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Land off Scamps Hill, Lindfield

# **TRANSPORT ASSESSMENT**

Report prepared for Gladman Developments Ltd

February 2024

Report Reference 1723/2/A



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# Transport Assessment Land off Scamps Hill, Lindfield

Client: Gladman Developments Ltd Report Ref: 1723/2/A

Status: Final

Date: February 2024

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# Transport Assessment

# Land off Scamps Hill, Lindfield

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# 1 Introduction

1.1 Ashley Helme Associates Limited (AHA) are appointed by Gladman Developments Ltd to prepare a Transport Assessment (TA) report to support the planning application for residential development on land off Scamps Hill, Lindfield (henceforth referred to as the Site). The location of the Site is indicated on Figure 1.1, in the context of the local highway network.

### 1.2 Proposed Development

1.2.1 The Site is presently agricultural/ field land. The proposed development comprises a residential development of up to 90 dwellings. All matters are reserved, except access.

### 1.3 Scope of the Report

- 1.3.1 The transport policy context for the proposed development is outlined in Chapter 2. The principles of the access strategy adopted for the proposed development are also discussed in Chapter 2, and this provides the means to achieve transport policy objectives. It is fundamental to the approach of the applicant, as represented in this TA, that a holistic view is taken of the consideration of access to the proposed development by all modes of transport.
- 1.3.2 The issues addressed within the TA fall broadly into the following areas:
  - (i) Accessibility by non-car modes, and
  - (ii) The vehicular traffic impact on the operational performance of the local highway network, assessed quantitatively for the TA defined study network.
- 1.3.3 The local highway network is described in Chapter 3. The proposed Site access arrangements are outlined in Chapter 4.
- 1.3.4 The transport sustainability of the proposed development is a key issue, as set out in the National Planning Policy Framework (NPPF, September 2023), and also Planning Practice Guidance (PPG, March 2014). Accessibility issues are identified in Chapter 2, and an accessibility appraisal of the Site by non-car modes is presented in Chapters 5 (Walk & Cycle) and 6 (Public Transport), using an accessibility mapping methodology.
- 1.3.5 The estimation of the development generated traffic and associated With Development traffic flows is presented in Chapter 7. Modelling of the impact of development traffic on the highway network is described in Chapter 8.
- 1.3.6 The conclusions of the TA are presented in Chapter 9.



# 2 Policies & Principles of Access Strategy

- 2.1 A holistic approach is adopted for the desired access strategy. Due cognisance is taken of a range of relevant policy documents and considerations that represent current national and local policies. These include:
  - National Planning Policy Framework (NPPF), December 2023,
  - Planning Practice Guidance (PPG), March 2014,
  - Mid Sussex District Plan 2014-2031 (Adopted March 2018),
  - West Sussex Local Transport Plan 2011-2026 (February 2011).
- 2.2 A general thrust of current national and local policies is to promote and deliver sustainable transport objectives, and this is a key factor in defining the access strategy for the proposed development.
- 2.3 There are a range of documents that provide advice and guidance identifying that the historic approach of adopting rigid highway design standards and considering this in isolation is not appropriate or desirable in today's world. This includes, for example, Manual for Streets (MfS) and the associated Manual for Streets 2 (MfS2).

### 2.4 NPPF: Achieving Sustainable Transport

- 2.4.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied.
- 2.4.2 Paragraph 7 of NPPF sets out that:

"The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. At a similarly high level, members of the United Nations – including the United Kingdom – have agreed to pursue the 17 Global Goals for Sustainable Development in the period to 2030. These address social progress, economic well-being and environmental protection."

2.4.3 In paragraph 10, NPPF makes it clear that:

"So that sustainable development is pursued in a positive way, at the heart of the Framework is a **presumption in favour of sustainable development.**"



# 2.5 NPPF: Promoting Sustainable Transport

- 2.5.1 The Government's commitment to sustainable development is emphasised in NPPF. Paragraph 108 advises development promoters to consider transport issues from the earliest stages of planmaking and development proposals, so that:
  - a) the potential impacts of development on transport networks can be addressed;
  - b) opportunities from existing or proposed transport infrastructure, and changing technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
  - c) opportunities to promote walking, cycling and public transport use are identified and pursued;
  - d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
  - e) patterns of movement, streets, parking and other transport considerations are integral to design of schemes, and contribute to making high quality places.''
- 2.5.2 This is expanded in paragraph 109, which states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

The proposed development respects and reflects this NPPF transport sustainability related objective.

2.5.3 NPPF states in paragraph 114 that:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

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



- b) safe and suitable access to the site can be achieved for all users; and
- c) 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 46; 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.''
- 2.5.4 NPPF makes it clear in paragraph 115 that:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe." (AHA emphasis).

- 2.5.5 NPPF offers specific transport advice with respect to development proposals. In paragraph 116, NPPF sets out that development should:
  - "a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
  - b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
  - c) create places that are safe, secure and attractive which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
  - d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and
  - e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."



# 2.6 PPG

- 2.6.1 The Department for Communities and Local Government (DCLG) launched the Planning Practice Guidance (PPG) web-based resource on 6 March 2014. The PPG includes advice on when transport assessments and transport statements are required, and what they should contain.
- 2.6.2 The PPG states that:

"Travel Plans, Transport Assessments and Statements can positively contribute to:

- encouraging sustainable travel;
- lessening traffic generation and its detrimental impacts;
- reducing carbon emissions and climate impacts;
- creating accessible, connected, inclusive communities;
- improving health outcomes and quality of life;
- improving road safety; and
- reducing the need for new development to increase existing road capacity or provide new roads."
- 2.6.3 With respect to Transport Assessments and Statements, PPG sets out that:

"'The key issues to consider at the start of preparing a Transport Assessment or Statement may include:

- the planning context of the development proposal;
- appropriate study parameters (i.e. area, scope and duration of study);
- assessment of public transport capacity, walking/ cycling capacity and road network capacity;
- road trip generation and trip distribution methodologies and/or assumptions about the development proposal;
- measures to promote sustainable travel;
- safety implications of development; and
- mitigation measures (where applicable) including scope and implementation strategy."
- 2.6.4 With respect to Travel Plans, PPG sets out that:

"Travel Plans should set explicit outcomes rather than just identify processes to be followed (such as encouraging active travel or supporting the use of low emission vehicles). They should address all journeys resulting from a proposed development by anyone who may need to visit or stay and they should seek to fit in with wider strategies for transport in the area.



They should evaluate and consider:

- benchmark travel data including trip generation databases;
- information concerning the nature of the proposed development and the forecast level of trips by all modes of transport likely to be associated with the development;
- relevant information about existing travel habits in the surrounding area;
- proposals to reduce the need for travel to and from the site via all modes of transport; and
- provision of improved public transport services.''

# 2.7 Mid Sussex District Plan 2014-2031 (Adopted March 2018)

- 2.7.1 Mid Sussex District Council (MSDC) adopted the Mid Sussex District Plan 2014-2031 as a Development Plan Document at its meeting on 28th March 2018.
- 2.7.2 The Council's policy DP21 covers Transport. This states that:

"Development will be required to support the objectives of the West Sussex Transport Plan 2011-2026, which are:

- A high quality transport network that promotes a competitive and prosperous economy;
- A resilient transport network that complements the built and natural environment whilst reducing carbon emissions over time;
- Access to services, employment and housing; and
- A transport network that feels, and is, safer and healthier to use.

To meet these objectives, decisions on development proposals will take account of whether:

- The scheme is sustainably located to minimise the need for travel noting there might be circumstances where development needs to be located in the countryside, such as rural economic uses (see policy DP14: Sustainable Rural Development and the Rural Economy);
- Appropriate opportunities to facilitate and promote the increased use of alternative means of transport to the private car, such as the provision of, and access to, safe and convenient routes for walking, cycling and public transport, including suitable facilities for secure and safe cycle parking, have been fully explored and taken up;



- The scheme is designed to adoptable standards, or other standards as agreed by the Local Planning Authority, including road widths and size of garages;
- The scheme provides adequate car parking for the proposed development taking into account the accessibility of the development, the type, mix and use of the development and the availability and opportunities for public transport; and with the relevant Neighbourhood Plan where applicable;
- Development which generates significant amounts of movement is supported by a Transport Assessment/ Statement and a Travel Plan that is effective and demonstrably deliverable including setting out how schemes will be funded;
- The scheme provides appropriate mitigation to support new development on the local and strategic road network, including the transport network outside of the district, secured where necessary through appropriate legal agreements;
- The scheme avoids severe additional traffic congestion, individually or cumulatively, taking account of any proposed mitigation;
- The scheme protects the safety of road users and pedestrians; and
- The scheme does not harm the special qualities of the South Downs National Park or the High Weald Area of Outstanding Natural Beauty through its transport impacts. Where practical and viable, developments should be located and designed to incorporate facilities for charging plug-in and other ultra-low emission vehicles. Neighbourhood Plans can set local standards for car parking provision provided that it is based upon evidence that provides clear and compelling justification for doing so."

### 2.7.3 Policy DP22 covers Rights of Way. This states that:

"Rights of way, Sustrans national cycle routes and recreational routes will be protected by ensuring development does not result in the loss of or does not adversely affect a right of way or other recreational routes unless a new route is provided which is of at least an equivalent value and which does not sever important routes.

Access to the countryside will be encouraged by:

• Ensuring that (where appropriate) development provides safe and convenient links to rights of way and other recreational routes;



- Supporting the provision of additional routes within and between settlements that contribute to providing a joined up network of routes where possible;
- Where appropriate, encouraging making new or existing rights of way multi-functional to allow for benefits for a range of users. (Note: 'multi-functional will generally mean able to be used by walkers, cyclists and horse-riders).
- 2.7.4 Policy DP28 covers Accessibility. This states that:

"All development will be required to meet and maintain high standards of accessibility so that all users can use them safely and easily.

This will apply to all development, including changes of use, refurbishments and extensions, open spaces, the public realm and transport infrastructure, and will be demonstrated by the applicant."

# 2.8 West Sussex Local Transport Plan 2011-2026 (February 2011)

2.8.1 West Sussex County Council is the local highway authority, and has responsibility for the development and delivery of the Local Transport Plan (LTP). LTP3 covers the period 2011-2026, and the third LTP was published in February 2011.

#### 2.8.2 The LTP sets out that:

"The main objective of this Plan is to improve quality of life for the people of West Sussex by:

- promoting economic growth
- tackling climate change
- providing access to services, employment & housing
- improving safety, security & health."
- 2.8.3 The underlying theme of the LTP is to promote policies and measures to foster and achieve improved opportunities for travel choices by non-car modes. This provides the context for specific local measures to be considered, promoted and introduced.



# 2.9 Principles of the Access Strategy

- 2.9.1 The access strategy for the development provides the means to achieve the identified policy objectives by optimising the opportunity for access to/from the Site by non-car modes. This is in accordance with all local and national policies.
- 2.9.2 The accessibility of the Site for those travelling on foot and cycle is reviewed in Chapter 5, and takes account of the existing and proposed facilities. The current accessibility of the Site by public transport is outlined in Chapter 6 herein, together with the development proposals for public transport. The proposed development takes account of the needs of the mobility impaired.
- 2.9.3 The Access Strategy for the development is cohesive, reflecting the need to appropriately consider and enable provision for the movement of people and goods. This is in accordance with the aims and spirit of NPPF. This includes considering, inter alia:
  - Permeability of the Site from/connection to the surrounding locality, for all modes of transport, motorised and non-motorised,
  - Internal access arrangements, all to be the subject of reserved matters application(s), should minimise distance travelled by all modes (where appropriate),
  - Emergency access requirements must be met.
- 2.9.4 The development proposals adopt an integrated approach to managing travel demand, offering safe and sustainable access for all by a choice of sustainable transport alternatives, between homes and employment and a range of services and facilities, such as retail, health, education, and leisure.

### 2.10 Summary

2.10.1 In summary, the development proposal respects and promotes the principles of transport sustainability, and is consistent with national and local transport policy objectives.



# 3 Highway Network

- 3.1 The location of the Site is indicated on Figure 1.1 in the context of the local highway network.
- 3.2 The Site has frontage on Scamps Hill, which is public highway.

### 3.3 Scamps Hill

- 3.3.1 B2111 Scamps Hill is aligned along the south-west boundary of the application Site. In the vicinity of the Site, Scamps Hill is a single carriageway road, measuring circa 6.0-6.5m wide. There is footway provision on the south-west side of Scamps Hill.
- 3.3.2 Coincident with the Site boundary, Scamps Hill is generally subject to a 40mph. At the junction with Gravelye Lane, the speed limit of Scamps Hill reduces to 30mph and this extends to Lindfield centre.

# 3.4 Study Network

3.4.1 Traffic generated by the Site will pass through the following junctions that comprise the TA study network of junctions:

#### **REF** JUNCTION

- SJ1 Site Access/Scamps Hill
- SJ2 B2111 Bedales Hill/A272 Lewes Road
- SJ3 Gravelye Lane/B211 Lewes Road/Scamps Hill
- SJ4 Westlands Road/Gravelye Lane
- SJ5 B211 Lewes Road/B2028 High Street/Denman's Lane

#### CONTROL

- Refer Chapter 4, priority controlled, priority controlled, priority controlled, priority controlled.
- 3.4.2 The TA study junction network is shown on Figure 3.1. The local highway authority West Sussex County Council (WSCC) is responsible for all of the TA study junctions.

### 3.5 Existing Junction Geometry

3.5.1 The existing study network junctions are presented on the following drawings:

JUNCTION	DRAWING
B2111 Bedales Hill/A272 Lewes Road	1723/02
Gravelye Lane/B211 Lewes Road/Scamps Hill	1723/03
Westlands Road/Gravelye Lane	1723/04
B211 Lewes Road/B2028 High Street/Denman's Lane	1723/05.
	JUNCTION B2111 Bedales Hill/A272 Lewes Road Gravelye Lane/B211 Lewes Road/Scamps Hill Westlands Road/Gravelye Lane B211 Lewes Road/B2028 High Street/Denman's Lane



#### 3.5.2 SJ2: B2111 Bedales Hill/A272 Lewes Road

- 3.5.2.1 SJ2 is a priority-controlled 'T' junction and is located to the south-east of the Site. The existing junction arrangements are presented on Drg No 1723/02.
- 3.5.2.2 B2111 Bedales Hill forms the minor arm of the junction, giving way to traffic on A272 Lewes Road. At the junction, Bedhales Hill forms separate left and right turn lanes. A right turn lane, formed by a ghost island hatching, is provided on Lewes Road (E) for movements into Bedales Hill. On the Lewes Road (W) there is a left turn diverge lane.
- 3.5.2.3 The junction is subject to a 50mph speed limit although the speed limit of Bedales Hill reduces to 40mph to the north of the junction.

#### 3.5.3 SJ3: Gravelye Lane/B211 Lewes Road/Scamps Hill

- 3.5.3.1 SJ3 is located near to the northern boundary of the Site. The existing junction arrangements are presented on Drg No 1723/03.
- 3.5.3.2 Gravelye Lane forms the minor arm of the junction and gives way to traffic on Scamps Hill. There are merge and diverge tapers on Scamps Hill to assist movements into and out of Gravelye Lane. There are bus stops accommodating north- and southbound services on Gravelye Lane.
- 3.5.3.3 The junction is subject to a 30mph speed limit, although a 40mph speed limit applies to Scamps Hill to the south east of the junction. There are existing footways on the south-west side of Scamps Hill and on both sides of Gravelye Lane. There is pedestrian refuge at the north east end of Gravelye Lane to assist pedestrians walking along the south-west side of Scamps Hill. Gravelye Lane benefits from street lighting. There is no identifiable street lighting on Scamps Hill in the vicinjty of the junction.

#### 3.5.4 SJ4: Westlands Road/Gravelye Lane

- 3.5.4.1 SJ4 comprises a priority-controlled junction located to the south of SJ3. The existing junction arrangements are presented on Drg No 1723/04.
- 3.5.4.2 Westlands Road is the minor arm of the junction and gives way to traffic on Gravelye Lane.
- 3.5.4.3 There is existing footway at the junction as follows:
  - (i) Westlands Road: Both sides of the road, segregated from the carriageway by a grass verge,
  - (ii) Gravelye Road: Continuous footway on the east side segregated from the



carriageway by a grass verge, and Footway on the west side to the north of Westlands Road.

3.5.4.4 The junction benefit from street lighting and is subject to a 30mph speed limit.

#### 3.5.5 SJ5: B211 Lewes Road/B2028 High Street/Denman's Lane

- 3.5.5.1 SJ5 comprises a priority-controlled junction located to the north-west of the Site. SJ5 is a priority-controlled junction formed by the intersection of B2111 Lewes Road and Denman's Lane with B2028 High Street. The existing junction arrangements are presented on Drg No 1723/05.
- 3.5.5.2 Lewes Road and Denman's Lane form the minor arms of the junction and are arranged in a right-left stagger. There are right turn lanes, formed by ghost island markings, to cater for stationary right turning vehicles for Lewes Road and Denman's Lane on High Street.
- 3.5.5.3 There is existing footway on:

(i)	Lewes Road:	north side of the road,
(ii)	Denman's Lane:	both sides of the road, and
(iii)	High Street:	both sides of the road.

There is pedestrian refuge, with dropped kerbs and tactile paving, on High Street located between Lewes Road and Denman's Lane.

3.5.5.4 The junction is subject to a 30mph speed limit and benefits from street lighting.

#### 3.6 Personal Collision History

3.6.1 The latest five-year personal collision records for the TA study junctions as well as the Site frontage has been purchased from Sussex Police (SP) A plan of the reported collisions is included in Appendix A.

#### 3.6.2 Distribution of Collisions

3.6.2.1 A summary of the SP collision data is set out below:

	2018	2019	2020	2021	2022	2023	TOTAL
	(from C	01/10)				(†0 30/09)	
Scamps Hill (SJ1)	-	-	-	-	-	-	0
SJ2	1	1	2	2	1	1	8
SJ3	1	-	1	-	-	-	2



SJ4	-	-	-	-	-	-	0
SJ5	1	-	-	-	1	2	4
TOTAL	3	1	3	2	2	3	14

#### 3.6.3 Severity

3.6.3.1 The severity of the recorded accidents is set out below:

	Slight	Serious	Fatal	TOTAL
Scamps Hill (near SJ1)	_	-	-	0
SJ2	6	2	-	8
EL2	1	1	-	2
SJ4	-	-	-	0
SJ5	3	1	-	4
TOTAL	10	4	0	14

#### 3.6.4 Summary

3.6.4.1 A review of the personal collision data shows there are **no** accidents recorded along the Site frontage. There are **only fourteen** recorded accidents at the TA study junction in the 5-year selection period. Whilst all accidents are regrettable, there is **no** accident pattern that raises concern or that gives rise to the need for accident remediation measures.



# 4 Proposed Site Access Arrangements

# 4.1 Design Philosophy

- 4.1.1 It is accepted that the way a new residential scheme relates to its surrounding area is key to its success. Guidance on the design of residential developments is set out in documents such Manual for Streets (MfS). This advocates that residential design should:
  - Be based on a hierarchical design process placing pedestrians at the top.
  - Recognise that streets fulfil a community function with spaces for social interaction.
  - Create an inclusive environment that recognises the needs of all ages and abilities.
  - Focus on pedestrian desire lines.
  - Create a permeable network of streets with strong connectivity to a range of routes.
- 4.1.2 The starting point of a new residential scheme is to first identify the existing places/amenities near to the site and their relative importance. Then, from this, form an understanding of how an area works to enable proposed points of connection and linkage to be identified, both within and outside the site, so that important desire lines are achieved. MfS recognises that:
  - A permeable and well-connected movement network can positively affect how much people walk or cycle or use public transport which helps to achieve a sustainable environment and good quality of life for its community,
  - A good range of local amenities within easy access of residents can help to create a walkable neighbourhood, and
  - Walking and cycling are important modes of travel, offering a more sustainable alternative to the car, making a positive contribution to the overall character of the place, public health and to tackle climate change through carbon emissions reductions.
- 4.1.3 MfS advocates residential design that creates walkable neighbourhoods. MfS sets out in para 4.4.1 that:

"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents."



4.1.4 A holistic approach to the Site access arrangements is at the core of the development Site access strategy. Thus, there is a cohesive 'package' of development access arrangements for differing modes of travel, comprising, walk, cycle, bus and motor vehicles. Further information about walk and cycle modes is presented in Chapter 5, and about public transport in Chapter 6.

### 4.2 Site Access Strategy

4.2.1 The planning application seeks outline consent with all matters reserved, except access. This TA considers access for vehicles, cyclists and pedestrians from Scamps Hill/Lewes Road.

#### 4.3 Design Considerations

#### 4.3.1 Design Guidance

- 4.3.1.1 The design guidance considered includes Manual for Streets 1 (MfS1), MfS2 and the Design Manual for Roads and Bridges (DMRB).
- 4.3.1.2 MfS2 states that:

"...most MfS advice can be applied to a highway regardless of speed limit. It is therefore recommended that as a starting point for any scheme affecting non-trunk roads, designers should start with MfS." (para 1.3.2)

Scamps Hill is not a trunk road.

#### 4.3.1.3 MfS continues in para 1.3.3:

"Where designers do refer to DMRB for detailed technical guidance on specific aspects, for example on strategic inter-urban and non-trunk roads, it is recommended that they **bear in mind the key principles of MfS**, and apply DMRB in a way that **respects local context**. It is further recommended that DMRB or other standards and guidance is **only used** when the guidance contained in MfS is not sufficient or where particular evidence leads a designer to conclude that MfS is not applicable."

#### 4.4 Site Access Arrangements

- 4.4.1 The proposed Site Access arrangements on Scamps Hill are shown on Drg No 1723/08/A.
- 4.4.2 The key features of the proposed Drg No 1723/08/A Site Access/Scamps Hill arrangements, and associated highway works, include:



- (i) Introduce new Site Access, forming a 'T' junction with Scamps Hill;
- (ii) Junction to operate under priority control;
- (iii) Site Access to measure 5.5m wide with 2.0m wide footways;
- (iv) 6.0m corner radii between the Site access and Scamps Hill,
- (v) Introduce dropped kerbs and tactile paving on Scamps Hill to the east of the Site access;
- (vi) Provide 2.4m x 120m visibility splay to the left, for vehicles emerging from the Site Access;
- (vii) Provide 2.4m x101m visibility splay to the right, for vehicles emerging from the Site Access.

#### 4.4.3 Speed and Visibility Requirements

- 4.4.3.1 Most of the Site frontage is coincident with a section of Scamps Hill that is subject to a 40mph speed limit. Immediately to the south of Gravelye Lane (SJ3), the speed limit of Scamps Hill changes to 30mph in a northwards direction. This means that there is about 90m of Site frontage coincident with a section of Scamps Hill subject to a 30mphs speed limit.
- 4.4.3.2 To assist with the design of the Site access junction, the applicant commissioned Automatic Traffic Count (ATC) surveys on Scamps Hill in the vicinity of the Site access. This involved the installation of pneumatic tubes across Scamps Hill at two locations along the Site frontage, being:
  - (i) ATC 1: About 50m south-east of Gravelye Lane, and
  - (ii) ATC 2: About 40m north-west of Langmore Lane.
- 4.4.3.3 The surveys were undertaken between 17-23 October 2023 (inclusive) and recorded data over the full 24-hour period of each survey day.

#### 4.4.4 Vehicle Speeds: Average

4.4.1 The recorded 5-day off-peak average speeds are:

(i)	ATC 1:	Northbound = 30.9 mph,	Southbound = 31.6 mph,
(ii)	ATC 2:	Northbound = 36.4 mph,	Southbound = 37.7 mph.

4.4.4.2 The results confirm that there is general obeyance of the speed limit.



#### 4.4.5 Vehicle Speeds: 85<sup>th</sup> Percentile

4.4.5.1 The recorded 7-day off-peak 85% le speeds are:

(i)	ATC 1:	Northbound = $36.4$ mph,	Southbound = 37.5 mph;
(ii)	ATC 2:	Northbound = $41.9$ mph,	Southbound = 43.1 mph.

- 4.4.5.2 The approach adopted to derive **Design Speeds** is to use:
  - (i) ATC1 Southbound data for visibility to the right at the Site access, and
  - (ii) ATC2 Northbound data for visibility to the left at the Site access.
- 4.4.5.3 A review of the weather records for Lindfield for the survey period (17-23 October 2023) shows that there was rainfall on most days of the survey. Therefore, the survey data reflects wet weather conditions. In accordance with current guidance, the approach adopted is to add 2.5mph to the recorded 85% speeds. The subsequent Design Speeds are:
  - (i) Northbound = 44.4 mph;
  - (ii) Southbound = 40.0 mph.
- 4.4.5.4 The Design Speeds are **above** the 37.5mph (60kph) threshold in MfS. Therefore, the design guidance in the Design Manual for Roads and Bridges (DMRB) is applicable for the Site Access junction.

#### 4.4.6 Stopping Sight Distance

- 4.4.6.1 The visibility standards in MfS are based on the Stopping Sight Distance (SSD). This is derived from the 85%ile WWJS together with assumptions regarding driver perception/ reaction times and rate of deceleration.
- 4.4.6.2 The SSDs in MfS assume:
  - (i) Driver perception/ reaction time: 1.5 seconds, and
  - (ii) Deceleration rate: 4.41 m/s<sup>2</sup>

4.4.6.3 Based on a **northbound** Design Speed of 44.4mph for the Site Access the calculated SSD is:

ADVICE	PERCEPTION/ REACT TIME (s)	DECEL RATE (m/s <sup>2</sup> )	SSD(m)
MfS	1.5	4.41	120.

4.4.6.4 Based on a **southbound** Design Speed of 40.0mph for the Site Access, the calculated SSD is:



ADVICE	PERCEPTION/ REACT TIME (s)	DECEL RATE (m/s <sup>2</sup> )	SSD(m)
MfS	1.5	4.41	101.

4.4.6.5 Drg No 1723/08/A demonstrates that visibility splays, satisfying DMRB standards, are achievable in the horizontal and vertical planes. Drg No 1723/08/A also confirms that a forward sightline is available between a northbound vehicle and stationary vehicle waiting to turn right into Site.

#### 4.4.7 Pedestrian and Cycle Infrastructure Improvements: Scamps Hill and Gravelye Lane

- 4.4.7.1 It is proposed that the following pedestrian infrastructure is to be delivered by the development:
  - (i) Introduce 3.0m wide shared footway/cycleway within the Site between the proposed Site access and a point near the western boundary of the Site,
  - (ii) Introduce dropped kerbs and tactile paving on Scamps Hill at the Site access junction,
  - (iii) Introduce a pedestrian access point near to the western boundary of the Site,
  - (iv) Introduce dropped kerbs and tactile paving on Lewes Road in the vicinity of the western pedestrian access point,
  - (v) Upgrade the current dropped kerbs on meadow Drive to provide tactile paving.
- 4.4.7.2 The proposed pedestrian improvement are shown on Drg Nos 1723/08/A and 1723/09.
- 4.4.7.3 In addition, the applicant also proposes to install tactile paving at the existing dropped kerb locations on:
  - (i) Enterprise Park, and
  - (ii) Chaloner Road.

#### 4.4.8 Swept Path Analysis

4.4.8.1 Swept path analysis of the proposed Site Access junction has been undertaken to examine if the proposed junction can accommodate the tracking movements of larger vehicles. For this exercise, vehicles are adopted that might be generated by the proposed development, albeit on an occasional basis. The results for the Site Access are set out on the following drawings:

(i)	9.57m Pantechnicon	1723/SP/01,
(ii)	10.60m Large Refuse Vehicle (3 axle)	1723/SP/02,
(iii)	8.68m Fire Appliance	1723/SP/03.



4.4.8.2 The swept path analysis shown on Drg Nos 1723/SP/01-03 confirms that all of the 'test' vehicles can complete all turns at the junction.

#### 4.4.9 Stage 1 Road Safety Audit

- 4.4.9.1 A Stage 1 Road Safety Audit (RSA) has been completed of the proposed Site Access arrangements and the proposed improvement scheme at the Gravelye Lane/Scamps Hill junction. The results are presented in Appendix B.
- 4.4.9.2 The RSA has identified 2no issues and these are considered in the Designer's Response report, which is also included in Appendix B. In response, to the RSA, Drg No 1723/08/A has been prepared.

### 4.5 Internal Roads

4.5.1 The internal road layout for the outline application is to be the subject of reserved matters application(s).

#### 4.6 Mobility Impaired

4.6.1 The needs of those with mobility impairment are an important component of the detailed design of the development. This is advocated in NPPF. The detailed design of the internal layout of the development, which must be the subject of reserved matters approval, will describe the facilities to be provided on Site to assist the mobility impaired, taking account of guidance and standards together with good practice and local/national policies.

#### 4.7 Summary

- 4.7.1 The planning application seeks the determination of access.
- 4.7.2 The scheme is to be served by a new priority-controlled T junction formed on Scamps Hill. This is presented on Drg No 1723/08/A.
- 4.7.3 It is demonstrated that the proposed access point:
  - (i) Satisfies geometric and visibility requirements;
  - (ii) Offers appropriate provision for all users, including those with mobility impairment;
  - (iii) Can accommodate the tracking movements of a range of vehicles.
- 4.7.4 It is considered that the proposed access strategy is in accordance with guidance at both local and national level.



# 5 Walk & Cycle

#### 5.1 Walk

5.1.1 It is established and acknowledged that walking is the most important mode of travel at the local level, and offers the greatest potential to replace short car trips, particularly under 2km.

#### 5.1.2 National Travel Survey (2022)

- 5.1.2.1 The National Travel Survey of 2022 (NTS 2022) confirms that **31%** of all trips are undertaken on foot. For trips up to **1 mile** (1.6km), **83%** of journeys are carried out on foot.
- 5.1.2.2 The NTS also sets out that, on average, people:
  - (i) undertake 267 walk trips per year,
  - (ii) walk a total of 221 miles per year,
  - (iii) spend 18 minutes walking per trip.

Based on the total walk distance of 221 miles and 267 trips per year, this means that the average walk trip is about 0.8 miles (circa 1.3km).

#### 5.1.2.3 The NTS establishes that:

- (i) 83% of all trips under 1 mile (1.6km) are made by foot,
- (ii) Nearly all walks recorded in the NTS were under 5 miles (99.8%),
- (iii) Walking accounts for 31% of all trips and 4% of distance travelled,
- (iv) 53% of trips to and from school were made by walking, by children aged 5-10 and 41% of trips to and from school were by foot for children aged 11-16,
- (v) Most trips to/from school for a trip length of under 1 mile were made by walking (86% for children aged 5-10 and 90% for children aged 11-16).

#### 5.1.3 National Planning Policy Framework (NPPF) & The National Design Guide

5.1.3.1 NPPF defines sustainable transport modes as:

"Any efficient, safe and accessible means of transport with overall low impact on the environment, including **walking** and cycling, ultra low and zero emission vehicles, car sharing and public transport." (AHA emphasis).



#### 5.1.4 The National Design Guide

5.1.4.1 The National Design Guide sets out in paragraph 82 that:

"Priority is given to **pedestrian** and cycle movements, subject to location and the potential to create connections. **Prioritising pedestrians** and cyclists mean creating routes that are **safe**, **direct**, **convenient** and **accessible** for **people** of all abilities. These are designed as part of attractive spaces with good sightlines, and well chosen junctions and crossings, so that people want to use them. Public rights of way are protected, enhanced and well-linked into the wider network of pedestrian and cycle routes." (AHA emphasis).

5.1.4.2 This expanded further in paragraph 83, which states:

"In well-designed places, people should not need to rely on the car for everyday journeys, including getting to workplaces, shops, schools and other facilities, open spaces or the natural environment. Safe and direct routes with visible destinations or clear signposting encourage **people to walk** and cycle." (AHA emphasis).

#### 5.1.5 Manual for Streets

5.1.5.1 The 'walkable neighbourhood' concept is set out in MfS1 and endorsed in MfS2. MfS1 explains that:

"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot. However, this is **not an upper limit** and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2 km." (MfS para 4.4.1, AHA emphasis).

#### 5.1.6 CIHT Planning for Walking

- 5.1.6.1 The CIHT document 'Planning for Walking' (2015) sets out the following key points:
  - "• Patterns of land use and, in particular, residential densities and mixed uses are the primary determinants of how much people walk. As towns and cities spread out, people make fewer short journeys. The current trend to higher density for new residential developments should encourage walking, if linked to provision of local destinations.



- Most short journeys are still made wholly on foot.
- Walking is also part of longer journeys. Very few trips by car or public transport are completed without some walking.
- Pedestrian "footfall" determines the viability of shops."
- 5.1.6.2 The document also stresses:
  - "• Walking contributes to physical and mental health.
  - All streets in urban areas need to be designed to accommodate people who walk wherever they wish to go
  - People travelling on foot want routes that are direct, as level as possible, enjoyable and have destinations in sight. Safe road crossings are an essential element of routes.
  - "Walking" is best thought of as a nonvehicle movement including all forms of assistance, such as sticks, wheelchairs, baby buggies and pavement vehicles. Good provision for users requiring such forms of assistance helps everybody.
  - Walking and cycling are often regarded as compatible. In reality, they are very different modes that will often require separate provision. Both benefit from reduced traffic speeds and reduced motor vehicle traffic flow.
  - The issue of pedestrians and pedal cyclists sharing space is contentious. There are perceived risks associated with cyclists sharing space with pedestrians, and it is not always realised that cyclists seriously injure several hundred pedestrians each year.
  - Planners and traffic managers should appreciate that to encourage walking, motor vehicle traffic rather than pedestrians should, as far as possible, be required to avoid conflicts by diverting from direct routes and by changing elevation. Pedestrians wish to follow direct routes on a constant level."

#### 5.1.7 CIHT Providing for Journeys on Foot

5.1.7.1 The CIHT document 'Providing for Journeys on Foot (2000) does not provide a definitive view of distances, but does suggest a preferred maximum distance of 800m for journeys to town centres and 2000m for walk commuting trips.



#### 5.1.8 Walk Isochrones and Local Amenities

- 5.1.8.1 The CIHT provides guidance about journeys on foot. It does not provide a definitive view of distances, but does suggest a preferred maximum distance of 2000m for walk commuting trips. A 400m distance corresponds to a walk time of 5 minutes, based upon a typical normal walking speed. Figure 5.1 presents the development 400m, 800m, 1200m, 1600m and 2000m walk isochrones, (ie reflecting 5, 10, 15, 20 and 25-minute walk journeys), and taking account of the pedestrian infrastructure.
- 5.1.8.2 The walk isochrones presented in Figure 5.1 are created using Basemap TRACC software, a digital mapping and transport data program. The TRACC software enables installation of maps to create a road network. Amendments have been made to the road network to allow for the inclusion of public rights of way and pedestrian access points.
- 5.1.8.3 The TRACC software adopts the Department for Transport speeds and hence, a walk speed of 4.8km/h is automatically assumed across the road network. However, it is possible to alter the walk speed on all roads to reflect for example, changes in gradient or no accessibility by footway. The walk isochrones presented in Figure 5.1 take into account the absence of footway on certain roads and the walk speed on these routes has been adjusted to 0km/h.
- 5.1.8.4 Indicated on Figure 5.1 are examples of local facilities near to the Site. Figure 5.1 shows that the following amenities are located within an 1200m walk of the Site:
  - Travel: Bus Stops
  - Education: Primary School
  - NurseryCommunity: Place of Worship
  - Community Centre Social Club
  - Health: Health Centre
    - Pharmacy
    - Opticians Shopping: Bakery Butchers Convenience Store
      - Bank/ ATM
  - Leisure: Food Outlets Public Houses Salon



Sports Ground/ Sports Club Playground.

- 5.1.8.5 Lindfield High Street is within 800m of the centre of the Site. There is a good range of shops, public houses and food outlets along High Street.
- 5.1.8.6 It is demonstrated that there is a good range of amenities within walking distance of the proposed development.

#### 5.1.9 Existing Walk Infrastructure

- 5.1.9.1 In the vicinity of the Site, and to the east of Gravelye Lane, there is an existing footway on the south-west side of Scamps Hill. This is generally separated from the carriageway by a grass verge. The majority of the route is located within a 40mph speed limit area and there is limited street lighting available.
- 5.1.9.2 To the west of Gravelye Lane, Scamps Hill changes name to Lewes Road. This generally offers footways along both sides of the carriageway, although there are missing sections of footway on the south-west side near to Lindfield High Street. The footway on the east side of Lewes Road is continuous between the Site and Lindfield High Street. Lewes Road is generally level, subject to a 30mph speed limit and benefits from street lighting. At the side road junctions of Noahs Ark Lane and Eastern Road, there are dropped kerbs and tactile paving. There is currently no tactile paving at the junctions with Enterprise Park and Chaloner Road.
- 5.1.9.3 Gravelye Lane has footway on both sides of the road for about 40m from Scamps Hill, South of this point, footway is available on the west side only. The route has an uphill gradient from Scamps Hill. Gravelye Lane is subject to a 30mph speed limit and benefits from street lighting. There are currently dropped kerbs but no tactile paving at the side road junction of Meadow Drive.

#### 5.1.10 Public Rights of Way

5.1.10.1 Figure 5.2 presents the existing Public Rights of Way (PROW) near to the Site. This confirms that there are no PROWs that run through the Site. Footpath No 5LR is located to the east of the Site and provides a walking connection between Scamps Hill and Gravelye Lane.



#### 5.1.11 Development Generated Pedestrian Trips

- 5.1.11.1 The proposed residential development will generate walk trips. The approach adopted to estimate the number of development generated walk trips is to:
  - (i) Undertake a multi-modal interrogation of the TRICS database to derive the total person trips (all modes) for the development, then
  - (ii) Use the 2011 Census Journey to Work for the Mid Sussex 008 MSOA (in which the Site is located) to derive the modal split.
- 5.1.11.2 The 2011 Census data for Mid Sussex 008 MSOA confirms that **9.9%** of residents complete their journey to work by bus.
- 5.1.11.3 Based on this approach, it is estimated that the proposed development could generate the following walk trips in the AM & PM peak hours:

(i)	AM peak hour:	Arrivals = 2	Departures = 8	2-Way = 10
(ii)	PM peak hour:	Arrivals = 5	Departures = 3	2-Way = 8.

5.1.11.4 Between 0700-1900 (12-hours), which is usually taken to be the 'working day', the proposed development is estimated to generate the following walk trips:

(i) 0700-1900 hours: Arrivals = 35 Departures = 35 2-Way = 70.

#### 5.1.12 Proposed Pedestrian Improvements

- 5.1.12.1 It is proposed that the following pedestrian infrastructure is to be delivered by the development:
  - (i) Introduce 3.0m wide shared footway/cycleway within the Site between the proposed Site Access and a point near the western boundary of the Site,
  - (ii) Introduce dropped kerbs and tactile paving on Scamps Hill at the Site access junction,
  - (iii) Introduce a pedestrian access point near to the western boundary of the Site,
  - (iv) Introduce dropped kerbs and tactile paving on Lewes Road in the vicinity of the western pedestrian access point,
  - (v) Upgrade the current dropped kerbs on Meadow Drive to include tactile paving.
- 5.1.12.2 The proposed pedestrian improvement are shown on Drg Nos 1723/08/A and 1723/09.



- 5.1.12.3 In addition, the applicant also proposes to install tactile paving at the existing dropped kerb location on:
  - (i) Enterprise Park, and
  - (ii) Chaloner Road.
- 5.1.12.4 The works outlined above offer positive encouragement to residents to elect to walk to nearby

#### 5.2 Cycle

5.2.1 It is recognised that cycling also has potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport.

#### 5.2.2 National Travel Survey (2022)

- 5.2.2.1 The NTS 2022 sets out that, on average, people:
  - (i) undertake 15 cycle trips per year,
  - (ii) cycle a total of 57 miles per year,
  - (iii) spend 24 minutes cycling per trip.

Based on the total cycle distance of 57 miles and 15 trips per year, this means that the average cycle trip is 3.8 miles, which is just over 6km.

#### 5.2.3 National Planning Policy Framework (NPPF)

5.2.3.1 NPPF defines sustainable transport modes as:

"Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and **cycling**, ultra low and zero emission vehicles, car sharing and public transport." (AHA emphasis).

#### 5.2.4 The National Design Guide

5.2.4.1 The National Design Guide sets out in paragraph 82 that:

"Priority is given to pedestrian and **cycle movements**, subject to location and the potential to create connections. **Prioritising** pedestrians and **cyclists** mean creating routes that are **safe**, **direct**, **convenient** and **accessible** for people of all abilities. These are designed as part of



attractive spaces with good sightlines, and well chosen junctions and crossings, so that people want to use them. Public rights of way are protected, enhanced and well-linked into the wider network of pedestrian and **cycle routes**." (AHA emphasis).

5.2.4.2 This expanded further in paragraph 83, which states:

"In well-designed places, people should not need to rely on the car for everyday journeys, including getting to workplaces, shops, schools and other facilities, open spaces or the natural environment. Safe and direct routes with visible destinations or clear signposting encourage **people to** walk and **cycle**." (AHA emphasis).

#### 5.2.5 Gear Change, A Bold Vision for Cycling and Walking (DfT, 2020)

5.2.5.1 Gear Change, A Bold Vision for Cycling and Walking states:

"58% of car journeys in 2018 were under 5 miles. And in urban areas, more than 40% of journeys were under 2 miles in 2017-18. For many people, these journeys are perfectly suited to cycling and walking." (Page 11).

#### 5.2.6 Cycle Isochrones and Local Amenities

- 5.2.6.1 It is recognised that cycling also has potential to substitute for short car trips, particularly those under 5km, and to form part of a longer journey by public transport.
- 5.2.6.2 The CIHT guidance 'Cycle Friendly Infrastructure' (2004) states that:

"Most journeys are short. Three quarters of journeys by all modes are less than five miles (8km) and half under two miles (3.2km) (DOT 1993, table 2a). These are distances that can be cycled comfortably by a reasonably fit person." (para 2.3)

- 5.2.6.3 The cycle isochrones presented in Figure 5.3 were created using Basemap TRACC software. The cycle isochrones presented in Figure 5.3 discounts footpaths which do not permit cyclists.
- 5.2.6.4 Figure 5.3 indicates the 2km and 5km cycle isochrones for the Site. Review of Figure 5.3 highlights that Lindfield is within a 2km cycle ride of the Site. Figure 5.3 also shows Haywards Heath is within a 5km cycle ride of the Site.



#### 5.2.7 Development Generated Cycle Trips

- 5.2.7.1 The 2011 Census data for Mid Sussex 008 MSOA confirms that only **1.2%** of existing residents complete their journey to work by cycle.
- 5.2.7.2 Based on the TRICS/Census approach set out above, it is estimated that the proposed development could generate the following person trips by train in the AM & PM peak hours:

(i)	AM peak hour:	Arrivals = 0	Departures = 1	2-Way = 1
(ii)	PM peak hour:	Arrivals = 1	Departures = 0	2 - Way = 1

- 5.2.7.3 Between 0700-1900 (12-hours), the proposed development is estimated to generate the following person trips by cycle:
  - (i) 0700-1900 hours: Arrivals = 4 Departures = 4 2-Way = 9.
- 5.2.7.4 It is worth recognising that train travel is popular in Mid Sussex 008 MSOA (see Chapter 6) and that a resident journey by rail could start and end with a cycle journey to/from Haywards Heath rail station. There are 312 cycle stands at the station.
- 5.2.7.5 A review of Figure 5.1 shows that the majority of local amenities are located to the west of the Site. This means that there is strong likelihood that most cycle trips will be to/from the west of the Site.

#### 5.2.8 Proposed Cycle Infrastructure Improvements

- 5.2.8.1 The B2111 route between Scaynes Hill and Linfield is identified (ref ID 213) in the West Sussex 'Walking and Cycling Strategy 2016-2026' as a route the Council would like to improve.
- 5.2.8.2 The proposed development is to introduce a 3.0m shared footway/cycleway between the western boundary of the Site and the proposed Site access. The route is to be of sealed surface construction and will benefit from lighting. The new infrastructure is about 180m long and is complementary to aims and aspirations of the Council to improve walking and cycling along the B2111 corridor.

#### 5.3 Summary

5.3.1 Transport sustainability is a principle underlying the proposed development. Encouraging walk and cycle journeys is recognised as important. The location of the Site provides a good



context for journeys of residents to be undertaken on foot and by cycle. There is good walk infrastructure between the Site and nearby amenities, thereby offering opportunity to foster a sustainable community, in accordance with the aims of local policies and national policy in NPPF.

5.3.1 The proposed development includes a package of measures to encourage walk and cycle trips. The scheme will deliver about 180m of new shared footway/cycleway within the Site. This will be complemented by a range of additional measures on the local highway network. It is considered that the proposed development is consistent with paragraph 104 of NPPF, which advises applicants to identify and take up walk and cycle infrastructure opportunities.



# 6 Public Transport

- 6.1 The proposed development affords opportunity for development generated public transport journeys to be made by bus and rail.
- 6.2 Bus

#### 6.2.1 Existing Bus Stops

- 6.2.1.1 Figure 5.1 identifies the location of the existing nearest bus stops in the vicinity of the Site, which is located on Gravelye Lane as follows:
  - (i) Southbound stop: 240m from the centre of the Site,
  - (ii) Northbound stop: 280m from the centre of the Site.
- 6.2.1.2 Both stops comprise a flag and pole arrangement.

#### 6.2.2 Bus Services & Frequencies

- 6.2.2.1 The services operating near to the Site are:
  - (i) Nos 31, 31A and 31B: Haywards Heath Uckfield,
  - (ii) No 162: Hawards Heath Crawley,
  - (iii) No 149: Scaynes Hill Chailey School,
  - (iv) No STP1: Haywards Heath Burgess Hill St Paul's Catholic College.
- 6.2.2.2 Service Nos 31/31A/31B operate between Haywards Heath and Uckfield and call at the bus stops on Gravelye Lane. The combined services offer bus travel at approximately an hourly frequency in both directions, Monday-Saturday.
- 6.2.2.3 The first and last journeys **to** Haywards Heath and Uckfield are:

DAY	TO HAYWARDS HEATH		TO UCKFIELD	
	FIRST	LAST	FIRST	LAST
Monday to Friday	0608	1820	0901	1846
Saturday	0735	1810.	0801	1835

6.2.2.4 The typical approximate journey times to destinations are:


LOCATION	JOURNEY TIME (MINS)
Haywards Heath (o/s Sainsburys)	12-17
Uckfield (bus station)	29-33.

- 6.2.2.5 Service No 31/31A/31B coincide with typical workplace start and finish times for journeys to/from Haywards Heath and Uckfield. This means that residents of the Site have good opportunity to complete commuting journeys by bus.
- 6.2.2.6 Service No 62 provides a single return trip to/from Haywards Heath. The morning service departs the Gravelye Lane bus stop at 0741. The afternoon service arrives at the Gravelye Lane bus stop at 1539 hours.
- 6.2.2.7 Service No 149 provides a single return trip to/from Chailey School. The morning service departs the Gravelye Lane bus stop at 0759 and arrives at Chailey School at 0830. The afternoon service departs Chailey School at 1455 and arrives at the Gravelye Lane bus stop at 1518 hours.
- 6.2.2.8 Service No STP1 provides a single return trip to/from Burgess Hill St Paul's Catholic College. The morning service departs the Gravelye Lane bus stop at 0728 and arrives at the college at 0815. The afternoon service departs college at 1515 and arrives at the Gravelye Lane bus stop at 1554 hours.

### 6.2.3 Development Generated Bus Trips

- 6.2.3.1 The proposed residential development will generate bus trips. The approach adopted to estimate the number of development generated bus trips is to:
  - (iii) Undertake a multi-modal interrogation of the TRICS database to derive the total person trips (all modes) for the development, then
  - (iv) Use the 2011 Census Journey to Work for the Mid Sussex 008 MSOA (in which the Site is located) to derive the modal split.
- 6.2.3.2 The 2011 Census data for Mid Sussex 008 MSOA confirms that only **1.1%** of residents complete their journey to work by bus.
- 6.2.3.3 Based on this approach, it is estimated that the proposed development could generate the following bus trips in the AM & PM peak hours:

(i)	AM peak hour:	Arrivals = 0	Departures = 1	2 - Way = 1
(ii)	PM peak hour:	Arrivals = 1	Departures = 0	2-Way = 1



- 6.2.3.4 Between 0700-1900 (12-hours), which is usually taken to be the 'working day', the proposed development is estimated to generate the following bus trips:
  - (i) 0700-1900 hours: Arrivals = 4 Departures = 4 2-Way = 8.
- 6.2.3.5 It is worth recognising that train travel is far more popular in Mid Sussex 008 MSOA (see below) and that a resident journey by rail could start and end with a bus journey to/from Haywards Heath rail station. Service Nos 31/31A/31B call at bus stops on Gravelye Lane and stops near the station. This could mean that bus patronage generated by Site residents could be higher than the figures calculated through TRICS and Census information.

### 6.2.4 Measures to Encourage Bus Use

- 6.2.4.1 The nearest bus stops to the Site are on Gravelye Lane and are about 240-280m from the centre of the Site, taking into account the proposed access strategy. To encourage residents to use the bus services, the applicant proposes to:
  - (i) Form a pedestrian entrance on Scamps Hill near to the western boundary of the Site,
  - (ii) Introduce dropped kerbs and tactile paving on Scamps Hill in the vicinity of the pedestrian access point,
  - (iii) Introduce tactile paving at the existing dropped kerbs on Meadow Drive,
  - (iv) Upgrade the northbound and south bus stops on Gravely Lane to provide shelters, real time information and low floor kerb access.
- 6.2.4.2 The works outlined above are shown on Drg No 1723/09 and offer positive encouragement to residents to access bus services on Gravelye Lane, which is in accordance with both local and national policies.

## 6.3 Rail

- 6.3.1 Lindfield does not have a rail station. The nearest rail station is in Haywards Heath and is about2.9km from the Site. This may be a too far for some residents to walk but is well within a convenient cycle ride. The station includes 312 cycle spaces.
- 6.3.2 Alternatively, bus Service Nos 31/31A/31B offer travel to bus stops in close proximity to Haywards Heath rail station, for example, Sainsburys or Perrymont Road. The journey time from the Gravelye Lane bus stop is about 12-17 minutes.
- 6.3.3 Hayward Heath rail station is supported by 1069 parking spaces, 12 of which are marked for disabled users.



6.3.4 There are a number of train services that call at Haywards heath rail station, being:

(i)	Northbound:	6 trains per hour to London Victoria, 2 trains per hour to London Bridge & St Pancras International, 2 trains per hour to Cambridge (via London Bridge),
(ii)	Southbound:	6 trains per hour to Brighton, 2 trains per hour to Eastbourne, 2 trains per hour to Littlehampton (via Hove and Worthing).

6.3.5 Services calling at Haywards Heath rail station offer travel to a wide range of destinations, including:

DIRECTION	DESTINATION	JOURNEY TIME (mins)
Northbound	Gatwick Airport	14-17
	East Croydon	30-33
	London Victoria	45-46
	London Bridge	45-47
	St Pancras International	60-62
	St Albans	82
	Stevenage	91
	Luton Airport	94-98
	Luton	98
	Bedford	123
	Cambridge	128-131
Southbound	Burgess Hill	5-6
	Bexhill	13
	Brighton	18-21
	Lewes	19
	Hove	19-20
	Hastings	23
	Worthing	36
	Eastbourne	43-45
	Littlehampton	57-59.

6.3.6 It is demonstrated that there is a very wide range of key centres, including London, which are served by frequent trains calling at Haywards Heath rail station. This offers the opportunity for Site residents to complete a commuter trip by train.



### 6.3.7 Development Generated Train Trips

- 6.3.7.1 The 2011 Census data for Mid Sussex 008 MSOA confirms that **21.6%** of existing residents complete their journey to work by train. This suggests that there is a strong likelihood of development generated trips by train.
- 6.3.7.2 Based on the TRICS/Census approach set out above, it is estimated that the proposed development could generate the following person trips by train in the AM & PM peak hours:

(i) AM peak hour:Arrivals = 5Departures = 162-Way = 21(ii) PM peak hour:Arrivals = 11Departures = 62-Way = 17.

- 6.3.7.3 Between 0700-1900 (12-hours), the proposed development is estimated to generate the following person trips by train:
  - (i) 0700-1900 hours: Arrivals = 76 Departures = 76 2-Way = 152.

## 6.4 Summary

- 6.4.1 There are existing public transport opportunities near to the application Site.
- 6.4.2 Site residents have the option of frequent travel by bus to/from key centres such as Haywards Heath and Uckfield.
- 6.4.3 The rail station at Haywards Heath offers frequent travel to a wide range of destinations including Brighton, Gatwick Airport and London. Existing bus services that call at stops near to the application Site also call near to the rail station. This means that longer journeys can be completed by bus and rail. Alternatively, the rail station is located within a convenient cycle ride of the Site and the station includes extensive cycle parking.
- 6.4.4 It is demonstrated that the Site has good public transport accessibility and this is in accordance with the aims and objectives of current national and local policies.



## 7 Traffic Flows

## 7.1 Study Network

7.1.1 The TA study network of junctions comprises:

REF	JUNCTION	CONTROL
SJ1	Site Access/Scamps Hill	priority controlled,
SJ2	B2111 Bedales Hill/A272 Lewes Road	priority controlled,
SJ3	Gravelye Lane/B211 Lewes Road/Scamps Hill	priority controlled,
SJ4	Westlands Road/Gravelye Lane	priority controlled,
SJ5	B211 Lewes Road/B2028 High Street/Denman's Lane	priority controlled.
Poak P	orioda	

- 7.2 Peak Periods
- 7.2.1 The times when the combination is greatest, of traffic generated by the proposed residential development and the existing highway network traffic, are the weekday AM & PM peak hours. The TA includes quantitative analysis of the traffic impact of the proposed development for these periods.

## 7.3 Traffic Counts

- 7.3.1 AHA has available the following traffic count data for the TA study network:
  - Scamps Hill: ATC data for 17-23 October 2023;
  - SJ2-SJ5: Classified turning counts undertaken on 18 October 2023.
- 7.3.2 Analysis of the traffic count data identifies the peak hours for traffic flows at the study junctions as:
  - AM: 0800-0900, and
  - PM: 1615-1715.

Quantitative analysis is undertaken for these peak hours.

7.3.3 Figure C1, Appendix C, presents the 2023 AM & PM peak hour traffic count flows at the study junctions. The flows are presented in vehicles.



## 7.4 Traffic Growth

- 7.4.1 For the purposes of quantitative testing of the local highway network, it is assumed that the development will be fully constructed and operational by year **2029**.
- 7.4.2 The National Transport Model (NTM) is used as a basis for deriving local growth factors. The NTM growth factors adopted to estimate year 2029 traffic flows, from the 2023 count data, are set out in Technical File Note 1A, Appendix D.

### 7.4.3 Factored Counts

7.4.3.1 Figure C2, Appendix C presents the 2029 AM & PM peak hour traffic flows at all of the study network junctions.

## 7.5 Committed Developments

- 7.5.1 AHA are aware of the following committed development for inclusion in the assessment:
  - (i) DM/15/4457 Land to the south of Scamps Hill, Lindfield, 200 dwellings, country park, and land for a primary education facility,
- 7.5.2 A TA was submitted with the above planning application and this was prepared by i-Transport. Figure 8.16 of the i-Transport TA includes the total development traffic flows. The traffic flows presented in Figure 8.16 are directly extracted and are included in the TA for the proposed development.
- 7.5.3 Figure C3, Appendix C presents the committed development traffic flows on the study network.

## 7.6 Base

- 7.6.1 The 'Base' situation represents the traffic flows on the TA study network with the implementation of the consented developments. This provides the proper context in which to assess the traffic impact of the proposed development.
- 7.6.2 The estimated 2029 Base AM & PM peak hour traffic flows at the TA study network junctions are presented on Figure C4, Appendix C.



## 7.7 Distribution of Development Generated Traffic

- 7.7.1 It is necessary to estimate the % distribution of the proposed development generated traffic. A common methodology is to use Journey to Work data from the 2011 Census as a basis for estimating the % distribution of development generated traffic on the study network junctions. This methodology was adopted in the TA for the Taylor Wimpey scheme on Land east of Gravelye Lane (planning ref DM/16/5648). Given the close proximity of this scheme to the proposed development and it being the most recent planning application and now constructed development, the approach adopted is to use the % distribution that was agreed for the Taylor Wimpey scheme for the proposed development.
- 7.7.2 Figure C5, Appendix C presents the % distribution of generated traffic on the study network.

## 7.8 Generated Traffic: Proposed Development

- 7.8.1 It is usual practice to undertake an interrogation of the TRICS database to identify suitable trip generation rates to adopt for estimating the AM and PM peak hour traffic generated by the proposed residential development. In this specific case the approach adopted is to undertake a comparison of the trip rates adopted by the Taylor Wimpey scheme on land east of Gravelye Lane with the TRICS derived trip rates.
- 7.8.2 Chapter 6 of the TA for the Taylor Wimpey scheme on land east of Gravelye Lane utilises trip rates which were agreed with WSCC for another residential development nearby called Heathwood Park. These trip rates are summarised below;

	ARR	DEP	2-WAY
AM	0.146	0.442	0.588
PM	0.427	0.237	0.664

- 7.8.3 TRICS is interrogated for information about trip generation rates for Houses. Criteria adopted for this interrogation include:
  - Houses privately owned;
  - Sites between 150-300 units;
  - All surveys 2012 or more recent;
  - Sites in Ireland, Northern Ireland and Greater London excluded on the basis that they may have significantly different travel characteristics;



- If a site has multiple survey date entries, include only the most recent survey used within the identified TRICS sample, (to avoid statistical bias in the trip rates identified for use in the analysis).
- 7.8.4 On this basis, 6 sites are identified and the results of the TRICS interrogation are included in Appendix C. TRICS explicitly states that the 85%ile statistic is not reliable for a database with less than 20 entries. Thus, average trip rates are adopted to estimate the traffic generated by the proposed residential development.
- 7.8.5 The AM and PM peak hour house trip rates based on the above TRICS interrogation are:

	ARR	DEP	2-WAY
AM	0.163	0.391	0.554
PM	0.363	0.171	0.534.

- 7.8.6 It is evident from the above that the trip rates adopted for the Taylor Wimpey scheme on Land east of Gravelye Lane are higher than the TRICS derived rates. To ensure a robust assessment, this TA report adopts the Taylor Wimpey scheme trip rates.
- 7.8.7 The consequent estimate of traffic (in vehicles) generated by the proposed development of up to 90 dwellings in the AM and PM peak hours is:

	ARR	DEP	2-WAY
АМ	13	40	53
PM	38	21	59.

7.8.8 Figure C6, Appendix C presents the traffic generated by the proposed development in the AM and PM peak hours at the study junctions, based on the % distribution on Figure C5, Appendix C.

## 7.9 Traffic Impact

- 7.9.1 At the time of preparing this TA report, AHA are aware of a WSCC's 2007 TA guidance document, section 10.5, which sets out the requirement for all junctions to be assessed that will experience increased entry flows of 30 or more vehicles in any given hour as a result of development, unless the junction is already congested in which case, the threshold reduces to an increase of 10 vehicle movements an hour.
- 7.9.2 This approach was adopted in the TA for the Taylor Wimpey scheme at Land east of Gravelye Lane. This TA report adopts the same methodology to ensure a consistent approach.



7.9.3 The traffic impact of the proposed development at the TA study network of junctions in the AM and PM peak hours is summarised below:

STUDY	AM	PM
JUNCTION		
SJ1	+53	+59
SJ2	+13	+15
SJ3	+40	+45
SJ4	+30	+33
SJ5	+10	+12.

A review of the above summary shows that the proposed development is estimated to have a traffic impact in excess of 30 vehicles at SJ1, SJ3 and SJ4.

7.9.4 Consequently, junction modelling of SJ1, SJ3 and SJ4 is undertaken and the results are presented and discussed in Chapter 8.

## 7.10 With Development

7.10.1 The estimated 2029 AM and PM peak hour With Development traffic flows at the TA study junctions are presented on Figure C7, Appendix C.



## 8 Operational Performance of the Highway Network

- 8.1 The computer program PICADY (within Junctions 9) is used to model the performance of a priority (give-way) control junction. PICADY predicts the ratio of flow to capacity (RFC) and associated queue for the minor (give-way) entry to the junction and for the major road. PICADY is used to model the operational performance of:
  - (i) SJ1 Site Access/Scamps Hill,
  - (ii) SJ3 Gravelye Lane/B211 Lewes Road/Scamps Hill,
  - (iii) SJ4 Westlands Road/Gravelye Lane.

## 8.2 Queue Surveys and Model Validation

### 8.2.1 Queue Survey

- 8.2.1.1 Queues were recorded on all external approach arms at the study junctions. Data was collected at the same time as the AM & PM peak period traffic count surveys.
- 8.2.1.2 The survey recorded queues in 5-minute intervals. The survey recorded the queue on each arm at the 5-minute mark (eg at 0800, 0805, 0810 etc). The survey also recorded the maximum queue during the 5-minute interval.

### 8.2.2 Model Validation

- 8.2.2.1 The process of model validation involves:
  - (i) Construct PICADY model for the junction;
  - (ii) Use 2023 recorded traffic count data;
  - (iii) Compare model output queues to recorded queues;
  - (iv) If necessary, make small adjustments to model geometry to provide 'best match' between model and recorded queues.

## 8.3 SJ1: Site Access/ Scamps Hill (AHA Drg No 1723/08/A)

8.3.1 Table 8.1 presents the results of the PICADY modelling of the proposed Site Access/ Scamps Hill junction. Review of Table 8.1 shows that the proposed priority-controlled junction is predicted to operate with a high degree of spare capacity and negligible queues/delays in the year 2029 AM & PM peak hour With Development situations.



## 8.4 SJ3: Gravelye Lane/B211 Lewes Road/Scamps Hill (AHA Drg No 1723/03)

- 8.4.1 Table 8.2 presents the average recorded spot queues during the AM & PM peak hours at SJ3. The queue survey confirms that negligible queues were recorded on the 5-minute interval marks. The survey results provide clear evidence that SJ3 is presently operating in an acceptable manner.
- 8.4.2 A PICADY model is constructed for the 2023 AM & PM peak hour Count situation. The results are also presented in Table 8.2. A review of Table 8.2 shows that the PICADY model queues provide a close match to the recorded queues. It is concluded that the PICADY model is suitable to test the traffic impact of the proposed development in year 2029.
- 8.4.3 Table 8.3 presents the results of the PICADY modelling of the Gravelye Lane/B211 Lewes Road/Scamps Hill junction. A review of Table 8.3 shows that the junction currently operates with a high degree of spare capacity and negligible queues/delays. Table 8.3 also shows that the priority-controlled junction is predicted to operate with a high degree of spare capacity and negligible queues/delays in the year 2029 AM & PM peak hour Base and With Development situations.

## 8.5 SJ4: Westlands Road/Gravelye Lane (AHA Drg No 1723/04)

- 8.5.1 Table 8.4 presents the average recorded spot queues during the AM & PM peak hours at SJ4. The queue survey confirms that negligible queues were recorded on the 5-minute interval marks. The survey results provide clear evidence that SJ4 is presently operating in an acceptable manner.
- 8.5.2 A PICADY model is constructed for the 2023 AM & PM peak hour Count situation. The results are also presented in Table 8.4. A review of Table 8.4 shows that the PICADY model queues provide a close match to the recorded queues. It is concluded that the PICADY model is suitable to test the traffic impact of the proposed development in year 2029.
- 8.5.3 Table 8.5 presents the results of the PICADY modelling of the Westlands Road/Gravelye Lane junction. A review of Table 8.5 shows that the junction currently operates with a high degree of spare capacity and negligible queues/delays. Table 8.5 also shows that the priority-controlled junction is predicted to operate with a high degree of spare capacity and negligible queues/delays in the year 2029 AM & PM peak hour Base and With Development situations.



## 8.6 Summary

8.6.1 Comprehensive junction analysis and modelling is undertaken for the year 2023 for the AM & PM peak hour Count situation and the year 2029 for the AM & PM peak hour Base and With Development situations. It is concluded that the proposed residential development **does not** have a detrimental impact on the operational performance of the TA highway network.



## 9 Summary & Conclusions

9.1 Ashley Helme Associates Limited (AHA) are appointed by Gladman Developments Ltd to prepare a Transport Assessment (TA) report to support the planning application for residential development on land off Scamps Hill, Lindfield. The Site is presently agricultural land. The proposed development comprises a residential development of up to 90 dwellings.

## 9.2 Access Strategy

- 9.2.1 The planning application seeks outline consent with all matters reserved, except access. This TA considers access for vehicles, cyclists and pedestrians via Scamps Hill.
- 9.2.2 The proposed access arrangements are shown on Drg No 1723/08/A. It is demonstrated that the proposed access point:
  - (i) Satisfies geometric and visibility requirements,
  - (ii) Has sufficient capacity to operate efficiently and safely,
  - (iii) Offers appropriate provision for all users, and
  - (iv) Can accommodate the tracking movements of a range of vehicles.

## 9.3 Walk and Cycle

- 9.3.1 The principle of transport sustainability underlies the masterplan development. The location of the Site provides a good context for journeys to be undertaken on foot and by cycle, and the masterplan access strategy reflects this with the provision of good permeability and connectivity for pedestrians and cyclists.
- 9.3.2 The proposed development includes a package of measures to encourage walk and cycle trips. The scheme will deliver about 180m of new shared footway/cycleway within the Site. This will be complimented by a range of additional measures on the local highway network. It is considered that the proposed development is consistent with paragraph 104 of NPPF, which requests that applicants identify and take up walk and cycle infrastructure opportunities.
- 9.3.3 The location of the Site and nearby local amenities, offer a good opportunity for fostering a sustainable community. This is in accordance with the aims of local policies and national policy in NPPF.



## 9.4 Public Transport

- 9.4.1 Encouraging public transport journeys is an important component of the development access strategy. There are existing bus services operating in the vicinity of the Site.
- 9.4.2 Site residents have the option of frequent travel by bus to/from key centres such as Haywards Heath and Uckfield.
- 9.4.3 The rail station at Haywards Heath offers frequent travel to a wide range of destinations including Brighton, Gatwick Airport and London. Existing bus services that call at stops near to the application Site also call near to the rail station. This means that longer journeys can be completed by bus and rail. Alternatively, the rail station is located within a convenient cycle ride of the Site and the station includes extensive cycle parking.
- 9.4.4 It is demonstrated that the Site has good public transport accessibility, with opportunities for frequent travel by bus and rail, including weekdays and weekends. This is in accordance with the aims and objectives of current national and local policies.

## 9.5 Traffic Impact

9.5.1 A TA study network of junctions is identified and comprises:

REF	JUNCTION	CONTROL
SJ1	Site Access/Scamps Hill	priority controlled,
SJ2	B2111 Bedales Hill/A272 Lewes Road	priority controlled,
SJ3	Gravelye Lane/B211 Lewes Road/Scamps Hill	priority controlled,
SJ4	Westlands Road/Gravelye Lane	priority controlled,
SJ5	B211 Lewes Road/B2028 High Street/Denman's Lane	priority controlled.

- 9.5.2 AHA has completed a review of schemes in the wider Lindfield area. AHA has concluded that none of these committed residential schemes will have a material impact on the TA study network and are therefore not included in the traffic flows in this TA.
- 9.5.3 Comprehensive junction analysis and modelling is undertaken for the year 2023 for the AM & PM peak hour Count situation and the year 2029 for the AM & PM peak hour Base and With Development situations. It is concluded that the proposed residential development has no material detrimental impact on the operational performance of the TA highway network.



## 9.6 Summary

9.6.1 It is concluded that the proposed development is in accordance with national and local transport policies, and that there are no transport/highways reasons for refusal of planning permission.

# Figures

#### **CD16** Notes: Acre Cottage This drawing is copyright and may not be copied or given to a third party without witten authority from Ashley Helme Associates Ltd 2. Source: Contains OS data © Crown copyright and database right (2020) KEY: SITE CHESTNUTS SUMMERHILL DRI LINDFIELD Little Walstead Farm Education Education 0 WIC Great Walstead Farm 5 Little Walstead-Wood Facility 0 DA Educati 100 The Spinney 0 ation The Coach WALSTEAD House PENN CRESCE SCAMPS HILL GTON R Beech Walstead Mead Wood Manor Avens Court Home Cops Henfiel Project: Title: FIGURE 1.1 SCAMPS HILL, WALSTEAD GRANGE ASHLEY HELME ASSOCIATES LOCATION PLAN Date: Scale: Client: GLADMAN DEVELOPMENTS NTS NOV 2023









# Tables

MOVEMENT	AM PEAK HOUR		PM PEAK HOUR		
	RFC	QUEUE (veh)	DELAY (mins/veh)	RFC	QUEUE (veh)

2029 With Development, Proposed Junction Geometry						
Site Access	0.12	0.1	0.18	0.06	0.1	0.17
Scamps Hill	0.01	0.0	0.07	0.02	0.0	0.08

Refer Drg No 1723/08 for proposed Site access drawing.
Refer Figure C7, Appendix C for 2029 With Development traffic flows.

SJ1 Proposed Site Access/Scamps Hill Table 8.1 PICADY RESULTS

MOVEMENT	AM PEA	K HOUR	PM PEAK HOUR		
MOVEMENT	OBSERVED	MODELLED	OBSERVED	MODELLED	

Gravelye Lane	4.2	1.9	0.5	0.7
Scamps Hill	0.3	1.2	0.6	1.6

Notes:

1. AHA queue survey 18.10.23

Average spot queue observed over peak hour period
Refer Figure C1, Appendix C for 2023 traffic count flows.

#### Table 8.2 PICADY VALIDATION SJ3 Scamps Hill/Gravelye Lane

		AM PEAK HOU	R	PM PEAK HOUR		
MOVEMENT	RFC	QUEUE (veh)	DELAY (mins/veh)	RFC	QUEUE (veh)	DELAY (mins/veh)

2023 Count, Existing Junction Geometry								
Gravelye Lane left     0.56     1.2     0.24     0.30     0.4     0.13								
Gravelye Lane right	0.41	0.7	0.36	0.22	0.3	0.23		
Scamps Hill     0.48     1.2     0.17     0.54     1.6     0.17								

2029 Base, Existing Junction Geometry									
Gravelye Lane left 0.76 2.9 0.56 0.36 0.6 0.16									
Gravelye Lane right	0.71	2.2	0.84	0.35	0.5	0.29			
Scamps Hill 0.54 1.6 0.19 0.57 1.8 0.18									

2029 With Development, Existing Junction Geometry								
Gravelye Lane left 0.82 3.9 0.74 0.39 0.6 0.18								
Gravelye Lane right 0.78 3.0 1.11 0.43 0.7 0.34								
Scamps Hill 0.55 1.6 0.20 0.61 2.2 0.20								

Notes:

1. Refer Drg No 1723/03 for existing junction geometry.

2. Refer Figure C1, Appendix C for 2023 Count traffic flows.

3. Refer Figure C4, Appendix C for 2029 Base traffic flows.

4. Refer Figure C7, Appendix C for 2029 With Development traffic flows.

#### Table 8.3 PICADY RESULTS SJ3 Scamps Hill/Gravelye Lane

MOVEMENT	AM PEA	K HOUR	PM PEAK HOUR		
MOVEMENT	OBSERVED	MODELLED	OBSERVED	MODELLED	

Westlands Road	1.3	1.3	0.8	0.6
Gravelye Lane	0.6	0.8	0.4	0.5

Notes:

AHA queue survey 18.10.23
Average spot queue observed over peak hour period

3. Refer Figure C1, Appendix C for 2023 traffic count flows.

#### Table 8.4 PICADY VALIDATION SJ4 Westlands Road/Gravelye Lane

	AM PEAK HOUR			PM PEAK HOUR		
MOVEMENI	RFC	QUEUE (veh)	DELAY (mins/veh)	RFC	QUEUE (veh)	DELAY (mins/veh)

2023 Count, Existing Junction Geometry									
Westlands Road Left     0.34     0.5     0.18     0.13     0.1     0.13									
Westlands Road Right	0.45	0.8	0.31	0.32	0.5	0.21			
Gravelye Lane     0.35     0.8     0.14     0.24     0.5     0.11									

2029 Base, Existing Junction Geometry									
Westlands Road Left	0.42	0.7	0.23	0.17	0.2	0.14			
Westlands Road Right	0.52	1.1	0.39	0.34	0.5	0.22			
Gravelye Lane 0.37 0.9 0.14 0.29 0.6 0.12									

2029 With Development, Existing Junction Geometry									
Westlands Road Left	0.43	0.7	0.24	0.20	0.2	0.14			
Westlands Road Right	0.53	1.1	0.40	0.35	0.5	0.23			
Gravelye Lane 0.38 0.9 0.14 0.31 0.6 0.12									

Notes:

Refer Drg No 1723/04 for existing junction geometry.
Refer Figure C1, Appendix C for 2023 Count traffic flows.
Refer Figure C4, Appendix C for 2029 Base traffic flows.
Refer Figure C7, Appendix C for 2029 With Development traffic flows.

#### Table 8.5 PICADY RESULTS SJ4 Westlands Road/Gravelye Lane

# A Sussex Police Personal Collision Data
## Scamps Hill – Lindfield – Ashley Helme

Collision report 01/10/2018 - 30/09/2023

Date produced 09 November 2023

This report is marked as Official – Sensitive

- The information included in this report is provided for analysis purposes and is for the exclusive use of the applicant, the information must only be used for the purposes for which it has been obtained.
- The data has been provided by Sussex Police and should not be transmitted to any other person without their consent, including reports for the general public.
- Be aware that any improper disclosure, copying, distribution or use of the contents of this information is prohibited and criminal proceedings may follow.

# Sussex Safer Roads

Safer Roads Safer Communities Sharing the Responsibility Data regarding personal injury collisions is recorded by Sussex Police in accordance with the DfT Stats 19 requirements. The data is subsequently used by Sussex Safer Roads Partnership for monitoring and planning. While every effort is made to ensure that this data is accurate, it is subject to change should further information become available.

This data may not be fully validated and while every effort is made to ensure its accuracy any statistics provided may not match those published elsewhere.

Sussex Safer Roads Partnership does not hold collision data either where there are no recorded casualties or the incident has not been reported to Sussex Police.

For further information:

web: www.sussexsaferroads.gov.uk email: data@sussexsaferroads.gov.uk





Detai	ils of P	ersonal Injury	Accidents for Period - 01/10	)/2018	to 30/0	<b>9/2023</b> (60) months					
Selec	tion:				Notes:						
Selec	cted us	ing Pre-defin	ed Ouerv : : Refined using Accider	nts							
withi	in selec	eted Polygon	s -Sussex - 2021 consultant reports								
("sca	mps h	ill (A H ASS	)")								
					Vehicles			C	asua	lties	
Police I	Ref.	Day	Location Description	Veh No	o / Type / Mar	w / Dir / Class		S	ex / /	Age	/ Sev
Road N	ío.	Date									
2nd Roa	ad No.	Time									
Grid R	ef.	D/L									
		R.S.C									
		Weather									
		Speed									
		Account of									
		Accident									
Causat	tion Fac	tor:									
Select	ed Pol	vgon:scamp	s hill (A H ASS)								
471806	489	Saturday	A272 LEWES ROAD LINDFIELD AT	Veh 1	Car	Turning right	E to N I	Dri F	t i	18	Slight
D1 4	272	24/11/2018	JUNCTION OF B2111 BEDALES HILL	Veh 1	Car	Turning right	E to N F	SP F	f .	17	Slight
KI: A	272	1415hrs		Veh 2	Car	Going ahead RH bend	SW to E	Dri F	1 4	49	Slight
К2: В F 525 (	2111 026	Wet/Damp	reet lights present								
E 555, N 122	920 601	Raining wit	thout high winds								
1 123,	091	50 mph	mout nigh which								
a	Б (	50				Particinant.	Confiden	ce.			
Causati	on Facto	or:				i ui ticipuitt	Comuch				
1st:	Inexpe	rienced or learne	er driver/rider			Vehicle 1	Possible				
2nd:	Slipper	ry road (due to v	veather)			Vehicle 1	Possible				
		BEDALES HII HILL ON LEW	ING FROM SCAYNES HILL TOWARDS LL (B2111)ACROSS ONCOMING TRAFF /ES ROAD (A272)	IC COLI	LIDING WITH	I ON LEWES ROAD (A27 I V2 TRAVELLING FRO	M HAYWARD	S HEAT	TH T	TO S	SCAYNES
47100-	711	<b>P</b> · 1		\$7.1.1	Car	Transin en al 14	NUMITO CON T	<b>∖</b> .:: ∓	<b>,</b> ,	70	C1: -1-4
4/1806	011	Friday	B2111 SCAMPS HILL LINDFIELD AT JUNCTION OF U GRAVELYE LANE	veh 1	Car Dadal1	furning right	INWE SW L	א ווע אייי	л .	12 01	Silgnt Sociou-
R1: B	2111	30/11/2018 1038hrs		Ven 2	Pedal cycle	Going anead	SEIONWI	Jri N	4 8	54	Serious
R2: U		Davlight:st	reet lights present								
E 535.	051	Wet/Damp									
N 124.	858	Fine withou	at high winds								
,		30 mph	C								
Causati	on Facto	or:				Participant:	Confiden	ce:			
1ct•	Failed	to look properly				Vehicle 1	Verv Lik	elv			
2nd:	Dazzli	ng sun				Vehicle 1	Possible				
		V2 TRAVELL OBSERVE ON RIDER TO LA	ING WEST ON MAIN ROAD.V1 TRAVE ICOMING V2 PARTIALLY DUE TO LOW ND ON CAR AND THEN FALL TO FLOG OF V1 SUSTAINING SERIOUS INUITY	LLING H V SUN. V OR AS A RF	EAST BUT CO /2 WAS UNA	DMMENCED TURNING F BLE TO AVOID V1 AND	STRUCK TH	E SOUT E NEAR JT DAM	H. V SID	V1 F )E C E	FAILED TO CAUSING



Details of P	ersonal Injury Accidents for Period - 01/1	0/2018	to 30/0	9/2023 (60) months		
Selection:			Notes:			
Selected us	ing Pre-defined Ouery : : Refined using Accide	ents	1100000			
within sele	eted Polygons -Sussex - 2021 consultant report.	s				
("scamps h	ill (A H ASS)")					
			Vehicles			Casualties
Police Ref.	Day Location Description	Veh No	o / Type / Mar	w / Dir / Class		Sex / Age / Sev
Road No.	Date					
2nd Road No.	Time					
Grid Ref.	D/L					
	R.S.C					
	Weather					
	Speed					
	Account of					
	Accident					
Causation Fac	tor:					
471901533	Thursday B2111 SCAMPS HILL LINDFIELD 55N	/ Veh 1	Car	Going ahead LH bend	NW <sup>to</sup> E Dri	F 68 Slight
D1. D 2111	21/03/2019 WEST OF U GRAVELYE LANE	Veh 2	Goods < 3.5t	Parked	0 to 0	
KI: B 2111	1525nrs Devlichtestreet lighte present					
F 535 090	Dayngm:street lights present					
E 555,060	Fine without high winds					
124,829	20 mph					
	50 mpi			D	C	
Causation Fact	or:		Participant:	Confidence:		
1st: Loss of	st: Loss of control				Very Likely	
	VEHICLE ONE TRAVELLING SOUTHBOUND ON SO	CAMPS H	IILL. VEHICL	E TWO IS PARKED ANI	UNOCCUPIED O	N THE GRASS VERGE
	TO THE SIDE OF THE NORTHBOUND CARRIAGEW THE ONCOMING CARRIAGEWAY, COLUDING WI	AY. VEI FH	HICLE ONE N	IISJUDGES THE SLIGHT	LEFT HAND BEN	D AND ENDS UP ON
	THE REAR NEARSIDE BUMPER OF VEHICLE TWO.	. CAUSE	ED SIGNIFICA	NT BONNET DAMAGE	TO VEHICLE ONE	E, AIRBAGS NOT
	DEPLOYED.					
471901748	Tuesday B2028 LINDFIELD AT JUNCTION OF	Veh 1	Car	Turning right	SE to NE	
D1. D 2029	02/04/2019 B2111	Veh 2	Pedal cycle	Going ahead	NE to SW Dri	M 44 Serious
R1: B 2028	1245 firs					
F 534 692	Wet/Damp					
E 554,062	Paining without high winds					
123,301	30 mph					
Caucation Fact				Participant:	Confidence:	
Lata Failed				Casualty 1	Voru Libolu	
ist. Paneo	VEHICLE 2 HAS DEEN DIDING DOWN THE MAIN D			Casually I	VELY LIKELY	
	SEEN VEHICLE 1 AND HAS RIDDEN INTO VEHICL	E 1.	CHICLE I HA	BEEN FULLING OUT	or a junction.	ENICLE 2 HAS NOT
471902505	Thursday A272 LEWES RD HAYWARDS HEAT	H Veh 1	Car	Turning right	N to W Dri	M 40 Slight
	16/05/2019 AT JUNCTION OF B2111 BEDALES	Veh 2	Car	Going ahead	W to E Dri	M 33 Slight
KI: A 272	0631hrs HILL OUTSIDE BEDALES CORNER					
K2: B 2111	Daylight:street lights present					
Е 535,952	Dry					
N 123,705	Fine without high winds					
	60 mph					
Causation Fact	Dr:			Participant:	Confidence:	
1st: Failed	to look properly			Vehicle 1	Very Likely	
	VEH 1 PULLED OUT OF 2ND ROAD TURNED RIGH	Γ ΙΝΤΟ Τ	THE PATH OF	VEH 2 A COLLISION O	CCURRED AND V	EH 2 OVERTURNED.



Details of Pe	ersonal Injury Accidents for Period - 01/1	0/2018	to 30/09	/2023 (60) months			
Selection: Selected usi	ing Pre-defined Query : ; Refined using Accide	nts	Notes:				
within selec	eted Polygons -Sussex - 2021 consultant reports						
("scamps hi	II (A H ASS)")		Vehicles			Casualt	ies
Police Ref. Road No. 2nd Road No. Grid Ref.	Day Location Description Date Time D/L	Veh No	9 / Type / Manv	/ Dir / Class		Sex / A	ge / Sev
	R.S.C Weather Speed Account of Accident						
Causation Fact	tor:						
471902559 R1: B 2111 E 535,804 N 124,227	Saturday B2111 SCAYNES ROAD HAYWARDS 18/05/2019 HEATH 50M NORTH OF U 2351hrs SNOWDROP LANE Darkness: no street lighting Wet/Damp Fine without high winds 40 mph	Veh 1	Car	Going ahead RH bend	N <sup>to</sup> SW FSP	M 2	0 Slight
Causation Facto	r:			Participant:	Confidence:		
1st: Loss of 2nd: Inexper	f control rienced or learner driver/rider VHC1 HAS BEEN DRIVING ALONG EAST MASCALI THE ROAD ON THE BEND. VHC1 HAS OVERCORRE OFFSIDE CAUSING A SKID. VEHICLE HAS THEN S RUCK A TREE ON THE OFFSIDE EMBANKMENT TO	LS LANE ECTED S F ) THE RE	SOUTHBOUN FRIKING THE EAR OFFSIDE 1	Vehicle 1 Vehicle 1 ID. IT HAS JOINED B21 NEARSIDE EMBANKM DOOR.	Very Likely Very Likely 11 SOUTH AND IENT AND HAS	HAS FAI SWERVE	LED TO FOLLC D TO THE
470881913 R1: B 2111 E 534,730 N 125,336	Thursday LEWES ROAD (B2111) - 60 METRES 26/09/2019 FROM JUNCTION WITH CHALONER 1000hrs ROAD Daylight:street lights present Wet/Damp Raining without high winds 30 mph	Veh 1	Car	Going ahead	NW <sup>to</sup> SE Ped	М	Slight
	VEH 1 TRAVELLING SOUTH EAST WHEN IT COLLI	DED WI	ΓΗ PEDESTRIA	AN ON PAVEMENT TR	AVELLING NOR	TH WEST	Γ
19906915 R1: A 272	Friday LEWES ROAD (A272) - 22 METRES 06/12/2019 FROM JUNCTION WITH 1800hrs UNCLASSIFIED ROAD	Veh 1	Car	Going ahead RH bend	SW to SE Dri	F 8	4 Slight
E 535,985	Wet/Damp						
N 123,685	Fine without high winds 50 mph						
Causation Facto	r:			Participant:	Confidence:		
1st: Swerve	ed			Vehicle 1	Very Likely		
2nd: Illness	or disability, mental or physical VEHICLE 1 TRAVELLING EAST ON A272 FOLLOWE WHERE IT WAS THEN WITNESSED TO VEER TO OI ROLLED ONTO OFFSIDE, MECHANICALLY TRA PPING SINGLE OCCUPANT ELDERLY PROMISED OF	ED BY M FFSIDE A VER.	EMBERS OF P ND THEN NE.	Vehicle 1 UBLIC. VEHICLE PASS ARSIDE. VEHICLE 1 M	Possible ED JUNCTION C OUNTED NEARS	OF B2111 SIDE VER	TO NEARSIDE GE AND



Details of l	Personal Injury Accidents for Period - 01/10/201	8 to 30/0	<b>9/2023</b> (60) months		
Selection: Selected u	using Pre-defined Query : ; Refined using Accidents	Notes:			
within selection ("scamps l	ected Polygons -Sussex - 2021 consultant reports hill (A H ASS)")				
Police Ref. Road No. 2nd Road No. Grid Ref.	Day Location Description Veh Date Time D/L R.S.C Weather Speed Account of Accident	Vehicles No / Type / Mar	ıv / Dir / Class		Casualties Sex / Age / Sev
Causation Fa	netor:				
20932437 R1: A 272 R2: B 2111 E 535,925 N 123,700	Thursday LEWES ROAD (A272) AT JUNCTION Veh 20/02/2020 WITH SCAYNES HILL ROAD (B2111) Veh 1410hrs Daylight:street lights present Wet/Damp Raining without high winds	1 Car 2 Car	Going ahead RH bend Turning right	SW to SE SE to N FSP	M 32 Slight
~	50 mph		Participant:	Confidence	
Causation Fac	ctor: d to look properly d to judge other persons path or speed V1 WAS TRAVELLING ON LEWEST ROAD A272 FROM WI THE JUNCTION OF B2111 ACCROSS THE PATH OF V1 CAU ROLL ONTO ITS SIDE. IT IS UNK NOWN WHY V2 DID NOT SEE AND GIVE WAY TO V1.	EST TO EAST. V USING V1 TO C	Vehicle 2 Vehicle 2 V2 WAS TRAVELLING F COLLIDE WITH THE NEA	Very Likely Very Likely ROM EAST TO WI AR SIDE OF V2. TH	EST. V2 TURNED INTO IIS CAUSED V2 TO
20967937 R1: B 2111 R2: U E 535,049 N 124,868	Monday SCAYNES HILL ROAD (B2111) AT Veh 20/07/2020 JUNCTION WITH GRAVELYE LANE Veh 1600 <sup>hrs</sup> Daylight:street lights present Dry Fine without high winds 30 mph	1 Pedal cycle 2 Car	Going ahead Wait to turn right	NW <sup>to</sup> SE Dri NW <sup>to</sup> SW	M 14 Slight
Causation Fac	tor:		Participant:	Confidence:	
1st: Faile 2nd: Carel	d to look properly less/Reckless/In a hurry V2 (CAR) TRAVELLING SE ON ROAD, OVERTAKES V1 (C OPPORTUNITY TO COMPLETE THE TURN, V1 COLLIDES RIDER OF V1	YCLE), V2 IND WITH V2 CAUS	Vehicle 1 Vehicle 1 ICATES R AND COMES SING DAMAGE TO BOT	Very Likely Very Likely TO A HALT WAIT H VEHICLES AND	ING FOR AN INJURY TO THE



Detai	ls of Per	sonal Injur	y Accidents for Period - 01/10	/2018	to 30/09/	2023 (60) m	onths	
Selec	tion:				Notes:			
Selec	ted usir	ng Pre-defin	ned Ouery : ; Refined using Acciden	its				
withi	n select	ed Polygor	ns -Sussex - 2021 consultant reports-					
("sca	mps hil	I (A H ASS	5)")					
					Vehicles			Casualties
Police I	Ref.	Day	Location Description	Veh No	/ Type / Manv	/ Dir / Class		Sex / Age / Sev
Road N	0	Date						
2nd Roa	o. 1d No.	Time						
Grid R	ef.	D/L						
		R.S.C						
		Weather						
		Speed						
		Account of						
		Accident						
Causat	ion Facto	r:						
					<i>a</i>		0 4- 0	
209789	02	Tuesday	LEWES ROAD (B2111) - 40 METRES	Veh I	Car	Parked		
R1·B	2111	08/09/2020	LANE	Veh 2	Car	Stopping	NWto SE	
		Davlight:s	treet lights present	Veh 3	M/C < 125 cc	Going anead	NW to SE Dri	M 19 Slight
E 534,	979	Dry	o r					
N 124,	987	Fine witho	out high winds					
		30 mph	-					
Causati	on Factor	:				Participant:	Confidence:	
1st:	Vehicle	door opened of	or closed negligently			Vehicle 1	Possible	
2nd:	Sudden	braking				Vehicle 2	Possible	
3rd:	Followir	ng too close				Vehicle 3		
	١	EHICLE 1 V	VAS PARKED IN LAY BY ON LEWES RC	AD LIN	DFIELD. VEH	ICLE 2 AND 3 W	WERE BOTH TRAVELLIN	G FROM WEST TO
	E	EAST ON TH	IS ROAD. OWNER OF VEHICLE 1 WAS	SAT IN	HIS DRIVERS S	SEAT. HE LOOP	KED, THEN OPENED HIS	DRIVERS SIDE DOOR.
	ŀ	E SUDDEN	D VEHICLE 2 TO BRA LY. VEHICLE 3 COLLIDED WITH THE R	EAR OF	VEHICLE 2. F	RIDER OF VEHI	CLE 3 SUSTAINED MINC	R GRAZES / CUTS TO
	ŀ	KNEES LEGS	WHERE HE FELL OFF.					
209807	73	Sunday	LEWES ROAD (A272) AT JUNCTION	Veh 1	Car	Turning right	E to N	
D1 4	272	13/09/2020	WITH SCAYNES HILL ROAD (B2111)	Veh 2	$M/C > 500 \ cc$	Going ahead	W to E Dri	M 60 Serious
KI: A D2. D	212	1502nrs Dauliahtus	tungt lights purgent					
E 535	2111 025	Dayingin.s	ueet lights present					
N 123	5 <u>45</u> 698	Fine witho	ut high winds					
123,	070	50 mph						
Conset	on Eastan					Particinant:	Confidence:	
Causau	on ractor					<b>F</b>		
1st:	Careless	/Reckless/In a	a hurry			Vehicle I	Very Likely	
2nd:	Failed to	Judge other p	Dersons path of speed	יתם א רווא		venicie I	Very Likely	
	I	DV1 STATES	SHE SAW THE MOTORCYCLES APPRO	ACHIN	G AND COMPL	ETELY MISS J	UDGED THE SPEED AND	THOUGHT THERE
	Ī	WAS ENOUC	H TIME TO TURN AND HOWEVER THIS	5				
	N C	VAS CLEAR	LY NOT THE CASE. DV1 HAS TURNED I	RIGHT A	AND CROSS TH	HE BIKERS DV2	2 PATH WHO WAS UNAB	LE TO AVOID THE
	(	OF THE CEN	TRAL ISLAND	JUVER	THE FOR OF I	THE CAR LAND	UNG ON THE KOAD SUK	ACE THE OTHER SID



Details of P	ersonal Injury Accidents for	Period - 01/10/	2018	to 30/0	9/2023	(60) months			
Selection:				Notes:					
Selected us	sing Pre-defined Query : ; Re	efined using Accident	S						
within sele	eted Polygons -Sussex - 202	1 consultant reports							
("scamps h	ill (A H ASS)")			Vahialas				Cocuolti	
Police Ref	Day Location Description	n	Veh No	/ Type / Ma	nv / Dir /	Class		Sex / Ag	e / Sev
I once Kei.	Date Document Desemption		V CHI I VO	/ 1ypc / 1via		01033		BEX / Mg	e / 5ev
Road No.	Time								
Grid Ref.	D/L								
	R.S.C								
	Weather								
	Speed								
	Account of Accident								
Causation Fac	tor:								
201006295	Friday GRAVELYE LA	NE - 21 METRES FROM	Veh 1	Car	Turnir	ig left	SE to SW RSP	F 14	Serious
R1: U	11/12/2020 JOINE HOIN WIT	III MEADOW DRIVE	Veh I	Car	Turnir	ng left	SE to SW RSP	м 9	Slight
	Darkness: street lights present	t	ven 2	Car	Going	anead	SW 10 NE		
E 535,033	Wet/Damp								
N 124,837	Fine without high winds								
	30 mph								
Causation Fact	or:				Particip	ant:	Confidence:		
1st: Loss of	of control				Vehicle	1	Very Likely		
	V1 TRAVELING WB ON B2111 OF CARRIAGEWAY STRIKING	I AND TURNED LEFT O G V2.	NTO GI	RAVELYE L	ANE WHE	EN ENTERING T	HIS ROAD HAS E	NTEREE	OTHERWISE
211023706	Saturday LEWES ROAD	(B2111) - 53 METRES	Veh 1	Car	Going	ahead	SE to NW Ped	F 54	Slight
D1 D 4111	20/02/2021 FROM JUNCTIO	ON WITH GRAVELYE							
RI: B 2111	1520hrs Einite Dauliahtistraat lights present								
E 535 018	Dayngm:street fights present								
N 124 915	Fine without high winds								
	30 mph								
Causation Fact	or:				Particip	ant:	Confidence:		
1st: Carele	ss/Reckless/In a hurry				Vehicle	1	Possible		
	C1 WAS STOOD AT THE SIDE WERE WALKING BY WITH TI SIDE. V1S VRM WAS NOT OB ORRECTLY AS C1 WAS UNAH CCTV OR ANPR CAMERAS IN	OF THE ROAD (IN THE HEIR DOG. VI TRAVELI TAINED C 3LE TO TAKE IT DOWN I THE AREA.	ROAD LING N , AND H	) WITH HER W TOWARD HAVE HAD I	BIKE BES S LINDFI NO TRACI	SIDE HER. SHE ELD CAME BY E ON PNC WITH	WAS TALKING T AND CLIPPED C1 I WHAT SHE COU	O A FAM ON HEF ILD REM	IILY WHO R RIGHT UPPE IEMBER. NO



Deta	ils of I	Personal Inju	ry Accidents for Period - 01/1	0/2018	to 30/	<b>09/2023</b> (60) months				
Selec	ction:				Notes:					
Sele	cted u	sing Pre-defi	ned Query : ; Refined using Accide	nts						
with	<del>in sek</del>	ected Polygo	ns -Sussex - 2021 consultant reports	3						
("sca	amps l	hill (A H AS	S)")					~		
		5			Vehicles			C	asualtie	es
Police	Ref.	Day	Location Description	Veh No	o / Type / Ma	anv / Dir / Class		Se	ex / Age	e / Sev
Road N	lo.	Time								
2nd Ro	ad No.	D/I								
Gria K	lei.	D/L PSC								
		K.S.C Weather								
		Speed								
		Speed								
		Account of								
~		Accident								
Causa	tion Fa	ctor:								
211063	8811	Wednesda	W SCAYNES HILL ROAD (B2111) NEAR	R Veh 1	Car	Going ahead	W to SE	Dri F	75	Slight
		07/07/202	JUNCTION WITH LEWES ROAD	Veh 2	Car	Turning right	SE to N	Dri F	57	Serious
R1: B	2111	1005hrs	(A272)	Veh 3	Car	Wait go ahead held up	N to W			
R2: A	272	Daylight:	street lights present			•				
E 535	,938	Wet/Dam	р							
N 123	,701	Fine with	out high winds							
		50 mph								
Causati	ion Fac	tor:				Participant:	Confide	nce:		
1st:	Carel	ess/Reckless/In	a hurry			Vehicle 2	Very Lil	cely		
2nd:	Illnes	s or disability, n	nental or physical			Vehicle 2	Very Lil	kely		
		V1 WAS TR	AVELLING FROM THE WEST ALONG L	EWES R	OAD A272 1	O THE EAST TOWARDS	LEWES. V2	WAS TRA	AVELI	LING IN THE
		JUNCTION (	FIRECTION ALONG LEWES ROAD A272 OF THE B2111 INTENDING TO	AND IN	TENDED TO	TURN RIGHT TOWARD	S B2111. V3 V	VAS STA	TION	ARY AT THE
		TURN RIGH	T ONTO THE A272 TOWARDS HAYWAI	RDS HEA	TH. V2 TUR	NED RIGHT INTO THE J	UNCTION W	ITHOUT	SLOW	VING OR
		STOPPING A	ND SUBSEQUENTLY COLLIDED WITH	I V1 WHO	O HAD NO C	CHANCE TO SLOW DOWN	N. V2 HAS TH	IEN BEE	N PUS	SHED ALONC
		AS STATION	JARY AT THE JUNCTION. DRIVER OF V	/2 APPE/	ARS TO BE A	AT FAULT. SHE HAS NO	RECOLLECT	ION OF I	INCID	ENT AND
		CAUSE OF I	NCIDENT IS LIKELY POOR OBSERVAT	ION ANI	O AWARENI	ESS. V1 HAD EXTENSIVE	DAMAGE T	O NEAR	SIDE /	AND FRONT
		BUMPER, V2	2 HAD EXTENSIVE DAMAGE TO N D FRONT BUMPER V3 HAD LITTLE TO		MAGE TO FI	ONT DRIVER BUMPER				
211073	3270	Tuesday	LEWES ROAD (A272) AT HINCTION	Veh 1	Car	Turning right	N to SW	FSP N	1 79	Slight
/		03/08/202	WITH BEDALES HILL (B2111)	Veh 2	Car	Going ahead	SW to SE	14	- 17	2
R1: A	272	1640hrs		2						
R2: B	2111	Daylight:	street lights present							
E 535	,936	Dry								
N 123	,698	Fine with	out high winds							
		50 mph								
Causati	ion Fac	tor:				Participant:	Confide	nce:		
1st:	Faile	d to look proper	y			Vehicle 1	Very Lil	kely		
		VEHICLE 1 PULLED INT	WAS AT THE JUNCTION OF BEDALES I TO THEIR PATH.	HILL WI	ГН А272. VE	HICLE 2 HAS CONTINUE	ED ALONG A	272 AND	VEHI	ICLE 1 HAS



Details of P	ersonal Injur	y Accidents for Period -	01/10/2018	to 30/09	/2023 (60) months		
Selection:				Notes:			
Selected us	sing Pre-defir	ned Query : ; Refined using Ac	cidents				
within sele	eted Polygon	s -Sussex - 2021 consultant rep	orts				
("scamps h	ill (A H ASS	)")		Vehicles			Casualties
Police Ref.	Day	Location Description	Veh No	/ Type / Manv	/ Dir / Class		Sex / Age / Sev
Road No.	Date						
2nd Road No.	Time						
Grid Ref.	D/L RSC						
	Weather						
	Speed						
	Account of						
	Accident						
Causation Fac	tor:						
211106185	Thursday	SCAVNES HILL ROAD (B2111)	JEAR Veh 1	Car	Turning right	SF to N	
211100100	04/11/2021	JUNCTION WITH LEWES ROAD	Veh 2	Car	Going ahead RH bend	SW to SE Dri	M 35 Slight
R1: B 2111	1825hrs	(A272)			0		C
R2: A 272	Darkness:	no street lighting					
E 535,927 N 123 706	Diy Fine witho	ut high winds					
123,700	50 mph	ut nigh winds					
Causation Fact	or:				Participant:	Confidence:	
1st: Failed	to look properly	1			Vehicle 2	Possible	
1500 1 41104	VEHICLE 2 W	AS TRAVELLING ALONG THE LE	EWES ROAD F	ROM WEST T	O EAST. VEHICLE 1 V	WAS TRAVELLING	G ALONG THE SAME
	ROAD IN TH	E OPPOSITE DIRECTION FROM EA	AST TO WEST	. VEHICLE 1	HAS THEN STARTED	TO TURN RIGHT	ONTO BEDALES HILL
	ROAD, VEHIO	CLE 1 HAS THEN STRUCK OFFSIDE WING OF VEHICLE 2 WI	TH ITS FRON	r offside wi	NG. BOTH VEHICLE	E HAVE STOPPED	IN THE ROAD BEFORE
	BEING MOVE	ED ONTO BEDALES HILL ROAD.	POLICE ARRI	VED AROUNI	0 20 MINUTES LATER		
221187318	Monday	SCAVNES HILL DOAD (P2111)	Vab 1	Goods > 7.5t	Going aboad	S to N	
221107510	06/06/2022	LINDFIELD, WEST SUSSEX	Veh 2	M/C > 500 cc	Going ahead	S <sup>to</sup> N Dri	M 46 Serious
R1: B 2111	1425hrs				8		
	Daylight:st	reet lights present					
E 535,936	Dry Eine withe	ut high winds					
N 123,782	40 mph	ut nigh winds					
Causation Fact	or:				Participant:	Confidence:	
1st: Failed	to look properly	7			Vehicle 2	Possible	
	VEHICLE 1 W	AS A HGV TRAVELLING THROU	GH BEDALES	HILL B2111 V	VHEN THE TOP OF TH	E VEHICLE HIT A	N OVERHANGING
	BRANCH CA	USING THIS BRANCH TO FALL O'	VER. VEHIC	CLE 2 IS A MO	TORBIKE TRAVELLIN	NG BEHIND VEHIO	CLE 1 AND WAS HIT BY
	HE RIDER OF	FHIS BIKE.					
221187652	Sunday	LEWES ROAD (A272) - 45 METR	ES Veh 1	Car	Going ahead RH bend	SW to E	
D1 4 050	12/06/2022	FROM JUNCTION WITH SCAYN	ES Veh 2	Pedal cycle	Going ahead	SW to E Dri	M 60 Slight
KI: A 2/2	1600nrs Davlight:st	reet lights present	nee,				
E 535,880	Dry	reet ngmo present					
N 123,692	Fine witho	ut high winds					
	50 mph						
<b>Causation Fact</b>	or:				Participant:	Confidence:	
1st: Carele	ss/Reckless/In a	hurry			Vehicle 1	Very Likely	
	V2 CYCLING	ALONG LEWES ROAD TOWARDS	SHAYWARDS	HEATH WHE	EN V1 HAS COLLIDED	WITH THE NEAR	SIDE OF V2 CAUSING
	DETAILS.	TO FALL OFF CAUSING INJURY.	v1 010 010	ALITILEFU	UNTITER ALOING THE	NUAD BUT DID N	JI EAUTANGE AN Y



Details of P	ersonal Injur	y Accidents for Period - 01/10	0/2018	to 30/0	<b>9/2023</b> (6	0) months		
Selection: Selected us within select	sing Pre-defin	ned Query : ; Refined using Accident s -Sussex - 2021 consultant reports	nts	Notes:				
("scamps h	ill (A H ASS	)")		Vehicles				Casualties
Police Ref. Road No. 2nd Road No. Grid Ref.	Day Date Time D/L R.S.C Weather Speed Account of Accident	Location Description	Veh No	) / Type / Mar	ıv / Dir / Cla	SS		Casuantes Sex / Age / Sev
Causation Fac	ctor:							
221191363 R1: B 2111 E 534,696 N 125,368	Thursday 23/06/2022 1705hrs Daylight:st Dry Fine witho	LEWES ROAD (B2111) - 25 METRES FROM JUNCTION WITH HIGH STREET (B2028), LINDFIELD, WEST reet lights present ut high winds	Veh 1	Car	Going and	ead	NW <sup>to</sup> SE Ped	M 54 Slight
	30 mph							
Causation Factor	or:				Participant	:	Confidence:	
1st: Failed 2nd: Failed	to judge vehicle to judge other p PEDESTRIAN TOWARDS P LEFT LOWER	es path or speed ersons path or speed 1 WALKING ALONG LEWES ROAD TO EDESTRIAN 1 WHO THEN STEPPED TO 2 ARM.	OWARD THE KI	S LINDFIELD ERB SIDE OF	Casualty 1 Vehicle 1 HIGH STRE THE PAVEM	ET, ANOTH IENT. A CAF	Very Likely Very Likely IER PEDESTRIAN WING MIRROR	I WAS WALKING STRUCK PEDESTRI
221192579 R1: B 2111 R2: U E 534,900 N 125,102	Saturday 25/06/2022 1113hrs Daylight:st Dry Fine witho 30 mph	LEWES ROAD (B2111) AT JUNCTION WITH EASTERN ROAD, LINDFIELD, WEST SUSSEX reet lights present ut high winds	Veh 1 Veh 2	Car Pedal cycle	Wait to tu Going aho	ırn right ead	SE <sup>to</sup> NE NW <sup>to</sup> SE Dri	M 39 Slight
Causation Fact	or:				Participant	:	Confidence:	
1st: Carele	ss/Reckless/In a V1 TRAVELL RIGHT. V1 CONFIRMED . INITIALLY	hurry ING NORTH WEST ON LEWES ROAD E HAS MOVED OFF TO TURN INTO EAST BY WITNESS ACCOUNT TAKEN FHOUGHT OF A SERIOUS INJURY BUT	32111 AN TERN RC THAS BE	ND HAS STOI DAD AND NO EEN CONFIRI	Vehicle 1 PPED AT JUN T SEEN V2 ( MED AS A M	NCTION OF E CYCLIST AN	Very Likely CASTERN ROAD ' D HAS COLLIDE Y RTC.	WAITING TO TURN D CAUSING INJURY
221207089 R1: B 2111 R2: B 2028 E 534,693 N 125,373	Monday 08/08/2022 1000hrs Daylight:st Dry Fine witho 30 mph	LEWES ROAD (B2111) NEAR JUNCTION WITH HIGH STREET (B2028), LINDFIELD, WEST SUSSEX reet lights present ut high winds	Veh 1	Car	Going and	ead	N <sup>to</sup> SE Ped	M 69 Slight

V1 MOUNTED FOOTPATH HITTING PEDESTRIAN



#### Details of Personal Injury Accidents for Period -01/10/2018 to 30/09/2023 (60) months Selection: Notes: Selected using Pre-defined Query : ; Refined using Accidents within selected Polygons -Sussex - 2021 consultant reports ("scamps hill (A H ASS)") Vehicles Casualties Police Ref. Day Location Description Veh No / Type / Manv / Dir / Class Sex / Age / Sev Date Road No. 2nd Road No. Time D/L Grid Ref. R.S.C Weather Speed Account of Accident **Causation Factor:** 221213979 LEWES ROAD (A272) AT JUNCTION Wait to turn right N to SW Veh 1 Car Saturday WITH SCAYNES HILL ROAD (B2111), Veh 2 Pedal cycle 27/08/2022 Going ahead RH bend SW to SE Dri M 42 Slight SCAYNES HILL, WEST SUSSEX R1: A 272 1000hrs R2: B 2111 Daylight:street lights present E 535,935 Dry N 123,697 Fine without high winds 30 mph V2 CYCLING EASTBOUND ON A272, V1 DRIVING WESTBOUND AND STOPPED AT THE GIVE WAY TURN, AS V2 APPROACHED THE VEHICLE, V1 PULLED OUT IN FRONT OF V2. Wednesday HIGH STREET (B2028) AT JUNCTION Veh 1 Car 231314313 SE to N Turning right 31/05/2023 WITH LEWES ROAD (B2111), Veh 2 Pedal cycle Turning right S to SE Dri M 50 Slight LINDFIELD, WEST SUSSEX R1: B 2028 1520hrs R2: B 2111 Daylight:street lights present Dry E 534,678 N 125,381 Fine without high winds 30 mph **Participant: Confidence: Causation Factor:** 1st: Vehicle blind spot Vehicle 1 Possible

CYCLIST V2 APPROACHED JUNCTION FROM THE SOUTH HEADING NORTH AND ATTEMPTED TO TURN RIGHT OFF LINDFIELD HIGH STREET INTO LEWES ROAD. V1 HAS ENTERED JUNCTION FROM EAST ON LEWES ROAD AND WENT TO TURN RIGHT WITHOUT SEEING CYCLIST. CYCLIST HAS MADE CON TACT WITH FRONT OFF SIDE OF V1

231318167	Tuesday	HIGH STREET (B2028) AT JUNCTION	Veh 1	Car	Parked	0	to 0				
R1: B 2028	13/06/2023 1045hrs	WITH DENMANS LANE, LINDFIELD, WEST SUSSEX	Veh 2	Car	Going ahead	Ν	to S	Dri	F	74	Slight
<b>R2: U</b>	Daylight:str	eet lights present									
E 534,687	Dry										
N 125,416	Fine withou	t high winds									
	30 mph										
Causation Factor:				:	Participant:		Confid	ence:			
1st: Careless/F	eckless/In a	hurry			Vehicle 1		Very L	ikely			
VI	EHICLE 2 M	OVING SLOWLY IN TRAFFIC AFTER M	IOVING	THROUGH TE	MPORARY TRAFFIC I	JGF	ITS ON	LINDF	IELD	HIC	GH STREET A
TH	E JUNCTIO	N OF DENMANS LANE TRAVELLING S	SOUTH	FOWARDS HA	YWARDS HEATH. VE	HIC	LE 1 H.	AS BEE	N PA	RKI	ED
Ur	NOCCUPIED	ON DENMANS LANE. HANDBRAK	EU								

DEPLOYED OF VEHICLE 2.



Details of P	ersonal Injury	Accidents for Period - 01/10	)/2018	to 30/09	/2023 (60) months						
Selection:				Notes:							
Selected us	ing Pre-define	ed Query : ; Refined using Acciden	nts								
within sele	eted Polygons	-Sussex - 2021 consultant reports									
("scamps h	ill (A H ASS)'	")									
				Vehicles					Casu	alties	
Police Ref.	Day L	location Description	Veh No	/ Type / Many	/ Dir / Class				Sex /	Age /	Sev
Pood No	Date										
2nd Road No.	Time										
Grid Ref.	D/L										
	R.S.C										
	Weather										
	Speed										
	Account of										
	Accident										
Causation Fac	tor:										
231345584	Friday	LEWES ROAD (A272) NEAR	Veh 1	Car	Turning right	Ν	to W	Dri	F	32	Slight
	25/08/2023	JUNCTION WITH SCAYNES HILL	Veh 2	Car	Going ahead RH bend	SW	to SE	Dri	М	28	Slight
R1: A 272	1620hrs	ROAD (B2111), SCAYNES HILL, WEST									
R2: B 2111	Daylight:stre	eet lights present									
E 535,932	Dry										
N 123,700	Fine without	t high winds									
	50 mph										
<b>Causation Fact</b>	or:				Participant:		Confid	ence:			
1st: Failed	to judge other per	rsons path or speed			Vehicle 1		Very L	ikely			
	VEHICLE 1 WA	AS TRAVELLING UP BEDALES HILL T	OWARE	S THE JUNCI	TION OF THE A272. VEI	HICL	E 2 WA	AS TRA	VELI	LING	ON THE A21
	FROM HAYWA	ARDS HEATH TOWARDS DIRECTION (	OF SCA	YNES HILL. V	EHICLE 1 HAS PULLEI	OU	T OF J	UNCTI	ON TO	O TU	RN RIGHT
	NG THE COLLI	ISION									
231347771	Friday	HIGH STREET (B2028) - 41 METRES	Veh 1	Car	Starting	S	to N				
20104///1	01/09/2023	FROM JUNCTION WITH DENMANS	Veh 2	M/C > 125 cc	Starting	s	to N	Dri	м	18	Serious
R1: B 2028	2030hrs	LANE, LINDFIELD, WEST SUSSEX	VCII 2	WI/C > 125 CC	Starting	5		DII	101	10	Serious
	Darkness: str	reet lights present									
E 534,691	Dry										
N 125,455	Fine without	t high winds									
	30 mph										
Causation Fact	or:				Participant:		Confid	ence:			
1et. Impoi	ad by alcohol				Vahiela 1		VoruI	ikalu			
isi. mpan		VED & CALL AT 21001DS ON 18T SET		ם 2022 דיר הדי		OTT	DDD	The W	יי דסד		NCEDOD
	SCENE BY THE MOTORBIKE.	E TIME OFFICERS ARRIVED. V1 REP	ORTED	K 2023 TO REL TO HAVE BEH	EN PARKED IN BUS ST	OP A	ND PU	LLED	OUT I	INTO	PATH OF V

## B Stage 1 Road Safety Audit & Designer's Response

CD1.6

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CD1.6

Land off Scamps Hill, Lindfield

## **Designers Response Report**

Report prepared for Gladman Developments Ltd

February 2024

Report Reference 1723/4/A





## Designer's Response Report

### Land off Scamps Hill, Walstead Grange, Lindfield

Client: Gladman Developments Ltd

Report Ref: 1723/4/A

Status: Final

Date: February 2024

### Ashley Helme Associates Ltd

76 Washway Road SALE, Manchester M33 7RE

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## Designer's Response Report

## Land off Scamps Hill, Lindfield

Chapter					
1	Introduction	1			
2	Items Raised by RSA and Designer's Response	3			
3	Summary & Conclusions	5			

### Appendices

- A Meraki Alliance RSA Report
- B Drg No 1723/08
- C Drg No 1723/08/A
- D RSA Decision Log and Statements



### 1 Introduction

1.1 Ashley Helme Associates Ltd (AHA) are appointed by Gladman Developments Ltd to prepare a Designer's Response Report to the Stage 1 Road Safety Audit (RSA) that has been undertaken for the proposed Site access junction on Scamps Hill, Walstead Grange, Lindfield.

### 1.2 Scheme Details

- 1.2.1 This Designer's Response Report has been prepared following an independent Stage 1 RSA of the works proposed on **Drg No 1723/08** (refer Appendix B).
- 1.2.2 The scheme shown on Drg No 1723/08 comprises:
  - (i) Introduce new Site Access, forming a 'T' junction with Scamps Hill;
  - (ii) Junction to operate under priority control;
  - (iii) Site Access to measure 5.5m wide with 2.0m wide footways;
  - (iv) 6.0m corner radii between the Site access and Scamps Hill;
  - (v) Introduce dropped kerbs and tactile paving on Scamps Hill to the east of the Site access;
  - (vi) Introduce 3.0m wide shared footway/cycleway within the Site between the proposed Site access and a point near the western boundary of the Site;
  - (vii) Provide 2.4m x 120m visibility splay to the left, for vehicles emerging from the Site Access;
  - (viii) Provide 2.4m x101m visibility splay to the right, for vehicles emerging from the Site Access.
- 1.2.3 Documents and plans were provided to the Audit Team and these were examined as part of the audit process. These comprise:
  - (i) Drg No 1723/08: Proposed Access Arrangements,
  - (ii) Transport Assessment report (ref 1723/2), including personal injury collision, traffic and speed data,

### 1.3 Key Personnel

- 1.3.1 The key personnel associated with this RSA are set out below.
  - (i) Overseeing Organisation: West Sussex County Council,
  - (ii) RSA Team:
- Jon Birkett, Meraki Alliance,
- (iii) Design Organisation: Simon Helme, Ashley Helme Associates

Land off Scamps Hill, Walstead Grange, Lindfield



### 1.4 Stage 1 Road Safety Audit

1.4.1 The audit visit was carried out on 28 January 2024 by the following members of the Audit Team:

Jonathan Birkett - IEng, MICE, FIHE, MSoRSA, Holder of Highways England Certificate of Competency Road Safety Audit Team Leader

Gillian Kidd - MIHE Road Safety Audit Team Member

- 1.4.2 The audit was undertaken in accordance with the DfT publication GG 119.
- 1.4.3 A copy of the Stage 1 Road Safety Audit Report is included in Appendix A of this report. AHA has carefully considered the problems and recommendations of the Stage 1 RSA. Chapter 2 of this report includes all of the problems and recommendations raised by the Audit Team, as well as the AHA's response to these issues.
- 1.4.4 The summary and conclusions of the report are presented in Chapter 3. The RSA Decision Log and the Design Organisation and Overseeing Organisation statements is included in Appendix D of the report.



### 2 Identified Issues and Designers Response

### 2.1 **PROBLEM 1-1**

- 2.1.1 Location: Site access and uncontrolled crossing Scamps Hill.
- 2.1.2 Summary: Obstructed visibility will increase the risk of failure to give way and pedestrian/vehicle collisions.
- 2.1.3 Examination of the drawing provided does not clearly show any site clearance. The verge is heavily overgrown (photos). Based on the drawings the existing vegetation will obstruct visibility and as such will increase the risk of failure to give way and pedestrian/vehicle collisions.

### 2.1.4 Recommendation

2.1.4.1 Ensure that all vegetation is removed that can obstruct visibility.

### 2.1.5 **Designer's Response**

2.1.5.1 It is accepted that some hedgerow will need to be removed/relocated near to the Site access to enable the provision of protected visibility splays. However, Drg No 1723/08 demonstrates that the majority of the sightlines are contained to within the grass verge (splay to the right) or the Scamps Hill carriageway (splay to the left) and are unaffected by vegetation.

### 2.2 **PROBLEM 1-2**

- 2.2.1 Location: Pedestrian/cycle access and connection to current footway Scamps Hill.
- 2.2.2 Summary: A lack of safe cycle facilities will increase the risk of cycle/pedestrian collisions and cyclist injuries.
- 2.2.3 It is proposed to create a 3.0m shared use route through the site and connect up to an existing footway to the west of the site access near Gravelye Lane. There does not appear to be any means by which cyclists are directed to rejoin the carriageway. The Audit Team were also concerned that this would result in cyclists travelling westbound on the footway and onto the bridge over the Scrase Stream. The bridge parapet did not seem high enough to safely allow a cyclist to use the footway and ride over the bridge (photos). With the footway being narrow it would seem likely that there could either be a collision between a cyclist and a pedestrian or even due to the narrow width a cyclist could topple over the parapet.

Land off Scamps Hill, Walstead Grange, Lindfield



A lack of safe cycle facilities will increase the risk of cycle/pedestrian collisions and cyclist injuries.

#### 2.2.4 **Recommendation**

2.2.4.1 Either ensure that cyclists can safely rejoin the carriageway or increase the height of the parapet to 1400mm.

### 2.2.5 Designer's Response

2.2.5.1 It is not the intention to encourage cyclists to use the existing footway on the north side of the B2111 and, particularly, the section of footway on the bridge. The scheme will include suitable cycle transition treatment with associated dropped kerbs, tactile paving and signage. An indicative arrangement is shown on **Drg No 1723/08/A** (refer Appendix C). The arrangement can be further considered at Detailed Design stage.



### 3 Summary & Conclusions

- 3.1 This Designer's Response Report has been prepared following an independent Stage 1 Road Safety Audit (RSA) of the works proposed on Drg No 1723/08.
- 3.2 The RSA identified only two problems and provided recommendations to address the issues.
- 3.3 AHA has carefully considered each problem and the recommendations of the Stage 1 Safety Audit Report. Drg No 1723/08/A has been prepared in response to comments about the treatment for cyclists at the western end of the proposed shared footway/cycleway. It is considered that the problems identified in the RSA are capable of being overcome at Detailed Design Stage.
- 3.4 The RSA decision log has been completed and signed by Simon Helme of the Design Organisation (AHA) and by the Overseeing Organisation (West Sussex County Council). The RSA decision log is included in Appendix D.
- 3.5 It is considered that the issues and recommendations identified by the Audit Team has been addressed.

## A RSA Report



## CD1.6

## Residential Development: Scamps Hill, Walstead Grange, Lindfield

## Road Safety Audit: Stage 1

West Sussex County Council County Hall West Street Chichester PO19 1RQ Jonathan Birkett Meraki Alliance Ltd Unit 1 Waterside Old Boston Road Wetherby LS22 5NB Tel:+44 (0) 7966296302

CD1.6



## Residential Development: Scamps Hill, Walstead Grange, Lindfield

## Road Safety Audit: Stage 1

Report Produced for:We<br/>CoReport Produced by:JoinReport Dated:29Report Reference:MARoad Safety Audit Team Leader:Join

West Sussex County Council Jonathan Birkett 29 Jan 2024 MAL/SCLRSA1Rev0 Jonathan Birkett



# Residential Development: Scamps Hill, Walstead Grange, Lindfield

## Road Safety Audit: Stage 1

## **Contents Amendment Record**

This report has been issued & amended as follows:

lssue	Revision	Description	Date	Signed
1	0	Draft Report	28 Jan 2024	JB
1	0	FINAL REPORT	29 Jan 2024	JB/GK

### **Report Circulation Record**

This report has been circulated, as follows:

Person	Organisation	No. of	Date
		Copies	
	West Sussex County Council	Electronic	
Paul Loftus	Ashley Helme	Electronic	29 Jan 2024
Gillian Kidd	Meraki Alliance Ltd	Electronic	29 Jan 2024

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## 1 Introduction

### 1.1 General

This report has been prepared in response to a request to undertake a Stage 1 Road Safety Audit (i.e., carried out prior to detailed design), by Paul Loftus of Ashley Helme Associates on behalf of West Sussex County Council (WSCC). The scheme submitted for Audit is the proposed new development, Scamps Hill, Walstead Grange, Lindfield.

The speed limits of the roads being audited are.

• Scamps Hill 40mph site access and 30mph where the footway link will be provided.

The scope of the proposed highway works includes:

- Construction of a new site access (simple priority junction).
- Footway link to the west towards Lindfield and Gravelye Lane.
- Uncontrolled crossing of site access and Scamps Hill.
- Road markings.

The audit comprised an examination of documents forming the Audit Brief and an examination of the site.

### **1.2** Documents Forming the Brief

The documents were made available to the Road Safety Audit Team by Paul Loftus (Ashley Helme), on behalf of West Sussex County Council.

The total documents forming the Audit Brief are listed in Appendix 1:

Generally, the Brief comprised:

- Drawings.
- Transport Assessment, including collision and traffic data.

### **1.3** Collision, Traffic and Speed Data

Collision data was available as part of the Transport Assessment for the 5-year period up to 30 September 2023. This covered a much wider area than that being examined as part of this Road Safety Audit.

A total of six collisions have been recorded close to the proposed works. All of these collisions were to the west of the proposed access road. Four collisions; two serious and two slight in collision severity occurred at the junction with Gravelye Road.



An extract of the collision plot is shown below.

Traffic data was available as part of the Transport Assessment.

Speed data was available as part of the Transport Assessment and is summarised below:

The recorded 7-day off-peak 85%le speeds are:

- (i) ATC 1: Northbound = 36.4 mph, Southbound = 37.5 mph.
- (ii) ATC 2: Northbound = 41.9 mph, Southbound = 43.1 mph.

A review of the weather records for Lindfield for the survey period (17-23 October 2023) shows that there was rainfall on most days of the survey. Therefore, the survey data reflects wet weather conditions. In accordance with current guidance, the approach adopted is to add 2.5mph to the recorded 85%le speeds. The subsequent Design Speeds are:

- (i) Northbound = 44.4 mph.
- (ii) Southbound = 40.0 mph.

### 1.4 Details of Site Visit

A site inspection was undertaken on 28 January 2024 between 11:00 and 11:45. The RSA team spent 45 minutes on site understanding the proposed works and their interaction with the local road network.

During the site visit, the weather was overcast and dry. No incidents or issues were identified whilst on site. Two pedestrians were observed using the footway along Scamps Hill.

### 1.5 RSA Team and Format

It was considered that the information provided was sufficient for the purpose of carrying out the Road Safety Audit Stage 1 requested.

The Road Safety Audit Team membership approved on behalf of the Highway Authority was:

JONATHAN BIRKETT IENG MICE FIHE Holder of Highways England Certificate of Competency Road Safety Audit Team Leader

G KIDD MIHE Road Safety Audit Team Member

The Road Safety Audit comprised an examination of the documents and drawings supplied to the Road Safety Audit Team (referenced in Appendix 1 of this report). No member of the Road Safety Audit Team has had any previous input to the design of the scheme.

The Terms of Reference are as described in the National Highways Design Manual for Roads and Bridges document GG119 'Road Safety Audit'. The scheme has been examined and this report compiled only with regard to safety implications to road users of the scheme as presented. It has not been verified for compliance with any other Standards or criteria. However, in order to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. However, any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.

Furthermore, any recommendations included within this report should not be regarded as being prescriptive design solution to the problem raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, as stipulated in GG119, and in no way imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which should be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

It is the Project Sponsor's responsibility to ensure that all problems raised by the Road Safety Audit Team are given due consideration.

In the event of a collision and any resulting legal action, Meraki Alliance Ltd would have to defend its actions on the basis that it took such care, as in all circumstances was reasonably required, to ensure that the highway was not dangerous to road users. It is important therefore that recommendations contained in the report are acted upon wherever possible.

### **1.6** Departures or Relaxations from Standards

No Departures or Relaxations from Standard were submitted to the Road Safety Audit Team.

### 1.7 Issues Raised in Previous RSA(s)

No previous RSA stages have been undertaken.

## 2 Items Raised at Stage 1 Road Safety Audit

This section details the findings of this Stage 1 Road Safety Audit. All locations of identified problems are illustrated on the plan included at **Appendix 2**.

### 2.1 RSA Problems

PROBLEM		1-'	1
Location:	Site access and uncontrolled crossing Scamps Hill.		
Summary:	Obstructed visibility will increase the risk of failure to give pedestrian/vehicle collisions.	way a	and

Examination of the drawing provided does not clearly show any site clearance. The verge is heavily overgrown (photos).



Based on the drawings the existing vegetation will obstruct visibility and as such will increase the risk of failure to give way and pedestrian/vehicle collisions.

### RECOMMENDATION

Ensure that all vegetation is removed that can obstruct visibility.

## CD1.6

PROBLEM		1-2
Location:	Pedestrian/cycle access and connection to current footway Sca	mps Hill.
Summary:	A lack of safe cycle facilities will increase the risk of cycle/pe collisions and cyclist injuries.	edestrian

It is proposed to create a 3.0m shared use route through the site and connect up to an existing footway to the west of the site access near Gravelye Lane. There does not appear to be any means by which cyclists are directed to rejoin the carriageway. The Audit Team were also concerned that this would result in cyclists travelling westbound on the footway and onto the bridge over the Scrase Stream. The bridge parapet did not seem high enough to safely allow a cyclist to use the footway and ride over the



bridge (photos). With the footway being narrow it would seem likely that there could either be a collision between a cyclist and a pedestrian or even due to the narrow width a cyclist could topple over the parapet.

A lack of safe cycle facilities will increase the risk of cycle/pedestrian collisions and cyclist injuries.

### RECOMMENDATION

Either ensure that cyclists can safely rejoin the carriageway or increase the height of the parapet to 1400mm.

## END OF PROBLEMS IDENTIFIED AND RECOMMENDATIONS PRESENTED IN THIS STAGE 1 ROAD SAFETY AUDIT

## 3 Audit Team Statement

We certify that this Road Safety Audit has been carried out in accordance with GG119		
ROAD SAFETY AUDIT TEAM LEADER		
NAME:	JONATHAN BIRKETT	
SIGNED:	P310	
POSITION:	DIRECTOR	
ORGANISATION	MERAKI ALLIANCE LTD	
DATE:	29 JAN 2024	
ROAD SAFETY AUDIT TEAM LEADER		
NAME:	GILLIAN KIDD	
SIGNED:	allen Sheet	
POSITION:	AUDIT TEAM MEMBER	
ORGANISATION	MERAKI ALLIANCE LTD	
DATE:	29 JAN 2024	
# Appendix 1 – Audited Drawings and Documents

#### 1723 2 Transport Assessment

1723-08

### Appendix 2 – Problem Location Plan



#### B Drg No 1723/08



C Drg No 1723/08/A



# D RSA Decision Log and Statements

RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
<ol> <li>Site access and uncontrolled crossing Scamps Hill.</li> <li>Obstructed visibility will increase the risk of failure to give way and pedestrian/vehicle collisions.</li> <li>Examination of the drawing provided does not clearly show any site clearance. The verge is heavily overgrown (photos). Based on the drawings the existing vegetation will obstruct visibility and as such will increase the risk of failure to give way and pedestrian/vehicle collisions.</li> </ol>	Ensure that all vegetation is removed that can obstruct visibility.	It is accepted that some hedgerow will need to be removed/relocated near to the Site access to enable the provision of protected visibility splays. However, Drg No 1723/08 demonstrates that the majority of the sightlines are contained to within the grass verge (splay to the right) or the Scamps Hill carriageway (splay to the left) and are unaffected by vegetation.		
<ol> <li>Pedestrian/cycle access and connection to current footway Scamps Hill.</li> <li>A lack of safe cycle facilities will increase the risk of cycle/pedestrian collisions and cyclist injuries.</li> <li>It is proposed to create a 3.0m shared use route through the site and connect up to an existing footway to the west of the site access near Gravelye Lane. There does not appear to be any means by which cyclists are directed to rejoin the carriageway. The Audit Team were also concerned that this would result in cyclists travelling westbound on the footway and onto the bridge over the Scrase Stream. The bridge parapet did not seem high enough to safely allow a cyclist to use the footway and ride over the bridge (photos). With the footway being narrow it would seem</li> </ol>	Either ensure that cyclists can safely rejoin the carriageway or increase the height of the parapet to 1400mm.	It is not the intention to encourage cyclists to use the existing footway on the north side of the B2111 and, particularly, the section of footway on the bridge. The scheme will include suitable cycle transition treatment with associated dropped kerbs, tactile paving and signage. An indicative arrangement is shown on Drg No 1723/08/A. The arrangement can be further considered at Detailed Design stage.		

likely that there could either be a collision between a cyclist and a pedestrian or even due to the narrow width a cyclist could topple over the parapet.		
A lack of safe cycle facilities will increase the risk of cycle/pedestrian collisions and cyclist injuries.		

#### On behalf of the Design Organisation I certify that:

1. the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.

Name:	Simon Helme
Signed:	
Position:	Director
Organisation:	Ashley Helme Associates Ltd
Date:	

On behalf of the Overseeing Organisation I certify that:

1. the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation; and

2. the agreed RSA actions will be progressed.

Name:	
Signed:	
Position:	
Organisation:	West Sussex County Council
Date:	

#### C Traffic Flows















D Technical Note 1A

TECHNICAL FILE NOTE 1A						
Project	Land off Scamps Hill, Walstead Grange, Lindfield			Project No	1723	
Contact		Originator	PL	Date	06/11/23	ASSOCIATES

#### Traffic Growth: TEMPRO 8.1 National Transport Model (NTM)

#### Methodology

Methodology for growthing background traffic from count year (2023) to Development Year of Opening (2029) is to use the National Transport Model (NTM) methodology, using the following criteria:

- Mid Sussex 008 geographical area,
- All purpose car driver trips,
- Area type: All
- Road type: All

#### 2023 to 2029 <Year of Opening>

AM peak period: 1.0677

PM peak period: 1.0671

Average of AM and PM peak period: 1.0674

#### E TRICS Outputs



1/23

Calculation Reference: AUDIT-733101-231110-1128

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL Category : A - HOUSES PRIVATELY OWNED MULTI-MODAL TOTAL VEHICLES

#### Selected regions and areas: 02 SOUTH FAST

02	300	INEASI	
	HC	HAMPSHIRE	1 days
	KC	KENT	2 days
	WB	WEST BERKSHIRE	1 days
	WS	WEST SUSSEX	1 days
03	SOU	TH WEST	
	DV	DEVON	1 days
04	EAS	T ANGLI A	
	NF	NORFOLK	2 days
	SF	SUFFOLK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Actual Range: Range Selected by User:	No of Dwellings 70 to 110 (units: ) 70 to 110 (units: )
Parking Spaces Range:	All Surveys Included
Parking Spaces per Dwellir	ng Range: All Surveys Included
Bedrooms per Dwelling Ra	nge: All Surveys Included
Percentage of dwellings pr	ivately owned: All Surveys Included
Public Transport Provision: Selection by:	- Include all surveys
Date Range: 01/01	/15 to 29/06/23
This data displays the rang included in the trip rate ca	ge of survey dates selected. Only surveys that were conducted within this date range are alculation.
<u>Selected survey days:</u> Monday Tuesday Wednesday Thursday Friday	1 days 3 days 1 days 2 days 2 days
This data displays the nun	nber of selected surveys by day of the week.
<u>Selected survey types:</u> Manual count Directional ATC Count	9 days 0 days
This data displays the nun up to the overall number of are undertaking using mad	nber of manual classified surveys and the number of unclassified ATC surveys, the total adding of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys chines.
<u>Selected Locations:</u> Suburban Area (PPS6 Out Edge of Town	of Centre) 2 7
This data displays the nun consist of Free Standing, E Not Known.	nber of surveys per main location category within the selected set. The main location categories Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and

Selected Location Sub Categorie.	<u>s.:</u>
Residential Zone	
Out of Town	
No Sub Category	

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

7 1 1

Inclusion of Servicing Vehicles Counts:	
Servicing vehicles Included	4 days - Selected
Servicing vehicles Excluded	10 days - Selected

Secondary Filtering selection:

<u>Use Class:</u> C3

9 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Secondary Filtering selection (Cont.):

Population within 1 mile:	
1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:	
5,001 to 25,000	2 days
25,001 to 50,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:	
0.6 to 1.0	1 days
1.1 to 1.5	7 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:	
Yes	7 days
No	2 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

<u>PTAL Rating:</u> No PTAL Present

9 days

This data displays the number of selected surveys with PTAL Ratings.



LIST OF SITES relevant to selection parameters

1	DV-03-A-03 LOWER BRAND LANE HONITON	TERRACED & SEMI DE	TACHED	DEVON
2	Suburban Area (PPSe Residential Zone Total No of Dwellings <i>Survey date:</i> HC-03-A-27 DAIRY ROAD ANDOVER	6 Out of Centre) S: <i>MONDAY</i> MI XED HOUSES	70 <i>28/09/15</i>	<i>Survey Type: MANUAL</i> HAMPSHI RE
3	Edge of Town Residential Zone Total No of Dwellings <i>Survey date:</i> KC-03-A-04 KILN BARN ROAD AYLESFORD DITTON	s: <i>TUESDAY</i> SEMI -DETACHED & TE	73 <i>16/11/21</i> RRACED	<i>Survey Type: MANUAL</i> KENT
4	Edge of Town Residential Zone Total No of Dwellings <i>Survey date:</i> KC-03-A-10 HEADCORN ROAD STAPLEHURST	s: <i>FRIDAY</i> MIXED HOUSES	110 <i>22/09/17</i>	<i>Survey Type: MANUAL</i> KENT
5	Edge of Town Residential Zone Total No of Dwellings <i>Survey date:</i> NF-03-A-34 NGWICH ROAD SWAFFHAM	s: <i>TUESDAY</i> MIXED HOUSES	106 <i>09/05/23</i>	<i>Survey Type: MANUAL</i> NORFOLK
6	Edge of Town Out of Town Total No of Dwellings <i>Survey date:</i> NF-03-A-36 LONDON ROAD WYMONDHAM	s: <i>TUESDAY</i> MI XED HOUSES	80 <i>27/09/22</i>	<i>Survey Type: MANUAL</i> NORFOLK
7	Edge of Town No Sub Category Total No of Dwellings <i>Survey date:</i> SF-03-A-07 FOXHALL ROAD IPSWICH	s: <i>THURSDAY</i> MI XED HOUSES	75 <i>29/09/22</i>	<i>Survey Type: MANUAL</i> SUFFOLK
	Suburban Area (PPS) Residential Zone Total No of Dwellings <i>Survey date:</i>	6 Out of Centre) s: <i>THURSDAY</i>	73 <i>09/05/19</i>	Survey Type: MANUAL



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### ASHLEY HELME ASSOCIATES 76 WSHWAY ROAD SALE

LIST OF SITES relevant to selection parameters (Cont.)

8	WB-03-A-03 DORKING WAY READING CALCOT Edge of Town Residential Zone	MI XED HOUSES		WEST BERKSHIRE
	Total No of Dwelling	S:	108	
	Survey date:	FRIDAY	09/09/22	Survey Type: MANUAL
9	WS-03-A-10	MI XED HOUSES		WEST SUSSEX
	TODDINGTON LANE			
	LITTLEHAMPTON			
	WICK			
	Edge of Town			
	Residential Zone			
	Total No of Dwelling	S:	79	
	Survey date:	WEDNESDAY	07/11/18	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

#### MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
ES-03-A-05	flats
ES-03-A-08	flats
WS-03-A-17	flats
WS-03-A-19	flats



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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI - MODAL TOTAL VEHICLES Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period Total People to Total Vehicles ratio (all time periods and directions): 1.79

	ARRIVALS		DEPARTURES			TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	86	0.106	9	86	0.309	9	86	0.415
08:00 - 09:00	9	86	0.134	9	86	0.373	9	86	0.507
09:00 - 10:00	9	86	0.128	9	86	0.138	9	86	0.266
10:00 - 11:00	9	86	0.109	9	86	0.137	9	86	0.246
11:00 - 12:00	9	86	0.124	9	86	0.138	9	86	0.262
12:00 - 13:00	9	86	0.143	9	86	0.133	9	86	0.276
13:00 - 14:00	9	86	0.141	9	86	0.134	9	86	0.275
14:00 - 15:00	9	86	0.154	9	86	0.158	9	86	0.312
15:00 - 16:00	9	86	0.270	9	86	0.155	9	86	0.425
16:00 - 17:00	9	86	0.245	9	86	0.187	9	86	0.432
17:00 - 18:00	9	86	0.327	9	86	0.159	9	86	0.486
18:00 - 19:00	9	86	0.297	9	86	0.161	9	86	0.458
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.178			2.182			4.360

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

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#### Parameter summary

Trip rate parameter range selected:	70 - 110 (units: )
Survey date date range:	01/01/15 - 29/06/23
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	4

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed. ASHLEY HELME ASSOCIATES 76 WSHWAY ROAD SALE



#### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI - MODAL TOTAL PEOPLE Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period Total People to Total Vehicles ratio (all time periods and directions): 1.79

	ARRIVALS		DEPARTURES			TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	86	0.156	9	86	0.536	9	86	0.692
08:00 - 09:00	9	86	0.235	9	86	0.841	9	86	1.076
09:00 - 10:00	9	86	0.217	9	86	0.245	9	86	0.462
10:00 - 11:00	9	86	0.158	9	86	0.224	9	86	0.382
11:00 - 12:00	9	86	0.213	9	86	0.244	9	86	0.457
12:00 - 13:00	9	86	0.238	9	86	0.209	9	86	0.447
13:00 - 14:00	9	86	0.231	9	86	0.204	9	86	0.435
14:00 - 15:00	9	86	0.247	9	86	0.245	9	86	0.492
15:00 - 16:00	9	86	0.654	9	86	0.296	9	86	0.950
16:00 - 17:00	9	86	0.472	9	86	0.320	9	86	0.792
17:00 - 18:00	9	86	0.588	9	86	0.271	9	86	0.859
18:00 - 19:00	9	86	0.488	9	86	0.267	9	86	0.755
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.897			3.902			7.799

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

## Drawings

















