to the site. The result is that travel mode shares for sustainable modes are currently low, especially for external trips. The proposed Development and the associated Transport Strategy (ES Appendix 16.5) will increase the number of cycle and bus trips made over short distances and the number of bus and rail trips made over longer distances. The assessment therefore represents a worst-case in terms of car driver mode share;

- At the time of submission of this application, the base VISSIM model (industry accepted micro-simulation model to assess local network impacts) has not been agreed with KCC and HE. The results of the VISSIM will be reported separate from this ES and will inform ongoing discussions regarding highway impact mitigation. The results of the VISSIM are not expected to change the conclusions of this Section or the TA;
- At the time of undertaking the trip generation and impact assessments, two Secondary schools were proposed which would be in use in the 2044 assessment year. This was subsequently reduced to one school committed, and one "reserved". Therefore a worst-case assessment has been undertaken
- Given the ongoing COVID-19 situation there have not been opportunity to undertake any more recent traffic surveys. It was agreed with KCC that the traffic data described in the TA (ES Appendix 16.4) could be used as the baseline for this assessment. It is acknowledged that giving the ongoing COVID-19 situation there is potential uncertainty on effects it will have on future travel patterns and baseline.

16.3 Baseline

Existing Baseline

Walking and Cycling

16.3.1 Figure 16.2 in ES Appendix 16.1 presents the existing walking and cycling networks and bridleways across the site and in the local area. The following sections provide an outline of the key walking and cycling routes and current aspirations for enhancement. These sections also make reference to the findings of the Walking and Cycling Study (Ref 16.12) commissioned by F&HDC to investigate the current walking and cycling environment in the area and consider improvements that would complement the proposed Development.

16.3.2 The Otterpool site is located in a rural setting and benefits from various public footpaths and byways located largely to the outskirts of the site, connecting residential areas with their surrounding areas. However, walking accessibility through the site is limited with many areas lacking a coherent network for pedestrians to navigate across the site and connect into external links.

16.3.3 A description of the walking and cycling environment on existing highway routes within and surrounding the site is provided in the following sections.

A20 Ashford Road

16.3.4 The A20 Ashford Road routes through the site and links it to Barrow Hill, Sellindge and, further afield, Ashford to the west and Newingreen, Sandling Park and the M20 Junction 11 to the east.

16.3.5 Footway provision along the A20 varies. Along its eastern boundary adjacent to Sandling Park, a footway of around 1-1.5m in width is located on the western side only, separated from the carriageway by a narrow grass verge and bollards spaced between 4.5-5.5m apart. As the A20 turns west, footpaths of between 1.5m and 2m in width are located on both sides of the road for a distance of around 150m from the junction with the A261 Hythe Road and Stone Street. West of this section, the footpath on the north side is replaced by a grass verge and hedgerows. The southern footpath extends through the junction with Otterpool Lane through Barrow Hill and Sellindge. A footpath is regained on the northern/eastern side as it routes north through Barrow Hill to Sellindge. The A20 narrows to one lane under the railway bridge north of Barrow Hill but maintains footpaths on both sides of the road.

16.3.6 There is a lack of formal pedestrian crossing facilities along the length of the route with the exception of a signalised pedestrian crossing on the southern arm of the junction with Otterpool Lane. However, there appears to be some evidence of the verges being used as informal pedestrian routes particularly where public rights of way (PRoW) cross the A20, described in more detail later in this section.

16.3.7 No infrastructure is provided for cyclists and the alignment of the A20, particularly on the section south of the junction with the M20, poses a particularly challenging environment for all but the most experienced cyclists.

16.3.8 The Walking and Cycling Study (Ref 16.12) commissioned by F&HDC considered a number of possibilities for enhancement of the walking and cycling networks was identified for this route:

- Introducing a shared footway and cycleway on the southern side of the A20 to connect with a possible cycle route to Folkestone along the A20;

- Introducing cycle and pedestrian crossing phases at the Otterpool Lane signals in order to facilitate walking and cycling movements to Lympne Industrial Park;
- Provision of safe crossing points over the A20, between A261 and M20 to the existing HE/281 footpath; and
- Provision of a re-aligned A20 through the development.

Otterpool Lane

16.3.9 Otterpool Lane routes south of the A20 from a location east of Barrow Hill, Sellindge through the heart of the southern section of the application site boundary and provides access to the Link Park industrial estate and thus provides access for large vehicles. There are no formal footpaths on either side of the road, although it is possible to traverse part of the length of the road on a grass verge on the western side of the road.

16.3.10 With the exception of the signal-controlled pedestrian crossing at the junction with the A20, there are also no pedestrian crossing facilities or traffic calming measures along the length of the road, with most of the road subject to the single lane national speed limit.

Stone Street

16.3.11 Routing south from the junction with the A20 and the A261 Hythe Road, Stone Street provides access for pedestrians and cyclists to Lympne. A footpath is provided on at least one side of the road for its entire length, averaging between 1.5m and 2m in width.

16.3.12 Stone Street provides no formal pedestrian crossing or cycling facilities but has traffic calming features located in the middle of Lympne in the form of two sections of the carriageway that are narrowed to 1-way only, thus reducing traffic speeds through the village.

Aldington Road

16.3.13 Aldington Road routes west-east from Aldington in the west to a junction with the A261 Hythe Road in the east, forming junctions with both Otterpool Lane and Stone Street.

16.3.14 West of the junction with Otterpool Lane, the carriageway is flanked by hedgerows making it impossible for pedestrians to traverse it other than on the carriageway. The high hedgerows make visibility difficult.

16.3.15 The section between Otterpool Lane and Octavian Drive offers a footpath on the northern side for most of its length. East of the junction with Octavian Drive, Aldington Road offers no off-road route for pedestrians towards the junction with A261 Hythe Road.

A261 Hythe Road

16.3.16 The A261 Hythe Road junction with the A20 is heavily trafficked and congested at peak periods. This junction, and the A20/Stone Street junction directly to the west, offers no pedestrian or cycle crossing facilities.

16.3.17 There is no footway provision along the length of the A261 Hythe Road until it meets Aldington Road. East of this junction, a narrow footpath is provided on the southern side.

16.3.18 This heavily trafficked road is not currently a suitable route for pedestrians, while cyclists would find its narrow and winding nature a challenging environment. The F&HDC Walking and Cycling Study identifies this route as a priority for improvement with regard to cycle linkages.

Public Rights of Way

16.3.19 The network of public rights of way (PRoW), as well as other footpaths and bridleways, within close proximity to the site are shown within Figure 16.2 in ES Appendix 16.1.

16.3.20 There are 11 PRoWs that route internally within the site area, providing connections between the villages of Sellindge, Newingreen, Lympne and Westenhanger. A PRoW survey was undertaken in April 2018 to determine condition of these routes and from that to identify likely level of recreational usage, as detailed in the socioeconomic assessment contained in Section 14 of the ES. This section provides details of a selection of these existing routes.

16.3.21 Public footpath HE/275, routes through the site between the railway line and the A20 within the vicinity of the Folkestone Racecourse. There are existing issues with north-south permeability and lack of wider connections and links over the railway line and M20.

16.3.22 Footpaths HE/281 and HE/313 provide connections to the east into Hythe. There are currently no controlled crossing facilities on the A20 allowing pedestrians to cross safely, and the alignment of the A20 does not provide ideal visibility for drivers. As a result, there are some issues with east -west severance. The study commissioned by F&HDC identifies the A20 and A261 as two key severance features within the study area which will need to be addressed. The A20 in particular dissects the study area which could have a severe impact on the wider permeability of the site.

16.3.23 There are also a number of nearby recreational areas including:

- Harringe Brooke Wood situated on the western boundary of the site comprising an area of woodland adjacent footpath HE/316; and
- Royal Military Canal is accessed at West Hythe approximately 1km from the site via an existing footpath HE/319 and bridleway HE/317.

16.3.24 The study commissioned by F&HDC also identified a number of opportunities for improving cycling and walking connections to the surrounding area of Otterpool Park. In summary these comprise:

- Cycle linkages to the Hythe area;
- Cycle linkages to the Folkestone area;
- Connections with Westenhanger Railway Station, particularly to the north; and
- Integration of internal road network and surrounding PRoW.

Designated Cycle Routes

16.3.25 At present there are no dedicated cycle routes in the immediate vicinity of the site. The coastal National Cycle Network (NCN) Route 2 lies approximately 1km south of the southern boundary of the site and is a popular long-distance recreational route following the English Channel coastline.

16.3.26 The section closest to Otterpool Park is traffic free and runs between West Hythe and Folkestone to the east and towards Romney Marsh in the west. The route runs along the canal towpath through West Hythe, Hythe and Folkestone. Cyclists can access

the route via Royal Military Road which is located at the southern point of Lympne Hill, the nearest connection to the site. These routes are shown in Figure 16.3 in ES Appendix 16.1.

16.3.27 Other than the aforementioned designated cycle routes it would be considered that there very little existing cycle infrastructure within the vicinity of Otterpool Park. The Walking and Cycling Study (Ref 16.12) identified the presence of painted west and eastbound cycle lanes on the carriageway between the A20/ M20 roundabout junction and Sandling Road.

Public Transport

Bus Services and Infrastructure

16.3.28 Although the existing site for Otterpool Park predominantly comprises agricultural land, there are in total 22 existing bus stops located within the study area. Bus stops are located on the strategic and local routes within the area, namely along the A20 Ashford Road, B2067 Aldington Road and Stone Street between Aldington Road and Ashford Road. Within the Otterpool Park area, bus services currently route along the A20 Barrow Hill/ Ashford Road, B2067 Otterpool Lane, Stone Street and Aldington Road. A plan showing existing bus service routes is provided Figure 16.4 in ES Appendix 16.1.

16.3.29 Table 16-9 summarises the services which serve the bus stops along these routes. Figure 16.5 in ES Appendix 16.1 presents the location of bus stops in the vicinity of the site and a 400m walk distance isochrone around each bus stop.

16.3.30 The 10/10A bus service provides a regular bus service between Folkestone and Ashford and has the highest frequency (hourly, Monday to Friday) of all the bus services in the Otterpool Park area. The 16A and 18A run daily, once in the morning and returns in the afternoon, taking local children to and from schools in Folkestone and Canterbury and only operates on school days.

Table 16-9 Summary of Local Bus Services (One-way Frequency)

Bus Number	Route	Frequency (One-way)		
		Monday - Friday	Saturday	Sunday
10/10A	Ashford – Folkestone	Hourly	Hourly	2 hours (No.10 only)
16A Gold	Cheriton – Hythe	School Service	-	-
18	Hythe - Canterbury	5 Services per day		-
18A	Ashford – Canterbury	School Service	-	-
111	Ashford – Folkestone	Once on Thursday only	-	-

Source: Traveline South and East (20th July 2021)

Rail Station and Services

16.3.31 Westenhanger Railway Station is located in the north-eastern corner of the Otterpool Park area. The station is strategically located on the Mainland Railway route connecting Ashford and Dover. All trains serving Westenhanger are operated by South-eastern. Facilities at the station are limited and include outdoor seating and limited free car parking. The station is unstaffed, there is no waiting room or cycle parking facilities and there is a general lack of accessibility for the mobility impaired.

16.3.32 Table 16-10 presents a summary of key destinations and the frequency of services from the station, which includes hourly (two trains an hour at peak times) eastbound services into Folkestone. Westbound, there is an hourly service to Ashford (half hourly at peak times), where high speed (HS1) services to Stratford International and London depart from.

Table 16-10 Summary of Rail Services from Westenhanger Railway Station

Destination	Journey Time	Frequency (approx.)
Ashford International	9 minutes	30 mins (peak) / 60 mins (off-peak)
Folkestone Central	11 minutes	30 mins (peak) / 60 mins (off-peak)
Dover Priory	24 minutes	30 mins (peak) / 60 mins (off-peak)
London St Pancras	1 hour	30 mins (peak: change at Ashford)
London Charing Cross	1 hour 33 minutes	30 mins (peak)/ 60 mins (off-peak)

Source: National Rail Enquiries (20th July 2021)

Highway Network

16.3.33 The following key links on the local highway network are shown in Figure 16.6 in ES Appendix 16.1.

M20 Corridor

16.3.34 The M20 motorway connects Kent with the M25 and London. It terminates in the east at Junction 13, on the northern outskirts of Folkestone. The M20 within the vicinity of Otterpool Park comprises three lanes in either direction, subject to the national motorway speed limit.

16.3.35 Junction 11 is a grade-separated five-arm junction which lies directly adjacent to the north-east corner of the site and is the main gateway to the site from the motorway. Junction 11 connects with the A20 (south), B2068 (north) and the STOP 24 Service Station via a five-arm roundabout. Junction 11 gives access to the M20 westbound (Ashford and London) and eastbound (Folkestone, Dover and continental Europe via ferry or Eurotunnel). Junction 11 serves as the main gateway highway access to the Otterpool Park site from the wider area.

16.3.36 Junction 11A to the east provides eastbound on-slips (from the A20) and westbound off-slips (from the Eurostar terminal) to the M20. Junction 12 consists of a grade-separated four-arm roundabout, with two arms providing on/off slips to the M20. The roundabout links to the A20 Ashford Road in the north and Cheriton Approach to the south, which provides access into Folkestone along Cheriton Road.

16.3.37 Junction 13 provides on- and off-slips linking to two mini-roundabouts; one to the north on the A20 and one to the south linking the A20 to the A259, which routes to/from the east, and the A2034 Cherry Garden Avenue routing south towards Cheriton Road. Just east of Junction 13, the M20 becomes the A20.

16.3.38 Junctions 9 and 10 provide access to Ashford. Both are four-arm grade-separated junctions, of which two arms consist of east- and westbound on/off slips to the M20. Junction 9 provides access to Ashford north of the M20 via Trinity Road and south via Fougeres Way. Junction 10 provides access to north Ashford via Kennington Road and south via Bad Munstereifel Road. The new junction 10a opened on 31 October 2019.

A20 Ashford Road / Barrow Hill / Hythe Road

16.3.39 The A20 is a major distributor road in Kent and crosses the Otterpool Park area from east to west and also forms the north-eastern boundary of the area. The A20 Ashford Road provides access to the M20, via Junction 11. The road consists of a single carriageway subject to a 50mph limit through the site, reverting to 40mph limit through Barrow Hill and 30mph through Sellindge village.

16.3.40 The existing road alignment of the A20 Ashford Road leading to Junction 11, comprises a sub-standard section resulting in poor driver visibility and potential road safety performance, assessed later in the Chapter. In addition, for a rural road (Rural S2 Road in TA 46/97), the A20 at this location appears to be operating slightly above capacity with the existing flows.

16.3.41 The A20 Barrow Hill is constrained by a single lane section, controlled by traffic signals, where the road passes under the high-speed and Network Rail lines south of Sellindge. Underneath the railway bridge there is a height restriction of 4.7m. North of Barrow Hill, the A20 Hythe Road provides a route to/from Ashford.

16.3.42 A number of residential properties front along the A20 predominantly within the settlements of Sellindge, Barrow and Newingreen. In addition, there are also a range of local amenities including schools, community hall, places of worship and local shops.

B2067 Otterpool Lane

16.3.43 The B2067 Otterpool Lane comprises a single carriageway road with a north - south alignment routing through the site. The road is predominantly subject to the national speed limit, which reduces to 50mph at the northern extent within the vicinity of the signalised junction with the A20 Ashford Road. The southern end of Otterpool Lane forms a priority junction with Aldington Road.

16.3.44 The road provides access to Lympne Industrial Park, Lympne Animal Park and Gardens, and a farm. Otterpool Lane is bounded by hedgerows and rural land. There are no footways present along the road.

A261 Hythe Road

16.3.45 The A261 Hythe Road connects the A20 at Newingreen with the A529 within Hythe, comprising a single carriageway road with no footway provision. The road is predominantly subject to the national speed limit, which reduces to 30mph on approach to the built-up area of Hythe.

16.3.46 It should be noted that there is a sharp double curve in the road alignment through the village of Pedlinge.

Aldington Road

16.3.47 Aldington Road forms the southern boundary of the Otterpool Park area. It has an approximate east-west alignment, extending from the A261 Hythe Road in the east past Lympne Hill and Otterpool Lane to form a priority junction with Roman Road and Knoll Hill in the west.

16.3.48 Aldington Road is a narrow single carriageway road. There is a 2m width restriction (except for access) east of the junction with Lympne Hill. These width restrictions are sign-posted to the east of the Aldington Road/ Stone Street junction and on the east side of the Lympne Hill junction. Aldington Road becomes narrow to the west

of the Otterpool Lane junction where it becomes the B2067, potentially allowing only one vehicle at a time to pass through.

16.3.49 The road is subject to the national speed limit, which reduces to 30mph within Lympne. A footway is provided along the northern side of the carriageway between Lympne Distribution Park and Octavian Drive, within Lympne. In addition, the route has a hilly terrain sloping in a westerly direction.

Lympne Hill

16.3.50 During discussions regarding the need for mitigation on Lympne Hill held with KCC and F&HDC, it was ascertained that, since the traffic survey data was collected for this junction, traffic calming measures have been implemented along West Hythe Road, which leads into Lympne Hill to the north. KCC advised that this is expected to reduce traffic along West Hythe Road and Lympne Hill, particularly traffic that were using the route to avoid the alternative route to/from destinations in the south of the District via Hythe. This is expected to have had a positive effect on pedestrian severance on Lympne Hill.

Harringe Lane

16.3.51 Harringe Lane has an approximate north-south alignment extending between the A20 and B2067, located at the north-western boundary of the Otterpool Park area. The road provides access to a limited number of residential properties and farmland.

16.3.52 The narrow country lane is bounded with hedgerows and can only accommodate one-way traffic movements with regular passing points. Harringe Lane is subject to width restrictions with signage restricting vehicles of a width greater than 1.98m (except for access). There is no footway provision along the road.

Stone Street

16.3.53 Stone Street was a Roman road between Lympne and near to Canterbury. In the study area it extends northwards from Aldington Road to the junction with the A20 Ashford Road and the A261 Hythe Road. Stone Street also extends further north from the A20 providing access to Westenhanger Railway Station. The road is separated by a small section of the A20 Ashford Road and as such has been split north of Lympne built up area. At the Aldington Road junction, signage states that Stone Street is ‘Unsuitable for heavy goods vehicles’. The road is subject to a 40 into the following two sections for this study; Stone Street south (between Aldington Road and Hythe Road) and Stone Street north (north of the A20).

16.3.54 The southern section comprises a single lane carriageway allowing for two-way movements, with the exception of one-way priority traffic calming measures in place

16.3.55 mph speed limit, which reduces further within the application site boundary to 30mph. Footways are predominantly provided along at least one side of the carriageway.

16.3.56 The northern section, which provides access to Westenhanger Rail Station and a number of residential properties, comprises a narrow single carriageway road, subject to a speed limit of 30mph.

16.3.57 North of Westenhanger Railway Station, Stone Street narrows to a single-track road on a bridge over the railway line before coming to an end by the M20 motorway.

Baseline Traffic Flows

16.3.58 Table 16-11 presents AM and PM peak baseline flows on the key links within the study area.

Table 16-11 Summary of AM and PM Peak Hour 2018 Baseline Flows

Link Name	Number of Vehicles					
	AM Peak Hour			PM Peak Hour		
	Nb / Eb	Sb / Wb	2-Way	Nb / Eb	Sb / Wb	2-Way
B2067 Otterpool Lane	239	230	**469**	349	118	**467**
A20 Ashford Road b/w Otterpool Lane & Newingreen	245	309	**554**	496	173	**669**
A20 Ashford Road at Newingreen	231	398	**629**	523	197	**720**
A20 Ashford Road b/w Newingreen & M20	723	659	**1,382**	712	692	**1,404**
A20 Ashford Road at Barrow Hill	341	262	**603**	282	394	**676**
Aldington Road b/w Otterpool Lane & Stone Street	86	139	**225**	140	97	**237**
Stone Street	305	109	**414**	97	193	**290**
B2067 Aldington Road west of Otterpool Lane	160	113	**273**	111	97	**208**
Lympne Hill	240	119	**359**	90	248	**338**
B2068 Stone Street	368	334	**702**	327	363	**690**
M20 east of J11	2,432	2,116	**4,548**	2,062	2,608	**4,670**
M20 west of J11	2,144	2,528	**4,672**	2,668	2,079	**4,747**
Cheriton Road	562	343	**905**	597	342	**939**
A261 Hythe Road	280	328	**608**	484	244	**728**
A259 Military Road	1,076	-	**1,076**	1,019	-	**1,019**
A259 Prospect Road	849	496	**1,345**	800	731	**1,531**
Swan Lane	100	142	**242**	188	103	**291**
A20 Hythe Road west of Swan Lane	418	298	**716**	293	490	**783**
A2070 Kennington Road	776	393	**1,169**	456	631	**1,087**
A262 Hythe Road	353	348	**701**	563	400	**963**
A260 Spitfire Way	594	1,043	**1,637**	1,059	683	**1,742**
A260 Canterbury Road	479	1,566	**2,045**	811	1,245	**2,056**
Alkham Valley Road	1,080	227	**1,307**	1,055	125	**1,180**
Nackington Road	518	360	**878**	311	506	**817**
Old Dover Road	593	314	**907**	279	527	**806**
Bad Munstereifel Road	1,679	1,590	**3,269**	1,927	1,824	**3,751**
A292 Hythe Road	353	348	**701**	563	400	**963**
A2070 Kennington Road	682	441	**1,123**	309	652	**961**
A20 Fougeres Way	1,775	1,743	**3,518**	1,601	2,074	**3,675**

Link Name	Number of Vehicles					
	AM Peak Hour			PM Peak Hour		
	Nb / Eb	Sb / Wb	2-Way	Nb / Eb	Sb / Wb	2-Way
A251 Trinity Way	1,422	1,012	**2,434**	1,155	1,585	**2,740**

Note: Nb- northbound, Eb – Eastbound, Sb – southbound, Wb – Westbound

M20 Freight Traffic Management

Operation Brock

16.3.59 In December 2020 Highways England (now NH) implemented an alternative scheme to Operation Stack following public consultation and testing of contingency plans earlier in the year. The new scheme, called Operation Brock, initially designed in the event of a 'no-deal' Brexit plan, creates up to 2,000 on-road lorry holding spaces between Junctions 8 (Maidstone) and 9 (Ashford) on the M20. A contraflow system is implemented on the northbound carriageway to allow traffic to travel in both directions between Junctions 8 and 9, while lorries are queuing on the southbound side. Drivers are able to access both junctions, rather than being diverted onto smaller local roads. A lower speed limit is implemented during times when Operation Brock is in place.

16.3.60 The Operation Brock contraflow system is designed to keep traffic on the M20 and other roads in Kent moving when there is disruption to travel across the English Channel. When there's any sort of disruption in the channel, HGV traffic on the M20 heading for the Port of Dover or the Eurotunnel has nowhere to go. A contraflow system, called 'Brock', can be set up overnight separates traffic into different lanes across both carriageways and keeps the M20 and other local roads open and moving.

16.3.61 It means, once the contraflow is in, traffic on the M20 which is not going to the port or the Eurotunnel, can continue its journey as normal. At the same time, it helps control how port-bound HGVs make their way to the Port of Dover or the Eurotunnel.

16.3.62 This new strategy is proposed to offer 'significant benefit' compared to the previous Operation Stack, as it would keep traffic flowing in both directions. Moveable barriers are currently stored on the hard shoulder so it can quickly be brought in and out of use when required.

Lorry Parks

16.3.63 Further to the lorry park of Ashford Sevington inland border facility, the Phase 1 of the Waterbrook Park located south of the M20 junction 10 also in Ashford has now been completed.

16.3.64 In addition, the planning application for a 53 space 24 hour lorry park facility has been granted approval at the end of August 2021. This will be located on the Lympne Industrial Estate which borders on the Otterpool Park development site in the south. It is not expected that this facility will generate an uplift of vehicles on the estate as a lorry wash business already exists on the site.

Personal Injury Collisions and Safety

16.3.65 Personal Injury collision (PIC) data has been obtained from Kent County Council, supplied by Kent Police for the five-year period to the end of December 2019. The Collision Study Area consists of ten routes as specified in Table 16-12 below. The

full record of the collision data is contained within ES Appendix 16.3, and a corresponding Collision Analysis Technical Note can be found in ES Appendix 16.3.

16.3.66 The data shows that a total of 255 recorded collisions took place within the study area over the five-year period. Of those, the vast majority of collisions, totalling 198 (78% of all collisions), were of slight severity, 52 (20%) serious and five (2%) of which fatal. Table 16-12 provides a summary of the number of collisions by location and severity.

Table 16-12 Collisions by Location and Severity

Location	Number of collisions			
	Fatal	Serious	Slight	Total
A20 Barrow Hill, Ashford Road & Hythe Road	1	20	49	**70**
M20 Junction 9-Junction 11 (excluding Junction 10A) Corridor	4	20	61	**85**
A261 Hythe Road	0	1	10	**11**
A259 Dymchurch Road & Seabrook Road	0	7	24	**31**
B2067 Otterpool Lane	0	0	3	**3**
Aldington Road	0	0	1	**1**
Stone Street	0	2	6	**8**
A2070 Bad Munstereifel Road & Lacton Interchange	0	1	34	**35**
A292	0	0	2	**2**
B2068	0	0	3	**3**
Old Dover Road, Canterbury		1	5	**6**
Total	**5**	**52**	**198**	**255**

16.3.67 Interrogation of the collision data shows that during the study period 10 collisions involved a pedestrian, eleven involved pedal cyclists and 39 involved motorcyclists.

16.3.68 Analysing collisions by lighting conditions indicates that 70 collisions (27% of all recorded collisions) occurred during the hours of darkness.

16.3.69 Of the 255 recorded collisions, 49 (19% of all collisions) occurred on a wet road surface, whilst 6 collisions (2% of all recorded collisions) occurred during frost, ice or snow.

16.3.70 For the links that fall outside the outlined Collision Study Areas, collision data has been extracted from the CrashMap database.

Table 16-13 Collisions by Location and Severity for roads that fall outside Collision Study Area

Link	Number of Collisions			
	Fatal	Serious	Slight	Total
Swan Lane	0	0	2	**2**
A2070 Kennington Road	0	0	9	**9**
A260 Spitfire Way	0	3	6	**9**
A260 Canterbury Road	2	11	65	**78**
Alkham Valley Road	0	8	18	**26**
Nackington Road	0	2	9	**11**
Old Dover Road	0	4	22	**26**

Road Safety Summary

16.3.71 Whilst all PICs are regrettable, the overall collision record in the entire study area over a five-year period does not give undue cause for concern.

16.3.72 Several collisions have occurred due to poor weather conditions. Aside from the above noted issues, the evidence does not suggest specific safety deficiencies on the local highway network in the vicinity of the proposed Development site.

16.3.73 Detailed information regarding each of the ten identified Collision Study Areas can be found within the Analysis Technical Note located within ES Appendix 16.3.

Future Baseline

16.3.74 The future baseline is the situation that would prevail should a proposed Development not proceed. The future baseline is further defined by the assessment scenario that the topic adheres to. The future baseline for transport has identified the following.

Traffic Flows

16.3.75 A 2044 Future Baseline (without the Otterpool Park development) has been assessed. This includes all committed and planned developments which represents maximum growth of the highway capacity modelling area without the development. The details of the Future Baseline have been set out in Chapter 6 of the TA. For the purposes of environmental assessment, this scenario is to be used as the Future Year Baseline against which the impacts of the Otterpool Park development are assessed including the assessment of construction traffic.

16.3.76 It is predicted that there will be a significant increase in traffic flow for the majority of links assessed by 2044 compared to the Base Year. Table 16-14 provides the predicted 2044 Future Baseline traffic flows, with flows shown for the AM and PM peak hours periods. The percentage increase in traffic flows is also shown.

16.3.77 The increase in flows is the direct result of planned development in the modelling study area and growth in traffic movements on the wider network in Kent.

Table 16-14 2044 Future Baseline(Without Development) Forecast Traffic Flows

Link	2044 Future Baseline (Without Development)		Percentage Change with 2018 Baseline	
	AM Peak	PM Peak	AM Peak	PM Peak
B2067 Otterpool Lane	1,055	1,169	125%	150%
A20 Ashford Road b/w Otterpool Lane & Newingreen	1,054	1,221	90%	83%
A20 Ashford Road at Newingreen	1,111	1,286	77%	79%
A20 Ashford Road b/w Newingreen & M20	2,158	2,271	56%	62%
A20 Ashford Road at Barrow Hill	1,164	1,213	93%	79%
Aldington Road b/w Otterpool Lane & Stone Street	812	877	261%	270%
Stone Street	400	359	-3%	24%
B2067 Aldington Road west of Otterpool Lane	297	229	9%	10%
Lympne Hill	556	560	55%	66%
B2068 Stone Street	973	977	39%	42%
M20 east of J11	6,302	6,623	39%	42%
M20 west of J11	6,290	6,522	35%	37%
Cheriton Road	1,379	1,478	52%	57%
A261 Hythe Road	1,133	1,089	86%	50%
A259 Military Road	1,483	1,387	38%	36%
A259 Prospect Road	1,572	1,771	17%	16%
Swan Lane	316	373	31%	28%
A20 Hythe Road west of Swan Lane	1,145	1,177	60%	50%
A2070 Kennington Road	2,259	2,339	93%	115%
A262 Hythe Road	1,170	1,514	67%	57%
A260 Spitfire Way	1,913	2,043	17%	17%
A260 Canterbury Road	2,381	2,377	16%	16%
Alkham Valley Road	1,465	1,409	12%	19%
Nackington Road	1,096	1,039	25%	27%
Old Dover Road	1,290	1,139	42%	41%

16.4 Design and Mitigation

16.4.1 The following section sets out:

- The embedded design measures, including good practice approaches, relied on in this assessment; and
- The potential significant effects remaining after the application of embedded design measures and good practice approaches, and any additional mitigation required to address these potential significant effects.

16.4.2 The potential significant effects prior to additional mitigation are identified in the Assessment Summary table.

16.4.3 Environmental considerations have influenced the proposed Development throughout the design development process, from early options assessment through to refinement of the Project design. An iterative process has facilitated design updates and improvements, informed by environmental assessment and input from the Project design teams, stakeholders and public consultation.

16.4.4 Impacts would be reduced by measures embedded into the design of the development, as well as by additional mitigation, and together these measures would act to avoid, reduce and mitigate effects. The measures have been summarised by whether they are embedded design measures, which are secured through the documents for approval, or additional mitigation secured, for example, by planning condition or legal agreement. Embedded measures are described as measures that form part of the design, developed through the iterative design process and good practice standard approaches and actions commonly used on development projects to avoid or reduce environmental impacts, typically applicable across the whole Development. Additional mitigation is described as any additional Development-specific measures needed to avoid, reduce or offset potential impacts that could otherwise result in effects considered significant in the context of the EIA Regulations.

Embedded Design Measures

Construction

16.4.5 A Construction Traffic Management Plan (CTMP) would be implemented to minimise the effects of road traffic during the construction phase. It will be secured by a planning condition and would incorporate:

- Identification of appropriate safe routes for the proposed Development traffic to and from the site via the M20 and A20;
- Where possible the development would try and utilise raw materials from local sources to reduce the vehicular traffic impact;
- Staff travelling to work would be encouraged to car-share, walk, cycle and travel via public transport and appropriate vehicle constraint targets will be set out within the CTMP;
- Full staff welfare facilities will be provided as part of the compound construction to reduce the requirement to travel off-site on lunch breaks and encourage sustainable travel by reducing driving trips off-site;
- Frequent inspections and monitoring to confirm the required measures would be implemented;
- There would be designated and adequate onsite parking facilities for site workers who travel by car, or other vehicles, to ensure that vehicles are not parked on the highway;
- The contractor would implement cleaning measures, such as wheel washing or wash-down facilities, which would serve to minimise the spread of dust, mud and other materials on to the roads; and
- Regular sweeping of roads would be undertaken, both on and off the site to reduce the spread of mud.

16.4.6 Furthermore, measures in relation to construction vehicles have been set out within Section 6 Air Quality and Section 13 Noise and Vibration.

16.4.7 Section 6.13 of the Outline Code of Construction Practice (CoCP) (ES Appendix 4.17) addresses transport matters. A Construction Traffic Management Plan (CTMP) will form part of the Detailed CoCP which will deliver the required mitigation measures during the demolition and construction phase. The CTMP would be secured through Condition at Reserved Matters Application Stage and agreed with the LPA.

Operation

16.4.8 The proposed Development design and Transport Strategy (ES Appendix 16.5) for the Otterpool Park Development includes the following embedded design and mitigation measures. These mitigation measures have been considered when assessing the potential operational effects and when establishing additional mitigation that may be required to address potential specific significant effects identified in Section 16.5.

Land Use Provision

16.4.9 The proposed Development quantum and mix of land uses, as set out in Chapter 4 (The Site and Proposed Development) of this ES, is such that the site will provide a sufficient scale and range of services that will meet the demands of the local population. This means the need to travel long distances by non-sustainable modes of transport will be minimised, with a high level of contained trips. It is also anticipated that the services provided will not be of a type that will attract significant trips from people living external to Otterpool Park.

Otterpool Park Transport Strategy

16.4.10 Otterpool Park will be influenced by the travel needs of the existing and future communities. The aim is to strike the right balance between ensuring the Garden Town is a great place to live and work with all the amenities its population needs, while also providing easy connections to and from neighbouring communities.

16.4.11 The Otterpool Park development and associated access and travel strategy will provide residents, employees and visitors with an attractive and comprehensive network of sustainable travel opportunities to provide viable alternatives to travel by private car. This will be balanced against ensuring that the highway access arrangements are robust enough to sustain additional traffic movements, provide connectivity to existing routes and allow the existing network to function within reasonable limits without causing significant issues for Otterpool Park and existing local residents.

16.4.12 The infrastructure of the proposed Development will be complemented by bespoke green travel measures, which will build on the opportunities offered by the existing and proposed walking, cycling, equestrian and public transport infrastructure, and promote and develop sustainable travel opportunities as well as support low emissions vehicles and innovative transport solutions.

16.4.13 The TA approach provides a worst-case assessment of the Otterpool development for car trips generated by the site. To provide a robust assessment, the traditional method of “predict and provide”, derived from historic trip rate patterns for the potential trips generated by the development, has been adopted. This approach relies on various sources of data including 2011 Census, TRICS survey and the National

Travel Survey. It has been demonstrated that even with this worst-case car trips that these can be adequately mitigated through key highway improvements.

16.4.14 The objective is that the actual car trips generated by the development would not reach the levels estimated in the TA such that the schemes identified in the highway access strategy could be reduced or would no longer be necessary as the threshold of requirement are not met. A monitor and manage approach, secured through a Section 106 Agreement, will assist with identifying when the thresholds are close to being reached so that alternative mitigations can be considered at an early stage to manage the situation in order to delay or prevent the threshold being reached.

16.4.15 The monitor and manage approach would be facilitated by the implementation of traffic counting technology to monitor traffic levels around the development as it is built out. This data can then be used to derive the actual trips generated by the development which can be compared with the values reported in the TA.

16.4.16 Additionally, the overall design of Otterpool Park is focused on the opportunities for excellent sustainable transport provision. A network of routes, infrastructure and green spaces will be created which include both direct and leisure routes, accessible to all from home to work, and play. These will be secured by planning condition and reserved matter applications.

16.4.17 External site interventions, agreed with the LPA and Highway Authority, for walking, cycling and public transport will be secured by Section 106 Agreement, and the impact assessed through the monitor and manage approach. These are summarised in Table 16-15.

16.4.18 The Transport Strategy (ES Appendix 16.5) for Otterpool Park is founded on the following principles:

- Create walkable neighbourhoods and a high street highly accessible by walking and cycling;
- Provide strong walking, cycling and bus connections to the rail station, employment, high street, local centres and schools from the residential areas;
- Provide connectivity by walking, cycling and bridleways into the surrounding countryside and existing communities;
- Ensure a high level of connectivity to and from Otterpool Park within the sub-region by frequent and high-quality public transport;
- Minimise and manage the impacts of traffic on the existing road network particularly through existing communities and other sensitive areas;
- Provide appropriate levels of parking for cars and bicycles;
- Implement a range of sustainable travel behavioural measures to encourage use of sustainable modes;
- Provide for future needs for electric vehicles and flexibility to adapt to innovative transport solutions; and
- Reduce the need to travel by providing relevant on-site facilities.

16.4.19 There will be a high proportion of local trips made within Otterpool Park as the development incorporates a range of schools, healthcare, community and sports facilities to meet as many of the needs of residents as possible and will minimise the need to travel to other locations. There will be local shopping and services and on-site employment locations together with the infrastructure for home working. A user-

centric approach has been adopted as part of the Future Mobility plan for the development.

16.4.20 The principles of this approach are to put the mobility needs of the users first, through undertaking an online survey of respondents who meet the demographic characteristics of future residents of Otterpool Park to understand their travel behaviour and requirements, and to design and develop the infrastructure to meet these needs. A monitor and manage approach will allow for the iterative refinement of these solutions.

16.4.21 The outcomes from the user-centric approach have allowed for some ambitious Mode Share targets to be derived. These would be supported by the comprehensive range of transport measures proposed at the development:

- Walking and Cycling Strategy – providing a highly connective and permeable network of routes both within the development and also to link to the wider area of existing footpaths and bridleways.
- Bus Service Enhancements – providing high-quality bus infrastructure that will make this travel mode an attractive option for short and longer journeys.
- Rail Enhancements – Improvements to the Westenhanger Rail Station and supporting proposals of future High-Speed services (subject to wider deliverability) at the Station as outlined in Kent's Rail Strategy 2021.
- Shared Mobility Schemes – Provision of bike and scooter share schemes, including electric options. Car club provision will offer development users who do not require a car on a regular basis the option to drive without the high cost and long-term maintenance associated with the private car.
- Mobility Hubs – facilities that integrate shared, active and public transport modes in one location as well as bringing opportunities create attractive places.
- MaaS (Mobility as a Service) - a single digital application to enable users to plan, book and pay for multiple types of mobility, with a single payment channel instead of multiple ticketing and payment operations.
- Healthy Streets Approach – promoting healthy lifestyle through active travel, sustainable choices, safety and connectivity.
- Parking Strategy – achieving an appropriate balance of parking for overall requirements of the development that accommodates parking but does not unduly encourage car ownership and use.
- EV Strategy - a bespoke EV charging point strategy for each phase of the development to be developed to support electric charging network and emerging technology.
- Delivery and Servicing Strategy - consider how to utilise emerging technologies and deliver a sustainable and efficient freight system that is fit for the future.

16.4.22 The Otterpool Park development and associated transport strategies will provide residents, employees and visitors with an attractive and comprehensive network of sustainable travel opportunities to provide viable alternatives to travel by private car.

16.4.23 The proposed approach at Otterpool Park is to is to comply with existing policy requirements and respond to emerging policy and technology advances. It is intended that the worst-case vehicle trip generation scenario forecast in the Transport

Assessment will not be reached, because site users will opt to travel using the sustainable alternative modes offered by the development instead.

16.4.24 The infrastructure of the proposed Development will be complemented by bespoke green travel measures, which will build on the opportunities offered by the existing and proposed walking, cycling, equestrian and public transport infrastructure, and promote and develop sustainable travel opportunities as well as support low emissions vehicles and innovative transport solutions.

16.4.25 The Transport Strategy principles will promote sustainable and active travel which will contribute to social, economic and environmental benefits to Otterpool Park users.

16.4.26 Further information on the proposed approach summarised above can be found within the Transport Strategy (ES Appendix 16.5).

Highway Access Strategy

16.4.27 The highway access strategy is based on the main access to Otterpool Park being from Junction 11 of the M20 via the A20. It is recognised that traffic will also use other routes. However, the upgrade of the route from Junction 11 to the site and thus providing high quality linkages will encourage the use of this route and minimise traffic impacts on other routes. The details of this route are described in the following section "Upgrade of the A20 Ashford Road". Furthermore, the approach is to mitigate impacts on the network but not to provide significant capacity increases elsewhere that encourage car use or the use of more sensitive routes.

Primary Access and Roads

16.4.28 A network of primary roads, implemented on a phased basis, will provide access through Otterpool Park, connecting both sides of the A20 and serving the station, town centre, schools, local centres and employment as well as giving access to the residential areas. These routes will provide for bus movements and have walking and cycling connections alongside. The primary roads are indicated in the Development Areas and Movement Corridors Plan provided in ES Appendix 4.2.

Newingreen Junction

16.4.29 At the southern end of the A20, there is a proposal to merge the existing A20 Ashford Road priority junctions with Stone Street and Hythe Road into one signalised junction, to be known as Newingreen junction. The mitigation is designed to address the potential impacts and mitigate the predicted delays at this location. The layout of the proposed junction is shown in Drawing number OP-ARC-XXX-DR-T-0007 (ES Appendix 16-4).

Upgrade of the A20 Ashford Road

16.4.30 The A20 link between the roundabout south of the M20 J11 and north of the Newingreen junction is proposed to be improved as a single carriageway road of 40mph speed limit, this will be undertaken prior to the first occupation of the site. Drawing 10029956-ARC-XX-XX-DR-HE-0025-P4 contained in Appendix I of the Transport Assessment in ES Appendix 16.4 shows the proposed A20 improved alignment plan. The new safer route will balance the need to accommodate future traffic with minimising the impacts. The monitor and manage approach will determine whether a further upgrade to an urban dual carriageway is required. With the implementation of the Transport Strategy (ES Appendix 16.5), it is expected that the

estimated traffic generated by the site proposed in the Transport Assessment will not be reached, and hence the dualling option may not be required.

16.4.31 In both the single and the dual layout scenarios the route is proposed to be provided west of the existing route in the southern section, and in the northern section the existing alignment would be realigned and widened to the west of the existing route as appropriate. This would address safety concerns of the existing alignment. A landscape buffer would be provided to minimise visual and other impacts on the Area of Outstanding Natural Beauty and Sandling Park to the east of the existing A20. Where the existing A20 is not used as part of the new alignment, it will be retained for pedestrian use to allow connectivity with footpath HE/281 and will form part of the landscape buffer – this will apply to both the single and dual options.

16.4.32 At the northern end of the A20 improved link, there will be another new traffic signalised junction and a new primary road providing access to the station and employment area. At the southern end of the A20, there will be a new traffic signalised junction connecting to the proposed Otterpool Avenue. Both of these are shown in Drawing 10029956-ARC-XX-XX-DR-HE-0025-P4 contained in Appendix I of the Transport Assessment in ES Appendix 16.4.

Otterpool Avenue

16.4.33 Otterpool Avenue is proposed to serve the development and provide a route for the A20 east-west traffic effectively bypassing the existing Newingreen junction, to the east of the site where the A20 Ashford Road meets Hythe Road to the east and Stone Street to the south. Otterpool Avenue is a new route proposed as a single carriageway 20mph strategic route with a segregated footway and cycleway alongside. Stone Street will be connected to Otterpool Avenue via a cross road priority junction but there will be no through route to the station or to the Newingreen junction, ensuring Stone Street serves as a quiet access to properties. A new crossroads with traffic signals would be provided to give access to the town centre and Westenhanger railway station to the north, and development to the south.

16.4.34 The Otterpool Avenue would be delivered to serve the north eastern part of the development, with the existing A20 tying into the link via a new junction at a point north west of Newingreen. This new junction is shown in Drawing 10029956-ARC-XX-XX-DR-HE-0025 contained in Appendix I of the Transport Assessment in ES Appendix 16.4. On the section of the existing A20 from Newingreen westwards it is envisaged the speed limit of Ashford Road west of Newingreen would be reduced to 30mph. This complements the proposed 30mph Otterpool Avenue speed and is likely to enhance road safety in an area. In addition, this will minimise impacts of noise and air quality aspects for residents in the vicinity and fit the proposed highway environment which includes a number of proposed junctions, better walking and cycling connectivity and more direct frontages. The Otterpool Lane junction is to be maintained as a traffic signalised three-arm junction and there is proposed to be a new junction to the west near to Otterpool Manor, providing access to the development to the north and south.

16.4.35 West of Otterpool Avenue, it is proposed that the existing A20 is reduced in speed limit from 40mph to 30mph and a segregated walking and cycling route is proposed alongside the highway, to provide an enhanced connection along the route prior to full development along the corridor.

Car Parking Provision

16.4.36 Through discussion with KCC, it is proposed that the level of residential car parking provision be dependent on the dwelling type and accessibility level of the land parcel

that the dwelling is located, using a scoring system that accounts for proximity to public transport and local facilities. It is intended that the category of area for which parking levels apply are agreed for each phase of the site as it comes forward, with the intention of pushing boundaries for residential car parking provision to a reasonable minimum.

Sustainable Travel and Low Carbon Measures

16.4.37 A comprehensive range of measures are suggested for the development to promote sustainable travel and vehicle choices, in addition to the provision of infrastructure in the form of walking and cycling routes and bus services and cycle storage. The suggested measures are set out in the draft Framework Travel Plan (ES Appendix 16.6). These would be confirmed as part of a Final Travel Plan, agreed prior to occupation of the development.

16.4.38 The development will need to provide for the future requirements for electric vehicles and give the flexibility to adapt to innovative transport solutions such as autonomous vehicles. Subject to technological advances at the implementation at the relevant phase, suggested measures include:

- Develop an electric vehicle car club in conjunction with an operator;
- Develop a rental bike scheme, including electric bikes;
- Provide passive provision for electric vehicle charging at all homes with allocated spaces as well as to on-street parking areas; and
- Develop electric vehicle charging point strategy with provision in local centres, employment locations and the rail station.

Additional Mitigation

16.4.39 An iterative appraisal of the proposed Development taking into account the embedded design measures and good practice was undertaken to identify any potentially significant effects that would require additional mitigation.

16.4.40 There are considered to be no additional potential significant effects during construction following implementation of the embedded measures.

16.4.41 Effects related to transport that could be significant and therefore required further consideration for additional mitigation in the operational phase were as follows:

- Potential impact on severance, where there is difficulty experienced in crossing a road due to the increase in vehicle flows and the change in flow composition i.e. an increase in large type vehicles.
- Potential impact on pedestrian amenity and fear and intimidation due to the increase in vehicle flows and the change in flow.
- Potential increase in pedestrian and driver delay due to the additional vehicles associated with the proposed Development on the highway network.
- Potential impact on accidents and safety due to increase in traffic flows, and the overall volume of traffic at the development and surrounding area.

Operation

16.4.42 Additional mitigation measures to address potential significant effects identified in Section 16.5 are considered by link, further to the embedded design measures.

These measures will be secured in the supporting Section 106 legal agreement or planning condition.

16.4.43 A monitor and manage approach, secured through a Section 106 Agreement, will assist with identifying when the thresholds are close to being reached so that alternative mitigations can be considered at an early stage to manage the situation in order to delay or prevent the threshold being reached.

16.4.44 External site interventions, agreed with the LPA and Highway Authority, for walking, cycling and public transport will be secured by Section 106 Agreement, and the impact assessed through the monitor and manage approach. A summary of the off-site mitigation identified in the Transport Assessment is provided in Table 16-15. The links/junctions that have been identified as requiring mitigation through this ES are described in the following paragraphs.

Table 16-15 Proposed off-site Mitigation

Type	Mitigation
Highway	• Partial signalisation of the M20 Junction 11 roundabout • Increasing local parking restrictions at A259 / Dymchurch Road / Military Road Gyratory Monitor and Manage Approach to consider the need for mitigation at the following locations: • A20 Hythe Road / The Street junction • M20 Junction 13 • Aldington Road / Lympne Hill junction • A261 London Road / Barrack Hill junction • A20 Ashford Road Left-In Left-Out junction • A259 Prospect Road / Stade Street • Barrow Hill Shuttle Signals • A20 / Spitfire Way / Alkham Valley Road Interchange • M20 J10 and J10A • A20 Ashford Road small roundabout junction
Highway Severance	• Monitor and Manage Approach to consider the need for mitigation at Stone Street
Public Rights of Way and Pedestrian/Cycle provision	Improvements to the following walking and cycling routes as part of an ongoing dialogue with KCC, to be secured and detailed in the supporting Section 106 legal agreement following planning submission. • HE/359 and HE/371 footpath - Improve the connection to Public Right of Way (PROW) and cycle network from Westenhanger Station to the north. • HE/281 footpath - Improvements to the route between Stone Street and heading south east through Sandling Park towards Hythe and Saltwood. • HE/293 footpath – links to the proposed pedestrian network and connection eastwards to Hythe. • HE/343 byway – Improving this link will make it more attractive as a pedestrian route to Hythe. • Aldington Road between Otterpool Avenue and Stone Street – improvements to the pedestrian provision such as formalised crossing points and consideration for traffic calming measures close to key pedestrian desire lines. • Harringe Lane - proposal to close this road for vehicle traffic halfway down the road. This will prevent any through traffic generated by the development and create a more attractive route for walking and cycling in the north – south direction.

Type	Mitigation
Bus Service	Enhancements to bus service frequency to meet the estimated future demand. Discussions are ongoing with KCC and bus operators as to the delivery of bus services for the development and various means of provision will be considered including use of demand responsive services in the early years.
Rail	Improvements to the Westenhanger Rail Station - details are provided in the TA (ES Appendix 16.4) and also the Transport Strategy (ES Appendix 16.5)

A20 Ashford Road at Barrow Hill - Driver and Public Transport Delay

16.4.45 In the future case, the traffic flow increase would have a major adverse effect on driver delay at the signal-controlled one-way section of Barrow Hill.

16.4.46 As described in the TA, the efficiency of the signals can be improved through cycle time optimisation to help mitigate driver delay. The inter greens between the two traffic movements are very high as the distance to pass the conflict area within the one-way section is longer than at a typical junction. As a result, a substantial portion of the cycle time is taken up by the intergreen period. Increasing the cycle time is a potential way to increase junction efficiency.

16.4.47 Longer cycle times mean that proportionally less of each cycle is lost to the intergreen period. This means the total amount of time that each approach receives a green traffic signal within the peak hour is increased.

16.4.48 Preliminary discussions regarding the future operation of this junction have been held with KCC and F&HDC. Any potential mitigation will be considered under a “monitor and manage” approach.

Aldington Road between Otterpool Lane and Stone Street - Pedestrian and Cyclist severance and amenity and accidents and safety

16.4.49 Aldington Road is anticipated to experience a major to moderate effect on pedestrian severance, pedestrian amenity and accidents and safety.

16.4.50 For the majority of this section of Aldington Road, there is settlement only on one side of the road, with the other side consisting of a hedgerow for which there is no reason for pedestrians to cross the road. For a short section at the eastern end to the west of Stone Street, the settlement of Lympne extends across Aldington Road in the form of Lympne Village Hall and around ten houses off The Street.

16.4.51 The impact of the increase in traffic flows is therefore considered to be restricted to a small section of Aldington Road. A set of dropped kerbs with tactile paving are located on Aldington Road opposite the access to the Village Hall. This is on the main desire line for pedestrian routing to/from Lympne. Visibility at this location is good, with at least 200m visibility for pedestrians in each direction along Aldington Road as well as along Stone Street.

16.4.52 Depending on the volume of future pedestrian flows, pedestrians may benefit from enhancing the crossing point either in the form of build-outs on either side to reduce the crossing distance and reduce vehicle speeds, or greater formalisation of the crossing in the form of a zebra crossing.

16.4.53 Alternatively, traffic calming measures could be implemented close to key pedestrian desire lines across the road. This could take the form of speed cushions or carriageway narrowing to form one-lane sections with give-ways on approach such as are in place on Stone Street through Lympne Village. The need for these measure

will be discussed and agreed with the local highway authority and if appropriate will be secured in the supporting Section 106 legal agreement or planning conditions.

16.4.54 Implementation of pedestrian facilities and/or traffic calming features as described is expected to reduce the overall magnitude of impact on severance, pedestrian amenity and accidents and safety, as described in section 16.5.

Stone Street - Severance

16.4.55 As existing, Stone Street is anticipated to experience a Moderate adverse magnitude of impact on pedestrian severance in the PM peak and a Minor adverse magnitude of impact in the AM peak due to the forecast increase in traffic flows.

16.4.56 The impact on severance and accidents and safety is expected to be restricted to the section of Stone Street routing through Lympne, as Stone Street north of Lympne has settlement on only one side of the road and there is therefore limited need for pedestrians to cross the road.

16.4.57 Within Lympne, locations where pedestrians can cross the road are limited as the majority of the road has a footpath on only one side of the road. However, due to the location of bus stops and the existing Lympne primary school on this section of Stone Street, pedestrians will be required to cross the road at some point.

16.4.58 Traffic flows along Stone Street would be monitored and if an issue of severance or safety is identified, a study should be undertaken to determine the most beneficial location for a pedestrian crossing facility such as a pedestrian refuge, where the carriageway has sufficient width, or a zebra crossing with zig-zag 'keep clear' markings. Anti-skid surfacing could be provided on approach to the crossing. Alternatively, a traffic calming measure such as a speed cushion that allows a bus to pass over but which would slow the speed of a smaller vehicle could be located at strategic locations that would enhance the impact of the existing traffic calming in the form of the carriageway narrowing to one-lane operation. The need for these measures will be discussed and agreed with the local highway authority and if appropriate will be secured in the supporting Section 106 legal agreement or planning conditions.

16.4.59 Introduction of pedestrian crossing facilities and/or traffic calming of this type is expected to address the severance effect, as described in section 16.5.

Cheriton Road / Cheriton High Street - Driver and Public Transport User Delay

16.4.60 As existing, a major/moderate adverse magnitude of impact on driver delay is predicted at the Cheriton Road and Cheriton High Street junctions with Risborough Lane and Cherry Garden Avenue. Detailed testing of these junctions has been undertaken and reported in the TA.

16.4.61 The Cheriton Road junction with Risborough Lane is expected to operate with significant delay in the 'without development' scenario. As described in section 16.2, the 'without development' scenario includes significantly less housing and job growth forecast than is tested in the 'with development' scenario. In order for the junction to operate within capacity a substantial highway improvement would be required at this location prior to 2037. Initial discussions regarding active travel contributions in lieu of mitigation at this junction have been held with KCC and F&HDC. Discussions will continue to be held following submission of this planning application, including the potential provision of contributions to be secured and detailed within the supporting Section 106 legal agreement.

A261 Hythe Road - Cyclist Fear and Intimidation

16.4.62 As existing, the moderate adverse magnitude of impact relating to fear and intimidation on the A261 Hythe Road concerns cyclists, as pedestrians are not expected to use this route.

16.4.63 As described in section 16.3, the F&HDC Walking and Cycling Study identifies this route as a priority for improvement with regard to cycle linkages. Since the report makes no firm proposals for improvement, further investigation into mitigation options is required. The promotors of the Otterpool Park development are committed to supporting the upgrade of this route for cycle use to reduce adverse effects, through the provision of financial contributions to be secured and detailed within the supporting Section 106 legal agreement following planning submission. Furthermore, the cycling route towards Hythe will be promoted using Aldington Road and Old London Road via Otterpool Lane or Stone Street. Improvements are proposed for HE/343 byway (Old London Road) which will benefit pedestrian and cyclists connecting to Hythe from the development, this will be secured and detailed within the supporting Section 106 legal agreement.

16.5 Assessment of Residual and Cumulative Effects

16.5.1 The following section sets out the residual effects following the implementation of the embedded measures and additional mitigation set out above.

Construction Phase

Construction Phase Overview

16.5.2 The proposed Development is expected to be constructed over an approximately 19-year period from 2023 to 2042. First occupancy of the proposed Development is anticipated in 2024.

16.5.3 The construction effects have considered the peak year of construction which is expected to occur in 2030 when there is overlap in the construction traffic and operational traffic from the homes, hotel, commercial uses, employment uses and schools that are assumed to be built out. The trips generated by these operational land uses are also included in the assessment of this scenario.

16.5.4 Construction of the development in year 2030 is forecast to generate up to 97 HGVs per day or 24,233 HGVs per year, during the peak construction period. The daily number of HGVs generated by the site is determined based on the assumption of 252 working days in a year. Further details on the methodological approach taken to determine the volume of construction materials and waste, are set out within Chapter 17: Material Resources and Waste.

Construction Vehicle Trips

16.5.5 The construction trips generated by the development have been estimated based on the Illustrative Accommodation Schedule (Appendix 4.4), a schedule providing an indicative plan for the specific proposed Development build-out sequence.

16.5.6 From the yearly phases schedule for each of the assessment years, the estimated annual number of HGVs generated by the development has been determined based on assumed waste generated and materials required. As a worst case, it is assumed that between 20-25% of the daily HGV trips will occur in the AM and PM peak hours. Table 16-16 below summarises the resulting HGVs trips in the AM and PM peaks considered for the VISUM strategic modelling.

Table 16-16 Construction HGV movements

Year	Number of HGVs			
	Total Annual	Average Daily	Average Peak Hour	Average Peak Hour Movements
2030	24,233	97	25	50
2037	17,765	71	21	42
2044 (8.5k)	818	4	1	2
2044 (10k)	1,738	7	1	2

16.5.7 Table 16-16 demonstrates that the peak year for construction traffic is 2030, with 97 average daily movements, 25 of which occur in the average peak hour.

16.5.8 Table 16-17 below compares 2030 and 2044 'with' development total traffic flows along highway links that could be used by HGVs routing to and from the proposed Development.

16.5.9 Table 16-18 compares HGV only traffic in the same scenarios. These links have been identified on the assumption that HGVs, construction and operational, would primarily route along the M20 before using local roads to service Otterpool Park. It should be noted that construction traffic was combined with operational traffic and background traffic for assessment within the VISUM strategic model so could not be extracted separately for this analysis.

Table 16-17 Comparison of 2030 and 2044 With proposed Development (8, 500 homes) Total Traffic Flows

Link	AM				PM			
	2030 With Development	2044 (8.5k homes) With Development	Difference	% Difference	2030 With Development	2044 (8.5k homes) With Development	Difference	% Difference
B2067 Otterpool Lane	465	585	120	26%	553	600	47	8%
A20 Ashford Road b/w Otterpool Lane & Newingreen	657	838	181	28%	765	869	104	14%
New A20 Ashford Road link Road	530	1,188	658	124%	667	1,336	669	100%
Old A20 Ashford Road at Newingreen	548	801	253	46%	660	929	269	41%
A20 Ashford Road b/w Newingreen & M20	2,665	3,640	975	37%	2,783	3,718	935	34%
A20 Ashford Road at Barrow Hill	990	1,304	314	32%	1,002	1,413	411	41%
Aldington Road b/w Otterpool Lane & Stone Street	466	583	117	25%	468	645	177	38%
Stone Street	675	723	48	7%	414	539	125	30%
B2068 Stone Street	932	1,030	98	11%	933	1,036	103	11%
M20 east of J11	6,045	7,597	1,552	26%	6,335	7,901	1,566	25%
M20 west of J11	5,982	6,812	830	14%	6,239	7,053	814	13%
A261 Hythe Road	1,512	1,721	209	14%	1,646	1,878	232	14%
A20 Hythe Road west of Swan Lane	958	1,273	315	33%	948	1,363	415	44%
A262 Hythe Road	1,010	1,232	222	22%	1,313	1,574	261	20%
Total on all links assessed	**23,435**	**29,327**	**5,892**	**25%**	**24,726**	**30,854**	**6,128**	**25%**

Table 16-18 Comparison of 2030 and 2044 With Development (8.5k homes) HGV only flows

Link	AM				PM			
	2030 With Development	2044 (8.5k homes) With Development	Difference	% Difference	2030 With Development	2044 (8.5k homes) With Development	Difference	% Difference
B2067 Otterpool Lane	46	50	4	9%	27	31	4	15%
A20 Ashford Road b/w Otterpool Lane & Newingreen	15	21	6	40%	4	3	-1	-25%
New A20 Ashford Road link Road	21	16	-5	-24%	34	20	-14	-41%
Old A20 Ashford Road at Newingreen	59	21	-38	-64%	35	25	-10	-29%
A20 Ashford Road b/w Newingreen & M20	145	93	-52	-36%	98	50	-48	-49%
A20 Ashford Road at Barrow Hill	60	74	14	23%	27	32	5	19%
Aldington Road b/w Otterpool Lane & Stone Street	23	13	-10	-43%	11	9	-2	-18%
Stone Street	29	17	-12	-41%	15	11	-4	-27%
B2068 Stone Street	29	17	-12	-41%	15	11	-4	-27%
M20 east of J11	742	788	46	6%	669	710	41	6%
M20 west of J11	797	842	45	6%	716	760	44	6%
A261 Hythe Road	39	42	3	8%	14	15	1	7%
A20 Hythe Road west of Swan Lane	64	78	14	22%	28	33	5	18%
A262 Hythe Road	31	34	3	10%	15	16	1	7%
Total on all link assessed	**2,100**	**2,106**	**6**	**0.3%**	**1,708**	**1,726**	**18**	**1.1%**

16.5.10 Table 16-17 demonstrates that, on all assessed links, 2044 (8.5k homes) total flows are higher than 2030 total flows in both peak periods. As can be seen in Table 16-17, HGV-only flows are predicted to be higher in 2030 compared with the 2044 (8.5k homes) along some of the assessed links. However, these are not considered significant given that 2030 is the peak construction year.

16.5.11 Furthermore, as can be seen from Table 16-17, it is predicted that in the 2044 scenario compared to the 2030 scenario, on the assessed links, there will be in total 5,892 (25%) and 6,128 (25%) total vehicle movements more in the AM and PM peak, respectively. And, as can be seen from

16.5.12 Table 16-18, cumulatively there will six HGV movements more (0.3%) in the AM peak and 18 HGV movements more (1.1%) in the PM peak in the 2044 scenario compared to the 2030 scenario on the assessed links.

16.5.13 This demonstrates that the 2044 'with' development scenario (based on 8,500 dwellings) represents the highest overall traffic and HGV flows on the local highway network, despite the peak construction year occurring earlier in 2030.

Potential Construction Impacts

16.5.14 Nevertheless, potential impacts associated with construction traffic were identified and are as follows:

- Potential impact on pedestrian and cycle severance, amenity and fear and intimidation due to the increase in vehicle flows and the change in flow composition (i.e. an increase in large type vehicles). The CTMP would identify appropriate construction haul routes and carefully phase construction vehicles to and from site.
- Potential increase in pedestrian, cyclist, public transport user and driver delay due to the additional vehicles associated with construction activities on the highway network together with possible temporary traffic management. However, possible disruption would be minimised by ensuring delivery times are outside of peak periods, convoy systems are in place to group vehicle movements, movements are restricted away from schools start and closing times and temporary facilities are designed to minimise disruption to traffic.
- Potential reduction in public safety following an increase in the number of larger vehicle types travelling to and from the site. The access to the site from the strategic road network would be using new highways and designated haul roads which would minimise any impacts. A convoy system and banks person would be used where vehicle movements need assistance to reduce the potential effect on the safety of road users and potential traffic management control.

Assessment of Construction Effects

16.5.15 A CTMP would be produced and delivered via the CoCP as the mechanism to mitigate these effects from construction traffic, effectively routing construction vehicles away from sensitive areas where possible. The CTMP would contain management measures designed to mitigate the effects, outlined in Section 16.4. This would include measures for construction worker vehicles, including a construction worker travel plan to manage the vehicle generation of the construction, construction worker parking, as well as details on construction vehicle and visitor routeing to be agreed with the local highway authority in order to avoid sensitive residential areas where possible.

16.5.16 The magnitude of impact would be judged to be negligible adverse, where there would be very minor loss or detrimental alteration to one or more characteristics, features or elements. With the most sensitive receptor being high, this would result in Minor Adverse effects (Not significant) for the existing users of the road network and pedestrian and cycle infrastructure, from the increase in construction vehicles on the local highway network.

Operational Phase - 2044

Residual Effects from Operation

16.5.17 The permanent traffic and transport operational impacts associated with the additional traffic flow generated by Otterpool Park in 2044 have been assessed by firstly identifying those links expected to see an increase in traffic of more than 10% in peak hour flow, as set out in Section 16.4.

16.5.18 For each of those links, the impact on the following has then been considered:

- Pedestrian severance
- Pedestrian amenity;
- Driver and public transport delay;
- Pedestrian, cyclist and Equestrian delay;
- Fear and intimidation; and
- Accidents and safety.

16.5.19 The predicted significance of residual effects is based on the sensitivity of identified receptors on each of the assessed links (as set out in Table 16-7) and the predicted magnitude of impact, established taking into consideration effect specific thresholds identified in Section 16.2 and the embedded and additional mitigation measures identified in Section 16.4.

Trip Generation and Assignment

16.5.20 The forecast background and Otterpool Park development traffic has been calculated and assigned to the highway network as described in section 16.2 for the 2044 assessment year. This represents the year of full occupation of the 8,500 proposed Development for which outline planning permission is sought. Full details of the predicted development trip generation and assignment for the Development can be found within Chapters 7 to 9 of the TA (contained within ES Appendix 16.3).

16.5.21 Table 16-19 shows the predicted 18-hour traffic flows on key links within the study area for the 'with' and 'without development' scenarios along with the percentage change on each link. It should be noted that the difference between the 'with' and 'without development' flows is not equal to the total Otterpool Park development traffic flows due to an element of dynamic re-routing of background traffic flows in the 'with development' scenario, as determined in the VISUM model.

Table 16-19 Otterpool Park Forecast Development Traffic Flows

Link	18 Hour Traffic Flows, vehicle movements		
	Without Development	With Development	Percentage Change
B2067 Otterpool Lane	**14,575**	**7,766**	**-47%**
A20 Ashford Road b/w Otterpool Lane & Newingreen	**14,910**	**11,187**	**-25%**
Proposed Otterpool Avenue	**-**	**16,542**	**-**
Old A20 Ashford Road at Newingreen	**15,709**	**11,338**	**-28%**
A20 Ashford Road b/w Newingreen & M20	**29,026**	**48,222**	**66%**
A20 Ashford Road at Barrow Hill	**15,578**	**17,806**	**14%**
Aldington Road b/w Otterpool Lane & Stone Street	**9,150**	**6,652**	**-27%**
Stone Street	**3,610**	**6,002**	**66%**
B2067 Aldington Road west of Otterpool Lane	**3,251**	**3,424**	**5%**
Lympne Hill	**6,897**	**11,014**	**60%**
B2068 Stone Street	**11,078**	**11,737**	**6%**
M20 east of J11	**76,221**	**91,403**	**20%**
M20 west of J11	**74,425**	**80,542**	**8%**
Cheriton Road / Cheriton High Street	**18,754**	**23,494**	**25%**
A261 Hythe Road	**14,909**	**24,148**	**62%**
A259 Military Road	**19,257**	**19,498**	**1%**
A259 Prospect Road	**22,430**	**23,611**	**5%**
Swan Lane	**3,791**	**3,989**	**5%**
A20 Hythe Road west of Swan Lane	**12,776**	**14,504**	**14%**
A2070 Kennington Road	**25,299**	**26,130**	**3%**
A262 Hythe Road	**17,332**	**18,120**	**5%**
A260 Spitfire Way	**23,144**	**23,384**	**1%**
A260 Canterbury Road	**27,836**	**29,223**	**5%**
Alkham Valley Road	**15,593**	**16,293**	**4%**
Nackington Road	**10,404**	**10,795**	**4%**
Old Dover Road	**14,887**	**15,082**	**1%**
Bad Munstereifel Road	**71,058**	**74,326**	**5%**
A292 Hythe Road	**17,332**	**18,120**	**5%**
A2070 Kennington Road	**24,748**	**25,579**	**3%**
A20 Fougeres Way	**61,393**	**62,812**	**2%**
A251 Trinity Way	**41,233**	**41,662**	**1%**

16.5.22 Table 16-19 shows in highlight those links where a 10% or more increase in traffic is forecast in the 'with development' scenario compared to the 'without development' scenario in 2044. This is based on the IEMA thresholds (Rule 2), which suggest that a detailed assessment should be undertaken on especially sensitive areas, where traffic flows increase by 10% or more.

16.5.23 Due to the high volume of traffic the magnitude of impact on the M20 mainline is judged to be negligible. Given the lack of sensitive receptors, it is not considered that the effect on the M20 would be sensitive from an environment perspective and is reported as being Negligible. As such, the effects of the proposed Development on the SRN are unlikely to be significant), and no further detailed assessments have been undertaken.

16.5.24 As Otterpool Avenue is a new road, it has been included in the assessment. The receptors on the links included in the assessment and the sensitivity of the receptors has been presented in Table 16-7. The assessment has been undertaken in the following sections.

Severance

16.5.25 Severance occurs when there is difficulty experienced in crossing a heavily trafficked road. IEMA guidance suggests that changes in traffic flow of 30%, 60% and 90% are considered as 'slight', 'moderate' and 'substantial' changes in severance respectively.

16.5.26 Table 16-20 presented the 'with' and 'without development' traffic flows on the key links in the study area and the percentage change in traffic flows between the two scenarios. This table identifies eight links that are expected to experience a 30% or greater traffic flow increase over the 18 hour period.

16.5.27 Pedestrian severance is assumed to be mitigated where dedicated pedestrian crossing facilities such as zebra or signalised crossings are provided on key desire lines. Where this is the case, links experiencing an increase in traffic flow of 30% or greater are assumed to have a **negligible** effect on receptors.

16.5.28 The following sections consider the expected impact on receptors on the assessed links that are expected to experience 10% or greater traffic flow increase.

Table 16-20 Otterpool Park Development Flows Impact on Level of Pedestrian Severance

Link	Percentage Change in traffic flows	Significance of Effect
Proposed Otterpool Avenue	N / A	The potential magnitude of impact is judged to be Negligible due to the proposed embedded signalised pedestrian crossings on link. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road b/w Newingreen & M20	**66%**	The potential magnitude of impact is judged to be Negligible due to two proposed signalised pedestrian crossings on link. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant).**
A20 Ashford Road at Barrow Hill	**14%**	The potential magnitude of impact is judged to be Negligible due to proposed signalised pedestrian crossings on approach to Barrow Hill. Given presence of a number of

Link	Percentage Change in traffic flows	Significance of Effect
		sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.
Stone Street	**66%**	Change in flow greater than 60% therefore magnitude of impact is judged to be Moderate. Mitigation to be provided in form of new crossing facilities and/or additional traffic calming. Given this, the residual magnitude of impact would therefore be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as **Minor Adverse (Not Significant)**.
Lympne Hill	**60%**	Change in flow greater than 60%, therefore magnitude of impact is judged to be Moderate. As Lympne Hill is not expected to have pedestrian receptors due to the nature of the road, the potential effect is reported as being **Negligible (Not Significant).**
Cheriton Road	**25%**	The potential magnitude of impact is judged to be Negligible due to change in flow less than 30% and existing signalised pedestrian crossings on link. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant).**
A261 Hythe Road	**62%**	Change in traffic flows greater than 60%, therefore the magnitude of impact is judged to be Moderate. As described in section 16.4, this link is identified as high priority for enhancement through the Folkestone & Hythe Walking and Cycling Study, measures are expected to be provided that would reduce the magnitude of impact to Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being reported as **Minor Adverse (Not Significant)**.
A20 Hythe Road west of Swan Lane	**14%**	The magnitude of impact is judged to be Negligible due to change in flow less than 30% and zebra crossing outside Primary School. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is being reported as **Minor Adverse (Not Significant).**

16.5.29 As can be seen from Table 16-20, the links assessed for pedestrian and cycle severance has resulted in **Minor Adverse** and **Negligible** significance effect (**Not Significant**). For these reasons, the predicted effect on pedestrian and cycle severance is unlikely to be significant.

Pedestrian and Cycle Amenity

16.5.30 As explained in section 16.2, the pedestrian amenity threshold, as set out in the IEMA Guidelines to assess the significance of effect, is where the traffic (or its HGV component) is halved or doubled. Table 16-21 presents the 'with' and 'without development' traffic flows on the key links in the study area along with the percentage change in flows.

Table 16-21 Otterpool Park Development Flows including HGV proportions

Link	18 Hour Traffic Flows, vehicle movements			18 Hour Traffic Flows, HGV movements			HGV % of Total Traffic	
	Without Development	With Development	% Change	HGV Without Dev	HGV With Dev	% Change	Without Dev % HGV	With Dev % HGV
Proposed Otterpool Avenue	-	16,542	-	-	236			
A20 Ashford Road b/w Newingreen & M20	29,026	48,222	66%	1,619	937	-42%	6%	2%
A20 Ashford Road at Barrow Hill	15,578	17,806	14%	125	695	456%	1%	4%
Stone Street	3,610	6,002	66%	90	133	48%	2%	2%
Lympne Hill	6,897	11,014	60%	31	31	0%	0%	0%
Cheriton Road / Cheriton High Street	18,754	23,494	25%	230	282	23%	1%	1%
A261 Hythe Road	14,909	24,148	62%	201	382	90%	1%	2%
A20 Hythe Road west of Swan Lane	12,776	14,504	14%	132	611	363%	1%	4%

16.5.31 As can be seen from Table 16-21, whilst the links experience varying degrees of traffic increase, the percentage change of total and HGV traffic would less than double for all links except the A20 Ashford Road at Barrow Hill and A20 West of Swan Lane. For these two links HGV traffic will more than double. However, even with the increase, the percentage of HGVs on both links will be less than 5%.

16.5.32 Furthermore, proposed mitigation measures are expected to mitigate adverse effects on pedestrian and cycle amenity. As described in Section 16.4, a key principle of the Transport Strategy includes creating walkable neighbourhoods, this would include enhancement to existing links to the street types set out in the Strategic Design Principles document (ES Appendix 4.3). For strategic and primary streets, including the A20 within the site boundary, these would include segregated pedestrian and cycle lanes to provide safe, direct and attractive routes.

16.5.33 Table 16-22 presented a summary of traffic flow increases on the key links and resultant assessment of significance of effect

Table 16-22 Otterpool Park Development Flows Impact on Pedestrian and Cycle Amenity

Link	Percentage Change in total traffic flows	Percentage Change in HGV traffic flows	Significance of Effect
Proposed Otterpool Avenue	**N / A**	**N / A**	Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road b/w Newingreen & M20	**66%**	**-42%**	The percentage of HGV flow is reduced. The potential magnitude of impact is judged to be Negligible due to the proposed footpath and cycle paths on the western side of the A20 at this location. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant).**
A20 Ashford Road at Barrow Hill	**14%**	**456%**	The potential magnitude of impact is judged to be Moderate. Mitigation to be provided in form of proposed signalised pedestrian crossings and proposed reduction in speed limit to 30mph on approach to Barrow Hill from the site. Taking the predicted increase into account the proportion of HGV will increase from 1% to 4%. Given this, the residual magnitude of impact would therefore be Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
Stone Street	**66%**	**48%**	Change in HGV flow is less than doubled therefore magnitude of impact is judged to be Minor. Mitigation to be provided in form of new crossing facilities and/or additional traffic calming. Given this, the residual magnitude of impact would therefore be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as **Minor Adverse (Not Significant)**.
Lympne Hill	**60%**	**0%**	Change in flow greater than 60%, but with no change in HGV flow, therefore magnitude of impact is judged to be Minor. As Lympne Hill is not expected to have pedestrian receptors due to the nature of the road, the potential effect is reported as being **Negligible (Not Significant).**
Cheriton Road	**25%**	**23%**	The potential magnitude of impact is judged to be Negligible due to change in flow less than double and existing signalised pedestrian crossings on link. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant).**

Link	Percentage Change in total traffic flows	Percentage Change in HGV traffic flows	Significance of Effect
A261 Hythe Road	**62%**	**90%**	Change in traffic flows greater than 60%, therefore the magnitude of impact is judged to be Moderate. As described in section 16.4, this link is identified as high priority for enhancement through the Folkestone & Hythe Walking and Cycling Study, measures are expected to be provided that would reduce the magnitude of impact to Minor. Furthermore, enhancement to the PRoW HE/281 footpath towards Hythe provides an alternative walking route to this link. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being reported as **Minor Adverse (Not Significant)**.
A20 Hythe Road west of Swan Lane	**14%**	**363%**	The magnitude of impact is judged to be Minor, taking the predicted increase into account the proportion of HGV will increase from 1% to 4%. However, there are existing facilities that include footpaths, shared use routes, as well as a zebra crossing outside a Primary School. Some of this provision is also separated to the traffic via a grass verge. Given this, the residual magnitude of impact would therefore be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is being reported as **Minor Adverse (Not Significant).**

16.5.34 Taking above into account, the potential magnitude of impact on pedestrian and cycle amenity along the assessed links is judged to be Minor and Negligible. Given the presence of a number of sensitive receptors, including with High assigned value, the potential effect is reported as being between **Minor Adverse** and **Negligible**. For these reasons, the predicted effect on loss of amenity for vulnerable road users is **Not Significant**.

Pedestrian, Cyclist and Equestrian Delay

16.5.35 The IEMA Guidelines suggest that pedestrian delay is experienced at a lower threshold when pedestrians experience a 10 second delay crossing a carriageway with no crossing facilities for a two-way flow of 1,400 vehicles per hour. Table 16-23 presents the 18-hour flow total, including development and baseline traffic for 2044, as an hourly average for each link.

Table 16-23 Impact on Pedestrian, Cycle and Equestrian Delay

Link	Average Hourly Flow over 18 Hours	Significance of Effect
Proposed Otterpool Avenue	**919**	The potential magnitude of impact is judged to be Negligible due to the proposed signalised pedestrian crossings on link. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road b/w Newingreen & M20	**2,679**	Flow greater than 1,400 vehicles per hour. However, a signalised crossing is to be provided on the desire line for the PRoW across the A20 and pedestrian activity across the A20 at this location is expected to be low. Upgrade of the A20 will significantly improve visibility for pedestrians and drivers. Given the above, the potential magnitude of impact is judged to be Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road at Barrow Hill	**989**	Flow less than 1,400 vehicles per hour, signalised crossing to be provided across A20 on approach to Barrow Hill and visibility for pedestrians and drivers is good. Given the above, the potential magnitude of impact is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.
Stone Street	**333**	Flow less than 1,400 vehicles per hour and visibility for pedestrians and drivers is good. Given the above, the potential magnitude of impact is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as **Minor Adverse (Not Significant)**.
Lympne Hill	**612**	Flow less than 1,400 vehicles per hour, the potential magnitude of impact is judged to be Negligible. As Lympne Hill is not expected to have pedestrian receptors due to the nature of the road, the potential effect is reported as being **Negligible (Not Significant)**.
Cheriton Road / Cheriton High Street	**1,305**	Flow less than 1,400 vehicles per hour and signalised crossing are provided at locations along the route, therefore the potential magnitude of impact is judged to be Negligible**.** Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A261 Hythe Road	**1,342**	Flow less than 1,400 vehicles per hour. Road alignment limits visibility for pedestrians and drivers at some locations. Pedestrian activity is low and the majority of the route is flanked by open fields thus there is no reason for pedestrians to cross at these locations. Given the above, the potential magnitude of impact is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being reported as **Negligible (Not Significant)**.
A20 Hythe Road west of Swan Lane	**806**	Flow less than 1,400 vehicles per hour. Zebra crossing and traffic calming located within Sellindge Village. Pedestrian activity west of Sellindge Village is expected to be low and visibility for pedestrians and drivers is good, therefore the potential magnitude of impact is judged to be Negligible**.** Given presence of a number of sensitive receptors including with High assigned value, the potential effect is being reported as **Minor Adverse (Not Significant)**.

16.5.36 As can be seen from Table 16-23, the effects on all links would be Negligible (Not Significant), with the exception of the A20 Ashford Road b/w Newingreen & M20, Stone Street and Cheriton Road / Cheriton High Street having a Minor adverse (Not Significant) residual effect.

Pedestrian and Cyclist Fear and Intimidation

16.5.37 Magnitude of fear and intimidation effect can be established through a combination of traffic flow, speed and composition. The criteria from the IEMA Guidelines for assessing this have been set out in Table 16-6.

16.5.38 Table 16-24 shows the predicted 2044 hourly traffic flows with the development over an average 18-hour period and identifies the likely effect on fear and intimidation. The significance of effect on the link is determined using sensitivity of receptors in the vicinity, as set out earlier in Table 16-7, and the predicted magnitude of effect.

Table 16-24 Impact on Level of Fear and Intimidation

Link	Average Hourly Flow over 18 Hours	Significance of Effect
Proposed Otterpool Avenue	**919**	Flow between 600 and 1,200 vehicles per hour. However, footway would be provided set back from the carriageway with a segregated cycle/footway. As such the potential magnitude of impact is judged to be Minor. Given presence of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road b/w Newingreen & M20	**2,679**	Flow greater than 1,800 vehicles per hour, however pedestrians and cyclists have dedicated paths segregated by green space, therefore it judged that the magnitude of effect is reduced to Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road at Barrow Hill	**989**	Flow between 600 and 1,200 vehicles per hour. Footways are provided on both side of the road, some with reduced width, therefore it judged that the magnitude of effect is reduced to Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
Stone Street	**333**	Flow less than 600 vehicles per hour, therefore the magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
Lympne Hill	**612**	Flow between 600 and 1,200 vehicles per hour. Traffic calming measures on West Hythe Road are proposed. The magnitude of effect is judged to be Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.

Link	Average Hourly Flow over 18 Hours	Significance of Effect
Cheriton Road / Cheriton High Street	**1,305**	Flow between 1,200 and 1,800 vehicles per hour. Footways of adequate width are provided on both sides of the road with additional protection such as kerbside bollards and guardrailing at specific locations. Crossing facilities are provided along the route in the form of signalised crossings and/or pedestrian refuges. Vehicle speeds are generally low due to signal-controlled junctions and congestion on the network. Given the proposed mitigation measures the magnitude of effect is judged to be negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A261 Hythe Road	**1,342**	Flow between 1,200 and 1,800 vehicles per hour. As described in section 16.4, this link is identified as high priority for enhancement through the Folkestone & Hythe Walking and Cycling Study. Although mitigation is yet to be defined, measures are expected to be provided that would reduce magnitude of impact to Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Hythe Road west of Swan Lane in Sellindge Village	**806**	Given traffic flow between 600 and 1,200 vehicles per hour and traffic calming measures in Sellindge Village, the magnitude of effect is judged to be negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.

16.5.39 As can be seen from Table 16-24, the assessment of fear and intimidation effects shows links to have **Minor adverse, Minor adverse/ Negligible or Negligible (Not Significant)** effects.

Accidents and Safety

16.5.40 Table 16-25 presents the magnitude of effect of the development on Accidents and Safety which is assumed to be a culmination of a number of factors; the adverse effects caused by an increase in traffic flows, the overall volume of traffic and any existing issues which are causing accidents, and the beneficial effects of any interventions.

16.5.41 The introduction of mitigation measures on existing links or pedestrian/cycle infrastructure or application of design standards on new links, is assumed to have a beneficial effect on Accidents and Safety. The scale of beneficial effect is considered in terms of the scale of intervention. For example, segregated cycle or pedestrian facilities are expected to have a major beneficial impact on accidents and safety.

16.5.42 The following sections takes account of the cumulative magnitude of effects of traffic flows, existing accident and safety issues and interventions to derive an overall magnitude of effect on accidents and safety for each link.

Table 16-25 Impact on Accidents and Safety

Link	Significance of effect
Proposed Otterpool Avenue	New link to be constructed in accordance with all relevant design guidance. Segregated cycle way plus footway segregated from road by cycleway on one side of road plus signal-controlled crossings will have beneficial effect for pedestrians/cyclists. The magnitude of effect is judged to be Negligible. Given presence of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Ashford Road b/w Newingreen & M20	Road is to be re-aligned to meet design standards and signalised junctions with the proposed Business Park access, Otterpool Avenue and junction with Hythe Road will reduce vehicle speeds and provide opportunity to provide adequate drainage and surfacing. New signalised crossing on desire line for PRoW, segregated cycle and footpaths, road re-alignment to meet design guidance. New road alignment, drainage and surfacing to meet design guidance. Given the above mitigation measures, the magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.
A20 Ashford Road at Barrow Hill	Introduction of reduced speed limit, new signal-controlled crossing at new junction on approach to Barrow Hill. For this reason the magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.
Stone Street	Enhanced crossing points, additional traffic calming measures as required, plus mitigation of congestion at junction with A20. Given these mitigation measures, the magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
Lympne Hill	No accidents recorded on Lympne Hill during the assessed period, traffic flows will increase by 60%. The magnitude of effect is judged to be Minor. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
Cheriton Road / Cheriton High Street	Increase in traffic flow by 25%, Contributions to new traffic congestion scheme to be confirmed. Potential to include new pedestrian/cycle facilities if capacity allows. The magnitude of effect is judged to be Minor. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A261 Hythe Road	Increase in traffic by 62%. Mitigation of traffic congestion at junction with A20 plus contributions to new cycle/pedestrian scheme. The resultant magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
A20 Hythe Road west of Swan Lane at Sellindge Village	Increase in traffic by 14%. New traffic calming facilities provided in Sellindge Village, therefore the magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.

Driver and Public Transport User Delay

16.5.43 Comprehensive transport modelling has been undertaken to understand the implications of the proposed Development on traffic flows within the study area. This has established that the vast majority of junctions within the study area are not affected by significant driver delay (over 85% capacity), on the basis of assessment of flows during worst case 'peak hours' (08.00-09.00 and 17.00-18.00). This transport modelling work is presented in detail in the Transport Assessment in ES Appendix 16.4.

16.5.44 In the absence of traffic speed data, driver delay has been assessed by reviewing the effect of the proposed Development against the projected average delay in seconds per vehicle or Passenger Car Unit (PCU) on the link for both peak periods. A PCU is a measure of the impact of a particular vehicular mode based on how much space it takes up on the carriageway, with large vehicles having higher PCU values than smaller vehicles (i.e. a bus has a PCU value of 2.0, while a car is 1.0). Using PCUs as a measure of queuing and delay gives a truer reflection of the nature and density of traffic flow volumes than vehicle numbers.

16.5.45 Of the links in Table16-19 that are expected to experience an increase in traffic flow of 10% or more in the 'with development' scenario, Table 16-26 presents which of these links are expected to have junctions that operate over practical or theoretical capacity or have new junctions created on the link. These factors are then considered in terms of a significance of effect on Driver Delay on each link.

Table 16-26 Impact on Driver and Public Transport Delay

Link	Junction	Delay/Capacity Assessment	2044 DM PRC/Degree of Saturation (%)	2044 DS PRC/Degree of Saturation (%)	Significance of Effect
Proposed Otterpool Avenue	Signalised junction with A20 Ashford Road in east (J35)	Operates within capacity in AM and PM peaks	N/A	89.8%	New link, junction is predicted to operate within capacity, therefore the magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
	Signalised junction with A20 Ashford Road in west (J33)	Operates within capacity in AM and PM peaks	N/A	66.7%	
	Signalised junction with proposed High Street (J39)	Operates within capacity in AM and PM peaks	N/A	76.6%	
A20 Ashford Road b/w Newingreen & M20	Existing priority roundabout with M20 Junction 11 (J2)	Operates within capacity in AM and PM peaks with proposed mitigation	0.53	80.8%	Existing junction operating within capacity, addition of three new signalised junctions on link operating with PRC/Degree of Saturation 90% is judged to result in Minor magnitude of effect. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
	New signalised junction with Business Park access (J36)	Operates within capacity in AM and PM peaks	N/A	88.5%	
	New signalised junction with Otterpool Avenue (J35)	Operates within capacity in AM and PM peaks	N/A	89.5%	
	New signalised junction with Hythe Road / Stone Street (J11)	Operates within capacity in AM and PM peaks with the proposed mitigations	0.58	87.8%	
	A20 Ashford Road small roundabout (J43)	Operates marginally over capacity in the AM peak, within capacity in the PM peak	0.49	0.89	
A20 Ashford Road at Barrow Hill	New signalised junction with access roads on approach to Barrow Hill (J31)	Operates within capacity in AM and PM peaks	N/A	42.8%	New signalised junction operating within capacity. The magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.

Link	Junction	Delay/Capacity Assessment	2044 DM PRC/Degree of Saturation (%)	2044 DS PRC/Degree of Saturation (%)	Significance of Effect
	Existing single lane section operated by signal-control (J27)	Operates over capacity in AM and PM peaks Potential increase in delays without mitigation. Will be monitored under a "monitor-and-manage" approach	104.1%	123.1%	The existing single lane section is predicted to operate with significant delay (given the predicted delay, it is judged operate over capacity). The magnitude of impact is judged to be Major. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Moderate Adverse (Significant)**.
Stone Street	New signalised junction with A20 Ashford Road (J11)	Operates within capacity in AM and PM peaks with the proposed mitigation measures	0.47	86.0%	The new signalised junction and is predicted to operate within capacity and less than 90% PRC/Degree of Saturation. The magnitude of impact is judged to be Minor. Given the presence of receptors assigned as medium surrounding the signalised junction, the potential effect is reported as being **Minor Adverse (Not Significant).**
	Priority junction with Aldington Road, with priority on Aldington Road (J10)	Operates within capacity in AM and PM peaks	0.23	0.27	The existing priority junction is predicted to operate well within capacity and hence the magnitude of impact is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant).**

Link	Junction	Delay/Capacity Assessment	2044 DM PRC/Degree of Saturation (%)	2044 DS PRC/Degree of Saturation (%)	Significance of Effect
Lympne Hill	Existing priority junction with Aldington Road, with priority on Lympne Hill (J12)	Operates within capacity in AM peak and over capacity in PM peaks	0.57	0.76	Junction predicted to operate with PRC/Degree of Saturation of less than 0.85. The magnitude of impact is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.
Cheriton Road / Cheriton High Street	Signalised junction with Risborough Lane (J24)	Operates over theoretical capacity in AM and PM peaks – potential contributions to be made to junction improvement scheme to be confirmed	140.6%	193.8%	It is anticipated that provision of potential contributions and resultant improvement to both junctions will ensure that both junctions operate not worse than in the 2044 Do Minimum scenario. Therefore, the magnitude of impact is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
	Signalised junction with Beachborough Road and Cherry Garden Avenue (J25)	Operates over theoretical capacity in AM and PM peaks – potential contributions to be made to junction improvement scheme to be confirmed	106.6%	137.0%	
A261 Hythe Road	New signalised junction with A20 Ashford Road (J11)	Operates within capacity in AM and PM peaks with mitigation	1.97	85.8%	The proposed improvement would significantly reduce the predicted delay resulting in junction operating within capacity in both peaks. For this reason, the magnitude of impact is judged to be Major Beneficial. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Moderate Beneficial (Significant)**.

Link	Junction	Delay/Capacity Assessment	2044 DM PRC/Degree of Saturation (%)	2044 DS PRC/Degree of Saturation (%)	Significance of Effect
A20 Hythe Road west of Swan Lane in Sellindge Village	Existing priority junction with Swan Lane, with Priority on A20 (J3)	Operates within capacity in AM and PM peaks	0.25	0.32	Junction operates within capacity and with less than 90% PRC/Degree of Saturation. Therefore, magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with Medium assigned value, the potential effect is reported as being **Negligible (Not Significant)**.
A20 Hythe Road west of Swan Lane west of Sellindge Village	Existing priority junction with Stone Hill, with priority on A20 (J4)	Operates within capacity in AM and PM peaks	0.00	0.01	Junctions operating within capacity with less than 90% PRC/Degree of Saturation along the link. Therefore, magnitude of effect is judged to be Negligible. Given presence of a number of sensitive receptors including with High assigned value, the potential effect is reported as being **Minor Adverse (Not Significant)**.
	Existing priority junction with Station Road / Church Road, with priority on A20 (J5)	Operates within capacity in AM and PM peaks	0.22	0.26	
	Existing priority junction with Mersham Road, with priority on A20 (J6)	Operates within capacity in AM and PM peaks	0.31	0.33	
	Junction with M20 Junction 10A (J42)	Operates within capacity in AM peak and over-capacity in PM peak	74.4%	83.0%	

16.5.46 As can be seen from Table 16-26, the significance of effect on driver delay on the assessed links and taking into account the proposed mitigations and contribution is predicted to be mostly **Neutral or Minor Adverse (Not Significant).** The predicted effect on the A20 Ashford Road at Barrow Hill link is predicted to be **Moderate Adverse (Significant)**. However, based on the expected user-centric approach as set out in 16.4.21, the impact at these locations will be less significant due to lower car trips.

16.5.47 The predicted **Moderate Adverse (Significant)** effect on driver and public transport delay along the A20 Ashford Road at Barrow Hill link is the result of the existing single lane section operating over capacity with significant delay. The location of this junction is under a railway bridge, hence there are physical constraints for any potential enhancements here. The section will be kept under review through the "monitor-and-manage" approach.

Impact on PRoW

16.5.48 In addition to the impact on links where an increase in traffic flows generated by the Development of more than 10% is identified, the impact on the public rights of way network has been considered.

16.5.49 There are 11 PRoW that dissect the site. A PRoW survey was undertaken in April 2018 to determine condition of these routes and from that to identify likely level of recreational usage. The survey identified a relatively low level of usage of these routes, and primarily for local uses such as dog walking / fitness purposes. The sensitivity of receptors on these routes is therefore considered Medium.

16.5.50 No PRoW or bridleways would be removed as a result of the proposed Development. The proposed Development has been designed to complement and, where possible, enhance existing PRoW and bridleways within the site and to link in with external routes adjoining the site. The proposed series of walking and cycling routes will link into the existing footpaths and footways within the site, which will be upgraded as appropriate. As such, the existing PRoW and bridleways are expected to experience an increase in usage levels due to increased accessibility and an increase in local population.

16.5.51 The incorporation of green infrastructure, open space and a variety of habitats and landscapes forms an intrinsic part of the design of Otterpool Park. Further details are provided in the Green Infrastructure Strategy (ES Appendix 4.11). Given the above opportunities, the potential magnitude of impact on PRoW users is judged to be Moderate. Given the fact that the sensitivity of receptors on these routes is judged to be Medium, the proposed Development is considered to have a **Moderate beneficial (Significant**) effect on PRoW and bridleway users in the local area, including recreational and dog walker and equestrians.

Summary of Residual Effects on Assessed Links

16.5.52 Table 16-27 provides a summary of the residual effects on assessed links where a 10% or more increase in traffic is forecast in the 'with development' scenario compared to the 'without development' scenario in 2044. This is based on the IEMA thresholds (Rule 2), which suggest that a detailed assessment should be undertaken on especially sensitive areas, where traffic flows increase by 10% or more.

Table 16-27 Summary of Traffic and Transport Significance of Effects

Link	Severance	Pedestrian and Cycle Amenity	Pedestrian, Cyclist and Equestrian Delay	Pedestrian and Cyclist Fear and Intimidation	Accidents and Safety	Driver and Public Transport User Delay
Proposed Otterpool Avenue	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**
A20 Ashford Road b/w Newingreen & M20	**Negligible – not significant**	**Negligible – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Negligible – not significant**	**Minor adverse – not significant**
A20 Ashford Road at Barrow Hill	**Negligible – not significant**	**Minor adverse – not significant**	**Negligible – not significant**	**Minor adverse – not significant**	**Negligible – not significant**	**Moderate adverse - significant**
Stone Street	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**
Lympne Hill	**Negligible – not significant**	**Negligible – not significant**	**Negligible – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Negligible - not significant**
Cheriton Road	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse - not significant**
A261 Hythe Road	**Minor adverse – not significant**	**Minor adverse – not significant**	**Negligible – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Moderate beneficial - significant**
A20 Hythe Road west of Swan Lane	**Minor adverse – not significant**	**Minor adverse – not significant**	**Minor adverse – not significant**	**Negligible – not significant**	**Minor adverse – not significant**	**Minor adverse - not significant**

16.5.53 Table 16-27 shows that the significance of effect for the assessed links is Neutral or Slight adverse, except for the A20 Ashford Road at Barrow Hill links where the effect on driver and public transport user delay is predicted to be **Moderate Adverse (Significant)**, and the Cheriton Road / Cheriton High Street link where the same effect is predicted to be **Moderate Beneficial (Significant)**. In addition, as shown in the previous section, the predicted significance of effect on PRoW users is judged to be Moderate Beneficial (Significant).

16.5.54 Overall, while the assessment of effects associated with the transport and traffic operational impact demonstrated that there will be some limited **Moderate Adverse (significant)** effect on driver and public transport user delay (A20 Ashford Road at Barrow

Hill). However, based on the expected user-centric approach as set out in 16.4.21, the impact at these locations will be less significant due to lower car trips.

16.5.55 As described in section 16.5, discussions regarding the impact on fear and intimidation for cyclists on the A261 Hythe Road and the driver delay on Cheriton Road are ongoing with KCC and F&HDC. When mitigation measures are identified through further study, support is likely to be provided through the provision of contributions to be secured and detailed within the supporting Section 106 legal agreement. An alternative cycle route towards Hythe will be promoted using Aldington Road and Old London Road via Otterpool Lane or Stone Street. Improvements are proposed for HE/343 byway (Old London Road) which will benefit pedestrian and cyclists connecting to Hythe from the development. This will be secured and detailed within the supporting Section 106 legal agreement.

16.6 Cumulative Effects

Planned and Committed Growth

16.6.1 Planned and committed traffic growth and transport schemes have been identified in consultation with KCC, F&HDC and HE and have been included in the 'with' and 'without development' assessments described in this Chapter and the TA. Since the transport network improvements described in section 16.4 are integral to the proposed Development, those improvements have also been included in the 'with development' assessment as embedded design measures. Considered planned and committed developments are described further in Chapter 6 of the TA, contained within ES Appendix 16.4.

Otterpool Park Framework Masterplan Area

16.6.2 The Otterpool Park Framework Masterplan comprises an additional 1500 residential units to the proposed Development, to total a 1,000 unit garden town development. The additional development for up to 10,000 homes and infrastructure that would be required for this quantum has been considered as a sensitivity test within the TA for the future year of 2044.

16.6.3 As indicated in Section 8.5 of the TA, the additional development for the Otterpool Park Framework Masterplan (OPFM) would generate additional 6.7% increase in driver trips on the transport network as a percentage of the increase associated with the 8,500 homes application scheme in the AM peak hour. For example, for the A20 Ashford Road at Barrow Hill link there will be 14% increase in traffic associated with the implementation of 8,500 homes compared to the scenario without development. The additional 6.7% associated with 10,000 homes would result in the total 15% increase from the without development scenario. As such, the overall result associated with 10,000 homes compared to 8,500 homes would be that the effects described for the identified links in the above sections would be slightly exacerbated and not anticipated to be significant. However, the proposed measures identified in Section 16.4, including the monitor and manage approach to be secured through a Section 106 Agreement, would accommodate these additional flows without any additional significant effects.

Permitted Waste Facility

16.6.4 The assessment provides the worst case predicted cumulative impact for the proposed Development. The traffic data assumes that the existing planning permission for the Permitted Waste Facility is not realised and that instead the Permitted Waste Facility site is replaced with 800 residential units and a primary school, this forms the full 8,500 homes application scheme. The traffic data estimated for the scenario with the Permitted Waste Facility is reported in Chapter 8.6 of the Transport Assessment (ES Appendix 16.4). The vehicle trips generated by the 800 units and a primary school is 287 and 295 in the AM and

PM peak respectively. Using the AM peak vehicle trip value, the daily trip has been estimated using Department for Transport's Motor vehicle traffic distribution by time of day and day of week on all roads, Great Britain 2019, resulting in circa 3008 daily vehicle trips. The Permitted Waste Facility proposes to generate 17 and 2 HGV trips in the AM and PM peak, with a total of 168 HGV movements in a day. This shows that the traffic generated from the residential/education use of the site would be greater than those associated with the operation of the waste facility.

16.6.5 Therefore, it is considered that the cumulative effects with the Permitted Waste Facility would be no worse than the existing assessment undertaken for the identified links in the above sections and the proposed measures identified in Section 16.4 would be applicable.

Effects of Extraordinary Freight Conditions on M20

16.6.6 As described in section 16.3, freight parking at the Port of Dover is limited and demand can sometimes exceed capacity which then has an adverse effect on the highway network. The current method of mitigating this effect is the implementation of Operation Brock, which provides on-road holding spaces for HGVs between the M20 junctions 9 and 8 while keeping the motorway open to general traffic, albeit with reduced capacity.

16.6.7 Based on the information currently available, it is assumed that the M20 Junction 11, which forms the primary motorway access junction for Otterpool Park, would be kept open for use by general traffic, including traffic routing to/from Otterpool Park. This means that the primary access routes to/from Otterpool Park – which are the M20 Junction 11, the A261 Hythe Road and the A20 Hythe Road – would all remain open as route options.

16.6.8 Effective communication of highway network issues if they develop will have an important role to play in managing traffic on the three primary routes to/from the site. During periods when extraordinary conditions, such as Operation Brock or when accidents occur that lead to road closures and diversions, road users can be assisted to make route choices to avoid most congested routes where alternative routes or mode choice is available if they are made aware of the issue and effect. Such information could be disseminated through a travel alert service via a phone app or text/MSM message direct to their phone or computer desktop. Advice providing route alternatives could be automatically sent simultaneously. If disruption extends over a period of days, incentives for travel externally by non-car mode could be made available. This may be most relevant to workers in the Business Park who live off-site. In addition, on-site residences would be provided with effective broadband facilities to facilitate home-working, and cycle parking facilities to ensure an alternative travel mode to the private car is available.

16.6.9 Depending on how much general traffic the reduced capacity of the M20 will be able to accommodate, background traffic flows on primary roads adjacent to the M20 may increase leading during extraordinary network conditions. As shown in detail in the TA, as a result of minor mitigation the M20 Junction 11 would have some spare capacity in the AM and PM peak periods to accommodate additional traffic. Further capacity enhancements could be made if monitoring of future traffic conditions requires. The constraint point on the two other primary routes to/from the site, the one-way signal-controlled system at Barrow Hill and the signalised junction at the A20 Ashford Road and A261 Hythe Road have been designed without significant spare capacity in order that vehicles are encouraged to use the M20 where possible.

16.6.10 While there is limited opportunity to increase capacity further through Barrow Hill, signal/cycle timings could be dynamically optimised to respond most effectively to changes in traffic flow volumes in each direction. The effect of the new traffic calming proposals in Sellindge Village, which Sellindge Parish Councillors suggest has reduced the amount of traffic, especially HGV traffic, routing through the village, on flows on the A20 Hythe Road

during an extraordinary freight situation is not currently known. Further investigation into the long-term effects of the proposals would be needed to draw a conclusion.

16.6.11 Further capacity enhancement at the A20 Ashford Road / A261 Hythe Road could be provided with a larger intervention scheme. However, the implementation of a larger scheme to mitigate extraordinary, infrequent network conditions is not recommended if it encourages increased use of the A261 through Hythe during normal operating conditions.

16.6.12 It is acknowledged that network operating conditions during the implementation of any NH mitigation scheme and any additional mitigation provided by Otterpool Park would be monitored to determine residual effects and inform the adaption of mitigation measures where required to most effectively mitigate effects.

Summary of Cumulative Effects

16.6.13 As indicated in this section, planned and committed traffic growth and transport schemes have been included in the 'with' and 'without development' assessments described in this Chapter and the TA. As such, they were already accounted for and assessed terms of significance of effect and will not result in additional effects to summarised in Table 16-27.

16.6.14 The additional development for the Otterpool Park Framework Masterplan would result in slightly exacerbated effects described for the identified links in the above sections. However, the proposed measures identified in Section 16.4, including the monitor and manage approach to be secured through a Section 106 Agreement, are expected to mitigate any additional significant effects.

16.6.15 The cumulative effects of extraordinary freight conditions on the M20 have a potential to be significant, however, it is not within Otterpool Park development's obligation to mitigate against these extraordinary events.

16.6.16 Given the above, no additional significant effects as predicted to occur as the result of the schemes identified in this section.

16.7 Monitoring

16.7.1 A Monitor and Manage Framework is proposed as part of the Core Strategy to provide mitigation for the Strategic Road Network. There is a strong emphasis on this approach in the bringing forward of the Otterpool Park development. Given the worst-case nature of the trip generation exercise, it is inappropriate to bring forward infrastructure which provides excessive capacity and encourages additional private vehicle trips on the network.

16.7.2 It is expected that the monitor and manage approach would be facilitated by the implementation of traffic counting technology to monitor traffic levels around the development as it is built out. This data can then be used to derive the actual trips generated by the development which can be compared with the values reported in the TA.

16.8 Assessment Summary

16.8.1 The approach in this ES provides a worst-case assessment of the proposed Development for vehicle trips generated by the site. It has been demonstrated that even with this worst-case vehicle trips that these can be adequately mitigated through key highway improvements. The vision is that the actual vehicle trips generated by the development would not reach the estimated levels such that the schemes identified in the highway access strategy could be reduced or would no longer be necessary as the threshold of requirement are not met.

16.8.2 Table 16-28 provides an assessment summary with respect to transport, including the potential significant effect with embedded design measures in place, and additional measures required to reach the residual significance of effect.

Table 16-28 Impact Assessment Summary

Receptor	Embedded Design Measures	Potential Significant Effect (pre-mitigation)?	Phase (Construction (C), Operation (O))	Additional Mitigation	Mitigation Delivery Mechanism	Residual Effect Significance
Pedestrians Cyclists Equestrians	See Sections 16.4.1 and 16.4.2, comprising: Implementation of a CTMP	Severance = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**
Pedestrians Cyclists	See Sections 16.4.1 and 16.4.2, comprising: Implementation of a CTMP	Amenity = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**
Pedestrians Cyclists Equestrians	See Sections 16.4.1 and 16.4.2, comprising: Implementation of a CTMP	Delay = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**
Pedestrians Cyclists	See Sections 16.4.1 and 16.4.2 Implementation of a CTMP	Pedestrian fear and intimidation = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**
Drivers Bus passengers	See Sections 16.4.1 and 16.4.2 Implementation of a CTMP	Delay = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**
Pedestrians Cyclists Equestrians Drivers Public Transport User	See Sections 16.4.1 and 16.4.2 Implementation of a CTMP	Accidents and safety = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**

Receptor	Embedded Design Measures	Potential Significant Effect (pre-mitigation)?	Phase (Construction (C), Operation (O))	Additional Mitigation	Mitigation Delivery Mechanism	Residual Effect Significance
PRoW users	See Sections 16.4.1 and 16.4.2 Implementation of a CTMP	Severance, amenity, delay = Not Significant	C	No additional mitigation required	N/A	**Minor Adverse (Not Significant)**
Pedestrians Cyclists Equestrians	As set out in the Transport Strategy principles, the development will provide strong walking and cycling connections, with wider connectivity by walking, cycling and bridleways.	Severance = Significant	O	See Sections 16.4.49 to 16.4.59 comprising: Measures at Aldington Road between Otterpool Lane and Stone Street (Crossing enhancement) Measures at Stone Street (Crossing facility)	**Section 106 Contributions**	**Minor Adverse (Not Significant)**
Pedestrians Cyclists	A street hierarchy has been developed for Otterpool Park. This creates a distinction between different types of streets to appropriately serve the local community.	Amenity= Significant	O	See Sections 16.4.49 to 16.4.54, comprising: Measures at Aldington Road between Otterpool Lane and Stone Street (Crossing enhancement)	**Section 106 Contributions**	**Minor Adverse (Not Significant)**
Pedestrians Cyclists Equestrians	Strategic network junctions on site have been assessed and will be designed to accommodate the appropriate forecast	Delay = Significant	O	See Table 16-15, comprising of highway locations that will be	**Section 106 Contributions**	**Minor Adverse (Not Significant)**

Receptor	Embedded Design Measures	Potential Significant Effect (pre-mitigation)?	Phase (Construction (C), Operation (O))	Additional Mitigation	Mitigation Delivery Mechanism	Residual Effect Significance
	trips with the implementation of Otterpool Park.			subject to the Monitor and Manage Approach		
Pedestrians Cyclists	The street hierarchy developed for the Otterpool Park site will provide appropriate level of provision for pedestrians and cyclists	Pedestrian and cyclist fear and intimidation = Significant	O	See Sections 16.4.62 to 16.4.63, comprising: Measures at A261 Hythe Road (Currently no firm proposals, but Improvement to alternative route HE/343 byway for pedestrians and cyclists)	**Section 106 Contributions**	**Minor Adverse (Not Significant)**
Pedestrians Cyclists Equestrians Drivers Public Transport User	Strategic and Primary streets defined in the street hierarchy will provide segregated pedestrian and cycle lanes to offer safe, direct and attractive routes.	Accidents and safety = Significant	O	See Sections 16.4.49 to 16.4.59 comprising: Measures at Aldington Road between Otterpool Lane and Stone Street (Crossing enhancement) Measures at Stone Street (Crossing facility)	**Section 106 Contributions**	**Minor Adverse (Not Significant)**

Receptor	Embedded Design Measures	Potential Significant Effect (pre-mitigation)?	Phase (Construction (C), Operation (O))	Additional Mitigation	Mitigation Delivery Mechanism	Residual Effect Significance
Drivers Bus passengers	Strategic network junctions on site have been assessed and will be designed to accommodate the appropriate forecast trips with the implementation of Otterpool Park.	Delay = Significant	O	See Sections 16.4.45 to 16.4.48, and Table 16-15 comprising: Measures at A20 Ashford Road at Barrow Hill (Signal timings) Highway locations that will be subject to the Monitor and Manage Approach	**Section 106 Contributions**	**Moderate Beneficial (Significant) -** A261 Hythe Road **Moderate Adverse (Significant) -** A20 Ashford Road at Barrow Hill
PRoW users	As set out in the Transport Strategy principles, the development will provide strong walking and cycling connections, with wider connectivity by walking, cycling and bridleways.	Severance, amenity, delay = Significant	O	See Sections 16.4.49 to 16.4.59, comprising: Measures at Aldington Road between Otterpool Lane and Stone Street (Crossing enhancement) Measures at Stone Street (Crossing facility)	**Section 106 Contributions**	**Moderate Beneficial (Significant)**

Notes: Phase column, Construction = C, operation = O

16.9 References

Reference	Title
Ref 16.1	Institute of Environmental Assessment (1994); *Guidelines of the Environmental Assessment of Road Traffic.*
Ref 16.2	Ministry of Housing, Communities & Local Government (2021); National Planning Policy Framework.
Ref 16.3	Department for Transport (DfT) (2013); *The Strategic Road Network and the Delivery of Sustainable Development – Department for Transport Circular 02/13.*
Ref 16.4	Highways England (2015); *The Strategic Road Network: Planning for the Future.*
Ref 16.5	Ministry of Housing, Communities & Local Government (2014); *Travel Plans, Transport Assessment and Statements.*
Ref 16.6	Kent County council (2016); *Kent Local Transport Plan 4: Delivering Growth without Gridlock 2016-2031.*
Ref 16.7	Folkestone & Hythe District Council (2022); *Core Strategy Review*.
Ref 16.8	Folkestone & Hythe District Council (2011); *Folkestone & Hythe District Council Transport Strategy.*
Ref 16.9	Reference not used
Ref 16.10	Folkestone & Hythe District Council (2020); *Places and Policies Local Plan.*
Ref 16.11	Folkestone & Hythe District Council (2017); *A Charter for Otterpool Park.*
Ref 16.12	Mott Macdonald (2018); *Otterpool Park Garden Town, Kent Walking and Cycling Study.*

Arcadis UK

80Fen

80 Fenchurch Street

London

T: +44 (0) 20 7812 2000

arcadis.com