

Forest Farm, Chippenham
Environmental Statement

Chapter 9
Traffic and transport



9 Traffic and transport

Introduction

- 9.1 i-Transport undertook the traffic and transport assessment. The findings of the assessment are summarised in this chapter and the transport assessment (TA) is included as technical appendix G. The references and data sources used in the assessment are shown in table 9.1.

Bus timetables: https://bustimes.org
Highways England, Transport Scotland, Welsh Government and Department for Infrastructure, 2020, Design Manual for Roads and Bridges, Sustainability and Environment Appraisal, LA 112 Population and Human Health
Institute of Environmental Management and Assessment, 2023, Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement
Ministry of Housing, Communities and Local Government, 2014, National Planning Practice Guidance: Travel plans, transport assessments and statements
Train timetables: https://www.thetrainline.com
Table 9.1: References and data sources

Legislation and policy

National policy

- 9.2 Paragraph 109 of the National Planning Policy Framework (NPPF; 2024) states that transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:
- a) making transport considerations an important part of early engagement with local communities;*
 - b) ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places;*
 - c) understanding and addressing the potential impacts of development on transport networks;*
 - d) realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location and density of development that can be accommodated;*
 - e) identifying and pursuing opportunities to promote walking, cycling and public transport use; and*
 - f) identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.”*
- 9.3 Paragraph 115 states that, in assessing specific applications for development, it should be ensured that:
- a) sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;*
 - b) safe and suitable access to the site can be achieved for all users;*

- c) *the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
- d) *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 through a vision-led approach."*

9.4 Paragraph 116 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.

9.5 The Ministry of Housing, Communities and Local Government published National Planning Practice Guidance: *Travel plans, transport assessments and statements* in March 2014, which provides guidance on the preparation of these documents.

Local policy

9.6 Wiltshire Council's (2011) *Wiltshire Local Transport Plan 2011-2026 Strategy* sets a series of strategic objectives, including the following that are relevant to the proposed development:

- SO1: To support and help improve the vitality, viability and resilience of Wiltshire's economy and market towns
- SO2: To provide, support and / or promote a choice of sustainable transport alternatives including walking, cycling, buses and rail
- SO3: To reduce the impact of traffic on people's quality of life and Wiltshire's built and natural environment
- SO4: To minimise traffic delays and disruption and improve journey time reliability on key routes
- SO7: To enhance Wiltshire's public realm and streetscene
- SO12: To support planned growth in Wiltshire and ensure that new developments adequately provide for their sustainable transport requirements and mitigate their traffic impacts
- SO13: To reduce the need to travel, particularly by private car
- SO14: To promote modes of travel that are beneficial to health
- SO17: To improve sustainable access to Wiltshire's countryside and provide a more useable public rights of way network

9.7 Wiltshire Council is currently preparing its draft *Chippenham Local Cycling and Walking Improvement Plan* as part of its local transport plan, following a public consultation exercise during summer 2023. The consultation material is limited, but identifies existing walking and cycling opportunities through Pewsham and on the London Road corridor to the north of the A4 London Road / A4 Pewsham Road / London Road roundabout.

9.8 Core Policy 60: Sustainable transport of the adopted *Wiltshire Core Strategy* (2015) states that the council will use its planning and transport powers to help reduce the need to travel, particularly by private car, and support and encourage the sustainable, safe and efficient movement of people and goods

within and through Wiltshire. This includes by planning developments in accessible locations, promoting sustainable transport, maintaining and selectively improving the local transport network, and assessing and mitigating the impact of developments on transport users, local communities and the environment.

- 9.9 Core Policy 61: Transport and new development requires new development to be located and designed to reduce the need to travel, particularly by private car, and to encourage the use of sustainable transport alternatives. Core Policy 62: Development impacts on the transport network requires developments to provide appropriate mitigation measures to offset any adverse impacts on the transport network.
- 9.10 The *Chippenham Neighbourhood Plan 2023-2038 Made Version* (2024) also sets out relevant policies in relation to traffic and transport. Policy T1 – Provision and Enhancement of Cycle Paths states that cycling schemes shall be prepared for all major development proposals to encourage modal shift from the private car to cycling. Policy T2 – Access to the Bus Network states that major development that will add to demands on public transport should incorporate new on site bus network infrastructure. Policy T3 – Electric Vehicle Charging Infrastructure encourages the provision of cable routes to allow for electric vehicle charging on-street where off-street parking cannot be provided.
- 9.11 A more detailed review of local and national planning policy is provided in the TA in technical appendix G.

Methodology

Traffic modelling

- 9.12 Manual classified traffic counts were undertaken on the following junctions in the study area in April 2024 (figure 9.1):
- Bridge Centre gyratory
 - A4 Avenue La Fleche / Gladstone Road
 - A4 Avenue La Fleche / A4 Pewsham Way roundabout
 - A4 London Road / A4 Pewsham Way roundabout
 - A4 London Road / New Road / A342 Old Derry Hill
- 9.13 In addition, automatic traffic count surveys were undertaken on the A4 London Road, London Road and the A4 Pewsham Way.
- 9.14 Twenty-four-hour annual average daily traffic (AADT) and 18-hour annual average weekday traffic (AAWT) flows were derived from the traffic surveys. Factors were calculated from the automatic traffic counts and applied to the traffic flows in the peak periods recorded at the manual classified count sites.
- 9.15 Trip generation from the proposed development was estimated using the TRICS database. To expand this to calculate the 24-hour AADT and the 18-hour AAWT flows, traffic data from TEMPro were used. Committed developments were also incorporated into the future traffic flows, using traffic estimates from the developments' TAs and expanded using the TRICS and TEMPro factors.

- 9.16 The Transport Research Laboratories' junction capacity assessment program Junctions 10 was used to model roundabouts and priority junctions, while the JCT Consultancy program LINSIG was used to model signalised junctions. The following scenarios were modelled for the assessment:

- 2024 baseline
- 2029 future baseline (estimated year of opening): baseline plus committed developments and wider background traffic growth
- 2029 with development: baseline plus committed developments and wider background traffic growth plus proposed development
- 2029 construction traffic: baseline plus committed developments and wider background traffic growth plus proposed development plus construction traffic
- 2036 with sensitivity test developments: baseline plus committed developments and wider background traffic growth plus proposed development plus the Land East of Showell Farm and Land South of Chippenham developments
- 2036 with sensitivity test developments and construction traffic: baseline plus committed developments and wider background traffic growth plus proposed development plus the Land East of Showell Farm and Land South of Chippenham developments plus construction traffic

- 9.17 The latter two scenarios are assessed in chapter 11: cumulative effects. Full details of the traffic modelling are provided in technical appendix G.

Assumptions and limitations

- 9.18 The assumptions and limitations are the same as those used in the preparation of the TA and are set out in detail in technical appendix G.

Effects assessed

Introduction

- 9.19 The Institute of Environmental Management and Assessment's (2023) *Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement* advise that assessments of traffic-related effects should include impacts on severance of communities, road vehicle driver and passenger delay, non-motorised user delay, non-motorised user amenity, fear and intimidation on and by road users, road user and pedestrian safety, and hazardous / large loads.
- 9.20 This chapter addresses the first six issues, as the nature of the proposed development means that it is not likely to generate hazardous loads. Definitions of each of the potential effects identified in the guidelines are set out below, together with explanatory text relating to the assessment criteria.
- 9.21 The IEMA guidance sets out two broad rules that have been used to determine the scale and extent of the assessment, as follows:
- 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 highway links of high sensitivity where traffic flows will increase by 10% or more

- 9.22 Where the predicted increase in traffic flows is lower than these thresholds, the guidelines suggest that the effects will be negligible and no further assessment is required. Increases in traffic flows of less than 10% are generally considered to be insignificant in environmental terms, as daily background traffic flows can vary by this amount.

Severance

- 9.23 Severance is the perceived division that can occur within a community when it becomes severed by major transport infrastructure. This may result from difficulty in crossing a heavily trafficked road or a physical barrier created by infrastructure. Severance is difficult to measure and, by its subjective nature, is likely to vary between different groups within a single community. In addition to the volume, composition and speed of traffic, severance is also likely to be influenced by road width, the demand for movement across a road, the presence of crossing facilities and the variety of land uses and extent of community located either side of a road. All these factors are considered when determining the likely severance effect.
- 9.24 The percentage change indicators suggested by the IEMA for initial severance effects are set out in table 9.2. The IEMA advises that these broad indicators should be used with care and regard should be paid to specific local conditions.

Indicator	Change in total traffic flows or HGVs
Substantial (large)	>90%
Moderate (medium)	60-90%
Slight (small)	30-60%
Negligible	<30%

Table 9.2: Severance percentage change indicators

- 9.25 In addition, volume LA 112 Population and Human Health of the Design Manual for Roads and Bridges (DMRB; 2020) identifies traffic levels that may contribute to impacts on severance for pedestrians, cyclists and horse riders at crossing points. These are referred to in the context of 'rights of way' crossing roads, but are still considered applicable to other types of at-grade road crossing (i.e. crossing from a footway on one side of the carriageway to a footway on the other side). These guideline thresholds are based on the AADT flows on a link and are set out in table 9.3.

Level	Traffic flow (AADT)
Very high	>16,000 vehicles per day
High	>8,000-16,000 vehicles per day
Medium	>4,000-8,000 vehicles per day
Low	<4,000 vehicles per day

Table 9.3: DMRB pedestrian severance thresholds

Pedestrian delay (incorporating delay to non-motorised users)

- 9.26 The assessment of pedestrian delay serves as a proxy for the delay that other types of non-motorised users may experience when crossing roads. The delay incurred by pedestrians is generally a direct consequence of their ability to cross roads. Therefore, the provision of crossing facilities, the geometric characteristics of the road, and the traffic volume, composition and speed are all factors that can affect pedestrian and other non-motorised user delay. The determination of what constitutes a material impact on non-motorised user

delay is generally left to the judgement of the assessor and knowledge of local factors and conditions.

9.27 The IEMA guidance states that definitive thresholds are not considered to be appropriate and that the assessor should use their judgement to determine whether pedestrian delay constitutes a significant effect. It suggests the following broad levels from the Department for Transport (2021) *TAG Unit A4-1 Social Impact Appraisal* can be used to classify pedestrian hindrance:

- None (negligible): Little or no hindrance to pedestrian movement
- Slight (small): All people wishing to make pedestrian movements will be able to do so, but there will probably be some hindrance to movement
- Moderate (medium): Pedestrian journeys will be longer or less attractive; some people are likely to be dissuaded from making some journeys on foot
- Severe (large): People are likely to be deterred from making pedestrian journeys to an extent sufficient to introduce a reorganisation of their activities. In some cases, this could lead to a change in the location of centres of activity or to a permanent loss of access to certain facilities for a particular community. Those who do make journeys on foot will experience considerable hindrance

Non-motorised user amenity (including fear and intimidation)

9.28 Non-motorised user amenity is broadly defined as the relative pleasantness of a journey. It is affected by traffic flow, traffic composition and pavement width / separation from traffic. It encompasses the overall relationship between pedestrians and traffic, including fear and intimidation, which is the most difficult effect to quantify and assess. A weighting system has been defined within the IEMA guidelines to help assessors provide a first approximation of the likelihood of pedestrian fear and intimidation. The degree of hazard is assessed with reference to the established thresholds (table 9.4) and a score is provided for each combination on a highway link under consideration.

Average two-way traffic flows over 18 hr day (vehicles/hour)	Total 18 hr HGV flow	Average vehicle speed over 18 hr day (mph)	Degree of hazard score
>1,800	>3,000	>40	30
1,200-1,800	2,000-3,000	30-40	20
600-1,200	1,000-2,000	20-30	10
Under 600	Under 1,000	Under 20	0

Table 9.4: Fear and intimidation degree of hazard

9.29 The total score from all three elements is combined to provide a 'level' of fear and intimidation for all three elements (table 9.5).

Level of fear and intimidation	Total hazard score
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

Table 9.5: Levels of fear and intimidation

9.30 The magnitude of impact is approximated with reference to the changes in the level of fear and intimidation from baseline conditions (table 9.6).

Magnitude of impact	Change in step / traffic flows (AADT) from baseline conditions
High (large)	Two step changes in level
Medium	One step change in level, but with: • >400 vehicle increase in average 18-hour two-way all vehicle flow; and / or • >500 increase in total 18-hour heavy vehicle flow
Low (small)	One step change in level, with: • <400 vehicle increase in average 18-hour two-way all vehicle flow; and / or • <500 increase in total 18-hour heavy vehicle flow
Negligible	No step change in level
Table 9.6: Fear and intimidation magnitude of impact	

Driver delay

- 9.31 Delay to drivers can occur at several points on the network surrounding a development site, including at the site entrance where there will be additional turning movements, on the roads passing the development site where there is likely to be additional traffic, at other key intersections along the roads that may be affected by increased traffic, and at side roads where the ability to find gaps in the traffic may be reduced, thereby lengthening delays.
- 9.32 The IEMA guidance states that computer modelling programs can be used to assess the changes in driver delay on the network as a result of a proposed development. The guidelines do not state specific thresholds to calculate the magnitude of the change; however, they advise that delays are only likely to be significant when the traffic on the network surrounding a development is already at, or close to, the capacity of the system.

Accidents and safety

- 9.33 The IEMA guidance states that stakeholders commonly request a 'collision cluster' assessment to determine potential impacts on road safety. Collision clusters are identified by a detailed review of the baseline characteristics to determine the road safety sensitivity of discrete areas of the highway network. This is typically based on the number of personal injury collisions occurring within a defined period in a given study area. Impacts are assessed by examining collision data to identify any emerging patterns or factors that could be exacerbated by traffic or movement generation.

Assessment of significance

- 9.34 The significance of potential effects has been determined using criteria developed from best practice techniques and expert knowledge. Significance has been derived from measures of the sensitivity of the receptor affected and the magnitude or scale of the change.
- 9.35 The sensitivity of a road can be defined by the vulnerability of the groups who may use it, such as elderly people or children. A more sensitive area may be where pedestrian activity is high, such as in the vicinity of a school, or where there is already an existing safety issue. It should be noted that receptor sensitivity is judged on the sensitivity of road users (primarily pedestrians). It also takes account of the nature of the road; for example, an 'A' road is likely to have lower sensitivity than a minor residential road. The sensitivity of receptors is assessed using the criteria in figure 9.2.

- 9.36 While the percentage change is an important determinant of impact magnitude, the absolute level of impact, such as the total flow of traffic or HGVs on a link, also needs to be considered. For example, an increase in traffic flow of 100% will lead to a negligible or small impact overall if the existing flows on the road are very low.
- 9.37 The impact magnitude criteria are shown in figure 9.3 and tables 9.2 to 9.6. These were combined with receptor sensitivity using the matrix in figure 9.4 to determine the degree of effect, which was then used to determine significance. Effects that are moderate or above are considered to be significant in EIA terms.

Baseline

Local and strategic highway network

- 9.38 The local highway network in the vicinity of the site is shown in figure 9.1. The A4 London Road forms the site's northern boundary and is a single carriageway road subject to a 50 mph speed limit. The carriageway is approximately 7.6 m wide, with street lighting on either side along the site frontage. The A4 London Road has a limited amount of development on either side where it runs alongside the site. To the north west of the site, the A4 London Road forms a three-armed roundabout with London Road and the A4 Pewsham Way.
- 9.39 London Road is subject to a 30 mph speed limit immediately to the north west of the roundabout. It is traffic-calmed, with build-outs provided over a short section. There is residential development either side of the road, with frontage access onto the road. Further north west, London Road forms a roundabout with Avenue La Fleche, The Causeway and Queens Square. The Causeway provides an onward connection to the town centre.
- 9.40 The A4 Pewsham Way operates as a distributor road for the residential area of Pewsham. It is single carriageway throughout and is subject to a 50 mph speed limit. There are four roundabouts along the A4 Pewsham Way that provide access into Pewsham; the westernmost of these forms a junction with Avenue La Fleche and the A4 Avenue La Fleche.
- 9.41 The A4 Avenue La Fleche is single carriageway, with a section of junction flaring for westbound traffic approximately 160 m before the junction with Avenue La Fleche and the A4 Pewsham Way. To the west, the A4 Avenue La Fleche joins the Bridge Centre gyratory. This is a seven-arm signalised junction that provides connections to the north and west of Chippenham, as well as access to the town centre.

Existing baseline traffic flows

- 9.42 The 24-hour AADT flows on the road links within the study area are provided in table 9.7.

Road link	Total vehicles	HGV flow	% of HGVs
A420 Ivy Lane (north of Bridge Centre gyratory)	17,189	355	2%
Bath Road (east of Bridge Centre gyratory)	7,647	60	1%
A4 Bath Road (west of Bridge Centre gyratory)	20,355	357	2%
Avenue La Fleche (between Bridge Centre gyratory and Gladstone Road)	29,655	621	2%
Gladstone Road (east of Avenue La Fleche)	6,375	86	1%
Avenue La Fleche (south of Gladstone Road)	23,803	561	2%
Avenue La Fleche (west of A4 Pewsham Way)	23,910	591	2%
Avenue La Fleche (east of A4 Pewsham Way)	8,623	98	1%
A4 Pewsham Way (south of Avenue La Fleche)	20,061	509	3%
A4 Pewsham Way (west of London Road)	15,196	469	3%
London Road (north of A4 Pewsham Way)	8,432	113	1%
A4 London Road (between A4 Pewsham Way and site access)	20,793	533	3%
A4 London Road (between site access and Old Derry Hill)	20,622	531	3%
A4 New Road (east of Old Derry Hill)	14,120	457	3%
Old Derry Hill (south of A4 New Road)	8,556	216	3%
A4 Chilvester Hill (west of A3102 Greenacres Way)	14,120	457	3%
A3102 Greenacres Way (north of A4 Chilvester Hill)	9,354	271	3%
A4 Curzon Street (east of A3102 Greenacres Way)	9,986	269	3%

Table 9.7: 2024 baseline 24-hour AADT flows

Public transport

Bus

- 9.43 The nearest bus stops to the site are on the A4 London Road, adjacent to the site's frontage at Stanley Park. The stops provide laybys and basic timetable information. Table 9.8 provides a summary of the services that route along the A4 London Road.

Service	Route	Weekday	Saturday	Sunday
55 / 55A (Stagecoach West)	Chippenham – Calne – Lyneham – Royal Wootton Bassett – Swindon	Broadly every 20-30 minutes. First departure from Chippenham 05:45, last departure from Swindon 23:15	Broadly every 20-30 minutes. First departure from Chippenham 06:47, last departure from Swindon 23:15	Broadly every 30 minutes. First departure from Chippenham 08:39, last departure from Swindon 21:10
33 / X33 (Faresaver)	Chippenham – Calne – Bromham – Rowde – Devizes	Eight services per day. First departure from Chippenham 06:55, last departure from Devizes 18:15	Seven services per day. First departure from Chippenham 07:20, last departure from Devizes 17:55	-
44P (Faresaver)	Chippenham – Pewsham – Chippenham (town service)	Nine services per day. First departure from Pewsham 08:38, last departure from Chippenham Bus Station 17:15	Five services per day. First departure from Pewsham 09:18, last departure from Chippenham Bus Station 14:10	-

Table 9.8: Bus routes and frequencies along the A4 London Road

Rail

- 9.44 The nearest station is Chippenham Railway Station, approximately 2.7 km to the north west, which is around a 14-minute cycle journey from the site via the Avon Valley Walk and can also be accessed via the 55 and X33 bus services. It is located on the Great Western main line between Swindon and Bath Spa. Timetable information for key destinations is summarised in table 9.9.

Destination	Service frequency and duration		
	Peak	Off-peak	Duration (mins)
Bristol Temple Meads via Bath Spa	1 per hour	1 per hour	22
London Paddington via Swindon, Didcot Parkway and Reading	2-3 per hour	1-2 per hour	80
Taunton via Bath Spa, Bristol Temple Meads, Nailsea & Backwell, Weston-super-Mare and Bridgewater	1 per hour	1 per hour	105
Westbury via Melksham and Trowbridge	1 per hour	1 per hour	43
Weston-super-Mare via Bath Spa, Bristol Temple Meads and Nailsea & Backwell	1 per hour	1 per hour	75

Table 9.9: Train services from Chippenham Railway Station

Pedestrians and cyclists

- 9.45 There is a footway along the northern side of the A4 London Road along the majority of the site frontage. The footway terminates outside the Stanley Park Sports Ground. A footway is then provided along the southern side of the A4 London Road approximately 270 m east of the A4 London Road / London Road / A4 Pewsham Way roundabout. It varies in width and at some points the effective width is less than 1 m. Footways are present on London Road to the north west of the site, providing pedestrian facilities towards the town centre.
- 9.46 Public footpath CHIP 16 runs through the west of the site and connects to / through Pewsham to a primary school and district centre. CHIP 16 connects to public footpath CALW 83 in the south of the site, which provides a link to the wider public rights of way network. The Avon Valley Walk to the west of the site provides a traffic-free route with an all-weather surface through Westmead Open Space, connecting to Avenue La Fleche north of the junction with Gladstone Road. Pedestrian and cycle access to the High Street can be achieved via Gladstone Road, Timber Street and Market Place or via the River Street car park. North of Gladstone Road, the Avon Valley Walk becomes Lovers Walk and connects to Bath Road to the east of the Bridge Centre gyratory. This provides pedestrian access to the High Street, services and facilities within the wider town centre and towards the railway station. At Forest Lane, the Avon Valley Walk connects to bridleway CHIP 40, which runs north as an alternative route to Pewsham district centre via Blackthorn Mews.
- 9.47 The nearest identified cycle route to the site is on the southern side of London Road, where a short section of off-road cycleway is provided between the A4 London Road / London Road / A4 Pewsham Way roundabout and the junction of London Road / Stanley Lane. An onward connection to Abbeyfield School is provided to the north of London Road via Stanley Lane. Between Monks Way and Pewsham district centre, CHIP 16 is a shared use route for walking and cycling. It has street lights and site observations suggest that it is well used.

- 9.48 As described above, the Avon Valley Walk provides a traffic-free route to Chippenham town centre and Pewsham district centre via bridleway CHIP 40. Many local residential streets within Pewsham and towards Chippenham town centre are suitable for cycling on the carriageway, as they are residential in nature and have low traffic flows and vehicle speeds.

Accidents

- 9.49 In order to establish the existing highway safety record in the vicinity of the site, personal injury accident data were obtained from Wiltshire Council for the period from October 2018 to June 2025, which is longer than the standard five-year assessment period. A total of 21 accidents were recorded within the study area in this time, comprising one fatal accident, four serious accidents and 16 slight accidents.
- 9.50 The slight accidents were spread across the junctions and links in the study area. The fatal accident occurred at the A4 Bath Road / A342 Old Derry Hill junction in August 2020, with primary causational factors including exceeding the speed limit and the driver being under the influence of alcohol. One serious accident also occurred at this junction when a car turning right from the A342 Old Derry Hill collided with a motorcyclist travelling southbound on the A4 Bath Road. The three other serious accidents occurred on the A4 London Road, one when a car overtook another vehicle on a blind bend and struck an oncoming vehicle, the second when a northbound vehicle drifted into the southbound lane and collided with an oncoming vehicle, and the third when one vehicle collided with the rear of another vehicle that had stopped for traffic.
- 9.51 The overall number and cause of accidents within the study area does not suggest a specific highway safety issue at any location, nor a pattern that indicates a problem with any particular junction. Full details of the accident record are provided in technical appendix G.

Receptor sensitivity

- 9.52 The links within the study area (figure 9.1) have been classified with reference to figure 9.2, as follows:
- 1: A420 Ivy Lane (north of Bridge Centre gyratory) – high
 - 2: Bath Road (east of Bridge Centre gyratory) – low
 - 3: A4 Bath Road (west of Bridge Centre gyratory) – low
 - 4: A4 Avenue La Fleche (between Bridge Centre gyratory and Gladstone Road) – low
 - 5: Gladstone Road (east of Avenue La Fleche) – low
 - 6: Avenue La Fleche (south of Gladstone Road) – low
 - 7: Avenue La Fleche (west of Pewsham Way) – low
 - 8: Avenue La Fleche (east of Pewsham Way) – low
 - 9: A4 Pewsham Way (south of Avenue La Fleche) – low
 - 10: A4 Pewsham Way (west of London Road) – low
 - 11: London Road (north of A4 Pewsham Way) – medium
 - 12: A4 London Road (between A4 Pewsham Way and site access) – low
 - 13: A4 London Road (between site access and Old Derry Hill) – low
 - 14: Site access – N/A

- 15: A4 New Road (east of Old Derry Hill) – low
- 16: Old Derry Hill (south of A4 New Road) – low
- 17: A4 Chilvester Hill (west of A3102 Greenacres Way) – low
- 18: A3102 Greenacres Way (north of A4 Chilvester Hill) – low
- 19: A4 Curzon Street (east of A3102 Greenacres Way) – high

Future baseline

9.53 The IEMA guidelines state that the greatest environmental change will generally be when a development's traffic is the greatest proportion of total flow. IEMA therefore recommends that the assessment should be undertaken at the development's year of opening, which is assumed to be 2029. The AADT flows for total vehicles and HGVs anticipated on the main links of the local highway network in 2029 are summarised in table 9.10. These flows include the committed development schemes (see chapter 11 for details).

Road link	Total vehicles	HGV flow	% of HGVs
A420 Ivy Lane (north of Bridge Centre gyratory)	20,549	363	2%
Bath Road (east of Bridge Centre gyratory)	7,805	61	1%
A4 Bath Road (west of Bridge Centre gyratory)	22,423	365	2%
Avenue La Fleche (between Bridge Centre gyratory and Gladstone Road)	33,633	633	2%
Gladstone Road (east of Avenue La Fleche)	6,507	87	1%
Avenue La Fleche (south of Gladstone Road)	27,682	572	2%
Avenue La Fleche (west of A4 Pewsham Way)	27,792	603	2%
Avenue La Fleche (east of A4 Pewsham Way)	9,308	100	1%
A4 Pewsham Way (south of Avenue La Fleche)	23,357	520	2%
A4 Pewsham Way (west of London Road)	18,391	478	3%
London Road (north of A4 Pewsham Way)	8,899	115	1%
A4 London Road (between A4 Pewsham Way and site access)	23,811	544	2%
A4 London Road (between site access and Old Derry Hill)	23,615	541	2%
A4 New Road (east of Old Derry Hill)	15,965	467	3%
Old Derry Hill (south of A4 New Road)	9,742	220	2%
A4 Chilvester Hill (west of A3102 Greenacres Way)	15,965	467	3%
A3102 Greenacres Way (north of A4 Chilvester Hill)	10,324	277	3%
A4 Curzon Street (east of A3102 Greenacres Way)	10,969	275	3%

Table 9.10: 2029 future baseline 24-hour AADT flows (including committed developments)

Effects during construction

Introduction

9.54 The construction period for the proposed dwellings is estimated to take approximately seven years, although this is dependent on market conditions. No demolition of any existing structures or buildings is required. Working periods are expected to be 08:00 to 18:00 Monday to Friday and 08:00 to 13:00 on Saturdays. Deliveries will be made on weekdays only and it is expected that 1.5 construction workers will arrive and depart the site in each staff vehicle. This car share assumption is robust, because there is likely to be much higher car occupancy, with construction workers arriving in multiple-occupancy vehicles. The following daily construction-related traffic movements are forecast:

- Cars / LGVs: 127 two-way movements
- HGVs: 43 two-way movements

- 9.55 The above figures represent the average daily construction vehicle trips over the construction period. This is likely to vary, depending on the construction phase and the activities taking place on the site. HGV traffic will be routed wherever possible via the strategic and primary road network, with all traffic arriving at and departing from the site via the A4 London Road, A4 Pewsham Way, A420 and A350 corridors (to / from the M4 to the north). Car and LGV traffic has been distributed based on Census journey to work data (details of which are provided in the TA in technical appendix G).

Changes in traffic flows

- 9.56 Table 9.11 sets out the traffic flows anticipated on the local highway network and changes as a result of the construction and occupation of the proposed dwellings combined (i.e. following occupation of initial dwellings, while the wider Forest Farm development is being constructed). This is a worst case scenario, where it is assumed that the development is fully occupied with construction traffic also accessing the site.

Road link	No. vehicles	Change	No. HGVs	Change
A420 Ivy Lane (north of Bridge Centre gyratory)	21,080	2.6%	367	1.2%
Bath Road (east of Bridge Centre gyratory)	7,805	0.0%	61	0.0%
A4 Bath Road (west of Bridge Centre gyratory)	22,993	2.5%	400	9.7%
Avenue La Fleche (between Bridge Centre gyratory and Gladstone Road)	34,735	3.3%	673	6.3%
Gladstone Road (east of Avenue La Fleche)	6,507	0.0%	87	0.0%
Avenue La Fleche (south of Gladstone Road)	28,784	4.0%	612	6.9%
Avenue La Fleche (west of A4 Pewsham Way)	28,894	4.0%	643	6.6%
Avenue La Fleche (east of A4 Pewsham Way)	9,308	0.0%	100	0.0%
A4 Pewsham Way (south of Avenue La Fleche)	24,509	4.9%	560	7.7%
A4 Pewsham Way (west of London Road)	19,543	6.3%	519	8.4%
London Road (north of A4 Pewsham Way)	9,392	5.5%	120	3.6%
A4 London Road (between A4 Pewsham Way and site access)	25,456	6.9%	588	8.2%
A4 London Road (between site access and Old Derry Hill)	23,944	1.4%	544	0.5%
A4 New Road (east of Old Derry Hill)	16,156	1.2%	468	0.3%
Old Derry Hill (south of A4 New Road)	9,880	1.4%	221	0.5%
A4 Chilvester Hill (west of A3102 Greenacres Way)	16,156	1.2%	468	0.3%
A3102 Greenacres Way (north of A4 Chilvester Hill)	10,422	1.0%	277	0.3%
A4 Curzon Street (east of A3102 Greenacres Way)	11,062	0.8%	276	0.3%
Table 9.11: 2029 Construction traffic impacts				

- 9.57 Table 9.11 shows that there will be less than a 10% increase in both total vehicle flows and HGV flows on all road links during the construction of the proposed development. As a result, in accordance with the IEMA guidance set out in paragraph 9.22, no further assessment is required.

Effects post-construction

Changes in traffic flows

- 9.58 The modelled post-construction 2029 'with development' traffic flows and changes as a result of the proposed development are set out in table 9.12.

Road link	No. vehicles	Change	No. HGVs	Change
A420 Ivy Lane (north of Bridge Centre gyratory)	21,050	2.4%	367	1.2%
Bath Road (east of Bridge Centre gyratory)	7,805	0.0%	61	0.0%
A4 Bath Road (west of Bridge Centre gyratory)	22,933	2.3%	369	1.2%
Avenue La Fleche (between Bridge Centre gyratory and Gladstone Road)	34,645	3.0%	642	1.4%
Gladstone Road (east of Avenue La Fleche)	6,507	0.0%	87	0.0%
Avenue La Fleche (south of Gladstone Road)	28,694	3.7%	581	1.5%
Avenue La Fleche (west of A4 Pewsham Way)	28,804	3.6%	612	1.5%
Avenue La Fleche (east of A4 Pewsham Way)	9,308	0.0%	100	0.0%
A4 Pewsham Way (south of Avenue La Fleche)	24,419	4.5%	529	1.8%
A4 Pewsham Way (west of London Road)	19,453	5.8%	488	1.9%
London Road (north of A4 Pewsham Way)	9,380	5.4%	120	3.6%
A4 London Road (between A4 Pewsham Way and site access)	25,354	6.5%	557	2.5%
A4 London Road (between site access and Old Derry Hill)	23,925	1.3%	544	0.5%
A4 New Road (east of Old Derry Hill)	16,144	1.1%	468	0.3%
Old Derry Hill (south of A4 New Road)	9,873	1.3%	221	0.5%
A4 Chilvester Hill (west of A3102 Greenacres Way)	16,144	1.1%	468	0.3%
A3102 Greenacres Way (north of A4 Chilvester Hill)	10,413	0.9%	277	0.3%
A4 Curzon Street (east of A3102 Greenacres Way)	11,059	0.8%	276	0.3%

Table 9.12: 2029 Post-construction traffic impacts

- 9.59 Table 9.12 shows that there will be less than a 10% increase in both total vehicle flows and HGV flows on all road links from traffic associated with the proposed development post-construction. As a result, in accordance with the IEMA guidance set out in paragraph 9.22, no further assessment is required. Full details of the junction modelling results are provided in the TA in technical appendix G. This concludes that there will be no significant increases in driver delay at junctions on the local road network as a result of the proposed development.

Pedestrian and cyclist facilities

- 9.60 Public footpaths CHIP 16 and CALW 83 will be retained along their existing alignments. Where the public footpaths cross streets within the development, appropriate crossing provision will be provided, with the detail of this determined at the time of a reserved matters planning application.
- 9.61 Shared footways / cycleways will also be provided within green corridors through the site. Two pedestrian / cycle accesses are proposed to the site. The first is a segregated footway / cycleway in the north west of the site to connect through to the A4 Pewsham Way. A new controlled crossing of the A4 Pewsham Way will then be provided, along with a new segregated footway

/ cycleway on the western side of Pewsham Way connecting to the existing shared use provision on London Road. The second access is in the south west corner, where a connection will be provided to a new toucan crossing of the A4 Pewsham Way. The existing stretch of public footpath CHIP 16 between the A4 Pewsham Way and Monks Way will then be upgraded to a shared footway / cycleway, providing onward access into Chippenham.

- 9.62 If these connections can be provided, a 1.8 m wide footway would be provided along the northern side of the A4 London Road and London Road from the pedestrian / cycle access point on the site's north eastern boundary up to the junction with Stanley Road to provide an additional pedestrian link towards Abbeyfield School and the town centre. A puffin crossing would be provided at the site access to enable pedestrians to cross the road.
- 9.63 However, if the footway / cycleway connections to the A4 Pewsham Way cannot be provided for any reason, the second option is for a shared cycleway / footway to be provided along the northern side of the A4 London Road and London Road from the pedestrian / cycle access point on the site's north eastern boundary up to the junction with Stanley Road. This would provide a pedestrian and cycle link towards Abbeyfield School and the town centre. It would be separated from the carriageway by a 0.5 m wide grass verge. A toucan crossing would be provided to enable pedestrians and cyclists to cross the road.
- 9.64 Overall, a slight beneficial effect that will not be significant is predicted as a result of the improved availability of pedestrian and cyclist connections and facilities in the area.

Public transport

- 9.65 The existing bus stops on the A4 London Road along the site frontage will be improved, with road markings provided and the existing laybys upgraded and / or reprovided. The primary street within the development has also been designed to accommodate buses and bus services may be diverted into the site if the development comes forward at the same time as the Land South of Chippenham development. No significant adverse effects are predicted on bus services as a result of the proposed development.

Mitigation and monitoring

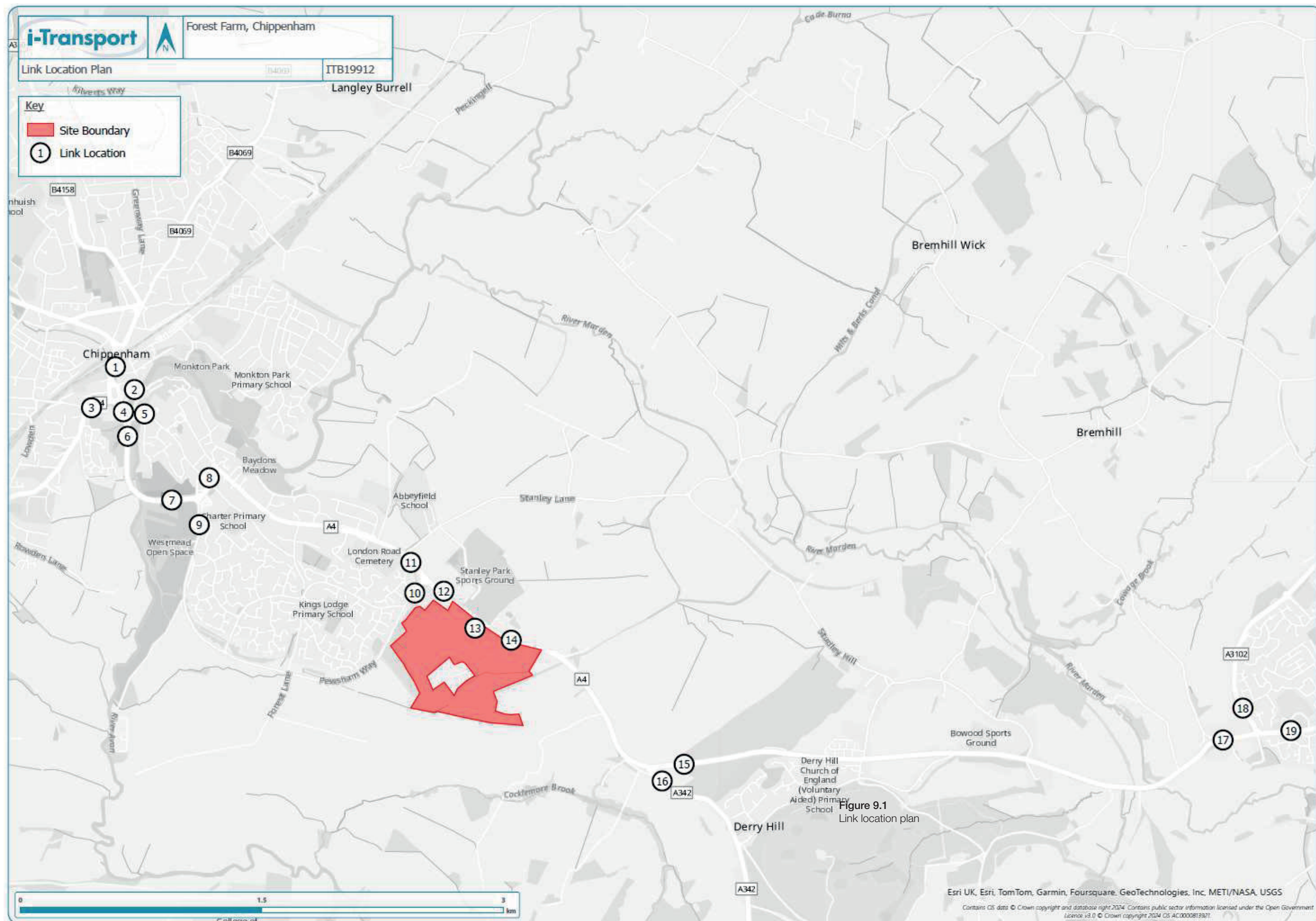
- 9.66 While no significant effects were predicted during construction, a construction traffic management plan (CTMP) will be required by a condition attached to any planning permission. This will include details of the routes construction traffic will take. Full details of any signage and management / monitoring of the construction traffic routing will be provided within the CTMP and agreed with Wiltshire Council at the relevant time. The CTMP will also include measures to prevent mud and soil being deposited on the highway, details of where construction vehicles will park on the site, and the associated construction compound. Working hours and delivery times will be proposed in the CTMP if appropriate.
- 9.67 A framework travel plan has been prepared for the proposed development to minimise single occupancy car use by residents, which is submitted as a stand alone document in support of the planning application. It sets out measures to promote more sustainable alternatives to the car, including

walking, cycling, public transport and car sharing. These measures include the provision of travel information packs to households, which will contain a sustainable travel voucher, bus and rail timetables, and information about the community travel website and car sharing.

- 9.68 The framework travel plan will be monitored using travel surveys and remedial measures will be put in place if required. Further details on the travel planning strategy can be found in the framework travel plan submitted in support of the planning application.

Residual effects

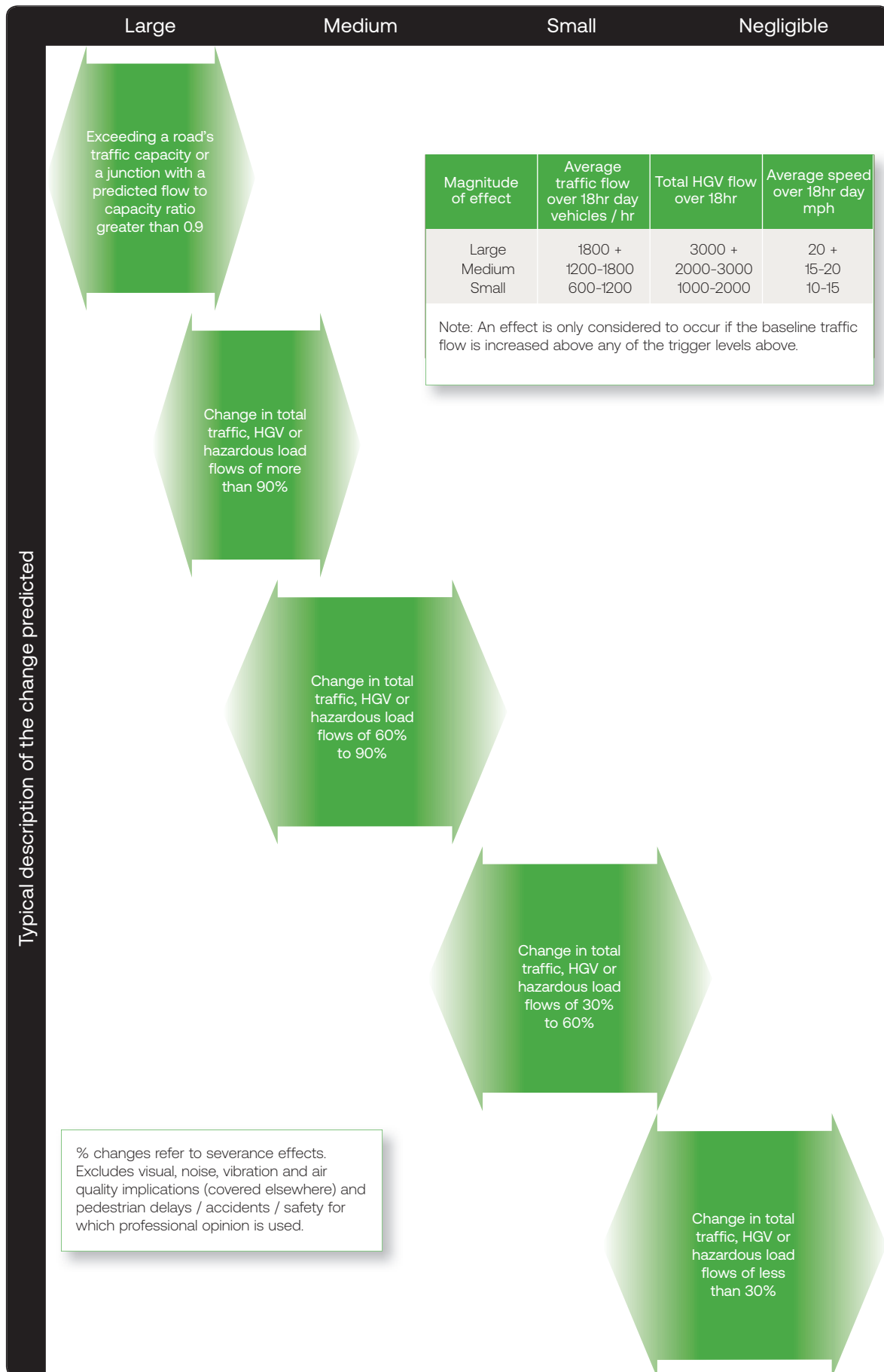
- 9.69 No significant residual effects are predicted as a result of the proposed development.



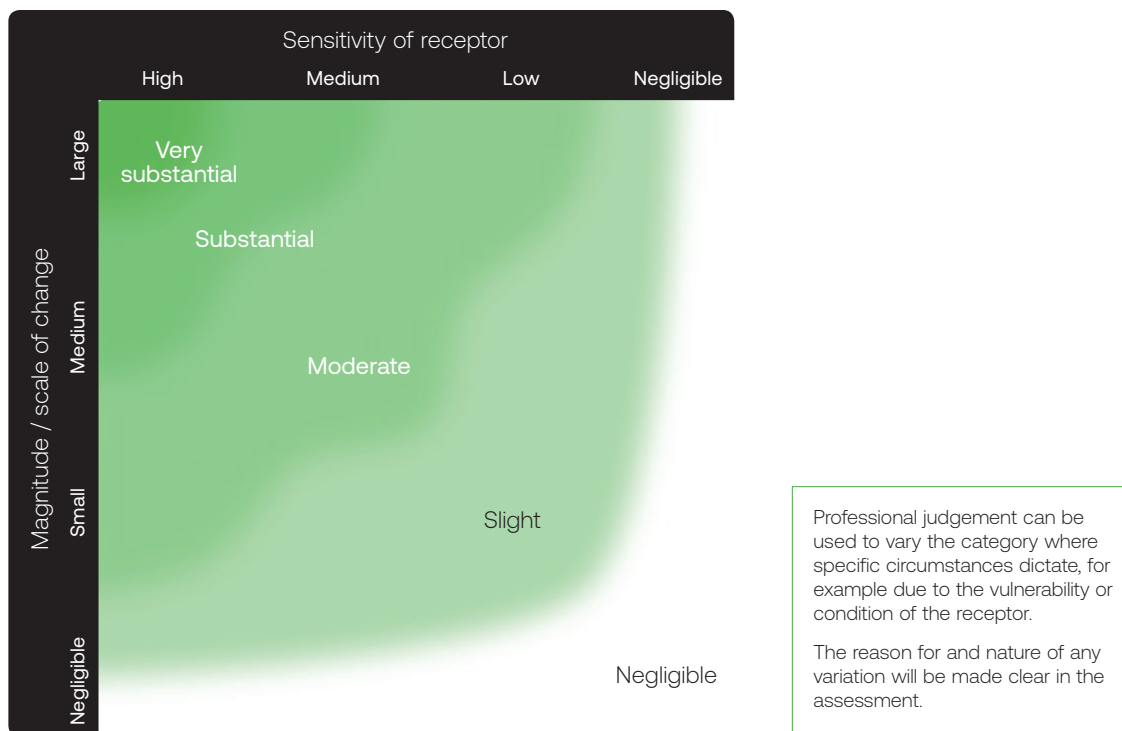
Sensitivity of receptor – Traffic



Magnitude of change – Traffic



Determination of significance matrix – Traffic



Degrees of effect

Very substantial

A change in total traffic, HGV or hazardous load flow of greater than 90% of the baseline on receptors of medium to high sensitivity; or a change in total traffic, HGV or hazardous load flow of 60 to 90% of the baseline on receptors of high sensitivity to traffic; or a change in total traffic, HGV or hazardous load flow of 30 to 60% of the baseline on receptors of the highest sensitivity to traffic.

Substantial

A change in total traffic, HGV or hazardous load flows of greater than 90% of the baseline on receptors that are sensitive to traffic flow (e.g. hospitals, shopping centres and areas with narrow pavements); or a change in total traffic, HGV or hazardous load flows of 60 to 90% of the baseline on receptors of medium to high sensitivity to traffic; or a change in total traffic, HGV or hazardous load flows of 60% of the baseline on a receptor of high sensitivity to traffic such as schools, playgrounds and accident blackspots.

Moderate

A change in total traffic, HGV or hazardous load flows in excess of 60% of the baseline on receptors of some sensitivity to traffic, such as churches, public open space, tourist attractions and residential areas with adequate pavements; or a change in total traffic, HGV or hazardous load flows of 30 to 60% of the baseline on receptors of medium sensitivity (e.g. hospitals, shopping centres and areas with narrow pavements) and high sensitivity (schools, playgrounds and accident blackspots).

Slight

A change in total traffic, HGV or hazardous load flows of between 30 and 60% of the baseline on receptors of some sensitivity to traffic, such as churches, public open space, tourist attractions and residential areas with adequate pavements.

Negligible

A change in total traffic, HGV or hazardous load flows of less than 30% of the baseline on receptors of very low sensitivity or sensitive receptors significantly distant from affected roads and junctions.

Significance

If the degree of effect is moderate or above, then the effect is considered to be significant.