

CHAPTER 8: TRANSPORT AND ACCESS

8.1 INTRODUCTION

- 8.1.1 This chapter of the ES has been produced by Paul Basham Associates on behalf of One Horton Heath and assesses the impact of the likely changes in traffic patterns arising from the proposed development both during construction and operation.
- 8.1.2 To confirm, this chapter reviews both the wider OPA and OPA Phase 1.
- 8.1.3 The chapter describes the assessment method; the baseline conditions at the Application Site and surroundings, the future baseline with committed development the likely significant environmental effects; the mitigation measures required to prevent, reduce or off-set any significant adverse effects; and the likely residual effects after these measures have been implemented.
- 8.1.4 Transport Assessments (TA) have been produced as separate documents for the wider OPA and OPA Phase 1. The scope and structure of each TA has been informed by discussions with officers at the Local Highway Authority, Hampshire County Council (HCC), and the Local Planning Authority, EBC. The TAs have also been prepared in accordance with national, regional and local planning policy including the National Planning Policy Framework (NPPF), HCC's Local Transport Plan 3 and EBC's Adopted and Emerging Local Plans.
- 8.1.5 The TAs have been used as source material which primarily identify the two proposed developments' compliance with national, regional and local transport planning policy regarding accessibility by non-car modes and the destinations and purpose of journeys. The TA also identifies measures proposed to mitigate the two developments impact and a strategy to improve accessibility for all transport modes, particularly for alternatives to the car such as walking, cycling and public transport. In addition, a Framework Travel Plan (FTP) has been prepared to support the Wider OPA and a Travel Plan has been produced to support the OPA Phase 1. Both the FTP and TP set out measures that would be introduced to encourage sustainable travel patterns and reduce the reliance on single occupancy vehicle trips.
- 8.1.6 The TAs do not fully assess the environmental impacts of the road traffic generated by the proposed development. This requires assessment against different criteria and traffic data has been provided to the relevant consultants; particularly noise quality and air quality specialists to determine such impacts.

- 8.1.7 It is important to note that the Application Site subject to both the Wider OPA and OPA Phase 1 planning applications have extant consents which included considerations with regards to traffic impacts and accessibility, some of which (e.g. accessibility) would not change as a result of the revised proposals.

8.2 ASSESSMENT CRITERIA & METHODOLOGY

Previous Assessment

- 8.2.1 The Application Site has been subject to four previous planning applications, two of which required Environmental Statement. This includes 'Chalcroft Farm and Land West of Horton Heath' which secured extant consent under application reference X/19/86475. The second application at 'Fir Tree Farm and Victoria Farm House' secured extant consent under application reference X/19/86303.
- 8.2.2 This Environmental Statement chapter has therefore followed that submitted previously and found acceptable.

Scoping Opinion

- 8.2.1 The extent of the study area has been scope with HCC Highways and EBC. A formal Scoping Opinion was issued in August 2020 and this ES chapter therefore reflects the necessary transport and traffic comments.
- 8.2.2 The majority of the study area reflects that agreed with HCC Highways through the pre-application scoping exercise and thus reflects the study area included within the associated Transport Assessments.
- 8.2.3 At the time of writing, the additional areas of assessment associated with this ES that are not included with the associated TAs include the impact of the M27 Junctions 5 and 8 and impact on Hedge End Railway Station and Eastleigh Railway Station.
- 8.2.4 The key routes included in the study area are summarised below:
- West Horton Heath to Eastleigh Corridor
 - West Horton to Fair Oak/Colden Common Corridor
 - West Horton Heath towards Hedge End Corridor
 - Southampton, Hedge End and West Corridor

8.2.5 To support the OPA Phase 1 planning application, the TA reflects a smaller study area based on the smaller scale of development and location of proposed access points. This is detailed within the associated Transport Assessment.

Legislative Context

8.2.6 The process of Environmental Impact Assessment is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017¹. These regulations apply the WU directive 'On the assessment of the effects of certain public and private projects on the Environment' (usually referred to as the Environmental Impact Assessment Directive) required to be considered within the Town Planning System in England. In terms of transport and highways impacts there are no specific pieces of legislation.

Planning Policy and Guidance

8.2.7 This section of the report considered the transport related national and local policy under which the site will be assessed.

National Planning Policy

8.2.8 The revised National Planning Policy Framework (NPPF) ² (adopted February 2019) acts as the central guidance for development planning, replacing all national planning policy guidance. The following NPPF paragraphs are relevant to Transport and Access.

8.2.9 Paragraph 102 states that "transport issues should be considered from the earliest stages of plan-making and development proposals", so that:

- a) The potential impacts of development on transport networks can be addressed;
- b) Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised;
- c) Opportunities to promote walking, cycling and public transport use are identified and pursued;

¹ Town and Country Planning (Environmental Impact Assessment) regulations 2017 as amended

² National Planning Policy Framework, Ministry of Housing, Communities and Local Government, 2019

d) 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

e) Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

8.2.10 Paragraph 103 identifies that “Significant development should be focused on locations which are or can be made sustainable, through limiting the needs to travel and offering a genuine choice of transport modes. This can help reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.”

8.2.11 Paragraph 108 sets out the three transport ‘tests’ which need to be addressed when considering sites that may be allocated for development in plans. It should be ensured that:

a) Appropriate opportunities to promote sustainable transport modes can be- or have been- taken up, given the type of development and its location;

b) Safe and suitable access to the site can be achieved for all users; and

c) 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.

8.2.12 Paragraph 109 identifies that “Development should only be prevented or refused on highways grounds if there was an unacceptable impact on highway safety, or residual cumulative impacts on the road network would be severe”.

8.2.13 Paragraph 111 states “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 impact of the proposal can be assessed”.

8.2.14 Therefore, development should provide opportunities for sustainable travel; achieve safe access; and should only be prevented where highway safety or residual cumulative impacts on the road network are considered severe.

Local Planning Policy

Current Planning Policy

Hampshire County Council's Local Transport Plan (2011-2031) ³

8.2.15 LTP3 sets out HCC's transport strategy and identifies a range of policy objectives based on the three guiding principles of "developing and supporting stronger communities, maximising wellbeing and enhancing quality of place". The most relevant policy objectives to this TA are summarised as:

- Continue to work and improve road safety through targeted measures that deliver a reduction in casualties and reduce the impact of traffic on community life and promote considerate driver behaviour;
- Work with district authorities to agree coherent policy approaches to parking; and
- Invest in sustainable transport measures, including walking and cycling infrastructure.

Eastleigh Borough Council Local Plan 2001-2011⁴.

8.2.16 The current Local Plan was adopted in May 2006 with Chapter 6 focussing on Transport and Accessibility. The adopted Local Plan identifies the following objectives, relevant to transport and highways which are in partnership with HCC:

- To reduce the need to travel, especially by car
- To reduce the number of accidents on our roads, particularly those involving vulnerable road users
- To encourage further provision and use of public transport, including the improvement of existing services and facilities
- To ensure the location of new development is in places which are or can become widely accessible by means of transport other than the car

³ Hampshire Local Transport Plan 2011-2031, 2013

⁴ Eastleigh Borough Local Plan Review (2001-2011), 2006

- To improve provision for cycling and walking
- To give priority to provision for the needs of pedestrians, cyclists and public transport users
- To meet the targets of the Road Traffic Reduction Act 1997
- To encourage where appropriate the transfer of freight from road to rail

8.2.17 Policy 100.T states 'Development which accords with other relevant policies of this Plan will be permitted provided it meets all the following criteria:

- i. It is, or could be well served by public transport, cycling and walking
- ii. It includes measures that minimise its impacts on the existing transport network
- iii. That where a large number of journeys are likely to be generated, the development is located to minimize travel demand and provide a choice of transport mode, and
- iv. That where appropriate, a Transport Assessment in accordance with the thresholds set out in Table B of the Hampshire Parking Strategy and Standards is included with the proposals.'

8.2.18 Policy 102.T states 'Development requiring new or improved access will be permitted provided it does not:

- i. Interfere with the safety, function and standard of service of the road network, or
- ii. Have adverse environmental implications and is to the adopted standard of the highway authority

Emerging Planning Policy

Eastleigh Borough Council Emerging Local Plan 2016-2036⁵

⁵ Eastleigh Borough Council Emerging Local Plan 2016-2036, 2018

8.2.19 EBC's Draft Local Plan (2011-2029) was submitted for formal examination in July 2014, however, following hearings, the Planning Inspector concluded that the plan was not sound because it did not provide sufficient housing. A revised Local Plan (2016-2036) was submitted to the Secretary of State in October 2018 with Hearings undertaken in January 2020 and the Inspector's Post Hearings advice made publicly available in April 2020. This advice outlined the need for some main modifications. At present (November 2020) the EBC Emerging Local Plan (2016-2036) remains unadopted. However, as this is emerging policy this still carries some weight and therefore has been considered in the completion of this Transport Assessment.

8.2.20 EBC's Emerging Local Plan identifies several objectives which relate to highways and transport which include:

- Tackling congestion – Tackle local traffic congestion and associated pollution by reducing car usage and improving transport infrastructure;
- Developing green infrastructure – Provide green links to and between local facilities and open space and a linked habitat network to safeguard wildlife and natural resources;
- Encouraging a sustainable community – Ensure future development contributes to the Borough's sustainability and resilience through effective low carbon and water efficient planning and design

8.2.21 Several strategic policies reference the proposed development site, including Strategic policy S3, Location of new housing which identified 'West of Horton Heath' for 950 dwellings and 'Land at Fir Tree Farm, Fair Oak' for 450 dwellings. Strategic policy S4, Employment provision also identifies land associated with this planning application under 'further employment development adjoining Chalcroft Business Park, subject to the provision of a new link road between the distribution park and Bubb Lane'. Strategic policy SA12, Transport infrastructure references 'a new link road linking Burnetts Lane and Bubb Lane serving the Chalcroft Business Park and new development west of Horton Heath'. Policy DM24, Housing sites, and Mixed-Use sites including housing with Planning Permission also makes reference to the extant permissions at Land West of Horton Heath and Land at Fir Tree Farm.

8.2.22 Policy DM13, General development criteria – transport confirms that 'all new development must have safe and convenient access to the highway network and make provision for access to, and by, other transport modes including public transport and cycle and pedestrian routes as appropriate'. The policy also confirms that 'all new development will be assessed to

establish whether it should contribute to off-site improvements to transport infrastructure in accordance with Hampshire County Council's Transport Contributions Policy, to the extent that these are necessitated by the development and proportionate to the scale of development. Development proposed that will generate vehicle movements likely to have an adverse impact on traffic conditions beyond the immediate vicinity of the site must be subject to Transport Assessment'.

8.2.23 Policy S13 of the Emerging Local Plan 'Strategic footpath, cycleway and bridleway link's references a number of new and strategic footpath/cycleway and bridleway routes which EBC are looking to secure. Those which would operate close to the site includes iv. 'Eastleigh to Botley via Bishopstoke, Horton Heath and Hedge End' and v 'Eastleigh to Hedge End parallel to the railway line. The policy states that the routes would accord with the appropriate design and construction standards to enable adoption by the highway authority. The policy also states that 'new developments should integrate with existing routes and wherever possible maintain, protect and enhance their function'. The masterplan has thus been designed to add not sever, obstruct or have a detrimental impact on the existing or proposed network.

8.2.24 The Emerging Local Plan also identifies numerous site allocations which cover the land associated with this planning application. Policy FO6 Foxholes Farm 'is allocated for development to include approximately 45 dwellings' with the following specific requirements:

ii. The provision of vehicular access from Fir Tree Lane

iii. The provision of contributions to, or delivery of, off-site highway improvements considered necessary to serve the development

iv. The provision of pedestrian and cycle links both within the site and to connect the site with the surrounding area and development permitted in adjacent sites, including the provision of access to the adjacent public open space adjacent to the east of the site

8.2.25 Paragraph 6.1.46 of the Emerging Local Plan states 'The West Horton Heath/Fir Tree Lane development sites have committed to deliver the following capacity upgrades at this location:

- Signalisation of the Allington Lane junction;
- Provision of an additional lane on Allington Lane on the northbound approach to the junction (giving dedicated left hand and right hand turn lanes)
- Widening between Allington Lane and Sandy Lane to two lanes in each direction (constituting of an ahead lane and a right turn filter lane)

- A right hand turn filter lane on Sandy Lane southbound arm; and
- Addition of two lanes on Fair Oak Road eastbound to enable dedicated lanes for each traffic movement (left and right turns and ahead).'

8.2.26 Paragraph 6.1.49 also states 'there is a commitment by the West of Horton Heath development to improve capacity at [Botley Road/Eastleigh Road Junction] by widening the northern (Winchester Road) arm to provide two southbound lanes.

8.2.27 Policy WE1 'Chalcroft Business Park' is identified as 'proposals for the alteration, extension, change of use or redevelopment of existing land and buildings within the Chalcroft Business Park for class B1b, B1c, B2 and B8 uses' and will be permitted if all the following criteria are met:

- 'A new road is built as shown on the policies map to serve the Chalcroft Business Park and the new development west of Horton Heath'

8.2.28 Policy WE2 'Land adjoining Chalcroft Business Park' is identified as 'a site of approximately 1.6 hectares between the Chalcroft Business Park and Burnetts Lane' and is allocated for employment development in use classes B1(b), B1(c) and B8 provided that:

- A new road is built as shown on the policies map to serve the Chalcroft Business Park and the new development west of Horton Heath'
- The site is served by a shared access within the rest of the Chalcroft Business Park

8.2.29 Paragraph 6.5.56 references the proposed link road through the site and states 'as part of the West of Horton Heath development, there is a commitment by developers to deliver a new road linking Burnetts Lane and Bubb Lane, serving the Chalcroft Business Park and new development west of Horton Heath'

8.2.30 More specific to transport policy are Policy 91.T Transport Schemes, Policy 100.T Transport and New Development and Policy 102.T New accesses which replicate the policies in the current adopted Local Plan.

Eastleigh Borough Transport Assessment

8.2.31 The Eastleigh Borough Transport Assessment provide the transport strategy for the Borough with a package of sustainable measures to improve accessibility and modal choice.

Guidance/ Best Practice

Manual for Streets

8.2.32 Manual for Streets⁶ was adopted in March 2007 by the Department for Transport and replaced Design Bulletin 32 and Places for Streets and Movement. Manual for Streets has a focus on residential, lightly trafficked streets, but many of the key principles can be applicable to other types of streets and it is the responsibility of the user to ensure its application is appropriate. The manual provides guidance about the design, construction, adoption and maintenance of new and existing residential streets.

Manual for Streets 2

8.2.33 'Manual for Streets 2 – wider application of the principles' (September 2010)⁷ acts as a companion guide to 'Manual for Streets' and extends its practices beyond just residential streets to cover urban and rural situations increasing its applicability. Manual for Streets 2 provides more background and scenarios which are applicable to transport planning and fill the gap in some design guidance, in particular the gap between Manual for Streets and Design Manual for Roads and Bridges (DMRB).

Baseline Data Collection

8.2.34 The following information and data have been collected to assist with the transport assessment and review traffic patterns associated with the Proposed Development:

- Census statistics relating to journey to work, mode and car ownership;
- Traffic flow distribution diagrams from the two previous outline planning consents;
- Trip rates approved from the previous outline planning consents;
- Additional trip rates from the national TRICS database
- TEMPro Growth Factors from TEMPro Version 7.2 software

⁶ Manual for Streets, Department for Transport, 2007

⁷ Manual for Streets 2 – Wider application of the principles, Department for Transport, 2010



- New traffic count surveys of the surrounding road network;
- Personal Injury Accident (PIA) statistics for the local road network; and
- Eastleigh Borough Council's 'Eastleigh Strategic Transport Study'.

8.2.35 The DfT's Transport Analysis Guidance (TAG) on Data Sources and Surveys (January 2014) advice states that 'surveys should be carried out during a 'neutral' or representative, month, avoiding main and local holiday periods, local school holidays and half terms, and other abnormal traffic periods. National experience is that the following Monday to Thursdays can be neutral: late March and April (excluding the weeks before and after Easter); May (excluding the Thursday before and all of the week of each Bank Holiday); June; September (excluding school holidays or return to school weeks); all of October, and all of November (provided adequate lighting is available).

8.2.36 To identify the existing baseline traffic flows on the local road network, 3 Automated Traffic Counters (ATCs) and 7 Manual Classified Counts (MCCs) were undertaken in November 2018. This covered the following roads and junctions

- Burnetts Lane
- Allington Lane
- Bishopstoke Road
- Maunsell Way/Tollbar Way Roundabout
- Fair Oak Road/Sandy Lane/Blackberry Drive Junction
- Botley Road/Burnetts Lane/Knowle Lane Junction
- Winchester Road/Portsmouth Road Junction
- Tollbar Way/Charles Watts Way/Turnpike Way Junction
- Telegraph Road/Botley Road/Moorgreen Road Junction
- Allington Lane/Swaythling Road/Townhill Way Junction

8.2.37 These surveys have been conducted so that a growth factor can be calculated to factor up the 2016 baseline figures utilised in the North-West Horton Heath application (planning application reference: O/16/79354). This is an approach which has been agreed in advance with

Hampshire County Council Highways as set out in an email dated 11th October 2018, including the number and location of these surveys to identify sufficient samples to generate an accurate growth factor.

8.2.38 Through the pre-application process, HCC Highways determined 7 additional junctions required a highways capacity assessment beyond those assessed as part of the extant consents. Therefore, no data existed for these junctions and therefore Manual Classified Turning Counts were completed on Tuesday 15th September 2020 at the following junctions:

- Tollbar Way/Pets at Home/M&S Roundabout
- Romsey Road (A335)/Upper Market Street Signal Junction
- Romsey Road/Leigh Road/Leigh Road Signal Junction
- Main Road (B3354)/Spring Lane/Dunsford Ride Signal Junction
- Main Road (B3354)/Highbridge Road Priority Junction
- High Street (B3335)/Hazeley Road/Finch's Lane Signal Junction
- B3335/M3 Junction 11 Signal Junction

8.2.39 The date/time of the surveys were agreed with HCC Highways before completion due to the current COVID-19 pandemic. A review of the data has also been completed to assess whether the recorded flows are comparable to the nearby links for existing data. This review confirms the data was comparable and thus suitable for the purpose of this assessment.

8.2.40 Railway station usage data has been obtained from the Office of Road and Rail's data portal for the most recent assessment year of 2018-2019. Data on the total number of entries and exits annually at both Hedge End Railway Station and Eastleigh Railway Station have been used to consider the impact of the proposed development on rail use.

Assessment Methodology

8.2.41 The assessment methodology has been informed by guidelines issued by the Institute of Environmental Management and Assessment (IEMA). These guidelines suggest that the following rules should be applied when considering the scope and extent of the environmental assessment:



- Highway links where traffic flows are predicted to increase by at least 30% should be included within the assessment (or where the number of HGVs is predicted to increase by 30%); and
- Areas that are considered to be especially sensitive to increases in traffic volumes should be included where traffic flows are predicted to increase by at least 10%.

8.2.42 These guidelines are formed on the basis that, in environmental terms, a 30% increase in traffic flow on a standard highway link is considered to be a 'significant' impact. An increase in traffic flow of less than 10% however would not be discernible to road users as background traffic flows can fluctuate by this amount on a daily basis.

8.2.43 The exception to this is where a transport link can be considered to be within a sensitive area, such as adjacent to a school, hospital, nursing home or where residential properties front onto the link and pedestrian activity is high.

8.2.44 The IEMA guidelines refer to the assessment of the Site's impact on link flows by establishing the overall 'without Site' and 'with Site' two-way flows for the links preceding the junctions' arms subject to a material increase.

8.2.45 The 'Guidelines for the Environmental Assessment of Road Traffic' suggested that assessment should be carried out for the 'scope in' areas regarding the following effects:

- **Severance:** Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. In general terms according to the IEA 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.
- **Driver Delay:** the delay to drivers generally occurs at junctions where opposing vehicle manoeuvres are undertaken with vehicles having to give or receive priority depending upon the type of junction arrangement.
- **Pedestrian Delay:** The delay incurred by pedestrians is generally a direct consequence of their ability to cross roads.
- **Pedestrian Amenity:** The term pedestrian amenity is broadly defined as the relative pleasantness of a journey.

- Accidents and Safety: This establishes the effect on the road safety record of the adjoining road network.

8.2.46 The receptors of impact include all local road network users with sensitivity being classed as low to very high.

8.2.47 The above would be assessed through percentage impact assessments of increases in traffic flow as a result of the Proposed Development in the assessment area and through junction modelling assessments undertaken as part of the TA.

Air Quality and Noise

8.2.48 The air quality and noise effects of traffic generated by the proposed development are dealt within in separate chapters of the ES and these deal with where sensitive receptors are in terms of air quality and noise. Traffic forecasts for the noise and air quality assessments has been produced using the methods set out in the TA's.

Significance Criteria Terminology

8.2.49 The assessment of effect significance (beneficial or adverse) is based on the following definitions:

- Substantial – a large change compared to the natural variations in background level;
- Moderate – change which is noticeable and may be a breach of limits and standards;
- Slight – change which when compared to background levels is only just noticeable. Limits and standards will not be breached;
- Negligible – minor change to baseline environment that is not perceptible; and
- No impact – no change to baseline environment.

8.2.50 The assessment of significance is based on the criteria set out in the EIA guidelines and/or the judgement and expertise of the assessor.

Geographical Scope

8.2.51 The scope of the assessment involves the key highway junctions and links within approximately a 5km radius of the Application Site, although it should be noted that the scope is based on route assignment and trip generation rather than purely on proximity and will include sensitive areas where the increase in traffic volumes is at least 10%. In particular, the

following junctions (as included within the previous Transport Assessments) are assessed as part of the Wider OPA:

- Fir Tree Lane/Allington Lane junction
- Allington Lane/Fair Oak Road/Eastleigh Road junction
- Sandy Lane/Blackberry Drive/Fair Oak Road
- Bishopstoke Road/Chicken Hall Lane mini-roundabout
- Bishopstoke Road/Twyford Road roundabout
- Fir Tree Lane/Burnetts Lane junction
- Burnetts Lane/Botley Road/Knowle Lane signalised junction
- Botley Road/Eastleigh Road/Stubbington Way signalised junction
- Botley Road/Winchester Road/Mortimers Lane signalised junction
- Winchester Road/Sandy Lane priority junction
- Winchester Road/Portsmouth Road (Fishers Pond)
- Winchester Road/Church Lane/Wessex Way junction
- Botley Road/Snakemoor Lane/Winchester Road/Bubb Lane roundabout
- Bubb Lane/Tollbar Way junction
- Tollbar Way/Maunsell Way roundabout
- Allington Lane/Swaythling Road/Townhill Way roundabout
- Allington Lane/Upmill Close/Oak Vale roundabout
- Moorgreen Road/High Street/Telegraph Way double mini-roundabouts
- Botley Road/Tollbar Way roundabout
- Charles Watts Way/Tollbar Way/Turnpike Way roundabout
- M27 Junction 7

8.2.52 Since the ES Scoping Report, 7 additional junctions have been included to the scope of assessment which includes:

- Tollbar Way/Pets at Home/M&S Roundabout

- Romsey Road (A335)/Upper Market Street Signal Junction
- Romsey Road/Leigh Road/Leigh Road Signal Junction
- Main Road (B3354)/Spring Lane/Dunsford Ride Signal Junction
- Main Road (B3354)/Highbridge Road Priority Junction
- High Street (B3335)/Hazeley Road/Finch's Lane Signal Junction
- B3335/M3 Junction 11 Signal Junction

8.2.53 In addition, the three proposed site access roundabouts are included within the scope of assessment.

8.2.54 The geographical scope of assessment is reduced as part of the OPA Phase 1 TA as agreed with HCC and thus covers:

- Allington Lane/Fair Oak Road Priority Junction
- Fair Oak Road/Sandy Lane/Blackberry Drive Signal Junction
- Bubb Lane/Bubb Lane/Tollbar Way Priority Junction
- Tollbar Way/Maunsell Way Roundabout
- Botley Road/Tollbar Way/Bradbeers Roundabout
- Winchester Road/Sandy Lane Priority Junction
- Winchester Road/Portsmouth Road (Fishers Pond) Signal Junction
- Winchester Road/Church Lane/Wessex Way Roundabout

8.2.55 In addition, the three proposed site access roundabouts are included within the scope of assessment for the OPA Phase 1.

8.2.56 At the time of writing this ES, no comments have been provided by Highways England with respect to additional junctions and links requiring assessment above those identified below. It is considered that the impact of the Wider OPA and OPA Phase 1 on Junction 5 on the M27 in particular would be low, with vehicles wishing to access Southampton or Eastleigh using other routes already such as Allington Lane, Moorgreen Road, Charles Watts Way for Southampton and Allington Lane and the B3037 to access Eastleigh. It is proposed 52 AM (0800-0900) trips would travel towards Junction 5 and 76 from Junction 5. In the PM (1700-1800) peak it is proposed 83 vehicle trips would travel towards Junction 5 and 50 from Junction 5. Of the

movements travelling towards Junction 5, it is considered a moderate number may exit at Junction 5, but most would continue on the M27 past Junction 5.

8.2.57 For movements travelling east, it is currently envisaged 175 AM trips enter the M27 at Junction 7 and 125 exit and in the PM 153 vehicle trips enter and 167 exit the M27 east. Similar to Junction 5, there are a variety of other routes accessing the locations which Junction 8 serves including Bursledon, Hamble and Swanwick. Whilst some vehicles wishing to travel eastbound may utilise Junctions 8, this is considered to be a small number and instead all have been attributed to the M27 Junction 7 and therefore covers a robust assessment. There are also a variety of likely destinations to the east of the Proposed Development including Whiteley, Fareham and Portsmouth and therefore it is not considered significant volumes of traffic would travel onto the M27 Junction 8.

Temporal Scope

8.2.58 The assessment work considers the year of application (2020) a future year of 2030 (10 years post submission) and 2036 (end of Local Plan period) to support the Wider OPA and 2020 and 2030 only to support the OPA Phase 1 given the smaller scale of development and likely construction/occupation timeframes.

Assumptions & Limitations

8.2.59 It is acknowledged that there may be slight changes in the design of the proposed masterplans and/or off-site mitigation measures identified after permission is granted. However, it should be noted that this ES presents the results of the environmental assessment of the proposed designs and measures at the time of writing. If there are any fundamental changes it may be necessary to revisit the assessment presented by this ES and to submit a revised planning application – although no significant changes are envisaged.

8.2.60 The environmental effects that are reported in this ES, and the level of mitigation described effectively set the minimum standard which should be achieved by the final masterplans and the off-site mitigation identified.

8.3 CONSULTATION

8.3.1 The scope and structure of the ES, TAs, FTP and TP have been discussed and agreed with HCC and EBC. In addition, transport and highway matters have been raised and discussed in various additional forums including;

- Various meetings/consultations with HCC EBC, HCC Countryside Services, Stagecoach, Xelabus and Sustrans

- Public Consultations held in September 2020 and November 2020, with a total of 8 1-hour sessions
- Meetings with the Burnetts Lane Neighbourhood Focus Group

8.4 BASELINE ENVIRONMENT

8.4.1 The Wider OPA Site is located to the west of Horton Heath, northwest of Hedge End and south of Fair Oak. All three local settlements provide Horton Heath with a range of local amenities with pedestrian and cycle networks present on some connections towards these locations to encourage the use of sustainable transport and help create a sustainable development. A summary of the existing local facilities in the vicinity of the Wider OPA Site which may form key desire lines to/from the site are identified in Table 6.1, with the approximate distance to such facilities identified and measured from the centre of the site (using existing walking routes). Distances will therefore vary depending on where the user's origin/destination is on the site.

Table 8.1: Summary of Local Facilities (Wider OPA)

Local Facilities	Approximate Distances
Primary School (Fair Oak Infants and Fair Oak Junior Schools)	1.5km
Secondary School (Wyvern Technology College)	1.5km
Pharmacy (Fair Oak Village Pharmacy)	2.1km
Dentist Surgery (Thurlow Dental)	0.8km
Doctors Surgery (Stokewood Surgery)	2.3km
Convenience Store (Horton Heath Service Station)	0.96km
Horton Heath Community Centre	1.3km
Public House (Brigadier Gerard)	1.6km
Lapstone Playing Fields	1.6km
Fair Oak Village Centre	2km
Convenience Store (Tesco Esso Express)	2km
Hedge End Train Station	4.3km
Hedge End Retail Park	5.3km
Eastleigh Town Centre	5.6km
Itchen Valley Country Park	4.6km

- 8.4.2 It is important to note that the Wider OPA scheme proposes a mixed-use development and therefore several key amenities would be provided on site to benefit proposed site users and also existing residents of nearby settlements.
- 8.4.3 The OPA Phase 1 is located in the south eastern section of the Wider OPA Site and therefore the distances referenced above may differ slightly which is fully detailed in the associated TA however for ease of reference the distances associated with the OPA Phase 1 scheme are provided in Table 8.2

Table 8.2: Summary of Local Facilities (OPA Phase 1)

Local Facilities	Approximate Distances
Primary School (Fair Oak Infants and Fair Oak Junior Schools)	2.4km**
Secondary School (Wyvern Technology College)	2.5km**
Pharmacy (Fair Oak Village Pharmacy)	3.2km**
Dentist Surgery (Thurlow Dental)	1.8km**
Doctors Surgery (Stokewood Surgery)	3.0km***
Convenience Store (Horton Heath Service Station)	2.3km*
Horton Heath Community Centre	2.0km*
Public House (Brigadier Gerard)	1.8km*
Lapstone Playing Fields	2.3km**
Fair Oak Village Centre	3.0km**
Convenience Store (Tesco Esso Express)	3.0km**
Hedge End Train Station	2.8km*
Hedge End Retail Park	2.8km*
Eastleigh Town Centre	6.2km***

*Via Link Road and Bubb Lane

**Via Local Footpaths and Burnetts Lane

***Via Link Road and Fair Oak Road

Public Transport

- 8.4.4 The local area is currently served by Bluestar and Xelabus bus routes with bus stops located on Burnetts Lane and Botley Road to the east and on Fair Oak Road (B3037) to the north. A summary of the bus services in the local area surrounding the development site are summarised in Table 8.3.

Table 8.3: Summary of Local Bus Services

Service	Bus Stop Location	Operator	Route	Approximate Frequency		
				M-F	Sat	Sun
X10*	Burnetts Lane	Xelabus	Bishops Waltham-West End-Southampton	Hourly	Every 2 Hours	No Service
2 Bluestar	Botley Road	Bluestar	Southampton-Eastleigh-Fair Oak	Every 15 mins	Every 15 mins	Every 20 mins
3 Bluestar	Botley Road	Bluestar	Southampton-Hedge End-Eastleigh	Hourly	Hourly	Hourly
X9/X9A	Botley Road	Bluestar	Bishops Waltham-Hedge End-Eastleigh	Hourly	Every 2 Hours	No Service
X15	Botley Road	Xelabus	Hamble-Netley-Hedge End-Eastleigh	2 a day	No Service	No Service
X17	Fair Oak Road	Xelabus	Eastleigh-Bishops Waltham-Petersfield	4 a day Tues & Thurs	No Service	No Service

8.4.5 Table 8.3 highlights the array of local bus services surrounding the Wider OPA Site and the OPA Phase 1 Site and the opportunities for sustainable travel to key destinations including Eastleigh Town Centre and Southampton City Centre.

8.4.6 In addition to bus travel, the Wider OPA Site and OPA Phase 1 Site are well located to support rail travel with Hedge End Railway Station located circa 4.3km to the south east of the Wider OPA Site and Eastleigh Railway Station located 5.2km to the northwest of the Wier OPA site. To access Hedge End Railway Station the existing route via Bubb Lane, Tollbar Way and Maunsell Way may be used or alternatively an improved route via a local footpath which runs to the south of the railway may be used (discussed in Chapter 10 of the OPA TA). In addition, it is possible to use the Bluestar 2 and Bluestar 3 bus routes to access Eastleigh Railway Station or the XelaBus X9 to access Hedge End Railway Station.

8.4.7 Hedge End Railway Station is supported by 54 secure and sheltered cycle spaces as well as 96 car parking spaces, CCTV, customer help points and a payphone. Destinations from Hedge End Railway Station include Portsmouth Harbour (43-minute journey) and London Waterloo (94-minute journey) with intermediate stops including Fareham (12-minute journey), Winchester (18-minute journey), Basingstoke (37-minute journey) and Woking (1-hour journey). Currently there is one service an hour towards London Waterloo and one an hour towards Portsmouth Harbour).

- 8.4.8 Eastleigh Railway Station is equipped with 130 secured and sheltered bicycle parking spaces, a 133 space car park, a manned ticket office Monday-Sunday, customer help points, toilets, payphones, step free access coverage and ramp for train access. Eastleigh Railway Station is supported by more services than Hedge End Railway Station and therefore provides access to more destinations including London Waterloo (90-minute journey), Romsey (13-minute journey), Salisbury (55-minute journey), Portsmouth Harbour (50-minute journey).
- 8.4.9 The Transport Assessment associated with the Wider OPA details a Sustainable Transport Strategy, which includes Public Transport and the measures proposed to encourage users of the development to travel by rail and bus. Such measures include designing the link road and distributor roads to accommodate buses, securing a bus service through the site and improving the walking/cycling route towards Hedge End Railway Station.

Local Highway Network

- 8.4.10 A full review of the surrounding local highway network is provided within the associated TAS this includes an assessment of the vehicular, pedestrian and cycle amenities. A summary is provided below.
- 8.4.11 Burnetts Lane runs north to south through the western side of Horton Heath and culminates at the Burnetts Lane/Botley Road/Knowle Lane Signal Junction in the north and at the Burnetts Lane/Bubb Lane/Moorgreen Road Priority Junction to the south. The northern section of Burnetts Lane is subject to a 30mph speed limit and is more urban in nature, which increases to 40mph circa 75m south of the Burnetts Lane/Barley Fields Priority Junction. Controlled crossing facilities are provided at the Burnetts Lane/Botley Road/Knowle Lane Signal Junction on all arms of the junction, also supported by dropped kerbs and tactile paving.
- 8.4.12 Burnetts Lane changes character along its path with the northern section between the Burnetts Lane/Botley Road/Knowle Lane Signal Junction to its junction with Chapel Drove facilitated by pedestrian footways on both sides of the carriageway which both measure circa 1.8m in width. The Burnetts Lane carriageway in this section measures circa 6.5m in width. At the Chapel Drove junction the footway on the north/western side of Burnetts Lane continues behind a hedge line and exits onto Fir Tree Lane. A dropped kerb crossing point is provided across Burnetts Lane to connect two local footpath routes which would run from the proposed development into the existing Horton Heath Settlement.
- 8.4.13 To the south of Fir Tree Lane, a footway continues alongside the carriageway on the western side of Burnetts Lane, whilst the footway on the eastern side travels behind a substantial area of vegetation for some 75m. The footways both maintain the circa 1.8m width with the

carriageway also remaining near 6.5m. Once past the area of vegetation footways are again present on both sides of the carriageway although the eastern footway is segregated from the main carriageway by a grass verge.

- 8.4.14 The nature of Burnetts Lane begins to change at its junction with Meadowsweet Way where both footways divert behind vegetation and are less visible from the main carriageway. The footways cease some 30m to the north of the Burnetts Lane/Crispin Close priority junction and the carriageway width reduces to circa 5.2m.
- 8.4.15 To the south of Barley Fields, where Burnetts Lane becomes 40mph, Burnetts Lane is more rural in nature and is flanked by vegetation and hedgerow on both sides with no pedestrian infrastructure. The width of Burnetts Lane also decreases to some 4.5-5m. A small number of residential properties are directly accessed from this section of Burnetts Lane.
- 8.4.16 Allington Lane runs north to south from the Allington Lane/Fair Oak Road Priority Junction in the north to the Allington Lane/Swaythling Road (A27)/Townhill Way Roundabout in the south. Allington Lane is subject to a 40mph speed limit for the majority (except the northern 450m section which is subject to a 30mph speed limit upon approach to the urban/residential area) as well as a 6'- 6" width restriction (except for access). Allington Lane may be used for those wishing to access Southampton to the south, Eastleigh to the north west and Fair Oak to the north east.
- 8.4.17 Allington Lane also has limited pedestrian infrastructure with footway/cycleways present at the northern and southern extents only. A circa 1.8-2.0m wide footway currently exists on the eastern side of Allington Lane which extends from the Allington Lane/Fair Oak Road Priority Junction to the access of the Linden Homes development 'Limewood Grange'. Following recent planning consents the footway is extending south to support the Bargate Homes development 'Archers Wood' with proposals for this to extend further south again to connect with the roundabout access onto Allington Lane as part of the One Horton Heath development. An uncontrolled crossing point is provided on Allington Lane circa 30m south of Dean Road which is supported by dropped kerbs, tactile paving, build outs and bollards to connect with Bishopstoke Footpath 744 to the west. A pedestrian refuge island equipped with dropped kerbs and tactile paving is also provided at the Allington Lane/Fair Oak Priority Junction.
- 8.4.18 Fir Tree Lane is a narrow primarily rural lane which runs through the development site east to west. At the eastern end Fir Tree culminates at the Fir Tree Lane/Burnetts Lane Priority Junction and to the west ceases at the Fir Tree Lane/Allington Lane Priority Junction.

- 8.4.19 For the first 90m in the eastern section Fir Tree Lane adopts a Manual for Streets nature with 1.8m wide footways along both sides of the main carriageway which measures circa 4.1m wide which serves access to the two residential areas of Fir Tree Close and Angelica Gardens. This section of Fir Tree Lane is subject to a 30mph speed limit. To the west of Angelica Gardens/Fir Tree Close there are no pedestrian facilities present on Fir Tree Lane and the carriageway width narrows to varying widths.
- 8.4.20 To the west of Angelica Gardens, Fir Tree Lane does not operate with easy two-way working and instead informal passing places are present along the route in the form of overrun areas. The road width varies between 3.0m-5.5m and is signposted as 'Single track road with passing places' and is also subject to a 6'-6" width restriction (except for access). The western section of Fir Tree Lane is also subject to the national speed limit.
- 8.4.21 The B3354 is a long distance road which begins in Botley to the south and ends at the Main Road (B3354)/Highbridge Road Priority Junction in the north. Botley Road, Winchester Road and Main Road are all sections of the B3354 which run in close proximity of the site are likely to be used by development traffic travelling south towards Hedge End, Botley or Whiteley or north towards Fair Oak, Colden Common, Twyford or the M3.
- 8.4.22 The B3354 Botley Road runs through the centre of the existing Horton Heath settlement. This section is largely supported by footways on at least one side of the carriageway with a speed limit between 30-40mph. Where Botley Road passes through more developed and urbanised areas footways are present on both sides of the footway and is subject to a 30mph limit. A signalised pedestrian crossing is provided circa 20m to the north of Wyvern College and all arms of the Botley Road/Eastleigh Road/Stubbington Way Signal Junction are provided with controlled crossing points.
- 8.4.23 The north, the B3354 continues as Winchester Road through Fair Oak up to the Winchester Road/Portsmouth Road (Fishers Pond) Signal Junction. Through Fair Oak Winchester Road is supported by footways on both sides of the carriageway which decreases to one side at the junction with Mortimers Lane. The majority of Winchester Road is subject to a 30mph limit which increases to 40m, 770m south of the junction with Portsmouth Road (Fishers pond).
- 8.4.24 To the north of Fishers Pond the B3354 continues north as Main Road through Colden Common and up to the Main Road (B3354)/Highbridge Road Priority Junction where the B3354 ends. Main Road is supported by a footway on at least one side of the carriageway for its entirety. The speed limit of Main Road varies from 30mph through Colden Common and up to 50mph at the northern extent.

- 8.4.25 The B3335 begins at the Main Road (B3354)/Highbridge Road Priority Junction and travels north towards the M3. The southern section is subject to a 50mph speed limit, with a footway on at least one side of the carriageway. Upon the approach into Twyford the speed limit reduces to 30mph and footways become present on both sides of the carriageway (although some areas do have constrained widths). Upon exiting Twyford where the B3335 becomes Cox's Hill the speed limit increases to 40mph and a footway remains present on at least one side of the carriageway. Some 100m to the north of New Barn Farm the speed limit increases to national which continues up to the junction with the M3 motorway junction.
- 8.4.26 The B3037 runs east to west from the Botley Road/Eastleigh Road/Stubbington Way Signal Junction to the Bishopstoke Road/Romsey Road (A335)/Twyford Road roundabout and connects Fair Oak and Eastleigh. The B3037 is therefore likely to be used by vehicles wishing to travel towards Eastleigh or Fair Oak.
- 8.4.27 To the east of Allington Lane, Eastleigh Road is supported by footways on both side of the carriageway and a wide carriageway width of circa 7.2m. To the north of Fratton Way, the footway along the southern side of Eastleigh Road becomes a footway/cycleway. Eastleigh Road is subject to a 30mph speed limit and serves a residential area.
- 8.4.28 To the west of Allington Lane, Fair Oak Road continues with the footway/cycleway present on the southern side which then moves over to the north side at Stokewood Close. The width of Fair Oak Road remains similar to other areas of the B3037 at around 7m with a 30mph speed limit. The footway/cycleway continues along the northern side of Alan Drayton Way again with similar, relatively wide, road widths, although Alan Drayton Way is subject to a 40mph speed limit.
- 8.4.29 An on-road cycle lane on the southern side of the B3037 begins at the Co-Op and begins on the northern side at the junction with Manor Farm Close and both cease circa 50m west of the B3037/Riverside Priority Junction. A footway/cycleway is again provided at the Eastleigh Rugby and Football Club on the southern side of the carriageway which continues on the southern side of the carriageway and into Eastleigh.
- 8.4.30 Sections of the pedestrian and cycle infrastructure along the B3037 are separated from the main carriageway by a grass verge and there are a number of dropped kerb tactile paving and signalised crossing points to facilitate movements north to south.
- 8.4.31 The A335 also runs east to west from the Bishopstoke Road/Romsey Road (A335)/Twyford Road roundabout to the Leigh Road (A335)/Bournemouth Road (B3043) Signal Junction. In close proximity of the site, the A335 is likely to be used to access Eastleigh Town Centre and

Junction 13 of the M3. The A335 is urban in nature with footways present on at least one side of the carriageway whilst the carriageway widths remain relatively wide circa 8m to accommodate the various junctions along the route including at signal junctions where two lanes are required.

- 8.4.32 Bubb Lane runs northeast to south west and connects with infrastructure which leads into West End in the east, Hedge End in the south and Horton Heath to the north. The majority of Bubb Lane is subject to a 50mph speed limit with a circa 3m wide footway/cycleway along the eastern side of the carriageway with a main carriageway width around 7m.
- 8.4.33 At the Bubb Lane/Bubb Lane/Tollbar Way Priority Junction Bubb Lane continues west past Wessex Vale Crematorium and ends at the Burnetts Lane/Bubb Lane/Moorgreen Road Priority Junction. This section of Bubb Lane is more rural in nature with no footways present and instead the carriageway is flanked by vegetation. National speed limit restrictions are also in place for this section of Bubb Lane and the carriageway reduces in width to some 5.8m.
- 8.4.34 Tollbar Way connects to Bubb Lane in the north, travels through the centre of the Hedge End Retail Park area at ends at the Charles Watts Way/Tollbar Way/Turnpike Way Roundabout. Between the Bubb/Bubb Lane/Tollbar Way Priority Junction and Botley Road/Tollbar Way/Bradbeers Roundabout Tollbar Way is single lane with large carriageway widths and a footway/cycleway on the eastern side of the carriageway. To the south of the Bradbeers roundabout Tollbar Way has two lanes in both directions to accommodate the flow of traffic and therefore becomes more strategic in nature. Tollbar Way is subject to a 40mph speed limit for its entirety.
- 8.4.35 Charles Watts Way acts as a strategic link across the M27 (and Junction 7) connecting Hedge End in the east with Southampton to the west. To the east of the M27 Junction 7 Charles Watts Way has two lanes of traffic in each direction and an additional flare lane into part of the Hedge End Retail Park. This section of Charles Watts Way which is subject to a 40mph speed limit.
- 8.4.36 To the east of the M27 Junction 7 Charles Watts Way has a single lane of traffic for each direction and again does not have any pedestrian or cycle facilities which reflects the strategic nature of this route. This section of Charles Watts Way is subject to the national speed limit and has a carriageway width around 8m.
- 8.4.37 In addition to the local roads, the proposed development is also well located to access the SRN with the M27 motorway located to the south of the development and the M3 motorway located to the north west. The M27 runs between Cadnam in the west and Portsmouth in the

east with primary destinations along the route including Southampton, Fareham, Whiteley and Portsmouth. To access the M27, most site users would utilise Junction 7 at Hedge End, although a small proportion who travel east may connect onto the M27 at Junction 8 (Bursledon) by travelling through the south east of Hedge End.

8.4.38 The M3 motorway runs north east to south west from Sunbury-on-Thames in Surrey to Eastleigh in Hampshire with key destinations along the route including Basingstoke, Winchester and Aldershot. For those wishing to access the M3, vehicles could join via Junction 13 at Eastleigh or via Junction 11 in Twyford at the Hockley Link.

Public Rights of Way

8.4.39 In addition to the on-road pedestrian network, the Wider OPA Site is also well located to use local Public Rights of Way (PROW) routes which run through the Wider OPA Site and connects the Wider OPA Site with off-site pedestrian infrastructure. A map demonstrating the PROW routes which run through the Wider OPA site and connect with the site is demonstrated within Figure 8.1.

8.4.40 As shown in Figure 8.1, West End Footpath 3 runs east to west in the northern edge of the OPA Phase 1 Site connecting the OPA Phase 1 Site with off-site pedestrian infrastructure and the wider connection of PROW routes running through the Wider OPA Site.

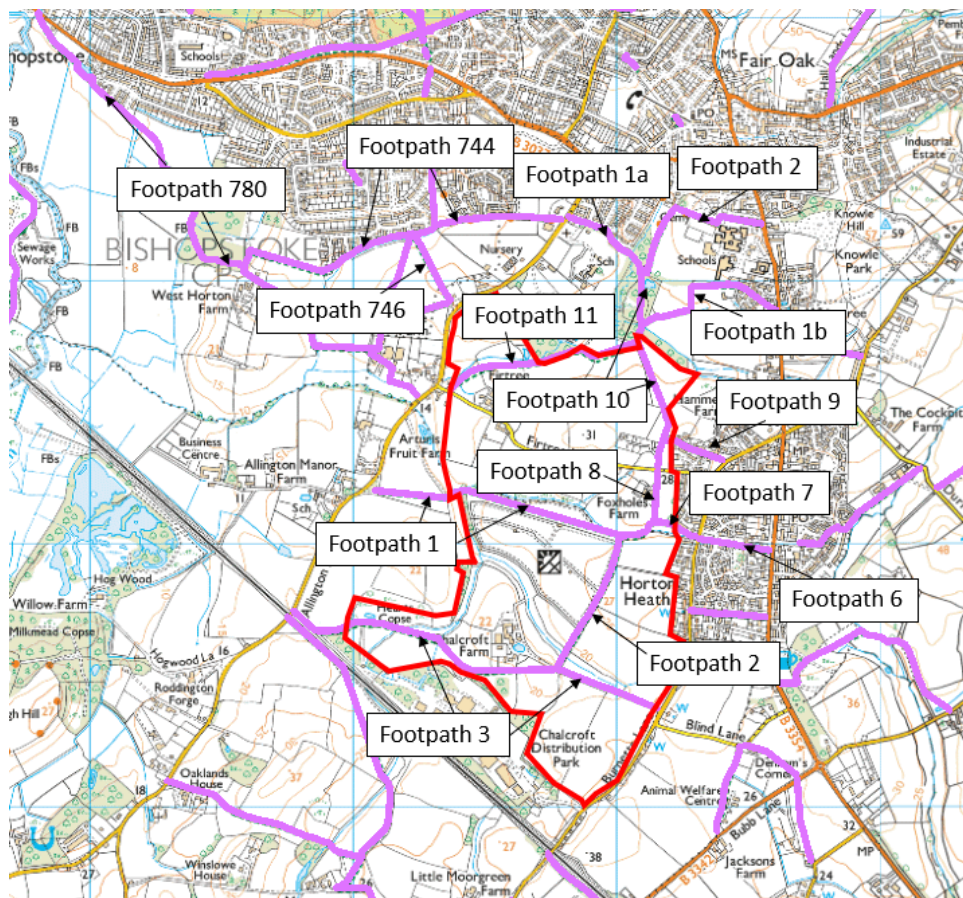


Figure 8.1: Local PROW Routes

8.4.41 It is evident the Wider OPA Site and the OPA Phase 1 Site are well connected to the existing PROW network which facilitate access to the key destinations. The Wider OPA TA provides details regarding the Sustainable Transport Strategy and potential upgrades and off-site highway contributions proposed.

8.4.42 In addition to the PROW and on-road routes, there is also an existing local footpath (not a formally registered PROW) which runs to the south of the railway line between Bubb Lane and connects to the southern end of Hedge End Footpath 6b via Hedge End Train Station. This route is currently of an unbound surface but offers a reasonably wide route for the majority which is well overlooked and lit in places. This route may be used to access the train station or new secondary school.

Traffic Flows

8.4.43 The majority of baseline traffic data has been obtained from the site's extant consents, in particular the North West Horton Heath Transport Assessment and baseline data from 2016.



8.4.44 Traffic flow data was collected for 7 additional junctions in 2020 to support the wider study area agreed as part of the pre-application process with HCC Highways. These junctions are reference in paragraph 8.5.21.

8.4.45 The baseline 2016 data has then been used to form a base assessment year of 2020 for the Transport Assessments. The Baseline 2016 data has been growthed to 2020 using an agreed TEMPro growth factor for the Eastleigh area.

8.4.46 To support the air quality and noise assessments AADT data was also taken from the site's extant consents. Appropriate growth factors have again been applied to factor the data to the correct baseline positions.

Personal Injury Accident Data

8.4.47 Personal Injury Accident (PIA) data has been acquired from Hampshire Constabulary to assess and consider the existing safety situation on the local road network. The scope of PIA assessment was agreed through the highway pre-application scoping exercise with HCC.

8.4.48 The patterns displayed in the data have been assessed within the TAs with regards to the proximity, frequency and severity of incidents that have occurred which may require further in-depth consideration. The PIA data has been collected for the most recent 5-year period between January 2015 and December 2019.

8.4.49 The PIA assessment for the Wider OPA considers incidents on roads and incidents at junction which has been split into the four key travel corridors:

- West Horton Heath to Eastleigh Corridor
- West Horton Heath to Fair Oak/Colden Common Corridor
- West Horton Heath towards Hedge End
- Southampton, Hedge End and West End

8.4.50 The study area for the OPA Phase 1 application is much smaller and includes the following junctions (and their associated links)

- Fir Tree Lane/Allington Lane Priority Junction
- Allington Lane/Fair Oak Road Priority Junction
- Fair Oak Road/Sandy Lane/Blackberry Drive Signal Junction



- Botley Road/Eastleigh Road/Stubington Way Signal Junction
- Botley Road/Snakemoor Lane/Winchester Road/Bubb Lane Roundabout
- Bubb Lane/Bubb Lane/Tollbar Way Priority Junction
- Tollbar Way/Maunsell Way Roundabout
- Botley Road/Horton Heath Service Station
- Botley Road/Blind Lane Priority Junction
- Botley Road/Tollbar Way/Bradbeers Roundabout
- Tollbar Way/Whites Way Priority Junction
- Tollbar Way/Wellington Park Roundabout

8.4.51 Additional junctions which are located between two junctions within the above list were included within the assessment, however no incidents were recorded during the study period.

8.4.52 Full details of the assessments are included within the associated TAs and have not been reproduced in this ES chapter due to the large amount of information included.

8.4.53 In summary, the five-year PIA records and assessment for both the Wider OPA and OPA Phase 1 demonstrate a relatively even distribution of incidents through time with incidents occurring across all 7-days of the weeks and at various times of the day. The majority of incidents record causation factors relating to human error as opposed to highway design.

8.4.54 Whilst some roads and junctions may appear to exhibit a high concentration of accidents this must be considered against the strategic nature of some of these routes and the volume of traffic using these corridors. At several junctions and links, the number of incidents is considered typical for busy links and junctions on major routes

8.4.55 The accidents also appear to mainly be a result of human error citing factors such as 'failed to look properly', 'failed to judge path or speed', 'nervous/uncertain/panic' or 'sudden braking' for example.

8.4.56 Of the PIA's assessed of total of 11 incidents that occurred on road/links involved a pedal cycle whilst 8 involved pedestrians with the remaining involving a form of motor vehicle, including motorcyclist. Of the junctions assessed, a total of 42 incidents involved a pedal cycle and 19 involved pedestrians.

8.4.57 It is also important to note that no 'fatal' incidents were recorded meaning all incidents were 'slight' or 'serious' in nature.

8.4.58 Notwithstanding this, any mitigation measures, schemes or contributions which are secured through the planning applications or recommended within the TAs would also ensure that the additional traffic associated with the developments can be satisfactorily accommodated by the local highway network with the proposed site access in particular being safe to accommodate expected demand.

8.5 INHERENT DESIGN MITIGATION

Mixed Use Development

8.5.1 The Wider OPA Site is proposing a mixed-use development which includes general residential dwellings, retirement flats/care home units, commercial uses, a local centre and a 3 form entry primary entry primary school. The provision of a mixed-use development should inherently reduce the need of users of the development to travel off-site to fulfil everyday needs. Mixed use schemes assist the containment of journeys within the site, encouraging more sustainable modes of travel and modal shift

8.5.2 The mixed-use scheme would also benefit existing local residents who may have previously travelled further afield to access certain amenities which are now being proposed on site.

Bubb Lane to Burnetts Lane to Allington Lane Link Road

8.5.3 The primary means of vehicular access to the proposed development would be via the link road with a roundabout in the northwest which connects Allington Lane to the link road, a roundabout to the south east which connects the development with another section of the link road and Burnetts Lane and a roundabout at the Bubb Lane/Link Road connection.

8.5.4 The new link road will provide the following functions:

- Access to the Chalcroft Business Park
- Reduce HGV use along Burnetts Lane (particularly the southern end which is used to access the Chalcroft Business Park)
- An important piece of infrastructure to help accommodate the wider development aspirations outlined in EBCs Emerging Local Plan
- Provide access to the proposed development
- Provide a new pedestrian and cycle link between Bubb Lane and Allington Lane



- 8.5.5 The design criteria for the new link road primarily reflects Manual for Streets, Manual for Streets 2 and HCC's A Companion Guide to Manual for Streets due to the majority of the route reflecting a 30mph design speed.
- 8.5.6 The Allington Lane/Link Road roundabout provide access to the north west section of the OPA and has 3 arms all of which have a two-lane approach with an Inscribed Circle Diameter (ICD) of 44m. This roundabout is also supported by a 3m wide footway/cycleway on the north eastern side which connects onto a proposed/extended footway/cycleway along Allington Lane being delivered by One Horton Heath. This connection ensures there is a continuous route along Allington Lane from the site to the north and up to Fair Oak Road.
- 8.5.7 The Burnetts Lane/Link Road Roundabout constitutes a 4-arm roundabout with an ICD of 50m with a two-lane approach on each arm of the roundabout. Burnetts Lane to the south of the roundabout is provided with a turning head as Burnetts Lane will no longer be a through route past Chalcroft Business Park. This roundabout provides access onto the link road to the east and west of Burnetts Lane, Burnetts Lane and an access into Chalcroft Business Park. The access into Chalcroft Business Park provides wider highway operational and safety benefits by connecting the park straight onto a new link road which negates the need to use Burnetts Lane, which in the southern section is more rural nature. Refuge island crossing points with dropped kerbs and tactile paving are provided on all arms of the junctions and measure a minimum of 2.2m wide to safely accommodate a cyclist waiting to cross. This roundabout would provide access to both the Wider OPA and OPA Phase 1 developments.
- 8.5.8 The roundabout would also be supported by a 3m wide footway/cycleway which flanks the northern boundary of the roundabout from the link road to the east of Burnetts Lane and onto the link road to the west of Burnetts Lane where the 3m wide footway/cycleway continues along the link road. A 2m wide footway is also provided on the southern side of the roundabout which connects into the Chalcroft Business Park and south of Burnetts Lane.
- 8.5.9 The Bubb Lane/Link Road Roundabout is a three-arm roundabout located to the north east of an existing electricity sub-station. The roundabout has an ICD of 40m and has two lanes on all approaches to the roundabout. Refuge island crossing points are provided on all arms of the junctions equipped with dropped kerbs and tactile paving which are a minimum of 2.0-2.4m wide/deep to sufficient accommodate a cyclist waiting to cross. This roundabout would provide access to both the Wider OPA and OPA Phase 1 developments.
- 8.5.10 The Bubb Lane/Link Road roundabout would be supported by a 3m wide footway/cycleway on all arms of the roundabout with the link road flanked by a 3m footway/cycleway to the north and the southwestern arm of Bubb Lane being provided with a 3m footway/cycleway which

leads to the crossing point to ensure the shortest distance is travelled for those wishing to travel south. An additional dropped kerb crossing point is provided circa 20m to the south of the roundabout.

- 8.5.11 The section of link road between Burnetts Lane and Bubb Lane has been designed (and approved) to adequately mitigate any noise or visual impact with neighbouring properties.

Distributor Roads

- 8.5.12 Two primary distributor roads are proposed to route through the Wider OPA Site. The first travels west to east and connects from the link road in the west, travels south of the existing Fir Tree Lane alignment and connects back up to Fir Tree Lane in the east. The second runs north to south, with southern section also travelling through the OPA Phase 1 development. This north to south route connects from the link road and up to local centre past the primary school. This latter route would also result in reduced traffic using Burnetts Lane travelling north/south. The routes would also be supported by strong pedestrian and cyclist infrastructure.

Fir Tree Lane

- 8.5.13 The Fir Tree Lane/Burnetts Lane Priority Junction would act as a secondary access route into the Wider OPA Site where improvements are proposed to upgrade the routes. The upgrades including widening the carriageway to a continuous 5.5m road width (although with a small traffic calming feature with a raised table and pinch points to discourage high vehicle speeds).
- 8.5.14 Circa 215m to the west of the Fir Tree Lane/Burnetts Lane Priority Junction and past the local centre it is proposed Fir Tree Lane is downgraded with vehicle rights removed to create an attractive sustainable travel corridor with a wide area for pedestrians and cyclists to travel east to west. Vehicles would still be able to travel east to west, but via the new distributor road aforementioned which would provide more appropriate geometries.
- 8.5.15 At the western end, the Fir Tree Lane/Allington Lane junction would remain as existing to allow existing rights of access, however this would eventually form a dead end.

Burnetts Lane

- 8.5.16 Traffic calming measures are proposed along the OPA Phase 1 Site boundary to encourage lower vehicle speeds and prevent this route from becoming a rat ran and discourage people from using this route and encourage more to use the link road. This should improve conditions along Burnetts Lane.

8.6 POTENTIAL ENVIRONMENTAL IMPACTS & EFFECTS

8.6.1 This section identifies the potential environmental impacts and effects of the proposed development. The impacts are assessed against a background which includes committed development.

Construction Impacts and Effects

8.6.2 The overall Wider OPA construction period is likely to take in the region of 15 years, although this is dependent on the number of sale outlets, market conditions and types of housing being built. The school and local centre would be built out as and when required to support the development and local environment although these will be a priority for EBC as developer. There is limited demolition on site which has not already taken place through the extant consents.

8.6.3 For the OPA Phase 1, the construction period is likely to take in the region of 3 years, although is again dependent on the number of sale outlets, market conditions and types of housing being built.

8.6.4 Construction working periods are expected to be 0800-1700 Monday to Friday and 0800-1300 on Saturdays with no night-time shifts. Deliveries will be made on weekdays only and the car driver mode share for staff is assumed to be 70%. This mode share assumption is robust because there is likely to be much higher car occupancy with construction workers arriving in multiple occupancy vehicles.

8.6.5 Based on the length of the link road and earthworks required, it has been estimated that the construction of the section of link road between Burnetts Lane and Allington Lane is likely to generate on average around 10 HGV and 20 workforce arrivals per day for the duration of the construction of the road. It is estimated that the link road would take around a year to construct. The section of link road between Bubb Lane and Burnetts Lane is currently under construction through the extant consents and as such has not been considered within this ES.

8.6.6 During the busiest construction phase (assumed to be 166 dwellings per year), it is predicted that there will be some 115 vehicle arrivals (100 cars/vans and 15 HGVs) per day. It is important to highlight that as working periods begin at 0800, the majority of on-site workers are likely to travel outside the AM peak period.

8.6.7 The other associated land uses are expected to be built alongside the residential construction programme. It is estimated that the other land uses will generate on average in the region of

40 vehicle arrivals (30 cars/vans and 10 HGVs) per day during the busiest period of construction. Again, workers are likely to arrive prior to 0800, to start work at 0800 and thus would travel outside the traditional morning peak travel period when traffic volumes and flows are at their highest.

8.6.8 In combination, for the Wider OPA, the construction of up to 166 dwellings a day and the other land uses, during the busiest periods the site could be expected to generate 155 vehicle arrivals, 135 of which would be in cars/vans and 25 as HGVs. Such figures are substantially lower than the total anticipated traffic generation of the Wider OPA development once fully built and occupied, effectively construction traffic associated with 166 properties per annum is less traffic than generated by 166 occupied dwellings and a lesser peak period impact.

8.6.9 The above figures represent the highest average daily construction vehicle trips across the entire construction programme. There is likely in practice to be some variation depending on the particular construction phase and activities taking place on site.

8.6.10 The IEA Guidelines for the Environmental Assessment of Road Traffic sets out that 'highway links should be assessed when traffic flows have increased by more than 30% or other sensitive areas are affected by traffic increased of at least 10%'.

8.6.11 Construction vehicle traffic would be routes where possible to travel via the Strategic Road Network (SRN) and would also utilise the new link road to gain access to the site. On this basis, the predicted increases in flow do not exceed the above thresholds and as such the demolition and construction period of the proposed development would have negligible adverse effects in terms of:

- Severance;
- Pedestrian Delay
- Pedestrian Amenity
- Accidents and Safety

8.6.12 Regarding driver delay, the construction activity period would continue whilst certain sections of the site are occupied. The residents and users of the development once occupied would also generate some travel demand and would thus place additional traffic movements on the local highway network. Therefore, there is the potential for a combined slight adverse effect, without mitigation, in terms of driver delay.

8.6.13 The construction of the Wider OPA or OPA Phase 1 developments are not expected to involve the transfer of hazardous loads to or from the Wider OPA Site or the OPA Phase 1 Site. The effect of the proposed development will therefore be negligible adverse.

8.6.14 It is likely the OPA Phase 1 average build per year may be slower than for the wider OPA. This is due to the OPA Phase 1 creating and developing bespoke house types which can then be readily applied to elsewhere on the development. There are also development aspirations associated with the Wider OPA to look at alternative construction methods which may speed up construction, such as modular housing. The estimates therefore regarding the Wider OPA are therefore higher than likely for the OPA Phase 1 application and are therefore also considered robust for the OPA Phase 1 construction impact.

Hazardous Loads

8.6.15 There should be no hazardous loads associated with either the Wider OPA or OPA Phase 1 and therefore the effect of the proposed development would be neutral.

8.6.16 The sensitivity of the receptor being local road network users ranges from low to very high with low accounting for hazardous loads and very high being against driver delay.

Occupation Impacts and Effects

Traffic Flows

8.6.17 Chapter 11 of the Wider OPA TA and Chapter 9 of the OPA Phase 1 TA outline the proposed traffic generation associated with the proposals whilst the appendices include detailed traffic flow diagrams of all the scenarios included within the assessment, including committed development traffic.

8.6.18 Table 8.4 summarises the proposed vehicular trip generation of the Wider OPA and OPA Phase 1, although it should be noted that all traffic associated with OPA Phase 1 is included within the Wider OPA assessment and would therefore not be additional to the local road network.

Table 8.4: Proposed Vehicle Trip Generation for Wider OPA and OPA Phase 1

Land Use	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Arrivals	Departures	Arrivals	Departures
2,225 C3 General Residential (-7.5%)*	307	807	776	461
275 Retirement Flats/Care Home Units	19	22	15	13
9,300sqm Commercial Use (-5%)*	64	26	18	51
9,500sqm of Office Use (-5%)*	194	12	20	199
3 Form Entry Primary School	64	0	0	64
Wider OPA Total	648	867	829	788
Of which				
Up to 399 C3 General Residential	59	156	150	89
OPA Phase 1 Total	59	156	150	89

* The percentages in brackets account for the internalisation factor as included within the extant consents and re-agreed through the pre-applications

8.6.19 The pre-application scoping exercises completed with HCC Highways for both the Wider OPA and OPA Phase 1 agreed a methodology for calculating the distribution of traffic from the proposed development which follows the principles established as part of the extant consents.

8.6.20 In summary, for the residential distributions which has also been applied to the retirement flat/care home land uses, these are based on 2011 Census Journey to Work data as well as a gravity modelling exercise completed as part of the two extant planning permissions. The distributions proposed 45.3% of residential trips utilising the Allington Lane/Link Road Roundabout, 18.7% utilising the Fir Tree Lane/Burnetts Lane secondary access and 36% of traffic anticipated to use the Burnetts Lane/Link Road roundabout.

8.6.21 The commercial traffic distributions are also based on 2011 Census Journey to Work data but for inbound trips as well as the masterplan and where such areas are proposed. These distributions (as agreed) have been applied to the commercial use, office use and primary school traffic. In summary, 21.1% of trips are anticipated to use the Allington Lane/Link Road roundabout, 14.7% utilise the Fir Tree Lane/Burnetts Lane Secondary Access and 64.2% utilise the Burnetts Lane/Link Road roundabout.

8.6.22 For the OPA Phase 1, the residential distributions differ slightly to that of the Wider OPA due the Fir Tree Lane/Burnetts Lane access not being readily available for use. It is therefore proposed 45.3% of vehicles would utilise the Allington Lane/Link Road roundabout and 54.7% of vehicles utilise the Burnetts Lane/Link Road roundabout.

8.6.23 A full explanation of the agreed vehicle distributions per land use is included in Chapter 11 of the Wider OPA TA and Chapter 9 of the OPA Phase 1 TA.

Impact

8.6.24 The IEA Guidelines for the Environmental Assessment of Road Traffic sets out that 'highway links should be assessed when traffic flows have increased by more than 30% or other sensitive areas are affected by traffic increases of at least 10%.

8.6.25 Utilising data submitted as part of the extant consents and the new traffic generation data and scenarios a comparison between the 'Baseline 2030 Plus Committed Development' and 'Baseline 2030 Plus Committed Development Plus Proposed Development' and then between 'Baseline 2036 Plus Committed Development' and 'Baseline 2036 Plus Committed Development Plus Proposed Development' have been completed to understand the percentage impact. A summary of the links which experience over a 10% increase is provided in Table 8.5, with links in green representing a 10-30% increase and those in red a +30% increase.

Table 8.5: Links with 10-30% and +30% increase in traffic (Wider OPA)

2030 Comparison	2036 Comparison
Burnetts Lane	Burnetts Lane
Fir Tree Lane	Fir Tree Lane
Allington Lane	Allington Lane
Proposed Link Road	Proposed Link Road
Moorgreen Road	Moorgreen Road
Bubb Lane West	Bubb Lane West
Bubb Lane North	Bubb Lane North
Tollbar Way	Tollbar Way
Winchester Road (North of Wessex Way)	Winchester Road (North of Wessex Way)
Sandy Lane	Sandy Lane

8.6.26 The links reference in Table 8.5 have therefore been assessed against the criteria referenced in Para 8.6.11.

8.6.27 When the same assessment is completed for the OPA Phase 1 with only the Baseline 2030 scenarios (as per the agreed TA scope of assessment), the 2030 percentage impact identifies only the link road is identified as a link which would fall within the categories, and would

experience a +30% increase. No further or additional assessment is considered necessary to support the OPA Phase 1 application given the minimal impact demonstrated.

Severance

- 8.6.28 The IEA guidelines define severance as “the perceived division that can occur within a community when it becomes separated by a major traffic artery”. The IEA Guidelines suggest that a 30%, 60% and 90% increase in traffic flow will respectively have a ‘slight’, ‘moderate’ and ‘substantial’ change in severance, although allowance needs to be made for the presence of crossing facilities.
- 8.6.29 It is therefore identified that Fir Tree Lane would have a slight adverse effect on severance without mitigation given the proposals would result in a highest percentage increase of 45.67%. The link road would in theory result in a substantial change in severance with a 100% increase, however this is based the link road only being available for use once the development starts occupying so is an expected value, but would not in practice results in a substantial effect.
- 8.6.30 With regards to the slight adverse effect on Fir Tree Lane it should be noted that there would be few affected parties along Fir Tree Lane given its rural nature and the limited number of properties this section of highway serves. There is also currently limited non-motorised user facilities along Fir Tree Lane, except for the eastern 100m between Burnetts Lane and Angelica Gardens/Fir Tree Close. The concept masterplan proposes downgrading the majority of Fir Tree Lane to the west of the Local Centre to provide an east to west pedestrian/cycleway, with an alternative vehicle route proposed to the south of the current alignment to still allow east to west movements. Therefore, whilst there is an increase in severance, future traffic volumes would be such that the overall level of severance is considered to be negligible adverse.
- 8.6.31 As confirmed, as a result of the OPA Phase 1, it is only the link road which would experience an increase in traffic flow above 30%, which is considered acceptable given the link road accompanies the applications. No further assessment associated with the OPA Phase 1 is required in regards to Severance.

Driver Delay

- 8.6.32 Chapter 12 of the Wider OPA TA fully details the associated highway impacts of the proposed development through capacity assessments of all junctions included within the study area whilst this is detailed within Chapter 10 of the OPA Phase 1 TA. The capacity assessment reviews junction operation under various scenarios pre and post development and provides

outputs relating to junction performance including a Ratio of Flow to Capacity (RFC) for priority junctions and roundabouts or Degree of Saturation (DoS) for signal junctions, as well as vehicle queue lengths and delay in seconds.

8.6.33 The highway capacity assessments demonstrate several existing junctions across the study area which currently experience delay during peak times within the Baseline 2020 scenario, before committed development or proposed development traffic is added to the models.

8.6.34 The below junctions have been assessed and are expected to operate within capacity in the final 'Baseline 2036 Plus Committed Development Plus Proposed Development'. Therefore no mitigation measures are required. The effect in terms of driver delay at these junctions is therefore slight adverse.

- Allington Lane/Link Road Roundabout
- Burnetts Lane/Link Road Roundabout
- Fir Tree Lane/Allington Lane Priority Junction
- Romsey Road (A335)/Upper Market Street Signal Junction
- Romsey Road/Leigh Road/Leigh Road Signal Junction
- Fir Tree Lane/Burnetts Lane Priority Junction
- Main Road (B3354)/Spring Lane/Dunsfords Ride Signal Junction
- Main Road (B3354)/Highbridge Road Priority Junction
- High Street (B3335)/Hazeley Road/Finch's Lane Signal Junction
- B3335/M3 Junction 11 Signal Junction
- Allington Lane/Upmill Close/Oak Vale Roundabout
- Tollbar Way/Pets at Home/Marks and Spencer's Roundabout

8.6.35 The Botley Road/Eastleigh Road/Stubbington Way Signal Junction is expected to be operating at or close to capacity in the 'Baseline 2036 Plus Committed Development Plus Proposed Development Scenario', and therefore the effect regarding driver delay is considered to be moderate adverse.

8.6.36 All other junctions included within the assessment have been identified as operating at or over theoretical capacity, either in the baseline years, baseline years plus committed development or baseline years plus committed development plus proposed development. The impact on driver delay at these junctions therefore range from slight adverse to substantial adverse.

8.6.37 As part of the Application Site's extant consents, a series of off-site highway works and/or contributions were secured. Circa £2.8 million has been paid upfront by EBC as developer to HCC Highways to deliver the previously agreed improvements. It is therefore considered that a substantial sum of money has also been paid and secured to mitigate the developments and impact, although further discussions may be required with HCC through the planning application process. However, in most cases the impact on driver delay should be considered slight adverse. This is detailed in full within Chapter 12 of the Wider OPA TA. A summary of the junctions where contributions have already been paid are provided below:

- Allington Lane/Fair Oak Road Priority Junction
- Fair Oak Road/Sandy Lane/Blackberry Drive Signal Junction
- Botley Road/Eastleigh Road/Stubbington Way Signal Junction
- Botley Road/Winchester Road/Mortimers Lane Priority Junction
- Winchester Road/Portsmouth Road (Fishers Pond) Signal Junction
- Botley Road/Snakemoor Lane/Winchester Road/Bubb Lane Roundabout
- Bubb Lane/Bubb Lane/Tollbar Way Priority Junction
- Tollbar Way Maunsell Way Roundabout
- Moorgreen Road/High Street/Telegraph Road Double Mini-roundabouts
- Botley Road/Tollbar Way/Bradbeers Roundabout
- Charles Watts Way/Tollbar Way/Turnpike Way Roundabout

8.6.38 In order to mitigate the impact of the development, the following junctions have been identified as requiring additional improvements (beyond the contributions already paid for):

- Bishopstoke Road/Chickenhall Lane Mini Roundabout – Contribution towards improvements identified in EBC's Emerging Local Plan



- Bishopstoke Road/Romsey Road/Twyford Road Roundabout – Contribution towards improvements identified in EBC's Emerging Local Plan
- Burnetts Lane/Botley Road/Knowle Lane Signal Junction – Contribution towards changes to equipment and phasing/staging operation
- Winchester Road/Sandy Lane Priority Junction – To convert into signal junction
- Winchester Road/Church Lane/Wessex Way Roundabout – Contribution towards amendments on Winchester Road arm
- Allington Lane/Swaythling Road (A27)/Townhill Way Roundabout – Contribution towards improvements identified in EBC's Emerging Local Plan
- Bubb Lane/Link Road roundabout

8.6.39 The Charles Watts Way/Grange Road/Wildern Lane/Botley Road roundabout and M27 Junction 7 roundabout both demonstrate capacity constraints in all pre-development scenarios and once development traffic is added to the junctions the impact is not considered severe.

8.6.40 With the improvements the development therefore has a slight adverse significance.

8.6.41 For the OPA Phase 1 application and associated TA a smaller study area was included, however all junctions were included within the Wider OPA TA and therefore no additional commentary is provided with regards to driver delay as this is sufficiently covered within the above review.

Pedestrian Delay

8.6.42 Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads.

8.6.43 The Proposed Development would generate an increase in traffic volumes in the local area as well as an increase in pedestrian and cyclist movements. Generally, where increases in traffic volumes are experienced, pedestrian delay is also likely to increase as pedestrians wait to cross roads.

8.6.44 The IEA Guidelines recommend that rather than rely on thresholds of pedestrian delay; the assessor should use judgement to determine whether there would be a significant impact on pedestrian delay.

- 8.6.45 Pedestrian use of Fir Tree Lane which traverses the site east to west is limited principally to the eastern end (circa 100m between Burnetts Lane and Angelica Gardens/Fir Tree Close) where there are currently pedestrian footways on both sides of the carriageway. A small number of pedestrians may also use the western end of Fir Tree Lane to access the few properties in this location. However, Fir Tree Lane at the eastern end would only form a secondary vehicular access point and therefore it is unlikely pedestrian flows would reach levels where pedestrian delays are likely to be significant given the small number of existing properties served by this highway and pedestrian crossing activity likely to be limited. As such the effect in terms of pedestrian delay on Fir Tree Lane is likely to be of slight adverse significance.
- 8.6.46 At the western end of Fir Tree Lane, traffic volumes would more significantly decrease as the Fir Tree Lane/Allington Lane Priority Junction would solely be used by the existing residential properties and therefore traffic levels will reduce along this section of Fir Tree Lane. Again pedestrian activity in this area is also likely to be minimal and thus overall there would be a negligible adverse effect upon pedestrian delay.
- 8.6.47 Burnetts Lane runs to the east of the proposed development. It is envisaged that only a small percentage of vehicles associated with the proposed development would use Burnetts Lane (to the north of the new roundabout). The construction of the new roundabout also stops Burnetts Lane from becoming a through route to the south of the Chalcroft Business Park and thus traffic levels overall are predicted to decreased through that section, with more vehicles entering via the link road. It is therefore considered that traffic flows would not reach levels where pedestrian delay is likely to be material.
- 8.6.48 Allington Lane runs to the west of the Wider OPA Site where pedestrian activity is largely concentrated at the northern extent close to the Allington Lane/Fair Oak Road Priority Junction. There are unlikely to be particular peak pedestrian demand times, with pedestrian movements likely to spread out across the day depending on destination. It is therefore considered the impact of pedestrian delay would be moderate adverse of significance.

Pedestrian Amenity

- 8.6.49 The attractiveness of a pedestrian route and journey is partly affected by traffic volumes, composition and the amenities available such as route width, separation and street lighting in particular. A tentative threshold for changes in pedestrian amenity is where traffic flows are halved or doubled. With reference to Table 8.2, it is only the proposed link road which would experience more than a doubling in traffic flow. Therefore, the development is expected to have a negligible or slight beneficial effect on pedestrian amenity.

Accidents and Safety

- 8.6.50 A full review of the Personal Injury Accident (PIA) data review is included within Chapter 6 of the Wider OPA TA and Chapter 6 of the OPA Phase 1 TA, with a summary also included within this ES chapter.
- 8.6.51 The review of data demonstrates a relatively even distribution of incidents through time with incidents occurring across all 7-days of the week and at various times of the day. Whilst some roads and junction may appear to exhibit a high concentration of accidents, this must be considered against the strategic nature of some of these routes and the volume of traffic using these corridors, and as such the accidents records are not considered unusual for the surrounding highway network.
- 8.6.52 The Proposed Development is therefore expected to have a slight adverse effect on accidents and safety without any mitigation. Some improvements are likely at junctions within the study area to improve highway capacity which may also in turn benefit accidents and safety.

Hazardous Loads

- 8.6.53 There should be no hazardous loads associated with both the Wider OPA and OPA Phase 1 and therefore the effect of the Proposed Development would be neutral.

Railway Generation and Impact

- 8.6.54 The impact of the Wider OPA on railway use is fully detailed in the Wider OPA Transport Assessment. However, the proposed development is likely to generate circa 164 daily vehicle trips and thus 41,656 annual trips based on a 5-day working week. A 5-day working week is considered acceptable given the majority of railway trips are associated with office use and thus employment. When the annual railway trip generation is compared against the Office of Road and Rail's recorded annual total entries and exits at Hedge End and Eastleigh train station of 522,492 and 1,665,426 respectively, the impact of the development would be considered to have a slight adverse effect given the increase, but is such that would not require mitigating.

Receptors

- 8.6.55 The sensitivity of the receptor being local road network users ranges from low to very high with low accounting for hazardous loads and very high being against driver delay.

8.7 ADDITIONAL MITIGATION, COMPENSATION & ENHANCEMENT MEASURES

8.7.1 This section sets out the proposed mitigation associated with the development proposals.

Construction

8.7.2 To support the construction of the development, a Construction Environmental Management Plan would be prepared, alongside a Construction Traffic Management Plan. The plan would include details such as:

- The use of appropriate and approved routes for deliveries and staff which would be signposted
- The management of working hours and delivery times to minimal disturbance caused by traffic (e.g. avoid deliveries during peak travel periods)
- The covering of loads coming to and leaving the Application Site
- Provision of wheel washing facilities, vehicle cleaning facilities or securing a commitment for a road sweeper if required
- Inspection of the local highway network for cleaning and repairs if required

8.7.3 The Construction Environmental Management Plan and Construction Traffic Management Plan would be agreed with the appropriate consultees, including HCC and EBC to deliver the required mitigation measures during construction to meet planning conditions and Section 106 legal obligations. The purpose of such management strategies is to reduce the risk of adverse effect of construction on sensitive environmental resources and to minimise disturbance to local residents.

8.7.4 The Construction Environmental Management Plan and Construction Traffic Management Plan would describe the checking, monitoring and audit processes that would be implemented to ensure that the construction activities are undertaken in accordance with these requirements, together with measures to ensure that appropriate corrective actions or mitigation measures are taken.

8.7.5 The Construction Environmental Management Plan and Construction Traffic Management Plan would also form part of the overall Project Management and as such, the activities described will be integrated with other Quality, Sustainability and Health and Safety management processes.

Occupation

8.7.6 To mitigate the transport related effects of the Completed Development, a comprehensive sustainable transport strategy is detailed within Chapter 10 of the Wider OPA TA. All measures included within this chapter would also benefit the OPA Phase 1, albeit some measures may only come forward with further development phases associated with the Wider OPA.

8.7.7 Chapter 8 of the OPA Phase 1 TA details the measures included specific to the OPA Phase 1 application which includes:

- A footway/cycleway which flanks one side of the link road and the eastern distributor road through the OPA Phase 1 proposed site layout
- A new pedestrian/cycle access from/onto Burnetts Lane in the location of the existing Chalcroft Farm Access road and improvements to the eastern c.430m stretch of WEF3 and associated crossing point
- Allowing connections onto other local PROW route which border the OPA Phase 1 site, including the western stretch of WEF3 and West End Footpath 2
- Proposed layout designed with consideration to bus use
- Provision of a Full Travel Plan

8.7.8 The proposed strategy complies with the aims of national, regional and local transport policy guidance to deliver sustainable new development, whilst providing considerable assistance in resolving the existing transport issues in the area, which includes the delivery of the local centre and commercial uses as part of the Wider OPA and can result in shorter travel distances to key local amenities.

8.7.9 The main objectives of the sustainable transport strategy include:

- Encourage users of the proposed development and existing residents of Horton Heath and Fair Oak to undertake local trips by sustainable modes of travel, including, walking, cycling and public transport
- Provide a development and associated infrastructure which maximises the potential for 'walkable' neighbourhoods where walking and cycling become the normal mode of travel
- Fully integrate the Wider OPA Site (including OPA Phase 1) with the surrounding local settlements, including Fair Oak, Horton Heath and Hedge End by providing improved connections for pedestrians, cyclists and public transport users

- To contain as many trips as possible within the site to reduce the number of traffic movements generated by the proposed development by providing key amenities and facilities on site

8.7.10 The development's proposed access strategy and masterplan seeks to encourage user of the development to walk and cycle with designated pedestrian and cyclists facilities. This includes the following:

- A high quality 3m wide footway/cycleway which flanks the eastern side of the link road which connects from Bubb Lane in the south to Allington Lane in the north along with associated crossing points
- A high quality 3m wide footway/cycleway which flanks the eastern distribution road which connects up to the Primary School and local centre
- A new pedestrian/cycle access from/onto Burnetts Lane in the location of the existing Chalcroft Farm Access road and improvements to the eastern c.430m stretch of WEF3 and associated crossing point
- Improved pedestrian facilities on Fir Tree Lane to provide a continuous footway along one side which connects with the local centre
- Upgrades to FOHHF7 to accommodate all year round use for pedestrians and cyclists
- Allowing connections onto other local PROW route which border the site, including the western stretch of WEF3 and a route towards the Lapstone Playing fields which could be via Fair Oak and Horton Heath Footpath 10, 1b or 2.
- Provision of 3m wide footway/cycleway on eastern side of Allington Lane to connect with existing/recently constructed pedestrian/cyclist infrastructure
- Off-site Highway contributions (£773,955.19 and £1,350,930.60) secured as part of the extant consents paid for by EBC as developers in October 2020 which include and thus secures PROW improvements to Dean Road (FOHHF1a) and Wyvern College (FOHHF2) and routes 746 and 780

8.7.11 Consideration of the route to the new secondary school; Deer Park and Hedge End Railway Station has also been assessed as part of the Wider OPA TA with contributions likely proposed towards improvements to the local footpath route to the east of Bubb Lane/Tollbar Way which runs to the south of the railway line.

8.7.12 A specific Public Transport Strategy has also been developed within the Wider OPA TA with the masterplan developed with consideration (and consultation) given to local bus operators as well as the CIHT's 'Buses in Urban Developments' (January 2018) guidance. Similar to the planning conditions and obligations secured as part of the two extant consents, it is proposed a bus service is secured for a defined time period along with appropriate bus stop

infrastructure. The service to be provided should be agreed in discussions with Bluestar and Xelabus to determine which route and proposed frequency. Conditions/obligations are also likely to be secured towards bus stop waiting facilities

8.7.13 A Framework Travel Plan has also been prepared to support the Wider OPA whilst a Full Travel Plan has been prepared to support the OPA Phase 1. Both Travel Plans focus on promoting measures to encourage the uptake of walking, cycling, car sharing and traveling via public transport. The plans both provide Action Plans, with the Full Travel Plan providing a more detailed and costed Action Plan referencing implementation, management and review.

8.7.14 To achieve the overarching aim of encouraging sustainable travel all users of the development would be issued with travel information, through a variety of means including a website, leaflets, noticeboards or printed Welcome Packs. Such marketing communication would provide details on local walking and cycle routes, public transport timetables, car sharing initiatives, benefits of using electric vehicles and the benefits and purpose of a Travel Plan

8.7.15 Several junctions have been identified within this ES and the Wider OPA TA as requiring mitigation (including those where contributions have now been made). Full details regarding the proposed mitigation are detailed within the TA, whilst a summary of the additional junctions where contributions/works are required to mitigate the development impact are summarised below (above those previously considered/secured with the extant consent):

- Bishopstoke Road/Chickenhall Lane Mini Roundabout – Contribution towards improvements identified in EBC's Emerging Local Plan
- Bishopstoke Road/Romsey Road/Twyford Road Roundabout – Contribution towards improvements identified in EBC's Emerging Local Plan
- Burnetts Lane/Botley Road/Knowle Lane Signal Junction – Contribution towards changes to equipment and phasing/staging operation
- Winchester Road/Sandy Lane Priority Junction – To convert into signal junction
- Winchester Road/Church Lane/Wessex Way Roundabout – Contribution towards amendments on Winchester Road arm
- Allington Lane/Swaythling Road (A27)/Townhill Way Roundabout – Contribution towards improvements identified in EBC's Emerging Local Plan

8.7.16 To support the extant consents a series of off-site highway contributions and mitigation measures were secured, and EBC as developer have paid £2,880,776.74 to HCC upfront to cover the previously agreed mitigation (as per Table 1 of the Wider OPA TA). This includes the following:

- Alternative scheme to be delivered at the junction of B3037 Fair Oak Road/Allington Lane/B3037 Fair Oak Road/Sandy Lane
- Botley Road controlled crossing
- Public Right of Way improvements to Dean Road and Wyvern College
- Moorgreen Road traffic management measures
- Charles Watts Way/Turnpike Way/Tollbar Way Junction improvements
- Moorgreen Road/High Street/Telegraph Road Junction Improvements
- Botley Road/Burnetts Lane/Knowle Lane equipment upgrade
- Tollbar Way/Maunsell Way Roundabout
- Bubb Lane/Tollbar Way Priority Junction Improvement Works
- Tollbar Way/Maunsell Way Junction Improvement Works
- Improvements to the local Public Rights of Way including routes 746 and 780
- Improvements to the Charles Watts Way/Turnpike Way Roundabout
- Improvements to the Botley Road/Tollbar Way Junction
- Improvements to the Portsmouth Road/Winchester Road (Fishers Pond) Junction
- Improvements to Winchester Road/Church Lane Junction
- Traffic Regulation Order (TRO) contributions towards parking restrictions at junctions, primary school entrance, local centre and commercial areas and towards the closure of Burnetts Lane (south of Burnetts Lane/Link Road Roundabout)
- SCOOT traffic light improvements to Junction 7 of the M27

8.8 RESIDUAL ENVIRONMENTAL IMPACTS & EFFECTS

Construction (for both Wider OPA and OPA Phase 1)

- 8.8.1 Construction activities would be controlled as previously set out and hence mitigation of the effects of construction traffic is an inherent part of the planning application. Therefore, any residual effects would remain negligible.



Occupation OPA Phase 1

8.8.2 As detailed in the previous sections of this ES and the OPA Phase 1 TA, a series of specific mitigation measures have been identified in response to traffic and thus environmental impacts of the OPA Phase 1 site. The mitigation measures would particularly benefit pedestrian amenity.

8.8.3 The proposed pedestrian improvements both on and off site would also mitigate the effects of severance.

Severance

8.8.4 The effect of severance would be mitigated through the improvements proposed through the OPA Phase 1 Proposed Development Site Layout and sustainable transport improvements such as the provision of upgraded pedestrian and cycle routes.

8.8.5 Elsewhere the mitigation measures and OPA Phase 1 Site layout would offer the potential for the development to have a negligible or slight effect on severance in the local area.

Driver Delay

8.8.6 The OPA Phase 1 TA outlined that the three roundabouts currently under construction to provide access would operate below capacity with minimal queues and delay. The remaining 5 off-site junctions assessed are demonstrated to operate over or close to theoretical capacity before development traffic is added. However, a series of off-site highway contributions have been secured and now paid for by EBC as developer which are considered sufficient to address concerns at the junctions associated with the Phase 1 TA and thus the mitigation measures (in the form of highway contributions) would therefore have either a nil-detriment or slight beneficial effect.

Pedestrian Delay and Amenity

8.8.7 The proposed site layout associated with the OPA Phase 1 is likely to have a slight beneficial effect in terms of pedestrian delay by improving connections and the attractiveness of routes and reducing some walking distances. The impact on pedestrian amenity is likely to be slight beneficial.

8.8.8 Elsewhere, the proposed development is likely to have a slight adverse effect on pedestrian delay.

Accidents and Safety

8.8.9 The mitigation measures and off-site highway contributions aforementioned offer the potential for the proposed development to have a slight beneficial effect in terms of accidents and safety.

8.8.10 Elsewhere the proposed development is likely to have a slight adverse effect in terms of Accidents and Safety.

Hazardous Loads

8.8.11 It is concluded that the OPA Phase 1 Site would have a negligible effect in terms of hazardous loads without mitigation.

Occupation Wider OPA

8.8.12 As detailed in the previous sections of this ES and the Wider OPA TA, a variety of mitigation measures (including contributions) have been identified in response to traffic and thus environmental impacts. The mitigation measures would particularly benefit driver delay and pedestrian amenity.

8.8.13 The proposed pedestrian improvements both on and off site would also mitigate the effects of severance.

Severance

8.8.14 The effect of severance would be mitigated through the improvements proposed through the masterplan and Sustainable Transport Strategy including pedestrian and cycle improvements along routes.

8.8.15 Elsewhere the mitigation measures and masterplan proposals would offer the potential for the development to have a negligible or slight effect on severance in the local area.

Driver Delay

8.8.16 The associated TAs and this ES have outlined a number of mitigation measures including off-site highway contributions towards wider Local Plan improvements in response to the effect on driver delay. The majority of the mitigation measures ensure the development does not result in an impact, where some driver delay constraints may remain due to the baseline levels of traffic. The mitigation measures would therefore have either a nil-detriment or beneficial effect.

8.8.17 Elsewhere, with the proposed development is likely to have a slight adverse effect in terms of driver delay.

Pedestrian Delay and Amenity

8.8.18 The Sustainable Transport Strategy and proposed masterplans associated with both the OPA and OPA Phase 1 are likely to have a slight beneficial effect in terms of pedestrian delay by improving connections and the attractiveness of routes and reducing some walking distances. The impact on pedestrian amenity is likely to be slight beneficial.

8.8.19 Elsewhere, the proposed development is likely to have a slight adverse effect on pedestrian delay.

Accidents and Safety

8.8.20 The mitigation measures and off-site highway contributions aforementioned offer the potential for the proposed development to have a slight beneficial effect in terms of accidents and safety.

8.8.21 Elsewhere the proposed development is likely to have a slight adverse effect in terms of Accidents and Safety.

Hazardous Loads

8.8.22 It is concluded that the Wider OPA Site would have a negligible effect in terms of hazardous loads without mitigation.

8.9 CUMULATIVE EFFECTS

8.9.1 To assess the impact of cumulative effects, a schedule of committed schemes is provided within Chapter 5 of this ES.

8.9.2 Reviewing the Schedule of Committed Developments identified in Chapter 5 it is confirmed that the following committed developments are not included within the Transport Assessments associated with the wider OPA and OPA Phase 1. A summary of why such development has not been included is provided also:

- Chalcroft Business Park (F/18/83945) – Due to no request from HCC for its inclusion
- Land off Botley Road (O/15/76418) – Due to scale of development and no request from HCC for its inclusion
- Southampton International Airport (F/19/86707) – Due to no request from HCC for its inclusion

- The Mount Hospital (O/12/71007) – Due to scale of development and no request from HCC for its inclusion
- Eastleigh Police Station (F/19/85332) – Due to scale of development and no request from HCC for its inclusion
- Land off St John's Road (F/15/76804) – Due to location of development respective to Application Site and no request from HCC for its inclusion
- Serenity, Heath House Lane (F/19/86829) – Due to location of development respective to Application Site and no request from HCC for its inclusion
- Land West of Waylands Place (F/17/80651) – Due to location of development respective to Application Site and no request from HCC for its inclusion
- Land at Park Farm/North Stoneham Park (F/19/86946) – Due to location of development respective to Application Site and no request from HCC for its inclusion
- Land South of Chestnut Avenue, North Stoneham Park (O/15/76023) – Due to location of development respective to Application Site and no request from HCC for its inclusion
- Land South of Bursledon Road (O/15/77121) – Due to location of development respective to Application Site and no request from HCC for its inclusion

8.9.3 All other Committed Developments set out within the schedule have been included with the Transport Assessment work. It should be noted that some Committed Developments included within the TA are not included with the ES Committed Development schedule and therefore the assessment is still considered robust.

8.9.4 The scope of Committed Development included within the Transport Assessment was discussed with Hampshire County Council Highways through the pre-application process. The scope is primarily based on those included within the sites previous extant consents and therefore covers a similar geographical area. HCC requested four additional sites to be included to support the new Wider OPA. The same committed developments have also been included in the assessment of the OPA Phase 1 and therefore covers a robust assessment.

8.9.5 The TAs prepared to support the Wider OPA and OPA Phase 1 have been prepared with the inclusion of Committed Development. The scenarios are assessed before any Committed Development, with Committed Development and then with the Committed Development and Proposed Development in the appropriate assessment years. It is evident in the assessments that several junctions experience capacity concerns in the Baseline scenarios and the Baseline plus Committed Development scenarios as such that once Proposed Development traffic is added the junction operates more under stress. The cumulative effects of the

background growth of traffic 10 and 16 years into the future and the addition of Committed Development traffic is considered within the Transport Assessments.

8.9.6 Of the 20 junctions identified in paragraphs 8.6.33, 8.6.34 and 8.6.35, 16 junctions are identified as having capacity concerns in either the Baseline 2020 or Baseline 2030 scenarios before any Committed Development or Proposed Development traffic is added. 2 junctions are demonstrated with capacity problems after the Committed Development traffic is added and 2 junctions are demonstrated with capacity problems after the Committed Development traffic and Proposed Development traffic is added. It is therefore added that in the majority of cases it is the growth in background traffic in isolation which causes the capacity concerns (which are then worsened by development). The cumulative impacts are therefore considered slight to moderate adverse, given only 4 of the 20 junctions with capacity concerns appear solely as a result of the Committed Development or Proposed Development traffic.

8.9.7 No in-combination effects are considered relevant to Transport and Access.

8.10 IMPACT OF CLIMATE CHANGE

8.10.1 This section of the ES has been prepared in accordance with the IEMA guidance titled 'Environmental Impact Assessment Guide to: Climate Change Resilience and Adaption' (2020).

8.10.2 The proposed development is not expected to be directly impacted by the potential effects of climate change from a transport and access perspective. The UKCP18 projections relating to temperatures would not have an impact on driver delay, severance, accidents and safety, pedestrian delay or pedestrian amenity.

8.10.3 The proposed development could result in an adverse effect on emissions and this the impact of climate change on other disciplines, principally relating to driver delay. However, appropriate mitigation measures are proposed to reduce/avoid driver delay and thus reduce congestion and emissions.

8.10.4 The sustainable transport strategy would also have a positive impact on the effect of climate change by encouraging users of the development to travel via sustainable modes of travel, such as walking, cycling or public transport use. This should in turn reduce single occupancy vehicle trips and reduce congestion and vehicle emissions associated with the proposed development and thus contribute to an overall benefit in regards to Greenhouse Gas emissions.

8.10.5 The Wider OPA and OPA Phase 1 developments are also developing a unique parking strategy which aims at reducing individual car ownership through the provision of a high percentage of spaces being unallocated and through the provision of a dedicated site car club. All residential dwellings would also be provided with the infrastructure to accommodate electric vehicle charging although not all will be installed with the charging unit, but given the infrastructure is in place this is easy to construct. These methods should also contribute towards lower greenhouse gas emissions.

8.11 ASSESSMENT SUMMARY

8.11.1 The below tables summarise the potential impact and effects, mitigation and residual effects.

8.11.2 Tables 8.6 and 8.7 summarises the predicted effects for the OPA Phase 1 and Wider OPA respectively in terms of their significance, whether they are beneficial, adverse or neutral, any proposed additional mitigation and the resultant residual effect.

8.11.3 Tables 8.8 and 8.9 lists the proposed mitigation for the OPA Phase 1 and Wider OPA respectively, associated with the transport impacts and how such measures are controlled, implemented and verified.



Table 8.6: Transport and Access Assessment Summary (OPA Phase 1)

Environmental Effect	Sensitivity of Receptor	Nature of Impact	Significance/Impact Magnitude	Additional Mitigation	Residual Impact Magnitude	Residual Significance of Effect
Construction Effects						
Severance	High	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Driver Delay	Very High	Temporary	Slight Adverse	Construction Environmental Management Plan	Negligible	Temporary
Pedestrian Delay	High	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Pedestrian Amenity	High	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Accidents and Safety	Medium	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Hazardous Loads	Low	Temporary	Negligible	Construction Environmental Management Plan	Negligible	
Operation Effects						
Severance	High	Permanent	Negligible or Slight Adverse	Sustainable Transport Improvements and Off-site highway contributions	Negligible or slight adverse	Permanent
Driver Delay	Very High	Permanent	Slight to Moderate Adverse	Sustainable Transport Improvements and Off-site highway contributions	Slight adverse	Permanent
Pedestrian Delay	High	Permanent	Negligible or Slight Adverse	Sustainable Transport Improvements and Off-site highway contributions	Negligible or Slight Adverse	Permanent
Pedestrian Amenity	High	Permanent	Negligible	Sustainable Transport Improvements and Off-site highway contributions	Slight beneficial	Permanent
Accidents and Safety	Medium	Permanent	Slight to Moderate Adverse	Sustainable Transport Improvements and Off-site highway contributions	Slight adverse	Permanent
Hazardous Loads	Low	Permanent	Negligible	Not Required	Negligible	
Cumulative Effects						
Effect	Description			Mitigation		Significance
N/A	N/A			N/A		N/A

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Impact of Climate Change			
Effect	Description	Mitigation	Significance
N/A	N/A	N/A	N/A



Table 8.7: Transport and Access Assessment Summary (Wider OPA)

Environmental Effect	Sensitivity of Receptor	Nature of Impact	Significance/Impact Magnitude	Additional Mitigation	Residual Impact Magnitude	Residual Significance of Effect
Construction Effects						
Severance	High	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Driver Delay	Very High	Temporary	Slight Adverse	Construction Environmental Management Plan	Negligible	Temporary
Pedestrian Delay	High	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Pedestrian Amenity	High	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Accidents and Safety	Medium	Temporary	Negligible	Construction Environmental Management Plan	Negligible	Temporary
Hazardous Loads	Low	Temporary	Negligible	Construction Environmental Management Plan	Negligible	
Operation Effects						
Severance	High	Permanent	Negligible or Slight Adverse	Sustainable Transport Strategy, Off-site highway works and contributions	Negligible or slight adverse	Permanent
Driver Delay	Very High	Permanent	Slight to Moderate Adverse	Sustainable Transport Strategy, Off-site highway works and contributions	Slight adverse	Permanent
Pedestrian Delay	High	Permanent	Negligible or Slight Adverse	Sustainable Transport Strategy, Off-site highway works and contributions	Negligible or Slight Adverse	Permanent
Pedestrian Amenity	High	Permanent	Negligible	Sustainable Transport Strategy, Off-site highway works and contributions	Slight beneficial	Permanent
Accidents and Safety	Medium	Permanent	Slight to Moderate Adverse	Sustainable Transport Strategy, Off-site highway works and contributions	Slight adverse	Permanent
Hazardous Loads	Low	Permanent	Negligible	Not Required	Negligible	
Cumulative Effects						
Effect	Description			Mitigation		Significance

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N/A	N/A	N/A	N/A
Impact of Climate Change			
Effect	Description	Mitigation	Significance
N/A	N/A	N/A	N/A



Table 8.8: Mitigation Implementation (OPA Phase 1)

Mitigation Measure	Implementing Agent(s)	Legal Instrument	Compliance Target	Implementation Timescale
Bubb Lane to Burnetts Lane link road and associated junctions	Developer	S278/S38	N/A	Spring 2021
Pedestrian/cycle route along eastern end of WEF3 (Chalcroft Farm Access Road)	Developer	S278/S38	N/A	TBC
Traffic calming along Burnetts Lane	Developer or HCC	S278/S106	N/A	TBC
Financial contributions towards surfacing improvements at local PROW routes	HCC	S106	N/A	TBC
Infrastructure at Bubb Lane/Link Road roundabout including extended footway and pedestrian crossing	Developer	S278/S106	N/A	TBC
Proposed OPA Phase 1 Site Layout provision of pedestrian and cycle routes	Developer	S278/S38	N/A	TBC
Proposed OPA Phase 1 Site Layout securing routes appropriate for bus use	Developer or HCC	S106	N/A	TBC
Off-site highway contributions (EBC as developer has already paid £2,880,776.74)	HCC	S106	N/A	TBC
Proposed OPA Phase 1 Site Layout allowing connections onto other local PROW routes	Developer	S278/S38	N/A	TBC
Provision of a Full Travel Plan	Developer	S106	N/A	3 months prior to 1 st occupation



Table 8.8: Mitigation Implementation (Wider OPA)

Mitigation Measure	Implementing Agent(s)	Legal Instrument	Compliance Target	Implementation Timescale
Bubb Lane to Burnetts Lane link road and associated junctions	Developer	S278/S38	N/A	Spring 2021
Burnetts Lane to Allington Lane link road	Developer	S278/S38	N/A	TBC
Improvement to eastern end of Fir Tree Lane	Developer	S278/S38	N/A	TBC
Pedestrian/cycle route along eastern end of WEF3 (Chalcroft Farm Access Road)	Developer	S278/S38	N/A	TBC
Traffic calming along Burnetts Lane	Developer or HCC	S278/S106	N/A	TBC
Improvements to local footpath route which runs to the south of the railway (route to secondary school)	Developer or HCC	S278/S106	N/A	TBC
Upgrades to FOHHF7 to accommodate pedestrians and cyclists	Developer or HCC	S278/S106	N/A	TBC
Financial contributions towards surfacing improvements at local PROW routes	HCC	S106	N/A	TBC
Infrastructure at Bubb Lane/Link Road roundabout including extended footway and pedestrian crossing	Developer	S278/S106	N/A	TBC
Masterplan provision of pedestrian and cycle routes	Developer	S278/S38	N/A	TBC
Downgrading of central section of Fir Tree Lane to become footway/cycleway	Developer	S278/S38	N/A	TBC
Provision of bus serving the development and associated infrastructure	Developer or HCC	S106	N/A	TBC
Off-site highway contributions (EBC as developer has already paid £2,880,776.74)	HCC	S106	N/A	TBC
Provision of Framework Travel Plan	Developer	S106	N/A	3 months prior to 1 st occupation