

Foreman Homes Ltd

Land to the South of Romsey Avenue, Fareham
Updated Environmental Statement Volume 2: Main Text
Chapter 6: Transport and Access



TEMPLE

CHAPTER 6: TRANSPORT AND ACCESS

Foreman Homes Ltd

Land to the South of Romsey Avenue, Fareham
Updated Environmental Statement Volume 2: Main Text
Chapter 6: Transport and Access



This page has been left blank intentionally to enable double-sided printing.

6.0 TRANSPORT AND ACCESS

6.1 Introduction

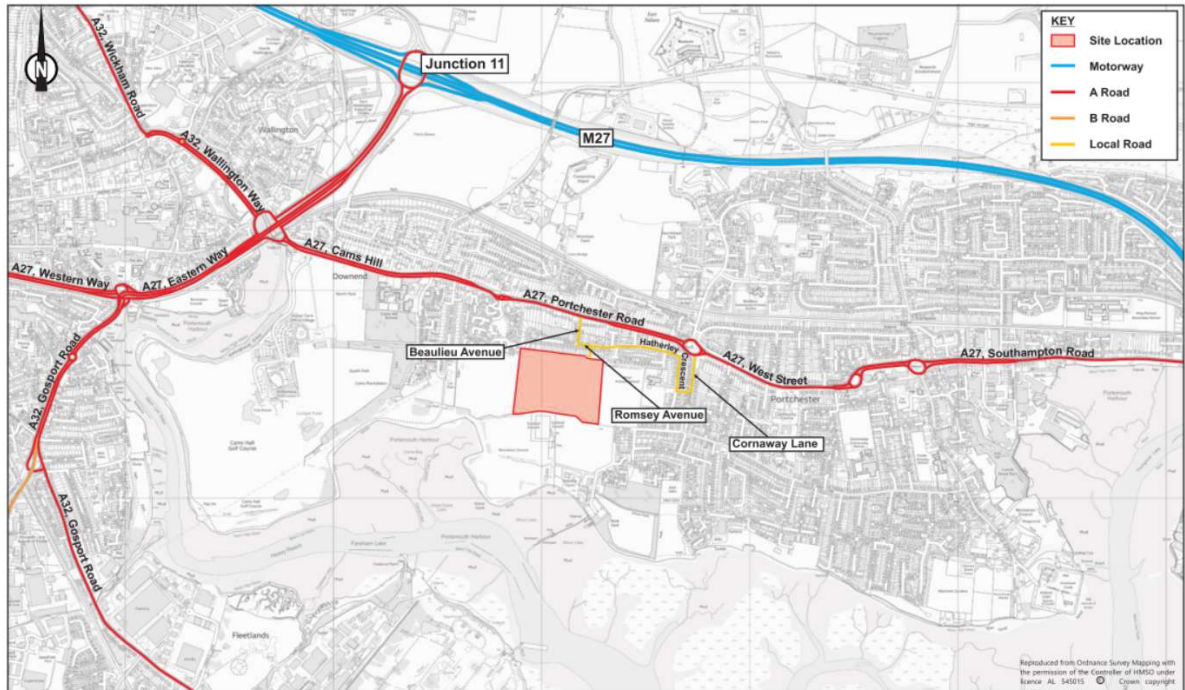
- 6.1.1 This Chapter documents the assessment of the likely significant effects of the Proposed Development from a traffic and transport perspective. In addition, it assesses the likely significant cumulative effects of the Proposed Development in combination with other proposals nearby.
- 6.1.2 'Intra-project effects' which are the combined effects of individual topic impacts on a particular sensitive receptor are considered in **Volume 2, Chapter 11: Effect Interactions**.
- 6.1.3 The Chapter summarises the technical work that has been undertaken to assess the likely significant environmental effects of the Proposed Development related traffic. In so doing, an assessment is provided of the base year traffic conditions within the vicinity of the Site and the wider study area along with an assessment of the baseline conditions in the forecast years, up to 2027.
- 6.1.4 The Proposed Development and the associated significant environmental effects are considered, together with the mitigation measures required to prevent, reduce, or offset significant effects, and the likely residual effects after these measures have been employed.
- 6.1.5 Detailed highway and transport analysis work, including the identification of site-related trip generation and assignment, review of network safety, link and junction operational capacity and the accessibility of the Site by non-car modes of travel (both under baseline and future operational conditions) has been considered in a formal Transport Assessment (TA). The TA has been submitted separately in support of the 2018 planning application, which remains applicable to the Appeal.
- 6.1.6 The analysis within this Chapter has been prepared in accordance with 'Guidelines for the Environmental Assessment of Road Traffic'¹. Accordingly, the topics of severance, driver delay, pedestrian delay, pedestrian amenity and accident and safety are considered within this Chapter.

6.2 Scope of Assessment

- 6.2.1 For the purposes of a robust and consistent assessment with that considered within the TA, the geographical scope of assessment within this ES Chapter in context to the surrounding highway and transport network is illustrated in the below **Figure 6.1**.

¹ Institute of Environmental Management and Assessment (January 1993) Guidelines for the Environmental Assessment of Road Traffic

Figure 6.1 - Site Location



6.3 Key Legislation, Policy and Guidance Considerations

6.3.1 An important consideration in the promotion of the Site is how it conforms to transport policies at both National and Local Government level.

National Planning Policy Framework (NPPF, 2019)²

6.3.2 Promoting sustainable transport is a key thread of the NPPF and para. 102 highlights the importance of considering transport issues from the earliest stages of development proposals to ensure that:

- The potential impacts on transport networks can be assessed.
- Opportunities from existing and proposed transport infrastructure, changing transport technology and usage are realised.
- Opportunities to promote walking, cycling and public transport use are identified and pursued.
- The environmental impacts of traffic and transport infrastructure are identified, assessed and considered – identifying opportunities for avoiding and mitigating any adverse effects and for net environmental gains.
- Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.

² DCLG (February 2019) National Planning Policy Framework

- 6.3.3 Paragraph 103 goes on to state that: *“The planning system should actively manage patterns of growth...Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes...”*
- 6.3.4 Para. 108 requires that when assessing specific allocations for development, it is important to ensure that:
- Appropriate opportunities to promote sustainable transport modes have been taken up.
 - Safe and suitable access to the Site can be achieved for all users. and
 - Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.
- 6.3.5 Para. 109 continues to state that *‘...developments should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe’*.
- 6.3.6 Para. 110 requires that applications for development should:
- First, give priority to pedestrian and cycle movements, both within the scheme and with neighbouring areas.
 - Second, so far as is possible, facilitate access to high quality public transport, maximising catchment areas to services and implementing appropriate facilities to encourage use.
 - Address the needs of people with disabilities and reduced mobility.
 - Create places that are safe, secure and attractive which minimise conflicts between pedestrians, cyclists and vehicles.
 - Allow for the efficient delivery of goods and access by service and emergency vehicles. and
 - Be designed to enable charging of plug-in and other ultra-low emission vehicles.

Fareham Borough Local Plan

- 6.3.7 Fareham Borough Council’s (FBC’s) Local Plan is set out in three parts, the **Core Strategy**³, which was adopted in August 2011, the **Development Sites & Policies**⁴ and the **Welborne Plan**⁵ both of which were adopted in June 2015.

³ Fareham Borough Local Plan Core Strategy (Aug 2011)

⁴ Fareham Borough Local Plan Part 2 Development Sites and Policies (June 2015)

⁵ Fareham Borough Local Plan Part 3 The Welborne Plan (June 2015)

- 6.3.8 The FBC's Core Strategy (CS) is a key part of the **Fareham Local Development Framework (LDF)**⁶ and will help deliver the spatial elements of the Fareham Sustainable Community Strategy⁷.
- 6.3.9 The CS identifies Portchester as a settlement which provides good facilities, including a district centre, medical facilities and educational facilities. The CS also identifies the existing local employment base. However, the CS acknowledges traffic congestion is generally a serious problem in the Borough and mitigation is needed to address issues associated with further growth, including impacts from air pollution on the natural environment, and encourage residents to use alternatives to the car.
- 6.3.10 Within the CS, a number of Strategic Objectives are laid out, these objectives aim to provide clear objectives to guide development in the borough in future years. In relation to transport matters for proposed residential developments, the following objectives are relevant:
- **SO5** – *“To ensure development provides and/or contributes to timely and appropriate transport infrastructure and mitigation measures to support the needs of development and provide and/or contribute to public transport and quality pedestrian and cycle links to reduce dependency on the car.”*
 - **SO9** – *“To improve accessibility to and facilitate the development and expansion of leisure, recreation, community, education, open space and health facilities and services. Achieve better access to green spaces close to where people live and work, to encourage healthy active lifestyles.”*

6.4 Assessment Methodology and Significance Criteria

- 6.4.1 Guidance regarding the assessment of the environmental effects of road traffic is provided in the “Guidelines for the Environmental Assessment of Road Traffic”⁸ published by the Institute of Environmental Assessment (IEA 1993) and in the Design Manual for Roads and Bridges (DMRB) Volume 11⁹.
- 6.4.2 The guidance acknowledges that whilst a Transport Assessment considers the development traffic impact at peak network periods, within EIA assessments it is necessary to consider periods where the development impact is likely to be highest. The industry accepted approach is to usually consider the Annual Average Daily Traffic (AADT) Therefore, the assessment within this Chapter assesses the impact of the Proposed Development in relation to the AADT.
- 6.4.3 Paragraph 3.17 of the of the IEA guidelines describes the magnitude of change in traffic flows on road links that should be considered as resulting in “Slight”, “Moderate” and “Substantial” impacts. The IEA guidelines indicate that increases in traffic flows of less

⁶ Fareham Local Development Framework

⁷ Fareham Sustainable Community Strategy

⁸ Institute of Environment Assessment (IEA) (1993) Guidelines for the Environmental Assessment of Road Traffic.

⁹ Design Manual for Roads and Bridges (DMRB) Volume 11

than 30% generally result in imperceptible changes. Similarly, changes of less than 10% create no discernible effect.

- 6.4.4 For the impacts of traffic flow considered herein, the IEA criteria for the magnitude of impacts have been used, as shown in **Table 6.1**.

Table 6.1 - Impact Magnitude for Assessment of Traffic Flow

Magnitude	Impact
Substantial	Considerable deterioration / improvement in local conditions or circumstances (+90% change in traffic)
Moderate	Readily apparent change in conditions (60 - 90% change in traffic)
Slight	Perceptible change in conditions or circumstances (30 - 60% change in traffic)
Negligible	Very small perceptible change in conditions or circumstances (10 - 30% change in traffic); and
No Impact	No discernible change in conditions (0 - 10% change in traffic).

Screening Tests: Identification of Links to Assess

- 6.4.5 In order to establish whether a highway link should be included as part of the detailed environmental assessment the following tests that are set out in the IEA Guidelines paragraph 3.15 are applied:

“Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%)

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

- 6.4.6 Any link where changes in total traffic flows or HGV flows resulting from the development are predicted to be less than 10% is screened out of the assessment. It should be noted that changes of less than 10% are generally considered to be insignificant given that the daily variations in background traffic flows may fluctuate by this amount.
- 6.4.7 Therefore, a full EIA assessment of all criteria is only triggered for links where traffic flows will increase by more than 30% (10% on link with sensitive receptors) as a result of development.

6.5 Determination of Baseline

- 6.5.1 Baseline conditions relevant to this assessment have been established by means of:

- Desktop research / studies (June 2018 and reviewed in 2021).
- Observations of the surrounding highway and transport networks (June 2017).
- Analysis of the Trip Rate Information Computer System (TRICS) and 2011 Census Location of Usual Residence and Place of Work by Method of Travel data to establish person trip generation by mode of travel and distribution such person trips onto the surrounding highway and transport networks.
- A future year scenario for 2023 (construction year) and 2027 (year of completion) have been calculated using the 2017 traffic survey data for the road network surrounding the site and 2019 DfT survey data for the A27. This data has been grown to the future year scenarios using TEMPRO and committed development sites added (based on data provided to support each individual application).
- Collation of Personal Injury Accident (PIA) data from 1st April 2012 and 31st March 2017 had previously been obtained as part of the 2018 planning application. This has been updated to provide data for the period 1st January 2016 to 31st December 2020.

Prediction Methodology

- 6.5.2 The assessment completed within the TA includes detailed highway and transport analysis work, including the identification of Proposed Development trip generation and assignment. The TA also considers link and junction operational capacity and the accessibility of the Site by non-car modes of travel (both under baseline and future operational conditions).
- 6.5.3 Detailed traffic flow information referred to within this Chapter is taken from the core analysis contained within the TA.
- 6.5.4 The TA accords with the guidance set out in 'Guidance on Transport Assessment'¹⁰ as well as the Department for Community and 'Travel Plans, Transport Assessments and Statements in Decision Making'¹¹.
- 6.5.5 The TA is distinguishable from this, the main text within this ES, in so far as it considers in detail the impact of the Proposed Development during the critical weekday AM and PM Peak periods (07:00-10:00 hours and 16:00-19:00 hours respectively) when the combination of peak development-related traffic flows and peak background flows on the surrounding highway network is at its greatest.
- 6.5.6 Within this ES, analysis is specifically focused on understanding the anticipated future changes in traffic demand levels on key movement corridor routes in the vicinity of the Site.
- 6.5.7 Transport related environmental impacts are typically associated with changes in local development traffic demand, both in terms of total number of vehicles and the type of vehicles generated (i.e. the proportion of larger HGV's). Key impacts to be considered within this assessment include:

¹⁰ Department for Transport (March 2007) Guidance on Transport Assessment

¹¹ DCLG (March 2014) Travel Plans, Transport Assessments and Statements in Decision-Taking (Online)

- network congestion and delay on key highway links within the extent of network under consideration;
- the impact on prevailing highway safety conditions and accident risk as a consequence of changes in Proposed Development traffic demand;
- the impact on the amenity of the local community and other local road networks users, in terms of matters such as severance and pedestrian delay / intimidation, as a consequence of changes in Proposed Development traffic demand;
- changes in Proposed Development traffic demand and congestion resulting in local air quality issues on the road corridors under consideration (see also the **Air Quality Assessment** presented in **ES Volume 4, Appendix A**); and
- changes in Proposed Development traffic demand resulting in noise and vibration issues at surrounding / frontage properties to the road corridors under consideration (see also **Chapter 7: Noise and Vibration**).

- 6.5.8 Transport related environmental impacts also vary over the different stages of the development lifetime. This ES Chapter will consider the additional traffic generated by the Proposed Development during both the construction process and the operational (or completed development) stages.
- 6.5.9 In this ES Chapter, construction traffic impact is defined as the extent of additional vehicle movements that would be generated during the construction phase. Such impacts comprise both light goods vehicle (LGV) movements (i.e. contractor's cars and small vans) as well as heavy goods vehicle (HGV) movements (bulk movement of materials). These impacts will be temporary in nature, occurring during the build period only, and will be variable dependent on the level of construction activity taking place at any one time.
- 6.5.10 In this ES Chapter, operational traffic impact is defined as the day-to-day transport impact associated with the residential uses proposed, including HGV demand.
- 6.5.11 As noted above, potential impacts, in terms of vehicular movements, will arise during both the construction and operational phases of the Proposed Development. The cumulative impacts of the Proposed Development along with other committed development is also considered.
- 6.5.12 In the case of the construction phase of the Proposed Development, i.e. over the short-term, the nature of these impacts from a traffic and transport perspective will be temporary. There will be direct impacts along routes that construction traffic is assigned to; however, with appropriate management to minimise disruption, any adverse effects can be mitigated.
- 6.5.13 As part of the methods used to assess potential impacts and likely effects on the surrounding networks during construction, prediction is made of the daily / weekly construction vehicle movements, based upon previous experience on similar projects.
- 6.5.14 Calculations are then made of the percentage increases in general and HGV traffic for each highway link against the future 2023 construction year scenario and then appraised in the context of the IEMA 'Rule 1' and 'Rule 2' guidelines. Further detailed assessments will then be undertaken if IEMA thresholds are exceeded.

6.5.15 Other methods used to assess impacts during the construction phase include:

- analysis of conflicts between construction vehicle movements, pedestrians, and cyclists in respect of the potential for severance, amenity and delay, fear and intimidation;
- a review of construction routing to avoid conflict with pedestrian and cycle routes and crossing points as well as bus routes and journey times;
- consideration of any requirement to restrict the timing of construction vehicle activity to reduce impact on sensitive receptors and avoid conflict with concentrations of pedestrians and cyclists, existing bus routes and journey times;
- estimation of the potential increase in pedestrian and cycle movements as well as public transport, particularly buses, arising from the construction workforce; and
- identification of management measures including avoidance of accident clusters, wheel washing and mechanical sweepers to minimise risk of accidents.

6.5.16 In the case of the operational phase, i.e. during the long term when the Site has been developed and occupied, the nature of these impacts is permanent.

6.5.17 Other methods used to assess impacts during the operation, or completed development phase include:

- Calculation of the predicted vehicle link flows and HGV flows in future Baseline (2023) scenario by factoring existing base year (2017) traffic flows by appropriate growth factors.
- Calculation of the predicted vehicle link flows for the future Baseline (2023) + Proposed Development scenarios using standard vehicle trip generation methodology.
- Calculation of the percentage increase in general and HGV traffic for each highway link resulting from the Proposed Development against the future Baseline (2023) scenario, referenced against IEMA 'Rule 1' and 'Rule 2' Guidelines.
- Completion of further detailed assessments where the IEMA Guidelines are breached.
- Estimation of impacts on public transport through consideration of available services and capacity and the prediction of the additional public transport trips arising from the Proposed Development.
- Detailed consideration of the potential impacts, by reference to the IEMA Guidelines, in terms of comfort levels, severance, amenity and delay, fear and intimidation arising from the completed development on the surrounding pedestrian and cycle networks through identification of additional trips by these modes generated.

6.5.18 Since no hazardous loads are expected to be transported as part of the construction or operational phases, the effects related to the transport of hazardous loads will be insignificant and are therefore excluded from the assessment.

Sensitive Receptors and Significance Criteria

6.5.19 The sensitive receptors listed in **Table 6.2** have the potential to be affected by effects arising from the Proposed Development. The assessment in this chapter has considered the effects listed in the table to determine the sensitivity of the highway links under consideration.

Table 6.2 Potentially Affected Sensitive Receptors

Receptor	Importance / sensitivity / vulnerability to change
Schools, colleges and other education institutions; Retirement / care homes for the elderly or infirm; Roads with no footway that may be used by pedestrians; and Accident 'blackspots'	High
Hospitals, surgeries and clinics; Parks and recreation areas; Shopping areas; and Roads with narrow footways that may be used by pedestrians.	Moderate
Open spaces; Tourist / visitor attractions; Historical buildings; Churches and other places of worship; and Standard roads with wide footways sufficient for pedestrian traffic.	Low

6.5.20 The above criteria has been used to determine the sensitivity of each of the highway links under consideration. The magnitude of effect is defined as follows:

- High – loss of resource including quality and integrity; severe damage to any key features (adverse). Large scale improvement to resource including quality and integrity (benefit);
- Medium – loss of resource but not adversely affecting either quality or integrity; partial loss to features (adverse). Betterment to or addition of resource including quality and integrity (benefit);
- Low – some change in attributes associated with resource; minor loss or change to a key feature (possibly more) (adverse). Minor benefit to or addition of key features; reduced risk of negative impact occurring (benefit);
- Negligible – very minor loss or adverse change to one or more key features (adverse). Very minor benefit or addition to one or more key features (benefit); and
- No change – no loss or alteration to key features; no change either for better or worse.

6.5.21 The following terms have been used to define the significance, in environment terms, of the effects identified:

- Major: where the Proposed Development could be expected to have a highly significant environmental effect (either beneficial or adverse) on the principal transport related conditions, during the construction and/or operational phases;
- Moderate: where the Proposed Development could be expected to have a significant environmental effect (either beneficial or adverse);
- Minor: where the Proposed Development could be expected to result in a small, barely noticeable environmental effect (either beneficial or adverse) that is not significant; and
- Negligible: where no discernible environmental effect is expected as a result of the Proposed Development.

Magnitude of impact

6.5.22 Road users (such as drivers', cyclists, pedestrians, public transport users) are considered to be the receptors of the Site's effect on the local transport network. According to the IEMA guidance, receptors are typically affected in the following ways:

- Severance.
- Congestion leading to driver delay, stress and frustration.
- Human health (Accidents and Safety).
- Pedestrian amenity and delay.
- Fear and intimidation due to heavy vehicles; and
- Climate change.

6.5.23 The paragraphs below consider the definition of Magnitude for various transport impacts.

Severance

6.5.24 Severance is defined in the Design Manual for Roads and Bridges (DMRB) as *“the separation of residents/site users from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows”*.

6.5.25 Several factors are considered in determining the existing level of severance. These include road width, traffic flow and composition, traffic speeds and the availability of pedestrian crossing facilities.

6.5.26 The measurement for assessing severance is difficult to predict as according to the Guidelines for the Environmental Assessment of Road Traffic, 1993:

“the correlation between the extent of severance and the physical barrier of a road is not clear and there are no predictive formulae which give simple relationships between traffic factors and levels of severance”.

6.5.27 Nevertheless, a range of indicators set out by the Manual for Environmental Appraisal (Department for Transport, 1983) can be used to determine the significance of relief from severance. These indicators will be used to assess the severance in this instance and are summarised **Table 6.3** below.

Table 6.3 Severance Indicator Thresholds

Indicator	Change in traffic flow
No change	No change
Negligible	< 30%
Minor	30% - 60%
Moderate	60% - 90%
Major	>90%

Fear and Intimidation

- 6.5.28 Fear and Intimidation is generally related to the composition of traffic volumes, notably HGV %, however vehicle speeds and the proximity of pedestrians to the traffic and presence of segregation / protection from traffic is also a key consideration.
- 6.5.29 With respect to the assessment of 'Fear and Intimidation', the thresholds summarised in **Table 6.4** will be adopted. The thresholds adopted are based upon (and add to) the thresholds identified within 'Pedestrian Delays, Annoyance and Risk'¹².

Table 6.4 Fear and Intimidation Thresholds

Degree of hazard	Avg. traffic flow over 18 hr day vehicle / hour	Total 18 hr HGV flow	Average speed over 18 hr day miles / hour
Major	1800 +	3000 +	20 +
Moderate	1200 - 1800	2000 - 3000	15 - 20
Minor	600 – 1200	1000 - 2000	10 – 15
Negligible	< 600	< 1000	5 - 10
No change	No change	No change	No change

Driver Delay

- 6.5.30 Delays to general background traffic typically occur at junctions, which can form bottlenecks where additional Site related traffic can add to the level of queuing and delays to the journey time.
- 6.5.31 This includes at the Site accesses, where additional turning movements may impede general background traffic. Vehicles turning out of minor roads may also experience increased driver delay because of Site-related traffic increasing volumes on major roads. Another factor to consider is the potential for parked cars reducing the capacity of links surrounding the Site.
- 6.5.32 Routes affected by the Proposed Development traffic have been considered and whether these routes can be mitigated. The assessment of driver delay has been based on a judgement using the comparison of the Proposed Development traffic flows and the baseline flows.

¹² Crompton and Gilbert (1981) Pedestrian Delays, Annoyance and Risk

Pedestrian and Cyclist Delay

- 6.5.33 With respect to Pedestrian and Cyclist Delay the guidance advises that assessors use judgement to determine whether pedestrian, or cyclist, delay is a significant impact. IEMA suggests that the volume, composition, and speed of traffic can potentially affect the ability for pedestrians and off-road cyclists to cross highways, particularly at uncontrolled crossings or where no crossings exist.
- 6.5.34 It is difficult to quantify delay resulting from increased traffic volumes but generally the significance of delay will depend upon the level of pedestrian and cycling activity during baseline conditions.

Pedestrian and Cyclist Amenity

- 6.5.35 With respect to 'Pedestrian Amenity' this is described in the guidance as 'relative pleasantness of a journey' which can be affected by the volume of traffic passing on the adjacent highway, composition of traffic, exposure to air pollution, separation from traffic and the footway / cycleway provision itself.
- 6.5.36 The guidelines suggest that the significance of changes in pedestrian amenity would be where the traffic flow (or its lorry component) is halved or doubled.

Accidents and Safety

- 6.5.37 With respect to 'Accidents and Safety' the likelihood of accidents occurring on a link or at a junction, relating to the addition of traffic associated with the Proposed Development, is considered in this assessment based upon several factors. These include the:
- current number of accidents;
 - whether they have a common causation factor; and
 - the number of new trips from the Proposed Development travelling through the link / junction.
- 6.5.38 These factors are considered, and assessor judgement used to make an assessment.
- 6.5.39 Following a review of the Personal Injury Accident data professional judgement is applied to assess the likely significant effects of the Site on the safety record of the surrounding highway network.

Significance Criteria – Significance of Effect

- 6.5.40 The significance criteria adopted for likely traffic and transport effects is based on the magnitude (or scale) of the change as well as the sensitivity (or importance) of the receptor affected. The magnitude of effects and receptor sensitivity will be compared to estimate the significance of the effect.
- 6.5.41 **Table 6.5** below includes a range of criteria to allow the specific characteristics of each effect to be considered.

Table 6.5 Significance of Effect Criteria

		Sensitivity or Value		
		<i>High</i>	<i>Medium</i>	<i>Low</i>
Magnitude	<i>Major</i>	Major adverse / beneficial	Major-moderate adverse / beneficial	Moderate-minor adverse / beneficial
	<i>Moderate</i>	Major-moderate adverse / beneficial	Moderate-minor adverse / beneficial	Minor adverse / beneficial
	<i>Minor</i>	Moderate-minor adverse / beneficial	Minor adverse / beneficial	Minor-negligible
	<i>Negligible</i>	Negligible	Negligible	Negligible

Limitations and Assumptions

6.5.42 The following assumptions are relevant to this assessment:

Future Traffic Growth

6.5.43 It is expected that baseline traffic flows will change over the assessment period (construction and operation) in line with the relevant predicted traffic growth forecasts for the area surrounding the Site. The Trip End Model Presentation Programme (TEMPRO) database derived from the National Transport Model (NTM)¹³ has been used to estimate growth in surveyed traffic flows for the years of construction and operation of the Proposed Development. The proposed method for identifying growth rates has been agreed with HCCHA as part of the consultation stage. As part of the TA, it was agreed that the future year assessment should be 2023. However, as part of this revised Environmental Statement, consideration has been given to a likely year of construction and a future year of completion of full development. Therefore, the 2023 future year has been used to assess the future year for construction and a new completed development future year of 2027 has been considered.

6.5.44 Analysis of the supporting information for predicted growth in household numbers in TEMPRO for the area over the period 2017 – 2027 (survey date to full development build out) indicates that predicted household growth during this period was for 312 dwellings. The details of the TEMPRO growth factors used in the assessment are provided in the TA, which was submitted in support of the 2018 planning application and remains applicable to the Appeal.

Committed Developments

6.5.45 Specific proposed and committed developments within the study area have been considered in terms of the possible additional traffic that could be added to the highway

¹³ National Transport Model

network within the study area, in the future assessment years and in terms of the associated changes that are expected in the transport networks within the study area.

- 6.5.46 In particular, traffic associated with the following committed developments have been added:
- Trafalgar Wharf mixed use development (ref: **13/00993/OUT** – development of 163 dwellings, 18,094sqm B1/B2/B8 use);
 - Land East of Down End Road development (ref: **P/20/0912/OA** – development of up to 350 residential dwellings);
 - Land south of Longfield Avenue Fareham (ref **P/20/0646/OA** - 1,200 dwellings and supporting infrastructure);
 - Land East of Newgate Lane East Fareham (ref **P/19/1260/OA** – 99 dwellings); and
 - Land at Newgate Lane (South) Fareham (ref **P/19/0460/OA** – 115 dwellings).
- 6.5.47 It should be noted that Cranleigh Road (reference: P/15/0260/OA – development of 120 dwellings), has been included within the baseline as it has now been built out and is operational.
- 6.5.48 Information on trips generated by the above listed committed developments have been taken from the relevant Transport Assessments for these sites and assigned to the local highway network within the TA. This methodology, therefore, provides a robust assessment of the future growth, as it considers both the direct traffic impact on links of the committed developments, as well as TEMPRO growth which applies growth to every link, whereas in reality, traffic will travel on a limited number of links depending on the location of the development. It is therefore considered that the assumed growth within the 2027 traffic flows is robust and a worst-case scenario.
- 6.5.49 The following limitations are relevant to this assessment:
- Since 2020, as COVID-19 restrictions have been in place, it has not been possible to obtain robust up to date traffic data. The data used in the assessment presented within this Chapter is, therefore, considered to be the most robust information and assessment results presenting a worst-case scenario.

Consultation Undertaken

- 6.5.50 Extensive consultation was undertaken with HCCHA) from a scoping exercise and meeting undertaken in May 2017, to confirm the assessment methodology, through to the agreement of proposed improvements and mitigation to be provided as part the development proposals prior to the determination of the 2018 planning application. All concerns and points raised by HCCHA were resolved, agreement was reached on all matters raised and HCCHA raised no objection to the scheme.
- 6.5.51 It is considered that the consultation undertaken for the 2018 planning application remains applicable to the Appeal.

6.6 Baseline Assessment and Identification of Key Receptors

Provision for Walk and Cycle Access

- 6.6.1 The Site is located within an approximate 1.9 km distance walk from Portchester Town Centre (located to the east of the Site) and 2.8 km distance cycle from Fareham Town Centre (located to the west of the Site) via existing cycle routes.
- 6.6.2 Lit, safe footways are present along both sides of all the surrounding residential roads, including Romsey Avenue and Beaulieu Avenue, connecting with the A27, Portchester Road to the north of the site and Hatherley Crescent and Cornaway Lane to the east. These provide direct routes for pedestrians to the wider footway network and provide safe routes to key destinations such as Wicor Primary School, Cams Hill School, Portchester Town Centre, Westlands Medical Centre, Portchester Community Centre and the nearby bus stops on the A27, as well as access to Portchester Rail Station.

Provision for Public Transport

- 6.6.3 Existing bus services are accessible from the A27, Portchester Road and within reasonable walking distance of the Site, using existing footway provision.
- 6.6.4 Bus services 3, F3 and X4, all operated by First Bus, serve these bus stops. Bus service 3 provides a service between Fareham and Gunwharf, Portsmouth via Portchester, with a 10-minute frequency Monday to Saturday and a 20-minute frequency on a Sunday.
- 6.6.5 Bus service F3 operates between Fareham bus station and Portchester Precinct with 3 journeys a day Monday to Saturday. Bus service X4 provides a service between Southampton and Portsmouth via Fareham and Portchester, with a 30-minute frequency Monday to Saturday and hourly on a Sunday.
- 6.6.6 The nearest rail station is Portchester rail station, located an approximate 2 km distance walk / cycle to the east of the Site along The Crossway. Direct rail services operate from Portchester to London Waterloo, London Victoria, Southampton Central and Portsmouth & Southsea.
- 6.6.7 The train journey from Portsmouth Harbour to London Waterloo is operated by South West Trains via Portchester, Winchester and Basingstoke. The train journey from Southampton Central to London Victoria is operated by Southern Trains via Portchester, Horsham and Gatwick Airport. These services run at a frequency of 2 an hour and so provide a frequent, high quality rail link to key destinations.

Surrounding Highway Network

- 6.6.8 The Site will be accessible from Romsey Avenue, which connects with Beaulieu Avenue, which provides access to the A27, Portchester Road. The A27 provides access to Fareham in the west, Portsmouth to the east and the M27.
- 6.6.9 Romsey Avenue is located within a residential area, and is approximately 6.3 m wide, there is evidence of existing on-street parking. Romsey Avenue is subject to a 30mph speed limit. Pedestrian footways (1.6 m wide) are provided on both sides of the carriageway.

- 6.6.10 The Site is located off of Romsey Avenue. The access road is currently used for on street parking for residential dwellings in proximity. An access road which provides access to the rear of the properties on Romsey Avenue is located at the end of this road.
- 6.6.11 The junction between Beaulieu Avenue and Romsey Avenue provides dropped kerbing to increase accessibility for pedestrians. Beaulieu Avenue provides footway on either side of the carriageway, has evidence of on street parking and is subject to a 30mph speed limit.
- 6.6.12 The A27, Portchester Road is subject to a 40mph speed limit, and provides cycle lanes on both sides of the carriageway. At the Junction with Beaulieu Avenue a right turn lane is provided.
- 6.6.13 The M27 runs to the north of the site and can be accessed via the A27 which is approximately a 10-minute drive (3.0 km). The M27 runs from Cosham and Portsmouth.

Existing Vehicle Restrictions

- 6.6.14 There are no highway links within the study area with restrictions on the passage of certain vehicle types.

Extent of Network

- 6.6.15 The extent of the network to be assessed has been determined based on the sensitive receptors and the operational and construction traffic flows expected. The network considered is:
- A27, Cams Hill;
 - Downend Road;
 - A27, Portchester Road;
 - Dore Avenue;
 - A27, West Street;
 - Beaulieu Avenue;
 - Romsey Avenue, West of the Site Access;
 - Romsey Avenue, East of the Site Access;
 - Hatherley Crescent;
 - Cornaway Lane; and
 - Site Access.

Location of Sensitive Receptors

- 6.6.16 The sensitive receptors to be considered as part of the assessment of possible transport environmental impact of the Proposed Development have been identified through Site visits, desktop studies and discussions with HCCHA.
- 6.6.17 Receptors with high sensitivity to changes in traffic flows have been discussed in the 'Sensitive Receptors and Significance Criteria' section and include: schools, colleges, playgrounds, accident blackspots, retirement homes, urban/residential roads without footways that are used by pedestrians.
- 6.6.18 The following receptors with high sensitivity have been considered:
- Wicor Primary School (Hatherley Crescent east of the Proposed Development).

Surveys and Data Sources

- 6.6.19 Existing daily traffic flow information has been derived from a number of traffic surveys that have been undertaken within the study area, in locations agreed with HCCHA.
- 6.6.20 An automatic traffic count (ATC) was undertaken on Romsey Avenue, located approximately 30 m west of Ashtead Close, between 23rd and 29th May 2017; full survey results are provided in the TA and summarised in **ES Volume 4, Appendix B** of this ES. The following manual classified counts (MCCs) were undertaken on 23rd May 2017 (of which full survey data is contained in the TA and summarised in **ES Volume 4, Appendix B**):
- Site Access / Romsey Avenue (Junction A)
 - Beaulieu Avenue / A27 Portchester Road (Junction B);
 - Hatherley Drive/ Cornaway Drive (Junction C);
 - Cornaway Lane Roundabout (Junction D); and
 - A27, Portchester Road/ Downend Road / Shearwater Avenue signalised Junction (Junction E).

Road Safety Data Review

- 6.6.21 Personal Injury Accident (PIA) data has been obtained from Hampshire Constabulary for the latest period between 1st April 2012 and 31st December 2020. A summary and review of the PIA accidents is provided in the TA.
- 6.6.22 The data, covers key areas within proximity of the Site, including Romsey Avenue, A27 Portchester Road, Hatherley Drive, Cornaway Lane, Cornaway Lane Roundabout and the A27, Cams Hill / A27, A27 Portchester Road / Condor Avenue / Oysell Gardens roundabout, Portchester Road / Downend Road / Shearwater Avenue signalised Junction, Romsey Avenue and Beaulieu Avenue. The accident data provided is summarised in Table 6.6.

Table 6.6 Summary of Accident Data 01/04/2012 – 31/12/2020

Location	Severity			Total
	Fatal	Serious	Slight	
Romsey Avenue	0	0	1	1
Beaulieu Avenue	0	0	0	0
Hatherley Crescent/Drive	0	0	2	2
Cornaway Lane	0	0	1	1
A27 Portchester Road (within 200m cordon of Beaulieu Ave)	0	11	44	55

6.6.23 Analysis of this information identified a total of 55 accidents across this network over this 6.5-year period. This equates to an average of less than 9 accidents per year over the network, over a number of junctions.

6.7 Identification and Description of Changes Likely to Generate Effect

Construction Phase

- 6.7.1 In relation to construction, it is the impact of HGVs that is the focus of the assessments. The expected number of daily vehicle trips associated with the Proposed Development have been derived based on survey data for residential construction sites (similar to the Proposed Development) and provides an average daily flow. Whilst operative numbers will stay relatively stable, the number and type of delivery vehicles accessing the Site may vary depending on the stage of the build.
- 6.7.2 Construction phase trips have been derived from survey data from a residential construction site based on a construction rate of 50 dwellings per annum. The assumptions used can be found in **ES Volume 4, Appendix B**. From this data an estimated 80 cars associated with tradesmen and operatives on Site would be present or 160 two-way trips per day. Of these, arrival trips in the morning would predominantly be between 07:00 and 08:00 and departures would be spread over a longer period in the afternoon from 16:00 onwards.
- 6.7.3 An estimate of the average daily delivery vehicles and the proportion of these that will be HGV (rather than transit van or equivalent) is provided and these have then been assigned to the highway network. The change in annual average daily traffic (AADT) HGV vehicles during the construction period is summarised in **Table 6.7**.

Table 6.7: Changes in AADT Peak Construction Traffic Flow and in relation to 2023 Future Year Traffic

Link	2023 + Committed Development Flows (two way HGV flow)*	Construction Generated Flows (two way HGV flow)	Percentage Change
A27, Cams Hill	360	38	11%
Downend Road	31	0	0%
A27, Portchester Road (West of Beaulieu Avenue)	360	38	11%

Link	2023 + Committed Development Flows (two way HGV flow)*	Construction Generated Flows (two way HGV flow)	Percentage Change
A27, Portchester Road (at Cornaway Lane roundabout)	440	10	2%
Dore Avenue	39	0	0%
A27, West Street	348	10	3%
Beaulieu Avenue	6	48	989%
Romsey Avenue (West of Site Access)	5	48	832%
Romsey Avenue (East of Site Access)	5	0	0%
Hatherley Crescent	8	0	0%
Cornaway Lane	44	0	0%

Note: * HGV numbers based on % HGVs on an average day, on the link growthed to future year.

Operational Phase

- 6.7.4 The operational traffic related to the Proposed Development has been assessed for the future year of 2027, when the full Proposed Development is expected to be built and occupied. The percentage change in traffic, as a result of the operational phase of the Proposed Development, compared to the 2027 future year for the AM and PM peaks are shown in **Table 6.8**.

Table 6.8: Changes in AADT Traffic Flow and Magnitude of Impact in Relation to 2023 Future Year Traffic

AADT			
Link	2027 + Committed Development Flows (two way flow)	Development Generated Flows (two way flow)	Percentage Change (%)
A27, Cams Hill	20653	806	4%
Downend Road	6308	0	0%
A27, Portchester Road (West of Beaulieu Avenue)	20653	808	4%
A27, Portchester Road (at Cornaway Lane roundabout)	25208	194	1%
Dore Avenue	7963	0	0%
A27, West Street	19967	403	2%
Beaulieu Avenue	1186	1000	84%
Romsey Avenue (West of Site Access)	1100	1000	91%
Romsey Avenue (East of Site Access)	1110	241	22%
Hatherley Crescent	1608	241	15%

AADT			
Link	2027 + Committed Development Flows (two way flow)	Development Generated Flows (two way flow)	Percentage Change (%)
Cornaway Lane	9011	210	2%

6.8 Assessment of Likely Significant Effect

Construction Phase

Embedded Mitigation Measures

- 6.8.1 The Construction Traffic Management Plan (CTMP) that will be submitted alongside future reserved matters applications will adequately manage construction traffic, routes and delivery periods. This will be a live document managed by a Site manager, who will be contactable by locals, should any concerns / problems arise. Given the low numbers of daily HGV trips and that these will be off peak, it is considered that no further mitigation measures are required.
- 6.8.2 Parking management on Beaulieu Avenue and cycle improvements on A27 will also assist with construction mitigation measures in terms of traffic movements and road safety. The parking management element will allow the rationalisation of existing on street parking on Beaulieu Avenue, by positioning the parking within a layby without any loss of parking spaces (based on the existing demand) but ensuring that the parking is only permitted in the bays provided. This then ensures that two-way working is possible on Beaulieu Avenue, unhampered by parked cars, as currently occurs. Existing parking on the bellmouth of Beaulieu Avenue and Romsey Avenue, prohibited under the Highway Code/Road Traffic Act 1988, will be removed through the provision of double yellow lines, improving visibility and manoeuvrability around the junction. Parking for the prohibited parked vehicles recorded in the 2017 surveys will be provided further along Romsey Avenue.
- 6.8.3 The abovementioned parking management will not only bring a benefit to existing residents by ensuring free flowing movement, but also construction traffic associated with the Site which will be able to safely manoeuvre.
- 6.8.4 To mitigate the impact of construction traffic, it is expected that the CTMP will seek to minimise the impact of HGVs on the local highway network. The CTMP will set out:
- agreed HGV routes;
 - measures to prevent the transport of mud and debris onto the external highway network;
 - measures to ensure that loose material is transported in sheeted or sealed containers;
 - restrictions of working hours; and
 - restrictions on the types of vehicles used.

- 6.8.5 There will also be a Site Manager present on-Site to meet with residents to discuss any issues, if necessary. Therefore, the provision of the CTMP and Site Manager will provide an effective management tool post permission, hence no further assessment or mitigation is considered necessary.

Anticipated Effects

- 6.8.6 In relation to construction, it is the impact of HGVs that is the focus of the assessment. From this assessment, it can be seen that the chosen construction route for delivery vehicles and in particular the HGV movements add 48 two-way daily movements to Romsey Avenue west of the Site access and onto Beaulieu Avenue, as this is the shortest route to the A27 and the wider strategic network. This equates to 8 two-way movements per hour over the period deliveries will be allowed during the day.
- 6.8.7 The anticipated effect will be short term and the implementation of the CTMP will significantly reduce the impact on the local highway network.

HGV Traffic

- 6.8.8 HGV construction traffic will be temporary and for a short term and regulated by the CTMP. The delivery periods will be limited to ensure that the larger HGV vehicles do not arrive in the peak periods and so will arrive after 09:00 and before 15:00 to avoid the school and commuter peak periods.
- 6.8.9 It must also be acknowledged that the number of HGV trips on Romsey Avenue and Beaulieu Avenue are very low, with only 8 two-way movements per hour predicted in a 24-hour period as would be expected of a typical residential road. Therefore, the increase of construction HGV trips may seem high. However, the roads used are wide and will have ample capacity to accommodate these movements. These HGV vehicle movements will also be aided by the provision of the parking management along Beaulieu Avenue and the junction of Beaulieu Avenue / Romsey Avenue to ensure the safe, free flowing movement of the vehicles.

Workforce Movements

- 6.8.10 The daily workforce on the construction Site will be made up of both main contractor and sub-contractor staff. As construction activity intensifies on the Site the number of workers will also increase.
- 6.8.11 It is likely that arrivals and departures of the workforce will be spread throughout the day with the bulk of arrivals between 07:00 and 08:00 but with departures spread more evenly through afternoon from 16:00 onwards. It is estimated that the number of Site operatives and staff will however generate no more than 160 two-way vehicle movements over a daily period during peak activity on the Site.
- 6.8.12 The CTMP will control Site operating hours and, therefore, associated movements. The CTMP will also seek to reduce vehicle movements where possible.
- 6.8.13 Construction phase impacts will be short term and be removed on completion of the Proposed Development. Construction traffic will access the Site along lightly trafficked residential streets, which whilst acknowledged to be residential are not identified as sensitive receptors as set out in Table 6.2.

- 6.8.14 The increase in traffic during construction on Romsey Avenue and Beaulieu Avenue is high due to the low baseline traffic flows; therefore, these roads need to be considered further.

Severance

- 6.8.15 With regards to pedestrian severance, whilst the change in traffic flow is considered to be of major magnitude (due to the low baseline traffic flows) on a low sensitivity receptor, this would categorise the effect to be of moderate-minor significance. However, this is not anticipated to result in any more than a **minor adverse** effect on pedestrian severance, due to the low number of movements per hour.

Driver Delay / Safety

- 6.8.16 Based on the significance criteria above, there is a minor magnitude of effect on a low sensitivity receptor, resulting in a minor-negligible significance of effect. However, effects of driver delay are only ever likely to be realised when traffic is at or close to capacity. Based on the embedded mitigation in the CTMP, which will include dispersed routing of vehicles to / from the Site and management of shift changeovers and deliveries / removals by HGV timed to avoid peak periods on the network, any impact is **negligible**.

Pedestrian Delay / Amenity / Safety

- 6.8.17 Based on the significance criteria above, the magnitude of effect is considered to be moderate on a low sensitivity receptor, resulting in a minor adverse effect. However, when considering pedestrian delay, amenity and safety, consideration must be given to the very low baseline traffic numbers along the 2 links identified (Romsey Avenue, Beaulieu Avenue). Both of these roads have wide footpaths and the increase in traffic is not anticipated to influence the crossing of the road. If necessary, and as part of the CTMP, additional signage warning of increased construction traffic activity can be placed on approach to key crossing points along the access routes. Therefore, it is considered that the impact of the construction traffic will be **minor-negligible adverse**.

Fear and Intimidation

- 6.8.18 In relation to fear and intimidation criteria, **Table 6.4** sets out that an increase of less than 1000 HGVs over an 18-hour period will have a negligible magnitude of impact on a low sensitivity receptor. Therefore, an increase of only 48 movements will result in a **negligible** effect.

Construction Phase – Summary of Impacts

- 6.8.19 In relation to the impact magnitude, it is considered that the HGV increase (magnitude of impact) along Romsey Avenue and Beaulieu Avenue (of low sensitivity) will be **moderate to high** in comparison to the very low levels of existing HGV traffic along this route, but only equate to an average of 8 two-way movements per hour for the 6-hour period to which delivery vehicles will be limited to under the CTMP. Therefore, the impact on Romsey Avenue and Beaulieu Avenue will be of moderate-minor adverse significance. However, with the implementation of the embedded mitigation measures, this is considered to be reduced from moderate-minor to minor-negligible adverse significance. It should be acknowledged that construction traffic is **temporary** in nature and so the number of HGVs accessing the Proposed Development (the Site) will be removed once construction is complete.

Operational Phase

- 6.8.20 The impact of the operation traffic has been assessed on a number of key highway links as they form the most likely routes along desire lines to key destinations and the strategic highway network.
- 6.8.21 The impact of the Proposed Development trips are assessed against the following screening tests:
- ***“Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%).***
 - ***Rule 2 – include any other specifically sensitive area where traffic flows have increased by 10% or more.”***
- 6.8.22 The following links have been assessed:
- **Traffic flows that will increase by more than 30%:**
 - Beaulieu Avenue;
 - Romsey Avenue (west of site access); and
 - **Sensitive Area where traffic flows increase by 10% or more:**
 - Hatherley Crescent (school present).

Embedded Mitigation Measures

- 6.8.23 As part of the extensive discussions with HCCHA, the following mitigation measures have been agreed to offset the impact of the Proposed Development:
- Junction improvements and cycle lane improvements at A27 / Beaulieu Avenue junction;
 - Contribution towards the HCCHA strategic junction improvement of the A27 / Downend signalised junction;
 - Contribution towards the HCCHA strategic junction improvement of the A27 / Delme Arms roundabout junction;
 - Improvements to cycle facilities at the Cornaway Lane roundabout;
 - Footway widening in the vicinity of the site access;
 - Walking audit led footway / footpath improvement along key desire lines;
 - Improvement to the site access road connection to Romsey Avenue, including surfacing, provision of footway and appropriate crossing points;
 - A School Travel Plan for the nearby Wicor Primary School;

- Implementation of Beaulieu Avenue parking restriction to rationalise existing parking to allow two-way traffic flows and improve safety over the existing situation; and
- Production of a Site Travel Plan.

- 6.8.24 The off-site works associated with the Proposed Development will include parking management which will allow the rationalisation of existing on street parking on Beaulieu Avenue by positioning the parking within a layby without any loss of parking spaces (based on the existing demand) but ensuring that the parking is only permitted in the bays provided. This then ensures that two-way working is possible on Beaulieu Avenue, unhampered by parked cars, as currently occurs. Existing parking on the bellmouth of Beaulieu Avenue and Romsey Avenue, prohibited under the Highway Code/Road Traffic Act 1988 will also be removed through the provision of double yellow lines, improving visibility and manoeuvrability around the junction. Parking for the prohibited parked vehicles recorded in the 2017 surveys will be provided further along Romsey Avenue.
- 6.8.25 The abovementioned parking management will not only bring a benefit to existing residents by ensuring free flowing movement, but also operational traffic associated with the Site which will be able to safely manoeuvre.
- 6.8.26 As noted above, the off-site works associated with the Proposed Development will improve parking conditions on local roads and allow for improved two-way working. This in turn will improve link capacity and the local highway network has adequate capacity to accommodate the potential anticipated traffic flows.
- 6.8.27 The introduction of the site Travel Plan and improved pedestrian and cycle routes to key destinations will also enhance alternatives to car use.
- 6.8.28 A Travel Plan (TP) was prepared by SMA to accompany the 2018 planning application, which remains applicable to the Appeal for the Proposed Development. The TP provides a package of measures to efficiently and sustainably manage the transport impact of the Proposed Development, through the delivery of a range of sustainable transport measures which include:
- Travel Information Pack;
 - Personalised Travel Planning;
 - Vouchers towards public transport travel / cycle purchase;
 - Bus / train timetable data; and
 - Newsletters / updates / events.
- 6.8.29 These measures would be promoted by a Travel Plan Co-ordinator, who would encourage and incentivise travel by sustainable modes. The Travel Plan will therefore further mitigate any traffic impact of the Proposed Development.

Anticipated Effects

- 6.8.30 As the development will result in an increase of over 30% traffic on Romsey Avenue west of the site access and Beaulieu Avenue, and over 10% on the sensitive link of Hatherley Crescent, further assessment is required of the impact on these routes.

Severance

- 6.8.31 Based on the data set out in Table 6.3, whilst the change in traffic flow is considered to be of major magnitude on a low sensitivity of receptor (Romsey Avenue and Beaulieu Avenue) or a high sensitivity of receptor (Hatherley Crescent), this would categorise the effect to be of moderate-minor significance or major adverse significance respectively. However, it is anticipated that the increase in traffic flows as a result of the Proposed Development will have no more than a **minor adverse** impact on severance. The improved pedestrian and cycle facilities as well as suitable crossing points will reduce the impact of any feeling of severance, as a result of the Proposed Development, on the links identified.

Driver Delay / Safety

- 6.8.32 Based on the significance criteria above, there is a minor magnitude of effect on a low sensitivity of receptor (Romsey Avenue and Beaulieu Avenue), resulting in a minor-negligible significance of effect. However, whilst the increase in traffic flows along these routes (Romsey Avenue and Beaulieu Avenue) is high in percentage terms, the increase is only 1000 two-way vehicle movements a day. Whilst traffic flows in the peak hours will be higher and overnight will be lower, this equates to an average of 42 movements per hour. It should be noted that there is currently none to very minimal levels of traffic on these links so of course an increase in traffic due to the Proposed Development will be inevitable.
- 6.8.33 The capacity of these links, however, will more than accommodate the traffic flows associated with the Proposed Development. Additionally, the proposed improvements to the junction of A27 / Beaulieu Avenue and the rationalisation of the parking on Beaulieu Avenue will ensure that this increase in traffic flow can fully accommodate the Proposed Development trips, with any impact being **negligible** on driver delay, and improve safety at the junction.
- 6.8.34 Based on the significance criteria above, there is a minor magnitude of effect on a high sensitivity receptor, resulting in a moderate-minor adverse significance of effect. However, in relation to Hatherley Crescent, the Proposed Development will add only 241 two-way trips over a 24-hour period or an increase of 15%, which when related to the criteria set out in Table 6.1 would be expected to have a **negligible adverse impact**. This increase over a 24-hour period will have no material impact on driver delay. A School Travel Plan will be funded by the Proposed Development, to help address the existing parent parking during the school pick up / drop off periods, which will not only address any impact of the Proposed Development trips and improve safety around the operation of the school, but also resolve an existing problem and therefore bring a benefit to the operation of the road.

Pedestrian Delay / Amenity / Safety

- 6.8.35 Based on the significance criteria above, the magnitude of effect is considered to be moderate on a low sensitivity receptor (Romsey Avenue and Beaulieu Avenue, resulting in

a minor adverse effect. However, when considering pedestrian delay, amenity and safety, consideration must be given to the very low baseline traffic numbers along the 2 links identified (Romsey Avenue and Beaulieu Avenue). The increase in Proposed Development trips is also relatively low and in keeping with the residential nature of the links. The mitigation measures already agreed as part of the Proposed Development (including pedestrian and cycle infrastructure improvements, along with the rationalisation of existing on street parking, which can hamper crossing points and visibility, as cars are parking on the junction bellmouths) will bring benefits over the existing situation as well as fully mitigating the impact of the Proposed Development trips. Therefore, it is considered that the impact of the operational phase will be **minor-negligible adverse**.

- 6.8.36 Based on the significance criteria above, the magnitude of effect is considered to be moderate on a high sensitivity receptor (Hatherley Crescent), resulting in a major-moderate adverse effect. However, when considering pedestrian delay, amenity and safety, consideration must be given to the very low baseline traffic numbers along the link identified (Hatherley Crescent). As above, the increase in Proposed Development trips is also relatively low and in keeping with the residential nature of the links and the mitigation measures already agreed as part of the Proposed Development will bring benefits over the existing situation as well as fully mitigating the impact of the Proposed Development trips. Therefore, it is considered that the impact of the operational phase will be **minor-negligible adverse**.

Fear and Intimidation

- 6.8.37 The criteria set out in Table 6.4 indicate that the Proposed Development's impact on fear and intimidation would be negligible.
- 6.8.38 Therefore, when considering the impact of the Proposed Development in relation to the low sensitivity of the 2 links identified (Romsey Avenue and Beaulieu Avenue), the criteria assessed in relation to fear and intimidation and the embedded mitigation schemes, it is considered that the impact of the operational phase will have a negligible magnitude of impact on a low sensitivity receptor, resulting in a **minor-negligible adverse** effect.
- 6.8.39 When considering the impact of the Proposed Development in relation to the high sensitivity of the link identified (Hatherley Crescent), the criteria assessed in relation to fear and intimidation and the embedded mitigation schemes, it is considered that the impact of the operational phase will have a negligible magnitude of impact on a high sensitivity receptor, resulting in a **minor-negligible adverse** effect.

6.9 Scope for Additional Mitigation Measures

- 6.9.1 It is considered that no additional mitigation measures are required, other than what is already proposed as embedded mitigation. The improvement to junctions, parking, public transport, the proposed Travel Plans and CTMP will offset the potential impacts of the Proposed Development. The local road infrastructure can easily accommodate the predicted level of traffic.

6.10 Residual Effects

- 6.10.1 With the embedded mitigation presented above, there are no significant residual effects anticipated as a result of the Proposed Development.

6.11 Cumulative Effects

- 6.11.1 This ES Chapter has identified and assessed the potential for traffic related cumulative effects associated with other committed developments. A list of committed developments for housing (approved but incomplete projects and projects for which an application has been made and which are under consideration by the consenting authorities) is provided in **Chapter 3: EIA Methodology** of this ES. Traffic generated by these developments has been factored from 2017 traffic survey flows (through the application of TEMPRO growth rates) to future years 2023 and 2027, which have formed the basis for all impact assessment within this ES Chapter.
- 6.11.2 As such, it is considered that all 'cumulative effects' have been duly considered and assessed in the previous sections of the ES Chapter and no further assessment is required.

6.12 Potential Changes to the Assessment as a Result of Climate Change

- 6.12.1 Transport is the fastest-growing contributor to climate emissions by sector according to the World Health Organisation (WHO) www.who.int/sustainable-development/transport/health-risks/climate-impacts/en/. Section 14 of the NPPF refers to this in paragraph 150 (b), which states that new developments should be planned in ways that *"can help to reduce greenhouse gas emissions, such as through its location, orientation, and design"*.
- 6.12.2 When considered in the context of the Climate Change Act 2008 and the need for radical reductions in emissions, this means that planning policies and decisions should influence the location and layout of development to reduce the need to travel, particularly by private car, and secure the highest possible share of trips made by sustainable travel.
- 6.12.3 The introduction of electric vehicles (EVs) and the associated EV infrastructure may become more apparent in the future baseline conditions. However, it needs to be mindful that the transition to EVs does not weaken the emphasis on reducing single occupancy vehicles as EVs do not reduce greenhouse gas emissions from transport unless accompanied by the rapid decarbonisation of the power sector.
- 6.12.4 In traffic and transport terms and in specific relation to this chapter, changes to the assessment as a result of climate change relates to how it may affect movement (for example traffic flows, pedestrian movement or cyclist movement) and how it may alter the sensitivity of receptors.
- 6.12.5 In terms of sensitivity, receptors that are sensitive to changes in traffic flows should not be altered by climate change and neither would their assessment of sensitivity (i.e. negligible, low, medium or high). The sensitivity of receptors identified in this Chapter would remain relevant.
- 6.12.6 People could be considered able to adapt to the effects of climate change in the sense that if a movement is needed by a particular mode of transport, then it is reasonable to assume that movement would still occur regardless of climate change (e.g. a person would still walk to a local shop or a person would still drive to and from work).
- 6.12.7 On this basis, it is considered that climate change is unlikely to affect future baseline conditions to such an extent that it would affect conclusions reached in this Chapter.

6.13 Summary and Conclusions

- 6.13.1 This chapter of the ES has assessed the likely significant effects of the Proposed Development in terms of highways and transport related environmental impact. Under 'Guidelines for the Environmental Assessment of Road Traffic' consideration has been given to the baseline conditions currently existing at the Site and its surroundings, the likely significant environmental effects, the measures introduced through embedded mitigation to prevent, reduce or offset any significant adverse effects, and the likely residual effects after these measures have been employed.
- 6.13.2 To establish whether significant environmental effects are likely a comparison has been made between predicted traffic flows on potentially affected roads, with and without the Proposed Development taking account of the sensitivity of the receptors as well as any changes in the composition of traffic.
- 6.13.3 The baseline transport environment for the study area has been established through Site visits, traffic surveys and the collection of relevant data from the most reliable current sources. The identification of sensitive receptors has been undertaken through Site visits. Account has been taken of traffic associated with other committed developments in the local area that have the potential to increase traffic flows on the local highway network.
- 6.13.4 It is considered that the impact magnitude of the HGV increase during the construction phase will be **moderate to high but temporary** in nature when considering the volume of HGV movements in comparison to the existing situation. However, when considering the criteria used to assess the elements of Severance, Driver Delay / Safety, Pedestrian Delay / Amenity / Safety and Fear and Intimidation alongside the embedded and proposed mitigation of preparing a CTMP, as part of the development process, and having a Site Manager present on-Site to liaise with, should any issues arise, the impact is considered to be minor / negligible adverse. It is therefore considered that no further assessment or mitigation is required.
- 6.13.5 With the proposed mitigation range of mitigation measures and improvements as part of the development scheme as well as the implementation of a Residential Travel Plan for the Proposed Development, the significance of the transport environmental effects during the operational phase is considered to be **minor-negligible adverse**.
- 6.13.6 Therefore, during the operation phase the significance of all negative transport environmental effects is found to be either negligible or minor negative and no further assessment or mitigation is required.
- 6.13.7 **Table 6.9** summarises the topic effects resulting from the Proposed Development.

Table 6.9: Summary of Residual Effects

Receptor/ Affected Group	Value or Sensitivity (Significance) of Receptor	Activity or Impact	Embedded Design Mitigation	Magnitude/ Spatial Extent/ Duration/ Likelihood of Occurrence	Significance of effect	Additional Mitigation	Residual Magnitude of Impact	Significance of Residual effect	
Construction (Romsey Avenue and Beaulieu Avenue)									
Pedestrians	Low	Pedestrian severance	CTMP & Proposed Off- site work provide adequate mitigation	Low Direct Local Temporary Likely	Minor Adverse	None	Low	Minor Adverse	
Drivers	Low	Driver Delay		Low Direct Borough Temporary Likely	Negligible	None	Low	Negligible	
Pedestrians	Low	Pedestrian amenity / delay		Low Direct Local Temporary Likely	Minor- Negligible Adverse	None	Low	Minor- Negligible Adverse	
Pedestrians	Low	Fear and Intimidation		Low Direct Local Temporary Likely	Negligible	None	Low	Negligible	
Drivers and pedestrians	Low	Highways safety		Low Direct Local Temporary Likely	Minor- Negligible Adverse	None	Low	Minor- Negligible Adverse	
Operation (Romsey Avenue and Beaulieu Avenue)									
Pedestrians	Low	Pedestrian severance		Travel Plan & Proposed Off-	Low Direct	Minor Adverse	None	Low	Minor Adverse

			site work provide adequate mitigation	Local					
				Permanent					
				Likely					
Drivers	Low	Driver Delay		Low	Negligible	None	Low	Negligible	
				Direct					
				Borough					
				Permanent					
				Likely					
Pedestrians	Low	Pedestrian amenity / delay		Low	Minor Adverse	None	Low	Minor Adverse	
				Direct					
				Local					
				Permanent					
				Likely					
Pedestrians	Low	Fear and Intimidation		Low	Minor-Negligible Adverse	None	Low	Minor-Negligible Adverse	
				Direct					
				Local					
			Permanent						
			Likely						
Drivers and pedestrians	Low	Highways safety	Low	Minor-Negligible Adverse	None	Low	Minor-Negligible Adverse		
			Direct						
			Local						
			Permanent						
			Likely						
Operation (Hatherley Crescent)									
Pedestrians	High	Pedestrian severance	Travel Plan & Proposed Off-site work provide adequate mitigation	Low	Minor Adverse	None	Low	Minor Adverse	
				Direct					
				Local					
				Permanent					
				Likely					
Drivers	High	Driver Delay		Low	Negligible Adverse	None	Low	Negligible Adverse	
				Direct					
				Borough					
				Permanent					
				Likely					
Pedestrians	High	Pedestrian amenity / delay		Low	Minor-Negligible Adverse	None	Low	Minor-Negligible Adverse	
				Direct					
				Local					
				Permanent					

				Likely				
Pedestrians	High	Fear and Intimidation		Low	Minor-Negligible Adverse	None	Low	Minor-Negligible Adverse
				Direct				
				Local				
				Permanent				
				Likely				
Drivers and pedestrians	High	Highways safety		Low	Minor-Negligible Adverse	None	Low	Minor-Negligible Adverse
				Direct				
				Local				
				Permanent				
				Likely				
Cumulative Effects - Construction								
N/A								
Cumulative Effects - Operation								
N/A								