

Land South of A259, Angmering

Transport Assessment

Client: Redrow Homes

i-Transport Ref: DS/GT/ITB16357-002

Date: 28 June 2021

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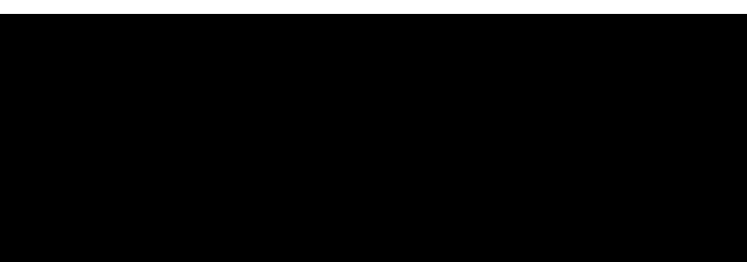
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SECTION 1 Introduction

1.1 Location

- 1.1.1 Redrow Homes has appointed i-Transport LLP to provide highways and transport advice in relation to a full planning application for a proposed residential development of 76 dwellings with associated car parking and landscaping, on land south of the A259 in Angmering.
- 1.1.2 The site is located on the eastern edge of Angmering village, immediately adjacent to the existing settlement boundary. The site is bounded to the north by the A259 Littlehampton Road, to the east by Roundstone Farm and the 'Artists in Stone' commercial premises, to the south by the West Coastway Railway Line and the west by the B2140 Old Worthing Road and residential properties. The location of the site is shown on **Figure 1**, an extract of which is provided as **Image 1.1**.

Image 1.1: Site Location



Source: Figure 1

1.2 Scope

- 1.2.1 This Transport Assessment (TA) has been prepared to consider the transport impacts that may arise from the proposed development, and to consider the proposal against the relevant transport planning policy considerations and the key transport tests identified in paragraphs 108 and 109 of the National Planning Policy Framework (NPPF) and these are summarised as follows:

- Will the opportunities for sustainable travel be appropriately taken up given the type of development and its location?
- Will safe and acceptable access be provided for all users?
- Will the transport impacts of the site be adequately mitigated, such that the residual cumulative impact will be acceptable (i.e. not severe), and not result in unacceptable safety impacts?

1.2.2 Pre-application discussions have been held with the officers at the local highway authority, West Sussex County Council (WSCC), regarding the proposed development and the scope of the TA. The scoping discussions are presented in **Appendix A** and are summarised as follows:

- Trip rates and distribution has been agreed. The scope of the junction assessment to extend to site access and A259 J11, with consideration of the development proposal in the context of the level crossing;
- Departure for Standards applications required in relation to the loss of hard strips, lane widths and bus stop location; and
- Consideration to be given to the widening of the A259 cycle/footway adjacent to the site and the treatment of the Public Right of Way crossing of the A259.

1.2.3 A separate Framework Travel Plan (FTP) has been prepared (report ref: ITB16357-003). The primary purpose of the FTP is to identify opportunities for the effective promotion and delivery of sustainable transport initiatives e.g., walking, cycling, public transport and home working to reduce the demand for travel by less sustainable modes.

1.3 Structure

1.3.1 The remainder of the TA is structured as follows:

- **Section 2** – Summarises relevant national and local transport policies and guidance;
- **Section 3** – Provides a review of existing transport conditions;
- **Section 4** – Confirms the details the development proposal;
- **Section 5** – Presents an assessment of accessibility and details a sustainable transport strategy to be delivered at the site;
- **Section 6** – Considers the likely traffic impacts of the proposal; and
- **Section 7** – Provides a summary of the report and its conclusions.

SECTION 2 Policy Context

2.1 Overview

- 2.1.1 This section of the TA sets out a review of national and local transport policy and guidance documents to provide the context for the TA.

2.2 National Policy

National Planning Policy Framework February 2019 (NPPF)

- 2.2.1 The revised NPPF sets out the Government's planning policies and how these are expected to be applied. It also constitutes guidance for local planning authorities and decision takers both in drawing up plans and as a material consideration in determining applications.

- 2.2.2 The NPPF stresses that at the forefront of planning is the 'presumption in favour' of sustainable development. Paragraph 9 states:

"..at the heart of the Framework is a presumption in favour of sustainable development".

- 2.2.3 The NPPF requires in paragraph 111 and that all developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment.

- 2.2.4 Paragraph 108 presents the primary transport tests for new development proposals, stating that plans and specific applications for development should ensure that:

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

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

c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."

- 2.2.5 Paragraph 109 of the revised NPPF presents a demanding test for assessing transport impacts. Only if there would be an 'unacceptable impact on highway safety' or when residual cumulative impacts are 'severe' should proposals be refused on transport grounds.

- 2.2.6 On this basis, planning permission for development should be approved unless a) the proposal is not consistent with development plan policies; b) where any adverse impacts 'significantly and

demonstrably' outweigh the benefits; or c) the specific policies within the NPPF indicate that the proposal should be restricted.

- 2.2.7 In accordance with NPPF, this TA has been produced to accompany the planning application and assesses the scheme against these key transport tests.

National Planning Practice Guidance (March 2014)

- 2.2.8 The web based NPPG replaced the DfT's 'Guidance on Transport Assessment' on 6 March 2014 and seeks to bring together planning guidance for England across all disciplines in an accessible way as well as to provide a clear link between guidance and the aims and objectives of the NPPF.

- 2.2.9 The NPPG discusses the role of travel plans and transport assessments / statements and how they relate to each other:

"Travel Plans, Transport Assessments and Statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements. (ID42 – 002);

Transport Assessments and Statements can be used to establish whether the residual transport impacts of a proposed development are likely to be "severe", which may be a reason for refusal, in accordance with the National Planning Policy Framework. (ID42 – 005);

Travel Plans are long-term management strategies for integrating proposals for sustainable travel into the planning process. They should not, however, be used as an excuse for unfairly penalising drivers and cutting provision for cars in a way that is unsustainable and could have negative impacts on the surrounding streets. (ID42 – 003)".

- 2.2.10 In accordance with NPPG this TA has been prepared to assess the transport impacts of the development, and to consider whether any effects would be 'severe'.
- 2.2.11 Sections 7, 8 and 9 of the TA presents a comprehensive assessment of potential traffic impacts and identifies deliverable and appropriate mitigation to ensure any impacts of the development are not significant.
- 2.2.12 A Framework Travel Plan (FTP) is also provided to outline a long-term, realistic strategy for the promotion of sustainable travel which seeks to reduce car-based travel demand. The FTP should be read in conjunction with the TA.

Local Transport Note 1/20 - Cycle Infrastructure Design (July 2020)

2.2.13 The Local Transport Note 1/20 provides guidance and good practice for the design of cycle infrastructure, in support of the Cycling and Walking Investment Strategy.

2.2.14 The Note sets out five core design principles which represent the essential requirements to achieve more people travelling by cycle or on foot, based on best practice both internationally and across the UK. These are that cycle networks and routes should be:

- Coherent;
- Direct;
- Safe;
- Comfortable; and
- Attractive.

2.2.15 The LTN 1/20 note identifies that inclusive design and accessibility should run through all five of the core design principles set out above. Designers should always aim to provide infrastructure that meets these principles and therefore caters for the broadest range of people. Infrastructure must be accessible to all, and the needs of vulnerable pedestrians and local people must be considered early in the process to ensure schemes are supported locally in the long term.

2.2.16 The cycle routes within the site have been designed in accordance with the core design principles and design guidance set out in LTN 1/20.

2.3 Local Planning Policies

Adopted Arun Local Plan 2011-2031 (July 2018)

2.3.1 In July 2018, Arun DC adopted a new Local Plan which sets out the vision for Arun District to 2031. The proposed development site forms a part of the wider 'West of Bersted' Strategic Allocation, which is identified under policy H SP2a (SD3). The whole West of Bersted allocation has been identified as being able to deliver at least 2,500 dwellings over the plan period. Redevelopment of the site therefore has policy support.

2.3.2 The Local Plan identifies a series of policies relating to transport, including:

“Policy T SP1 – Transport and Development - This identifies that development sites will be supported where they:

- ***Are designed to reduce the need to travel by car, but make provision for safe access to the site for all travel modes;***
- ***Give priority to pedestrian and cycle movements;***
- ***Incorporate appropriate levels of parking in line with WSCC Guidance;***
- ***Are supported by effective and deliverable Transport Assessments and Travel Plans; and***
- ***Explain how development can:***
- ***Accommodate deliveries and servicing;***
- ***Give priority to pedestrian and cycle movements and have access to high-quality public transport;***
- ***Create safe and secure layouts for all users;***
- ***Incorporate electric charging infrastructure; and***
- ***Consider the needs of people with disabilities.”***

“Policy T DM1 – Sustainable Travel and Public Rights of Way – This identifies that proposals for new development must:

- ***Be located where they are close to sustainable travel opportunities which link to key destinations;***
- ***Contribute to the extension of public transport services;***
- ***Make provision for pedestrian and cycling facilities; and***
- ***Contributes to provision of a joined-up cycle and PROW network.”***

2.3.3 This TA, and the accompanying FTP, have been prepared in accordance with these requirements and set out how the criteria within policies SP1 and DM1 will be met.

West Sussex County Council’s Transport Plan 2011-2026

2.3.4 The West Sussex County Council (WSCC) Local Transport Plan 3 was published in February 2011 and sets out a long-term strategy and implementation plan for making improvements to the transport system throughout the county over the next 20 years.

2.3.5 The strategy for Arun is to provide improvements to the transport system to tackle the identified transport issues as and when funding becomes available. To ensure that the regeneration aspirations of the plan are delivered, and the identified transport issues are addressed, they will

ensure that all new scheme and developments contribute, and support, in some way to the following:

- *increasing use of sustainable modes of transport;*
- *improving network efficiency in order to improve journey times and air quality;*
- *improving safety for all road users;*
- *discouraging HGVs from using unsuitable roads; and*
- *improving accessibility between communities within the District.*

2.3.6 This TA has been prepared in accordance with the strategies set out in the Local Transport Plan. The TA provides a comprehensive assessment of the impact of the development proposal and sets out a suitable and robust mitigation strategy.

Arun Transport Study 2016 (EBR 2017) and the Infrastructure Delivery Plan (2017)

2.3.7 The Arun Transport Study EBR 2017 (ATS) and the Infrastructure Delivery Plan (2017) (IDP) forms part of the evidence base that supports the adopted Arun Local Plan. The ATS and IDP have been prepared to demonstrate that the policies and proposals outlined in the LP are deliverable and to understand the infrastructure that is required to support development and growth across the District.

2.3.8 The ATS assesses the impact of planned growth upon the strategic and local highway networks. It establishes where intervention will be necessary to address a 'severe' highway impact arising from the planned growth and identifies schemes of mitigation at most locations. The cost of the scheme is included within the ATS and these have been apportioned to specific development locations according to the proportional impact of each development. This provides a framework for the works and financial contributions required from the Development in order to mitigate the impact of development. **Table 2.1** sets out the identified schemes of relevance to other allocated sites within Angmering.

Table 2.1: Arun Transport Study Strategic Infrastructure Schedule

Junction No.	Junction	Cost (High Estimate)
1	A27/B2233 Nyton Road	£300,000
	A27/A284 Arundel (roundabout improvement)	£301,000
7	A27 / A29 (Fontwell Eastern Roundabout)	£595,000
23	A259 / B2187 (Littlehampton West - Tesco)	£334,000

Source: Arun Transport Study EBR (2017)

2.3.9 Whilst the above have been identified as junctions which will require contributions from local allocated developments, it is not anticipated the proposed development will generate any significant impacts at any of these junctions to justify a financial contribution being secured.

2.3.10 The ATS establishes that the schemes above do not represent the full cost of highways and transport mitigation, as each development will also need to consider the following on a site-by-site basis:

- Local junction mitigation (i.e. junctions not included in the scope of the ATS on the local network);
- Cycle/pedestrian infrastructure; and
- Bus infrastructure.

2.3.11 The findings of the ATS contribute towards the infrastructure requirements set out in the Infrastructure Delivery Plan. The most recent iteration of the IDP, produced by Arun District Council in 2017, provides a site-specific infrastructure schedule which reflects the schemes identified in the ATS and which has been further developed through the Arun Apportionment Study (June 2020).

Arun Parking Standards Supplementary Planning Document (2020):

2.3.12 The SPD outlines Arun District Council's approach to parking at new developments (both residential and commercial) and should be used to help determine the level of parking at new developments. The SPD provides guidance on levels of car parking, cycle parking and electric vehicle infrastructure.

2.3.13 The document is based upon the 'West Sussex County Council Guidance on Parking at New Developments May 2019' (WSCC GPND) with a few exceptions. The SPD therefore seeks to define and formalise these standards in order to give them greater weight when considering planning applications.

2.3.14 The parking standards are based on Parking Behaviour Zones. The proposed development falls within 'Zone 2 – Peri-Rural'. A summary of the residential parking standards for the residential and commercial uses for the proposed development site are summarised in **Table 2.2** and **2.3** respectively.

Table 3.2: Residential Car and Cycle Parking Standards – Zone 2

No. Of Bedrooms	No. of Habitable Rooms	Car Parking Provision	Cycle Parking Provision
1	1-3	2	1
2	4	2	1
3	5-6	2	2
4+	7+	3	2

Source: ADC Parking Standards Supplementary Planning Document, January 2020

West Sussex Walking and Cycling Strategy 2016 – 2026

2.3.15 WSCC has developed a Walking and Cycling Strategy to outline the design and safety principles for walking and cycling, recognising the different needs of users, and identifies and prioritises potential infrastructure improvements for the County.

2.3.16 In relation to Angmering, the strategy identifies potential improvements to local cycle routes to:

- High Street Angmering to A259;
- Angmering to Arundel;
- Angmering to Rustington; and
- Angmering link to A259

Relevant Transport Guidance

2.3.17 The TA has also been prepared with due regard to relevant 'industry standard' practice and guidance documents, including:

- DfT's 'Manual for Streets' (MfS) and 'Manual for Streets 2' (MfS2);
- The Design Manual for Road and Bridges (DMRB);
- Local Transport Note 01/20;
- National Travel Survey (NTS) data; and
- WSCC's 'Transport Assessment Methodology' (TAM).

2.4 Summary

2.4.1 Paragraph 108 of the NPPF identifies the three key transport criteria that decisions on development proposals should take account of. These are whether:

- The opportunities for sustainable travel have been appropriately 'taken up';
- Safe and suitable access can be achieved; and
- Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.

2.4.2 These criteria are reflected in local policy. This TA has therefore been prepared to assess the development proposal against these criteria and the remainder of this TA demonstrates how the proposals comply with the identified national and local transport policy.

SECTION 3 Existing Transport Conditions

3.1 Introduction

- 3.1.1 This section of the TA sets out the existing transport conditions in the local area. This includes a review of the opportunities to use non-car modes, as well as the current operation of the existing highway network.

3.2 Site Location

- 3.2.1 The site is located on the eastern edge of Angmering village, immediately adjacent to the existing settlement boundary. The site is bounded to the north by the A259 Littlehampton Road, to the east by 'Artists in Stone' commercial premises, to the south by the West Coastway Railway Line and the west by the B2140 Old Worthing Road and residential development.

3.3 Walking and Cycling

Walking

A259 Littlehampton Road

- 3.3.1 The A259 Littlehampton Road runs parallel to the north side of the site, running east through Hangleton and west towards Angmering and Preston. A shared footway/cycleway is provided on the south side of the carriageway, tying into the proposed access-only road at the north west corner of the site. The shared footway/cycleway routes east from the site to a toucan crossing arrangement at the access junction to the ASDA superstore. The shared footway/cycleway continues eastward through Hangleton to a merged toucan/equestrian crossing providing access north across the A259 to the large industrial area on Hangelton Lane.
- 3.3.2 It should also be noted the street lighting is provided along the extent of Littlehampton Road and the straight nature of the carriageway affords both motorists and pedestrians good visibility.

Old Worthing Road

- 3.3.3 Old Worthing Road forms the southern arm of the A259 Littlehampton Road / Old Worthing Road / Roundstone By-Pass Road / A280 roundabout to the northwest of the site. Footways are provided on both sides of the carriageway with the southern footway tying into the proposed access-only road to the site. Both footways continue southwest through a residential area into

Preston. Old Worthing Road is street-lit along its extent with good natural surveillance provided by surrounding residential properties. A 30mph posted speed limit ensures vehicle speeds are low when routing alongside pedestrians.

A259 Roundstone By-Pass

3.3.4 The A269 Roundstone By-Pass Road routes west from the A259 Littlehampton Road / Old Worthing Road / Roundstone By-Pass Road / A280 roundabout to the northwest of the site. An uncontrolled pedestrian crossing comprising dropped kerbs and a pedestrian refuge island is provided across this arm of the roundabout.

3.3.5 A single footway is provided on the north side of the A259 Roundstone By-Pass Road, separated from the carriageway via a wide grass verge. This footway gives access to a number of retail units including Hobbycraft and Haskins Garden Centre. To the west, an uncontrolled pedestrian crossing comprising dropped kerbs, tactile paving and a pedestrian refuge island is provided at the A259 Roundstone By-Pass Road / Roundstone Lane roundabout. From here, onward pedestrian travel opportunities continue along Roundstone Lane north and south.

A280

3.3.6 Whilst there are no designated pedestrian routes along the A280, an uncontrolled pedestrian crossing point comprising dropped kerbs and tactile paving is provided across this arm of the A259 Littlehampton Road / Old Worthing Road / Roundstone By-Pass Road / A280 roundabout to the northwest of the site.

Cycling

3.3.7 The shared footway/cycleway along the A259 Littlehampton Road provides an off-carriageway route to Hangleton. The low vehicle speeds, street lighting and residential nature of Old Worthing Road provides an environment conducive to in-carriageway cycle without the need for designated cycle facilities. The A259 Roundstone By-Pass Road is subject to a 50mph speed limit and can therefore accommodate the majority of cyclists within the carriageway. Roundstone Lane is subject to a 30mph speed limit in both a northbound and southbound direction; this allows for safe cycle travel within the carriageway.

3.4 Public Rights of Way (PRoW)

- 3.4.1 An extensive PRoW network is available in the vicinity of the site, providing numerous alternative off-road routes to surrounding destinations. The extent of the local PRoW is outlined in **Image 3.1** below.

Image 3.1: Local PRoW Network



Source: West Sussex County Council iMap

- 3.4.2 Public Footpath 2126 is located to the east of the site and connects the A259 Littlehampton Road at its northern extent with Kingston Lane to the southwest and the north-western edge of Ferring to the east of the site. This is achieved through a network of additional footpaths including Footpaths 2114 and 2118.
- 3.4.3 Public Footpath 2143 is accessible to the north of the A259 Littlehampton Road and provides an off-carriageway route towards Angmering before linking with Bridleway 2140. An additional northbound round into Angmering can be accessed via Footpath 2145 located to the west of the roundabout at the northwest corner of the site.

3.5 Public Transport

Bus

3.5.1 The closest bus stops to the site are located along the A259 circa 100m to 150m from the site and take the form of a flag and pole arrangement. **Table 3.1** summarises the local bus services accessible from these stops and identify the site's accessibility to bus services.

Table 3.1: Bus Services available from A259 Littlehampton Road

Service	Route	Operation		
		Monday- Friday	Saturday	Sunday
8	Worthing - Goring by Sea - South Ferring	One service per day to Angmering at 08:30, to Worthing at 15:40	-	-
9	Holmbush Shopping Centre - Arundel	Hourly service First service to Shoreham-by-Sea at 08:11, to Arundel at 06:57. Last service from Shoreham-by-Sea at 17:38, from Arundel at 17:14.	Hourly service First service to Shoreham-by-Sea at 08:19, to Arundel at 08:02. Last service from Shoreham-by-Sea at 17:38, from Arundel at 17:08.	-
700	Brighton - Wick	3-6 services per hour. First service to Brighton at 06:13, to Littlehampton at 05:45. Last service from Brighton at 20:50, from Littlehampton at 22:34.	2-5 services per hour. First service to Brighton at 07:15, to Littlehampton at 06:13. Last service from Brighton at 20:50, from Littlehampton at 20:22.	1-3 services per hour. First service to Brighton at 07:38, to Littlehampton at 07:36. Last service from Brighton at 19:15, from Littlehampton at 20:54.

Source: Bluestar and Traveline Southeast

Correct as of April 2021

3.5.2 **Tables 3.1** demonstrates that there are regular bus services operating along the A259 Littlehampton Road in the vicinity of the site. The 700 service provides a frequent service between Littlehampton and Brighton Monday to Sunday whilst bus route 9 serves Angmering Rail Station. Additional services are available to surrounding destinations such as Arundel and Worthing.

Rail

3.5.3 Angmering rail station is located around 1.8km west of the proposed site and is accessible by foot and by cycle. The station provides 123 car parking spaces with 3 accessible spaces along with 142 cycle parking spaces. As mentioned earlier, the station is also directly accessible via the 9 bus route operating from the A259 Littlehampton Road.

3.5.4 **Table 3.2** below summarises the details and frequencies of rail services from Angmering Station during both peak and off-peak periods.

Table 3.2: Rail Services from Angmering Station

Destination	Typical Frequency (trains per hour)		Average Journey Duration
	Peak	Off-Peak	
Littlehampton	1-2 direct services per hour	1 direct service per hour	11 minutes
Brighton	2-4 services per hour	2 services per hour	37 minutes
Portsmouth	1-2 direct services per hour	1 direct service per hour	48 minutes
Southampton	1 direct service per hour	1 direct service per hour	74 minutes
London	2 direct services per hour	1-2 direct services per hour	103 minutes

Source: National Rail Enquiries

3.5.5 **Table 3.2** demonstrates that Angmering Station provides rail services to a number of high order destinations including Portsmouth, Southampton, London and Brighton. This provides the opportunity for future residents to travel further afield for leisure, employment and retail opportunities via direct connections.

3.6 Local Highway Network

A259 Littlehampton Road

3.6.1 The A259 Littlehampton Road is a dual carriageway located to the north of the site routing east through Hangleton before merging with the A2032 Littlehampton Road at the Swallows Return Pub. The westbound carriageway measures approximately 7.3m in width with the eastbound carriageway measuring approximately 6.6m. The dual carriageway is subject to a 50mph speed limit.

Old Worthing Road

- 3.6.2 Old Worthing Road is a single carriageway measuring approximately 6.9m in width. At its northern extent it connects with the A259 Littlehampton Road / Old Worthing Road / Roundstone By-Pass Road / A280 roundabout to the northwest of the site. At its southern extent, Old Worthing Road merges into Roundstone Lane at a simple priority junction and onwards across the train line. A posted 30mph speed limit is enforced along the extent of Old Worthing Road.

A259 Roundstone By-Pass

- 3.6.3 The A259 Roundstone By-Pass is a short section of single carriageway that connects the A259 Littlehampton Road / Old Worthing Road / Roundstone By-Pass Road / A280 roundabout to the east with the A259 Roundstone By-Pass Road / Roundstone Lane roundabout to the west. The posted 50mph speed limit carries over from the A259 Littlehampton Road and continues along this route. The carriageway measures approximately 9.5m in width.

A280

- 3.6.4 The A280 forms the northern arm of the A259 Littlehampton Road / Old Worthing Road / Roundstone By-Pass Road / A280 roundabout and comprises a single carriageway measuring approximately 7.3m in width. The A280 is subject to the national speed limit of 60mph.

3.7 Existing Network Operation

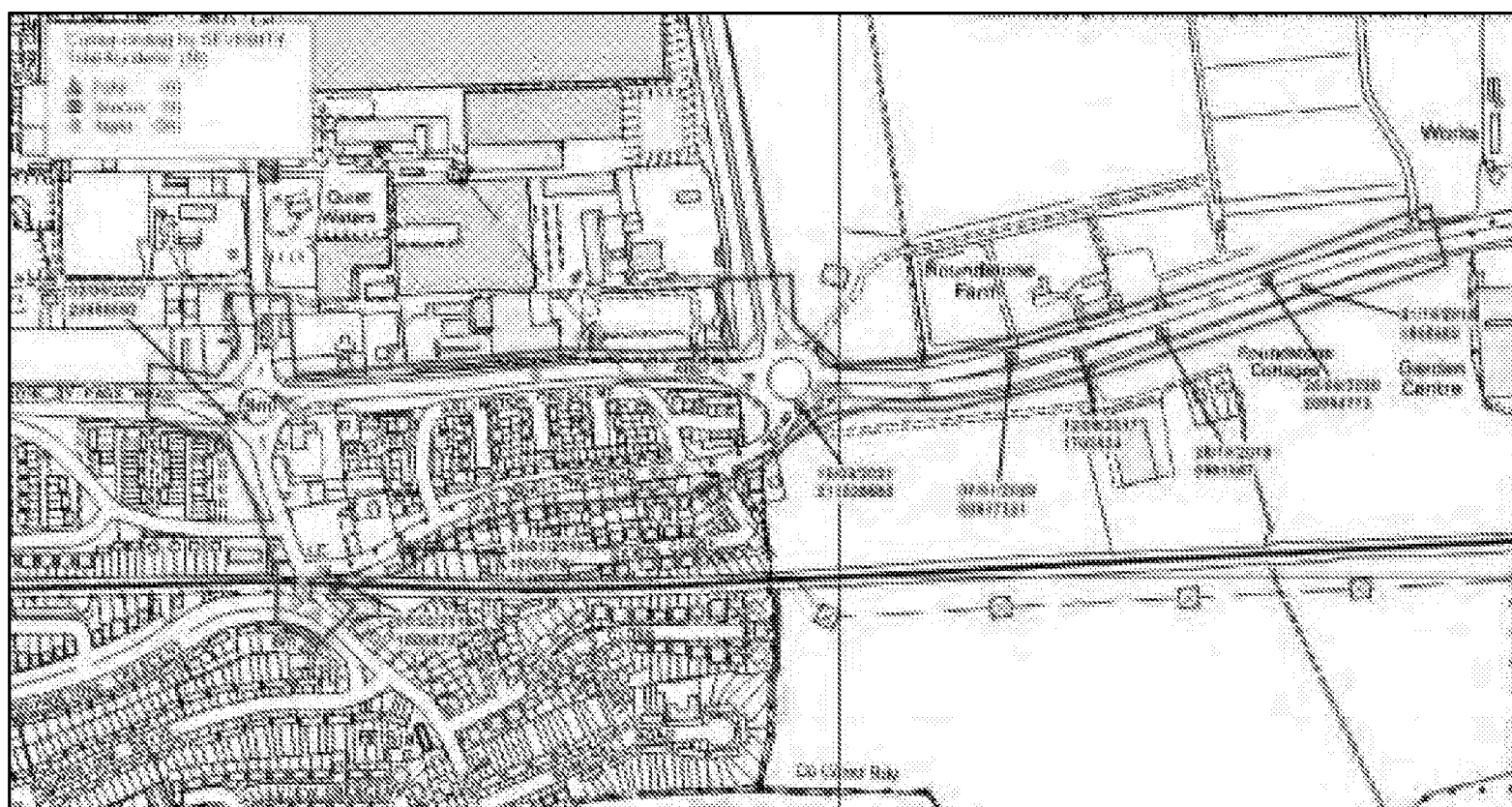
- 3.7.1 Usual practice would be to undertake peak period traffic flows to obtain baseline traffic flows, however due to the Covid-19 pandemic, it has not been possible to obtain 2021 baseline data from the use of traffic surveys as the existing peak period conditions experience lower traffic flows compared to pre-pandemic peak periods. On this basis, peak period traffic data has been obtained from planning application associated with Land South of Water Lane, Angmering (application ref: A/99/17/OUT). This application had baseline traffic data for 2015 peak periods which are illustrated in **Figures TF1 and TF2**.

3.8 Highway Safety

3.8.1 Personal Injury Accident (PIA) data has been obtained from Sussex Safer Roads Partnership for the most recently available five-year period between 01/04/2016 and 31/03/2021. A full copy of the collision data is provided at **Appendix B**.

3.8.2 In total, there were 38 PIAs recorded within the study area within the last five years. Of the collisions, nine were recorded as 'serious' in nature and 29 as 'slight'. No fatal collisions were recorded. The locations of the recorded PIAs are shown on **Image 3.2**.

Image 3.2: Location of Recorded PIAs



Source: Sussex Safer Roads Partnership

3.8.3 The nature, cause and location of each of these PIAs is outlined in the following paragraphs.

A259 Littlehampton Road (West of Asda)

3.8.4 Seven collisions occurred along this section of road of which four occurred on the westbound carriageway and three on the eastbound carriageway.

3.8.5 On the westbound carriageway, three collisions resulted in 'serious' injury. The first involved a motorcycle which attempted to change lanes and then lost control. The second 'serious' collision involved a cyclist who collided with a stationary vehicle and the third 'serious' collision involved a vehicle which attempted to change lanes and struck a motorcycle passing between vehicles. The final collision along this section resulted in 'slight' injury and involved a cyclist who entered the carriageway across the path of an oncoming vehicle.

- 3.8.6 On the eastbound carriageway, two collisions resulted in 'serious' injury and the first involved a motorcycle which failed to slow in time and collided with another motorcycle. The second involved a motorcyclist who was driving aggressively, left the carriageway and lost control. The 'slight' injury collision along this section involved a vehicle which lost control avoiding an animal in the carriageway.

A259 / Old Worthing Road Roundabout

- 3.8.7 A total of 10 collisions occurred at this junction, two resulted in 'serious' injury and 14 resulted in 'slight' injury.

A280 Arm

- 3.8.8 One collision occurred on this arm which involved a vehicle which failed to slow in time and caused a rear end shunt type collision and resulted in 'slight' injury.

A259 Littlehampton Road Arm

- 3.8.9 A total of five collisions occurred on this arm, all of which involved a vehicle which failed to slow in time causing a rear end shunt type collision and all resulted in 'slight' injury. Causal factors suggest that two of these collisions were due to damp road conditions.

Old Worthing Road Arm

- 3.8.10 One collision occurred on this arm which resulted in 'serious' injury. The collision involved a motorcycle travelling around the roundabout and colliding with a cyclist.

Roundstone By-Pass Arm

- 3.8.11 Three collisions occurred on this arm, all resulted in 'slight' injury. The first collision involved two vehicles colliding when merging on the exit of the roundabout travelling westbound. Another collision involved an eastbound vehicle which lost control and the causal factors suggest the driver experienced a medical episode. The second 'slight' injury collision involved a cyclist who entered the carriageway across the path of an oncoming vehicle.

A259 Roundstone By-Pass

- 3.8.12 Three collisions occurred along this section of carriageway, all resulted in 'slight' injury. On the eastbound carriageway, one collision involved a vehicle which failed to slow in time and caused

a rear end shunt type collision, whilst the other collision involved a vehicle which collided with a cyclist due to dazzling sun impacting the driver's vision.

- 3.8.13 The final collision involved a vehicle approaching the roundabout which had to brake suddenly which caused the vehicle to lose control. The causal factors suggest damp road conditions could have contributed to the collision.

Roundstone Roundabout

- 3.8.14 Eight collisions occurred at this junction, one resulted in 'serious' injury and seven resulted in 'slight' injury.

Roundstone Lane (North) Arm

- 3.8.15 One collision occurred on this arm which resulted in 'slight' injury and involved a southbound vehicle which collided with a stationary motorcycle. The causal factors suggest this was due to a road rage incident.

Roundstone By-Pass (East) Arm

- 3.8.16 Five collisions occurred on this arm, all resulted in 'slight' injury and involved westbound vehicles which failed to slow in time and caused a rear end shunt type collision. The causal factors suggest one collision was caused by a driver anticipating the vehicle in front to move.

Roundstone By-Pass (West) Arm

- 3.8.17 Two collisions occurred on this arm. The 'serious' injury collision involved a westbound vehicle colliding with a cyclist on the exit of the roundabout. The 'slight' injury collision involved a parked car reversing into another parked car.

Old Worthing Road

- 3.8.18 Five collisions occurred along this section of the carriageway, two resulted in 'serious' injury and three resulted in 'slight' injury. The first 'serious' injury collision occurred at the junction with Roundstone Lane and involved a southbound vehicle which swerved to avoid another vehicle and collided with a pedestrian. The second 'serious' collision occurred just to the east of Roundstone Lane and involved an eastbound vehicle colliding with a pedestrian emerging from between stationary vehicles.

- 3.8.19 Two 'slight' injury collisions occurred at the junction with Arlington Crescent. One collision involved an eastbound vehicle attempting to overtake and colliding with a vehicle waiting to turn right. The second collision involved a vehicle turning right and pulling out across the path of an eastbound vehicle.
- 3.8.20 The final 'slight' injury collision involved a westbound cyclist colliding with a slow moving vehicle. This collision also occurred at the junction with Roundstone Lane.

Old Worthing Road Level Crossing / North Lane

- 3.8.21 Five collisions occurred at this location, all resulted in 'slight' injury. Two collisions involved a vehicle which pulled out across the path of an oncoming cyclist to travel south along North Lane. Another collision involved a cyclist being struck by a vehicle turning right to the north of the level crossing.
- 3.8.22 A further collision involved a northbound vehicle colliding with a northbound motorcycle at the level crossing. The final collision occurred at the Worthing Road / North Lane junction and involved a vehicle which failed to slow in time and caused a rear end shunt type collision.

PIA Summary

- 3.8.23 Whilst it is regrettable that PIA's have been recorded on the local highway network within the last five-year period, the type and number of collisions is not uncommon for a network of this nature.
- 3.8.24 Two clusters of collisions have been identified on the eastern arms of the A259 / Old Worthing Road roundabout and also at the Roundstone Roundabout. Whilst clusters have been identified at these locations, all of the collisions resulted in 'slight' injury and again, this number and type of collision is not uncommon for junctions of this nature which experience high traffic volumes. The causal factors also suggest that some of the collisions were caused by damp road conditions and also driver error trying to anticipate the driver in front moving.

3.9 **Summary**

- 3.9.1 The site is well located to the existing pedestrian / cycle network within Angmering. Within the vicinity of the proposed site, existing bus stops are served by a frequent bus routes between Brighton and Littlehampton along with Shoreham-by-Sea and Arundel.

- 3.9.2 Angmering rail station is accessible by foot and cycle and is also accessible by bus. Rail services from Angmering rail station offer access to destinations further afield such as Littlehampton, Brighton, Portsmouth, Southampton and London which provides a realistic opportunity for future residents to travel via sustainable modes.
- 3.9.3 A detailed review of the most recently available accident data has been undertaken and does not identify any specific road safety problems within the local area. Notwithstanding this, the analysis in **Section 6** of this TA carefully assesses the traffic impact of the proposal to identify whether the proposal will result in a material change in the way the local highway network operates.

SECTION 4 Development Proposal

4.1 Introduction

- 4.1.1 This section of the TA presents the development proposal including the proposed access and servicing arrangements. The TA supports a full planning application for 76 dwellings including associated infrastructure, parking and landscaping.

4.2 Schedule of Accommodation

- 4.2.1 The accommodation schedule of the 76 dwellings which form this development proposal is summarised in Table 4.1.

Table 4.1: Schedule of Accommodation

Type	Quantum / Size
Private	
2-bed House	8
3-bed House	10
4-bed House	35
Affordable	
1-bed Apartment	8
2-bed House	8
3-bed House	7
Total	76

Source:

- 4.2.2 The proposed development will provide a mixture of open market dwellings (70%) and affordable dwellings (30%).

4.3 Site Access Strategy

Vehicular

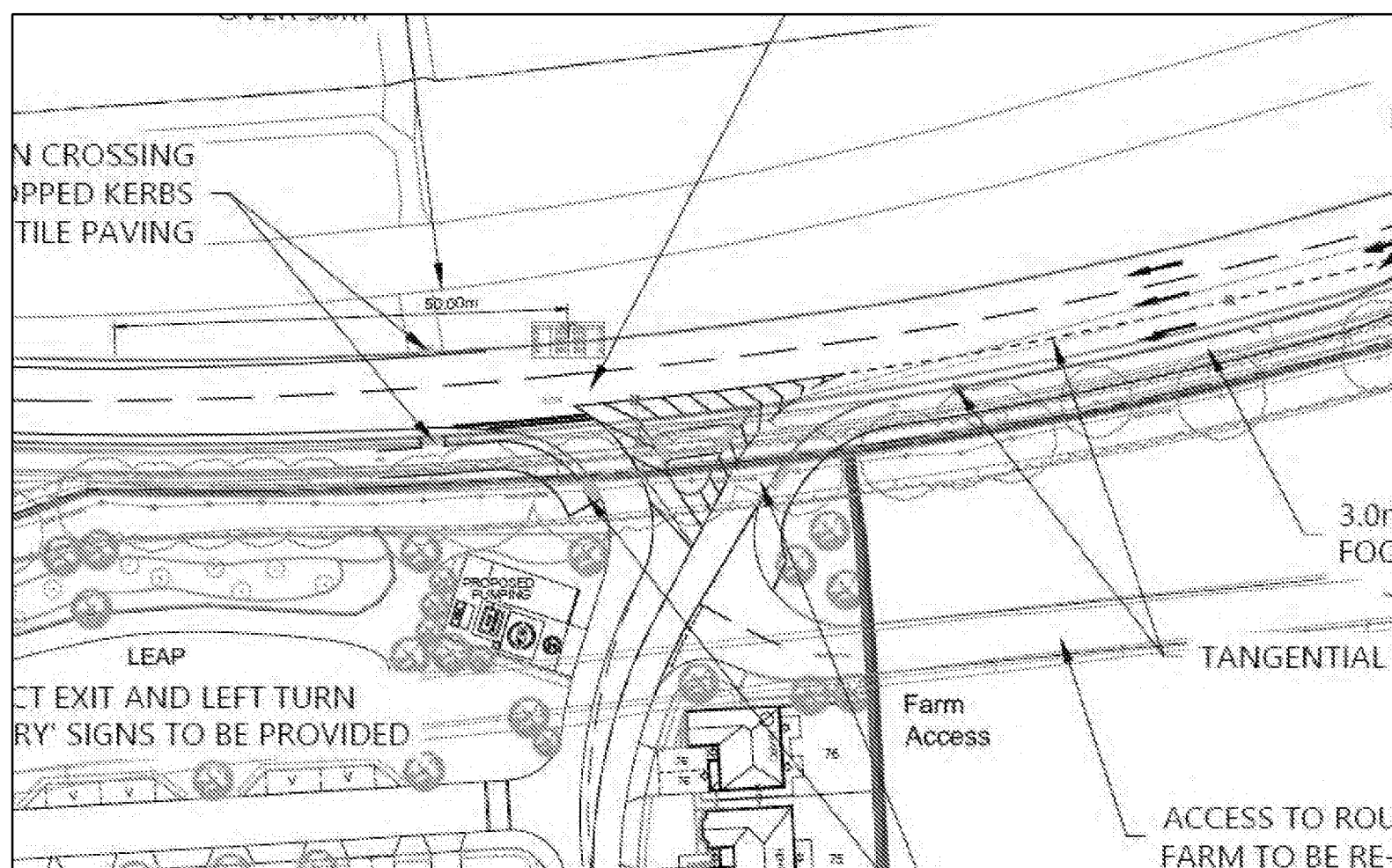
- 4.3.1 The site is currently accessed via a field gate onto the B2140 Old Worthing Road roundabout junction with the A259 Littlehampton Road. This access links within the site to the existing left in / left out access from the A259 Littlehampton Road serving the Artists In Stone commercial premises.

4.3.2 It is proposed to utilise a similar access arrangement to that agreed as part of previous planning application on the site, which was deemed acceptable by the local highway authority. The arrangement comprises:

- A new Left In / Left Out type arrangement onto the A259 Littlehampton Road to the west of the roundabout.
- Retention of the existing access from the roundabout as an 'Entry Only' to the site.

4.3.3 The Left In / Left Out site access is located within a 50mph limit and as such, the site access has been designed in accordance with design guidance laid out in the Design Manual for Roads and Bridges (DMRB). The proposed site access arrangement is presented in **Drawing ITB16357-GA-003D**, an extract of which is shown in **Image 4.1**.

Image 4.1: Site Access Extract



Source: ITB16357-GA-003 Rev D

4.3.4 Through pre-application engagement with WSCC the need for Departure from Standards (DfS) applications was identified in relation to the loss of hard strips and lane widths on the A259 adjacent to the site access and the proximity of the bus stops to the site access. The DfS applications are included at **Appendix C**. Upon resolution of the DfS applications a Stage 1 Road Safety Audit will be commissioned.

- 4.3.5 As part of the pre-application advice, WSCC also advised that a dedicated left turn lane between A259 westbound and Old Worthing Road did not make it into the Phase 1 A259 improvement works and, if possible, it would be prudent for development does not prejudice the potential for this to be delivered in the future. It should be noted that a dedicated left turn does not form part a programmed scheme of improvements, nor is the land safeguarded for its delivery; as such, it has no committed status and is only an aspirational scheme of improvements. It is not possible to relocate the access further east, and the proposed junction is at the easternmost part of the proposed development site.
- 4.3.6 In addition to the above, there are 4 lime trees situated adjacent to the roundabout, which are subject to a Tree Protection Order. These trees are identified in the Arun TPO extract provided at **Image 4.2**, and would restrict the delivery of any improvement scheme at this location:

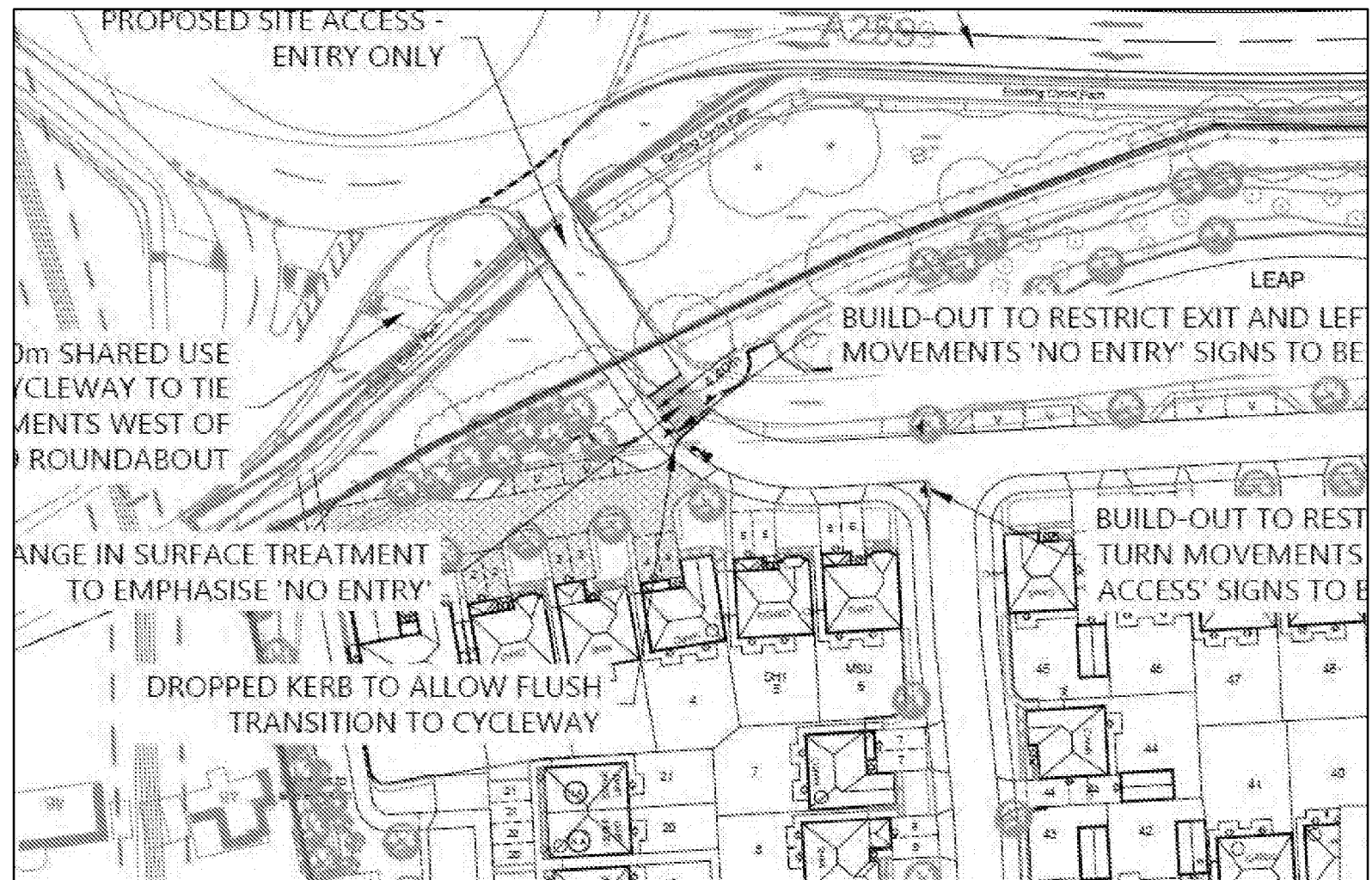
Image 4.2: TPO Extract



Source: Arun TPO

- 4.3.7 Further consideration of any additional measures to support 'entry only' into the site was also sought by WSCC through the pre-application response. The design has been amended to incorporate road narrowing, 'no entry' signage and a change in surface materials to emphasise that the route is not to be used to obtain access to the roundabout. A build out of the kerb line adjacent to property 6 has also been included to restrict left turn manoeuvres by vehicle movements originating in the southwestern area of the development. The measures are shown on access drawing **ITB16357-GA-003D**, an extract of which is provided at **Image 4.3**.

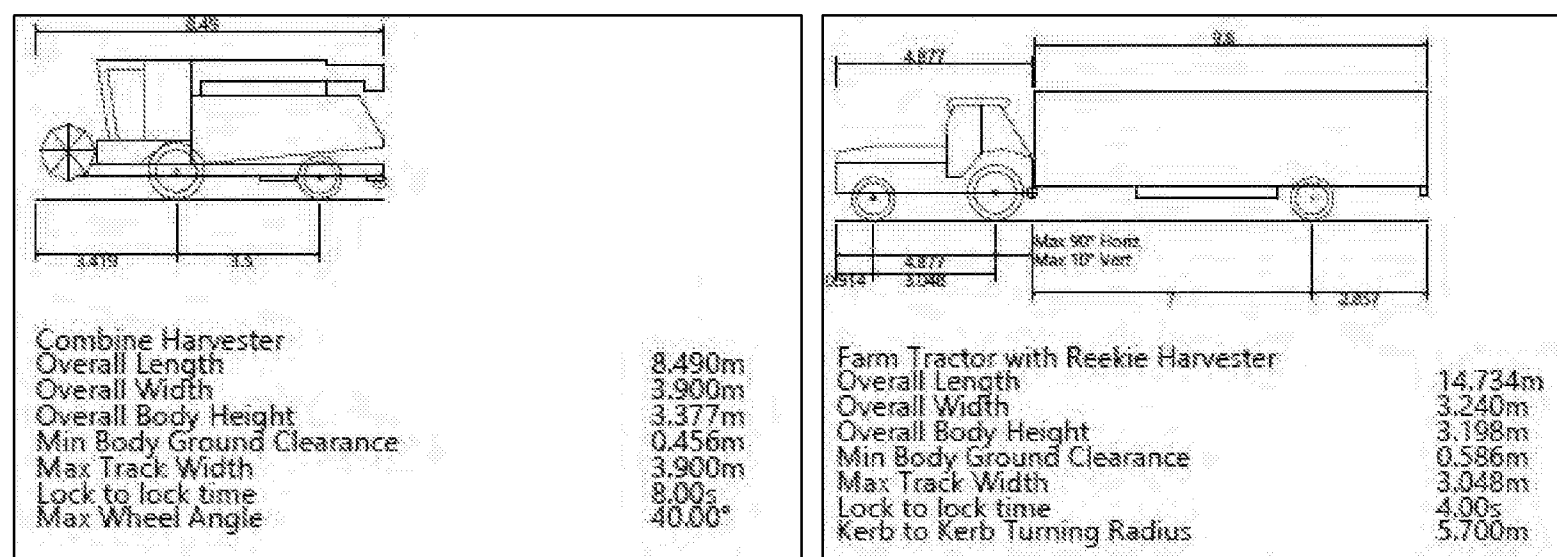
Image 4.3: Measures to Restrict Egress



Source: ITB16357-GA-003

- 4.3.8 These measures have been designed with consideration given to the vehicles operated by the adjacent Roundstone Farm, which has rights of access via the roundabout. It is understood that the farm operates two vehicles which are subject to an annual Abnormal Load Consent issued by Sussex Police. These design vehicles are identified in **Images 4.3** and **4.4**, and the tracking of each vehicle is presented in **Drawing ITB16357-GA-006A**.

Images 4.2 and 4.3: Design Vehicles



Pedestrian and Cyclists

- 4.3.9 Pedestrian and cycle access to the site can be obtained at both the left in, left out access and the 'entry only' access from the roundabout.
- 4.3.10 At the 'entry only' access, a pedestrian/cycle link is to be provided adjacent to the access road, connecting into existing cycle footway provision adjacent to the A259/B2140 arm of the roundabout, and onwards eastbound footway/cycleway provision.
- 4.3.11 To the north of the development site, it is understood that planned improvement to widen the cycleway on the southern side of the A259 and east of the A280 has been removed from the scope of the Phase 1 A259 Improvements; WSCC has indicated that it would be expected that improvements be delivered as part of any development proposal. On the basis, it is proposed to widen the east-west section of the route to the south of the A259, as identified in **Drawing ITB16357-GA-003D**. However, due to the constraints posed by the TPO Lime trees adjacent to the roundabout, it is not possible to widen this section of the route.

4.4 Site Layout

Street Layout and Servicing Arrangements

- 4.4.1 The layout of the site has been developed in line with the principles set out within MfS with carriageway widths of 5.5m provided on the primary route through the development. Refuse vehicles and servicing vehicles can manoeuvre within the site safely and leave in forward gear, and that emergency vehicles can satisfactorily manoeuvre around the layout.

Visibility

- 4.4.2 The site layout has been designed to ensure sufficient visibility is provided on internal streets and at junctions. Visibility to the spine road is provided at 2.4m x 25m, commensurate with a design speed of 20mph. In addition, building lines have been set back from corners to allow for forward visibility around bends.

Parking Provision

- 4.4.3 Car and cycle parking is to be provided in accordance with Arun Parking SPD and the proposed parking strategy is summarised in the Design and Access Statement accompanying the application. The development also makes provision for Electric Vehicle Charging (EVC) across the proposed development.

4.5 Summary

- 4.5.1 The development is to provide for 76 new homes, comprising 70% private and 30% affordable dwellings.
- 4.5.2 Access to the site is to be achieved through a left in, left out junction onto the A259. An 'entry only' is to be retained through the existing site access from the B2140/A259 roundabout, and measures are proposed within the site to restrict egress from the site through this junction.
- 4.5.3 A pedestrian and cycle access is proposed adjacent to the 'entry only' access to connect into existing pedestrian/cycle provision adjacent to the A259/B2140 roundabout. In addition, a scheme of improvements to widen the pedestrian/cycle provision on the southern side of the A259 is proposed for delivery as part of the site access arrangements.
- 4.5.4 The internal layout has been designed in accordance with Manual for Streets design principles and provides access for refuse and emergency vehicles throughout the site; further detail of this, and the parking strategy, is contained within the Design and Access Statement accompanying the application.

SECTION 5 Accessibility

5.1 This section of the TA considers the accessibility of the site to key services and facilities by non-car modes of transport.

5.2 Journey Purpose

5.2.1 In considering accessibility and promoting sustainable travel it is important to consider the reasons why future residents of the proposed development will make journeys. The Department for Transport's (DfT) National Travel Survey identifies the proportion of all trips by purpose as set out in **Table 5.1**.

Table 5.1: Proportion of Trips per Year by Journey Purpose

Journey Purpose	Proportion of Trips
Leisure	26%
Shopping	19%
Commuting/Business	18%
Education/Escort Education	13%
Personal Business	9%
Other Escort	9%
Other (Including Just Walk)	6%

Source: Table NTS0409 Average number of trips by purpose and main mode: England NTS – 2019 Edition

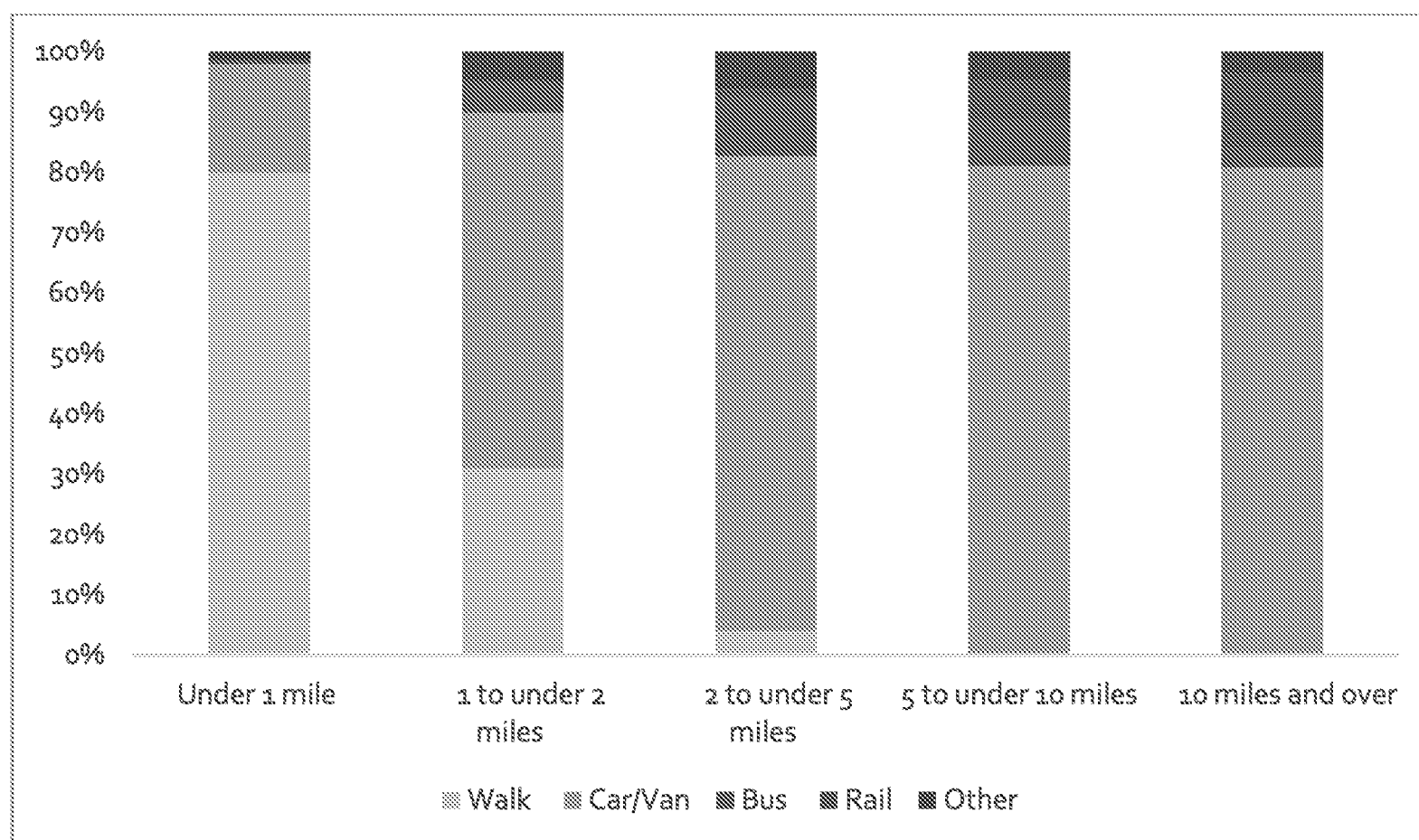
5.2.2 **Table 5.1** demonstrates that trips are made up of a number of different journey purposes, and each type of journey will have different requirements in terms of destination, time constraints and route choice.

5.2.3 This TA therefore considers the opportunities to access local facilities and services by a choice of transport modes.

5.3 Walking Distances

5.3.1 The National Travel Survey (NTS) 2019 identifies the mode share of journeys of different lengths:

Image 5.1: Mode Share of Trips by Main Mode for Different Trip Lengths: England



Source: National Travel Survey: England 2019

5.3.2 The vast majority (80%) of trips are undertaken on foot for journeys up to one mile, whilst walking accounts for some 31% of all trips between 1 and under 2 miles (circa 1.6km – 3.2km). Walking trips fall away beyond 2 miles, with journeys of between 2 and 4 miles equating to approximately 4% of all trips.

5.3.3 The one-mile (1.6km) distance is reflected in the Chartered Institution of Highways and Transportation (CIHT) guidance 'Planning for Walking' (2015) which states:

“Across Britain, approximately 80% of journeys shorter than 1 mile are made wholly on foot – something that has changed little in 30 years. The main reason for the decline in walking is the fall in the total number of journeys shorter than 1 mile, which has halved in thirty years. It is not that people are less likely to make short journeys on foot but rather that fewer of the journeys they make can be accomplished on foot. If destinations are within walking distance, people are more likely to walk if walking is safe and comfortable and the environment is attractive.”

5.3.4 Therefore, facilities and services within one mile (1.6km) will provide the greatest opportunity for trips to be made by walking.

5.3.5 Against this background, the following walking distances are identified:

- 1,600m - a distance where most people (circa 80%) will walk and offers “the greatest potential to replace short car trips”; and

- 5.3.6 **Figure 2** and **Table 5.2** demonstrates that there is a very good variety of local services and facilities within a 'reasonable' walking distance of the site including significant employment, education, retail, leisure and healthcare.

5.4 Cycling Distances

- 5.4.1 The Department for Transport's Cycling and Walking Investment Strategy (2017) states at paragraph 1.16 that:

"... there is significant potential for change in travel behaviour. Two out of every three personal trips are within five miles - an achievable distance to cycle for most people, with many shorter journeys also suitable for walking. For school children, the opportunities are even greater. Three quarters of children live within a 15 minute cycle ride of a secondary school, while more than 90% live within a 15 minute walk or bus journey from a primary school."

- 5.4.2 The DfT's Gear Change A bold vision for cycling and walking states (page 11) that:

In particular, there are many shorter journeys that could be shifted from cars, to walking, or cycling. We want to see a future where half of all journeys in towns and cities are cycled or walked. 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.

- 5.4.3 While now superseded, the Department for Transport's (DfT) Local Transport Note 2/08 'Cycle Infrastructure Design' (October 2008) states that:

"Urban networks are primarily for local journeys. In common with other modes, many utility cycle journeys are under three miles (4.8km) (ECF, 1998), although for commuter journeys, a trip distance of over 5 miles (8km) is not uncommon."

- 5.4.4 This is corroborated by data provided within the National Travel Survey which demonstrates that the average distance per journey by bike is approximately 4.4km, with the current average length of an employment and leisure cycle trip some 5.2km.

- 5.4.5 There is a wealth guidance on cycling distances, with 8km (5 miles) considered to be a reasonable cycle distance.

5.5 Key Destinations

- 5.5.1 The primary destinations for future residents of the proposed development within the local area are listed in **Table 5.2**, overleaf, and also shown on **Figure 2**.

Table 5.2: Local Destinations

Journey Purpose	Destination	Distance (m)	Walking (mins)	Cycling (mins)
Leisure	Hangleton Farm Equestrian Centre	1300	15	5
	East Preston Football Club	1400	17	5
	Worthing RFC	1500	18	6
	Highdown Vineyard	1500	18	6
	The spotted Cow Public House	1700	20	6
	The Henty Arms Public House	1700	20	6
	Angmering Community Centre	1800	21	7
	Glebelands Recreation Ground	1800	21	7
	Ferring Village Hall	1800	21	7
	Ferring Football Club	2000	24	8
	Langmead Recreation Ground	2100	25	8
	Worthing Hockey Club	2300	27	9
	Angmering Village Hall	2500	30	9
Retail	Roundstone Bypass Retail Park	600	7	2
	Costcutter	900	11	3
	Asda	950	11	4
	The Co-operative Food (Ferring)	1800	21	7
	The Co-operative Food (Angmering Rail Station)	1900	23	7
	Sainsbury's	2100	25	8
	The Co-operative Food (Angmering)	2400	29	9
Education	East Preston Junior School	1500	18	6
	East Preston Village Pre-School	1900	23	7
	Ferring CoE Primary School	2200	26	8
	Georgian Gardens Community Primary School	2400	29	9
	The Angmering School	2400	29	9
	Angmering Village Pre-School	2500	30	9
Employment	Hangleton Industrial Estate	1100	13	4
	Littlehampton Road Industrial Estate	1900	23	7
	Rushington Trading Estate	3500	42	13
Healthcare	Asda Chemist	950	11	4
	Lloyds Pharmacy	1800	21	7

Journey Purpose	Destination	Distance (m)	Walking (mins)	Cycling (mins)
	Kamsons Pharmacy	1900	23	7
	Willow Green Surgery	2000	24	8
	Ferring Dental Clinic	2000	24	8
	Angmering Medical Centre	2500	30	9

Source: Google Maps and Consultant Estimates

	Reasonable walking distance (1,600m)
	Reasonable cycling distance (5,000m)

- 5.5.2 As demonstrated on **Figure 2** and in **Table 5.2**, a range of local facilities are accessible within reasonable walking and cycling distances, including education, retail, leisure and employment opportunities.

5.6 Public Transport

- 5.6.1 As set out in Section 3, the site is well located to existing bus stops situated on the A259 Littlehampton Road. These stops are serviced by regular bus routes to destinations including Littlehampton, Brighton, Shoreham-by-Sea and Arundel.
- 5.6.2 Angmering rail station is located circa 1.8km west from the site and the station offers services to destinations including Littlehampton, Brighton, Portsmouth, Southampton and London.
- 5.6.3 The development proposal will connect the site to the existing pedestrian / cycle network along the A259 Littlehampton Road and this will provide a realistic opportunity for residents to travel from the site using sustainable modes of transport.

5.7 Sustainable Transport Strategy

- 5.7.1 The site is located within a comfortable walking and cycling distance of a good range of everyday facilities. Regular bus services are also accessible to the site to provide connections to destinations further afield and in addition to this Angmering rail station is also located within a reasonable walking distance and comfortable cycling distance.

5.7.2 To ensure these opportunities are taken up, a 'Sustainable Transport Strategy' has been developed. The strategy will be delivered through the Framework Travel Plan that supports the TA (report ref: ITB16357-003).

5.7.3 The overarching aims of the Strategy are:

- To reduce the number of single occupancy car journeys to the site, in line with the objectives of local and national policy guidance; and
- To promote the accessibility to the site by non-car modes of transport.

5.7.4 The key target of the Framework Travel Plan is:

"Over the period of the plan, achieve a 12-hour vehicle trip rate that is 10% lower than was forecast in the Transport Assessment for the site."

5.7.5 To deliver these aims and targets, the Strategy seeks to:

- Manage car parking demand across the development;
- Support a range of sustainable transport alternatives to provide the future residents and their visitors with options for travel to/from the site;
- Develop an awareness of the options for sustainable travel to and from the site amongst residents and their visitors;
- Promote car sharing, walking, cycling and public transport as safe, efficient, affordable alternatives to private cars and highlight the health and environmental benefits of using sustainable travel modes; and
- Minimise the impacts of car based travel to the site on the local and strategic highway network and environment.

5.7.6 A combination of 'hard' (infrastructure led) and 'soft' (promotion of incentive based) measures are identified to promote and incentivise sustainable travel choices where it is realistic to do so. The Framework Travel Plan identifies a delivery and management strategy for these measures and commits to future monitoring of the success of the travel plan.

5.7.7 An Action Plan is provided in **Table 5.4** which summarises the comprehensive package of measures proposed to be delivered to encourage sustainable access to and from the site. Further detail is provided within the Framework Travel Plan that accompanies the TA.

Table 5.4: Sustainable Transport Strategy

	Measure	Timescale
Cross-Objective	Develop and maintain community website	Prior to occupation
	Prepare and distribute Travel Welcome Packs	Prior to occupation
	Provide community notice boards	Phased with development
	Provide EV charging infrastructure	Phased with development
Reduce the Need to Travel	Deliver connections to broadband network	Phased with development
Promotion of Walking and Cycling	Provision of walking and cycling maps	Prior to occupation
	Pedestrian connection to the A259	Phased with development
	Offer a £50 travel voucher to each dwelling for cycle equipment purchase	On occupation
	Provision of cycle storage within each unit	Phased with development
	Set up a Bicycle User Group (BUG)	Six months after Occupation
Promotion of Public Transport	Negotiation of Bus Taster Ticket with local operators	On occupation
Encourage Car Sharing	Promotion of car sharing schemes through https://liftshare.com/uk/community/west-sussexcarshare	Prior to Occupation
Management	Appoint a Travel Plan Co-ordinator	Three months prior to Occupation – retained for five years from occupation
	Training of the sales team about the Travel Plan	Training as part of induction process
	Production of Sales Stage Travel Packs	To be developed before 1 st occupation
	Develop Full Travel Plan	One year after occupation
	Steering Group	Meeting every 6 months for the first three years after first occupation, annual meetings thereafter
Monitoring	Traffic Surveys at the site access	Year one, three and five
	Travel Questionnaires	Annually (for five years)
	Monitoring Report	Year one, three and five

Source:

5.8 Summary

5.8.1 The site is accessible to a wide range of facilities that residents may use on a day-to-day basis by a range of travel modes, including on foot and by cycle. Local bus services are accessible to

the site within a short, less than two minutes' walk, providing access to local destinations further afield such as Littlehampton, Brighton, Shoreham-by-Sea and Arundel.

5.8.2 Angmering rail station is also located within a reasonable walking distance from the site and provides services to key destinations such as Littlehampton, Brighton, Portsmouth, Southampton and London and therefore offers a realistic opportunity for residents to travel via sustainable modes.

5.8.3 A sustainable transport strategy has been developed to identify opportunities to promote sustainable transport choices. This will ensure that opportunities for sustainable transport can be taken up in accordance with paragraph 108 of the NPPF.

SECTION 6 Traffic Impact

6.1 This section of the TA establishes the likely traffic generation of the proposed development and assesses the vehicular traffic impact of the proposed development on the local highway network.

6.2 Baseline Conditions

6.2.1 Due to the Covid-19 pandemic, it has not been possible to obtain 2021 baseline data from the use of traffic surveys as the existing peak period conditions experience lower traffic flows compared to pre-pandemic peak periods. On this basis, peak period traffic data has been obtained from planning application associated with Land South of Water Lane, Angmering (application ref: A/99/17/OUT). This application had baseline traffic data for 2015 peak periods which are illustrated in **Figures TF1 and TF2**.

6.3 Traffic Growth and Committed Development

6.3.1 Factors to allow for background traffic growth from 2015 to 2021 and 2026 have been derived using the TEMPRO software for Arun 005 mid-layer super output area in line with WSCC's Transport Assessment guidance.

6.3.2 Application of the TEMPRO growth rates take account of local housing and employment projections so considers the cumulative impact of development within Angmering. The growth factors are summarised in **Table 6.1** and the TEMPRO calculations are provided in **Appendix D**. **Figures TF3 to TF6** illustrate the associated traffic flows.

Table 6.1: Growth Rates

Date Range	Morning Peak	Evening Peak
2015-2021	1.0687	1.0692
2015-2026	1.1190	1.1205

Source: TEMPRO

6.4 Proposed Development Trip Generation

6.4.1 The residential trip rates have been derived from the TRICS database using the following parameters, which were agreed with WSCC as part of the pre-application discussions:

- England (excluding Greater London);

- Privately owned houses;
- Surveys in suburban and edge of town locations; and
- Sites with between 40 – 80 houses.

6.4.2 The proposed development is for 76 residential dwellings. As shown in the schedule of accommodation in Section 4, 70% of the dwellings are privately owned and 30% are affordable dwellings, however, the trip rates are derived from surveys associated with private owned dwellings which typically exhibit greater peak hour trip rates. The agreed residential trip rate and generation is summarised in **Table 6.2** and the full TRICS output is provided in **Appendix E**.

Table 6.2: Residential Trip Rates

	Morning Peak Period			Evening Peak Period		
	In	Out	Total	In	Out	Total
Privately Owned Houses	0.118	0.367	0.485	0.350	0.166	0.516
76 Dwellings	9	28	37	27	13	40

Source: TRICS

6.4.3 The proposed residential development of 76 dwellings is expected to generate some 37 two-way vehicle movements during the morning peak period and 40 two-way vehicle movements during the evening peak period. This equates to around one vehicle movement every 1.5 minutes in the peak periods.

6.5 Traffic Distribution

6.5.1 The likely journey purpose for the generated car driver peak hour trips has been determined using data derived from the National Travel Survey (NTS) 2019 (DfT), the proportion of the peak hour trips by journey purpose by car is presented in **Table 6.3**.

Table 6.3: Proportion of Peak Hour Trips by Journey Purpose (Car Driver Only)

Trip Purpose	Morning Peak	Evening Peak
Commuting / Business	36.8%	43.2%
All Other Journey Purposes	63.2%	56.8%
Total	100%	100%

Source: Car driver trip start time by trip purpose (Monday to Friday only): Great Britain, 2015/19, National Travel Survey, DfT, 2020

- 6.5.2 The data set out in **Table 6.3** has been used to distribute the generated traffic. For the purpose of this assessment, the analysis has been undertaken on the basis that 43.2% of the total vehicular trips generated by the development will be for employment journeys and the remaining 56.8% of the vehicle journeys will be for all other purposes for both the morning and evening peak periods.

Commuting Trips

- 6.5.3 Travel to Work data contained within the 2011 Census has been reviewed to identify the likely destinations for employment journeys. The data for the residents of Arun 005 MSOA has been used, which comprises the proposed development site and the surrounding residential area. The analysis is summarised in **Table 6.4**, overleaf, and presented in full in **Appendix F**.

Table 6.4: Summary of Work Trips Distribution (Travel by Car)

Destination	Percentage of Trips to Work	Percentage of All Trips
Worthing	11.06%	25.61%
Littlehampton	6.57%	15.20%
Angmering	3.04%	7.03%
Chichester	2.41%	5.59%
Crawley	1.81%	4.19%
Bognor Regis / Felpham	1.59%	3.68%
Shoreham by Sea	1.59%	3.68%
Brighton	1.54%	3.56%
Angmering on Sea	1.43%	3.30%
Findon / Patching	1.24%	2.88%
London	1.10%	2.54%
Horsham	1.08%	2.50%
Steyping / Henfield / Ashington	1.01%	2.33%
Yapton	0.95%	2.20%
Arundel	0.58%	1.35%
Ferring	0.53%	1.23%
Other	5.67%	13.13%
Total	43.20%	100.00%

Source: 2011 Census

Other Journey Purpose

- 6.5.4 The distribution of non-employment trips has been estimated using a P/T^2 gravity model. This considers destinations within a 30-minute drive time of the site to reflect the more local nature of the likely destinations of these trips.
- 6.5.5 The population of key urban areas (likely destinations for non-employment trips) has been estimated from the 2011 Census. Journey times were then estimated using journey planning software from the Google Maps Directions facility, based on peak hour journey times.
- 6.5.6 A summary of the distribution for non-employment journey purpose by destination is presented in **Table 6.5**. The gravity model is presented in full in **Appendix G**.

Table 6.5: Distribution of Other Journey Purposes (Car Drivers Only)

Destination	Percentage of Trips to Work	Percentage of All Trips
Worthing	28.63%	50.40%
Littlehampton	19.52%	34.36%
Bognor Regis / Felpham	3.30%	5.81%
Shoreham by Sea	1.45%	2.56%
Angmering	1.22%	2.15%
Horsham	1.09%	1.92%
Angmering on Sea	0.50%	0.88%
Chichester	0.40%	0.71%
Ferring	0.32%	0.56%
Other	0.37%	0.65%
Total	56.80%	100.00%

Source: Consultant's Gravity Model and Census 2011 Data

Combined Distribution

6.5.7 The traffic distribution associated with the employment and non-employment trips have been combined and the overall traffic distributions is summarised in **Table 6.6**.

Table 6.6: Combined Distribution (Travel by Car)

Destination	Percentage of all Trips – Work	Percentage of All Trips – Non-Work	Percentage of All Trips
Worthing	11.06%	28.63%	39.69%
Littlehampton	6.57%	19.52%	26.08%
Bognor Regis / Felpham	1.59%	3.30%	4.89%
Angmering	3.04%	1.22%	4.26%
Shoreham by Sea	1.59%	1.45%	3.05%
Chichester	2.41%	0.40%	2.82%
Horsham	1.08%	1.09%	2.17%

Destination	Percentage of all Trips – Work	Percentage of All Trips – Non-Work	Percentage of All Trips
Angmering on Sea	1.43%	0.50%	1.93%
Crawley	1.81%		1.81%
Brighton	1.54%		1.54%
Findon / Patching	1.24%	0.02%	1.26%
London	1.10%		1.10%
Steyning / Henfield / Ashington	1.01%	0.08%	1.09%
Yapton	0.95%	0.03%	0.98%
Ferring	0.53%	0.32%	0.85%
Arundel	0.58%	0.04%	0.62%
Other	5.67%	0.20%	5.87%
Total	43.20%	56.80%	100.00%

Source: 2011 Census

6.5.8 With reference to the results set out in **Table 6.6**, Worthing is the main local destination for peak hour travel, accounting for some 40%, followed by Littlehampton with circa 26% of trips and Bognor Regis / Felpham with approximately 5% of trips.

6.5.9 The development distribution is illustrated in **Figure TF7** and the development traffic flows during the morning and evening peak hours are shown in **Figures TF8 and TF9**.

6.6 Traffic Assignment

6.6.1 The traffic expected to be generated by the site (ref: **Table 6.2**) has been distributed across the local highway network to the destinations identified in **Table 6.6**.

6.6.2 To determine the routing of trips to these destinations, reference has been made to the Google Maps 'Directions' facility. A morning peak hour start time for journeys was utilised to ensure that peak period traffic conditions are reflected.

6.6.3 **Table 6.7** provides a summary of the assignment of development generated trips and the assigned trips are illustrated in **Figures TF10 to TF11**.

Table 6.7: Summary of Residential Traffic Assignment

Description of Route		% Traffic	Morning Peak			Evening Peak		
			In	Out	Two-Way	In	Out	Two-Way
East of Site Access	A259 E	44.30%	4	13	17	12	6	18
West of site Access	A280	18.30%	2	5	7	5	2	7
	Old Worthing Road	9.17%	1	3	4	2	1	3
	Roundstone Lane N	1.28%	0	0	0	0	0	0
	Roundstone Lane S	0.58%	0	0	0	0	0	0
	A259 (West of Roundstone Lane)	26.37%	2	7	9	8	4	12
Total		100.00 %	9	28	37	27	13	40

Source: Consultants' calculations

- 6.6.4 Based on the above, it can be seen that approximately 55.7% of the residential development traffic will route west of the site, equating to 20 to 22 two-way vehicle movements during the morning and evening peak periods. This equates to one vehicle movements every three minutes.

Development Traffic Impact

- 6.6.5 To put the level of increase into context, Table 6.8 provides a traffic impact assessment along key links within the vicinity of the proposed site.

Table 6.8: Net Traffic Impact Assessment (2026 Future Year)

Junction / Link	Morning Peak				Evening Peak			
	2026	Dev	2026 + Dev	% Impact	2026	Dev	2026 + Dev	% Impact
A259 E	2687	17	2704	0.63%	2843	18	2861	0.63%
A280	740	7	747	0.95%	803	7	810	0.87%
Old Worthing Road	882	4	886	0.45%	624	3	627	0.48%
A259 (West of Roundabout Lane)	1068	9	1077	0.84%	2737	12	2749	0.44%

Source: Consultants' calculations

6.6.6 Table 6.8 shows the greatest increase in traffic will be experienced along the A280 with a circa 1% increase during the morning and evening peak periods. This equates to around one additional vehicle movement every nine minutes. It should be noted that all of the local highway links will experience an increase of less than one percent in the peak periods which demonstrates the proposed development will have an immaterial impact.

6.7 Junction Capacity Testing

6.7.1 To calculate the impact of the proposal on neighbouring junctions, capacity analysis has been undertaken using the TRL software Junction 9 at the following junctions.

- Site Access / A259 Junction; and
- A259 / Old Worthing Road roundabout.

6.7.2 No further junctions are deemed necessary to consider as part of this assessment as Table 6.8 shows no other junctions within the vicinity of the site will experience an increase in traffic flows in excess of 30 movements. This is in accordance with WSCC's Traffic Assessment Methodology Section 10.5 which states:

"Generally the study area will include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour – or if the junction already experiences peak period congestion an increase of 10 or more vehicles – as a result of the development proposals."

6.7.3 At each of the junctions outlined above, detailed modelling assessments were undertaken considering the following scenarios:

- 2021 without development;
- 2026 without development; and
- 2026 with development.

6.7.4 **Appendix H** presents the junction modelling outputs and the results of the assessment are summarised in the following paragraphs.

Proposed Site Access / A259

6.7.5 The principal outputs derived from the model are the Ratio of Flow to Capacity (RFC), Queue Length and Delay. The junction capacity assessment results are summarised in **Table 6.9**.

Table 6.9: Proposed Site Access / A259

Approach	Morning Peak Period			Evening Peak Period		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2026 with Development						
Site Access	0.05	<1	7	0.04	<1	10

Source: Junctions 9

- 6.7.6 The results demonstrate that the proposed site access onto Lower Turk Street will operate within capacity (i.e. with minimal queueing and delay), during all future year assessment scenarios.

A259 / A280 / B2140 roundabout

- 6.7.7 The A259 / Old Worthing Road roundabout is located immediately west of the proposed site access. There is a committed WSCC junction improvement scheme (**Appendix I**) which is expected to be implemented prior to the first occupation of the site. On this basis, the junction capacity assessment of the roundabout is based on the committed improvement scheme.

Table 6.10: A259 / Old Worthing Road Roundabout

Approach	Morning Peak Period			Evening Peak Period		
	RFC	Queue (veh)	Delay (s/veh)	RFC	Queue (veh)	Delay (s/veh)
2021						
A280	0.35	1	5	0.34	1	4
A259 (East)	0.44	1	3	0.69	2	5
Old Worthing Road	0.56	1	7	0.25	<1	5
Roundstone By-pass Road	0.65	2	5	0.63	2	4
2026 with Committed Development						
A280	0.38	1	6	0.37	1	5
A259 (East)	0.46	1	3	0.73	2	6
Old Worthing Road	0.60	2	8	0.27	<1	6
Roundstone By-pass Road	0.69	2	6	0.66	2	5
2026 with Committed Development plus Development						
A280	0.39	1	6	0.38	1	5
A259 (East)	0.47	1	3	0.74	2	6
Old Worthing Road	0.61	2	8	0.28	<1	6
Roundstone By-pass Road	0.69	2	6	0.67	2	5

Source: Junctions 9

- 6.7.8 Table 6.10 shows the A259 / Old Worthing Road roundabout will operate well within capacity during the 2026 future 'with development' scenarios. Both queueing and delay remains consistent between the 'without' and 'with' development scenarios in each peak period and therefore the proposed development will not result in a 'severe' impact at the junction.

6.8 Roundstone Lane Level Crossing

- 6.8.1 As requested through the WSCC Pre-Application Advice, consideration has been given to the impact of the proposed development upon the B2140 level crossing.
- 6.8.2 The B2140 level crossing is located circa 700m west of the proposed site and it is anticipated around 10% of development generated traffic will route across the level crossing during the peak periods. This equates to around four two-way movements in each peak (one additional vehicle every 15 minutes).
- 6.8.3 As the development will generate such a low increase in vehicle movements at the level crossing, it has not been considered necessary to undertake a detailed capacity assessment of the crossing; it is forecast that the development will generate a maximum of one additional vehicle in the queue during the peak periods. On this basis, the proposed development will not cause a severe intensification in use at the level crossing and therefore complies with the NPPF.

6.9 Summary

- 6.9.1 The proposed residential development of 76 dwellings is expected to generate some 37 two-way vehicle movements during the morning peak period and 40 two-way vehicle movements during the evening peak period. This equates to around one vehicle movement every 1.5 minutes in the peak periods.
- 6.9.2 Based on the trip distribution methodology agreed as part of the pre-application advice, junction capacity testing has been undertaken at the site access junction and the A259/B2140 junction. The assessment demonstrates that the proposed development does not have a material, let alone 'severe', impact upon the operation of the highway network, consistent with the requirements of the National Planning Policy Framework.
- 6.9.3 Consideration has been given to the impact of the development upon the B2140 level crossing. The development is forecast to generate 4 peak hour movements across the level crossing, a level of impact that would be imperceptible to its existing performance.

SECTION 7 Summary and Conclusions

7.1 Summary

Introduction

- 7.1.1 Redrow Homes has appointed i-Transport LLP to provide highways and transport advice in relation to a full planning application for a proposed residential development of 76 dwellings with associated car parking and landscaping, on land south of the A259 in Angmering.
- 7.1.2 The site is located on the eastern edge of Angmering village, immediately adjacent to the existing settlement boundary. The site is bounded to the north by the A259 Littlehampton Road, to the east by Roundstone Farm and the 'Artists in Stone' commercial premises, to the south by the West Coastway Railway Line and the west by the B2140 Old Worthing Road and residential properties.

Policy

- 7.1.3 Paragraph 108 of the NPPF identifies the three key transport criteria that decisions on development proposals should take account of. These are whether:
- The opportunities for sustainable travel have been appropriately 'taken up';
 - Safe and suitable access can be achieved; and
 - Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.
- 7.1.4 These criteria are reflected in local policy. The TA has therefore been prepared to assess the development proposal against these criteria and how the proposals comply with the identified national and local transport policy.

Sustainability

- 7.1.5 The site is accessible to a wide range of facilities that residents may use on a day-to-day basis by a range of travel modes, including on foot and by cycle. Local bus services are accessible to the site within a short, less than two minutes' walk, providing access to local destinations further afield such as Littlehampton, Brighton, Shoreham-by-Sea and Arundel.
- 7.1.6 Angmering rail station is also located within a reasonable walking distance from the site and provides services to key destinations such as Littlehampton, Brighton, Portsmouth,

Southampton and London and therefore offers a realistic opportunity for residents to travel via sustainable modes.

- 7.1.7 A sustainable transport strategy has been developed to identify opportunities to promote sustainable transport choices. This will ensure that opportunities for sustainable transport can be taken up in accordance with paragraph 108 of the NPPF.

Access and Safety

- 7.1.8 A detailed review of the most recently available accident data has been undertaken and does not identify any specific road safety problems within the local area.
- 7.1.9 Access to the site is to be achieved through a left in, left out junction onto the A259. An 'entry only' is to be retained through the existing site access from the B2140/A259 roundabout, and measures are proposed within the site to restrict egress from the site through this junction.
- 7.1.10 A pedestrian and cycle access is proposed adjacent to the 'entry only' access to connect into existing pedestrian/cycle provision adjacent to the A259/B2140 roundabout. In addition, a scheme of improvements to widen the pedestrian/cycle provision on the southern side of the A259 is proposed for delivery as part of the site access arrangements.
- 7.1.11 The internal layout has been designed in accordance with Manual for Streets design principles and provides access for refuse and emergency vehicles throughout the site; further detail of this, and the parking strategy, is contained within the Design and Access Statement accompanying the application.

Traffic Impact

- 7.1.12 The proposed residential development of 76 dwellings is expected to generate some 37 two-way vehicle movements during the morning peak period and 40 two-way vehicle movements during the evening peak period. This equates to around one vehicle movement every 1.5 minutes in the peak periods.
- 7.1.13 Based on the trip distribution methodology agreed as part of the pre-application advice, junction capacity testing has been undertaken at the site access junction and the A259/B2140 junction. The assessment demonstrates that the proposed development does not have a material, let alone 'severe', impact upon the operation of the highway network, consistent with the requirements of the National Planning Policy Framework.

- 7.1.14 Consideration has been given to the impact of the development upon the B2140 level crossing. The development is forecast to generate 4 peak hour movements across the level crossing, a level of traffic that would have an imperceptible impact on its existing operation.

7.2 Conclusions

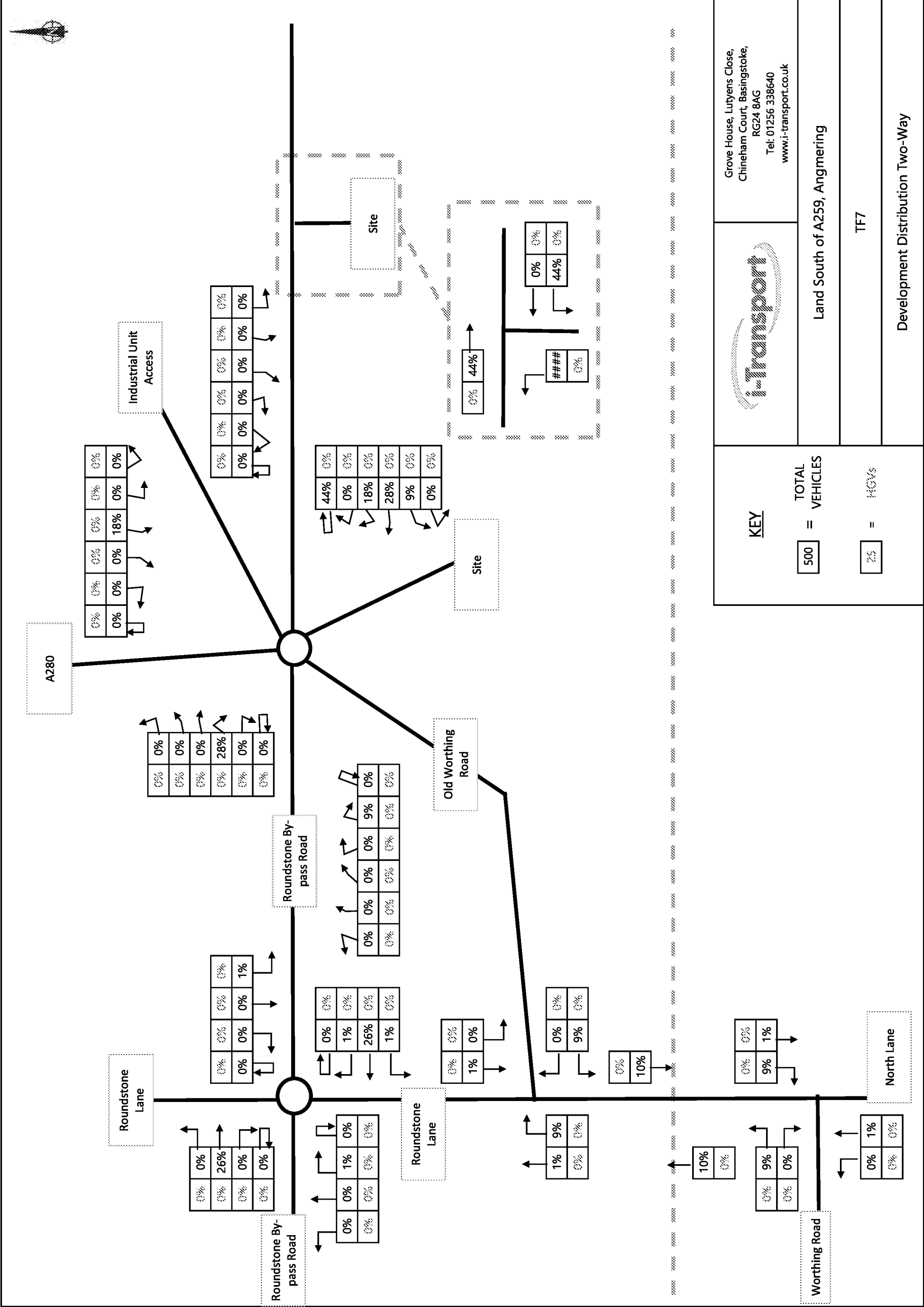
- 7.2.1 On this basis of the above, it is concluded that the proposed development complies with the requirements of the NPPF insofar that:

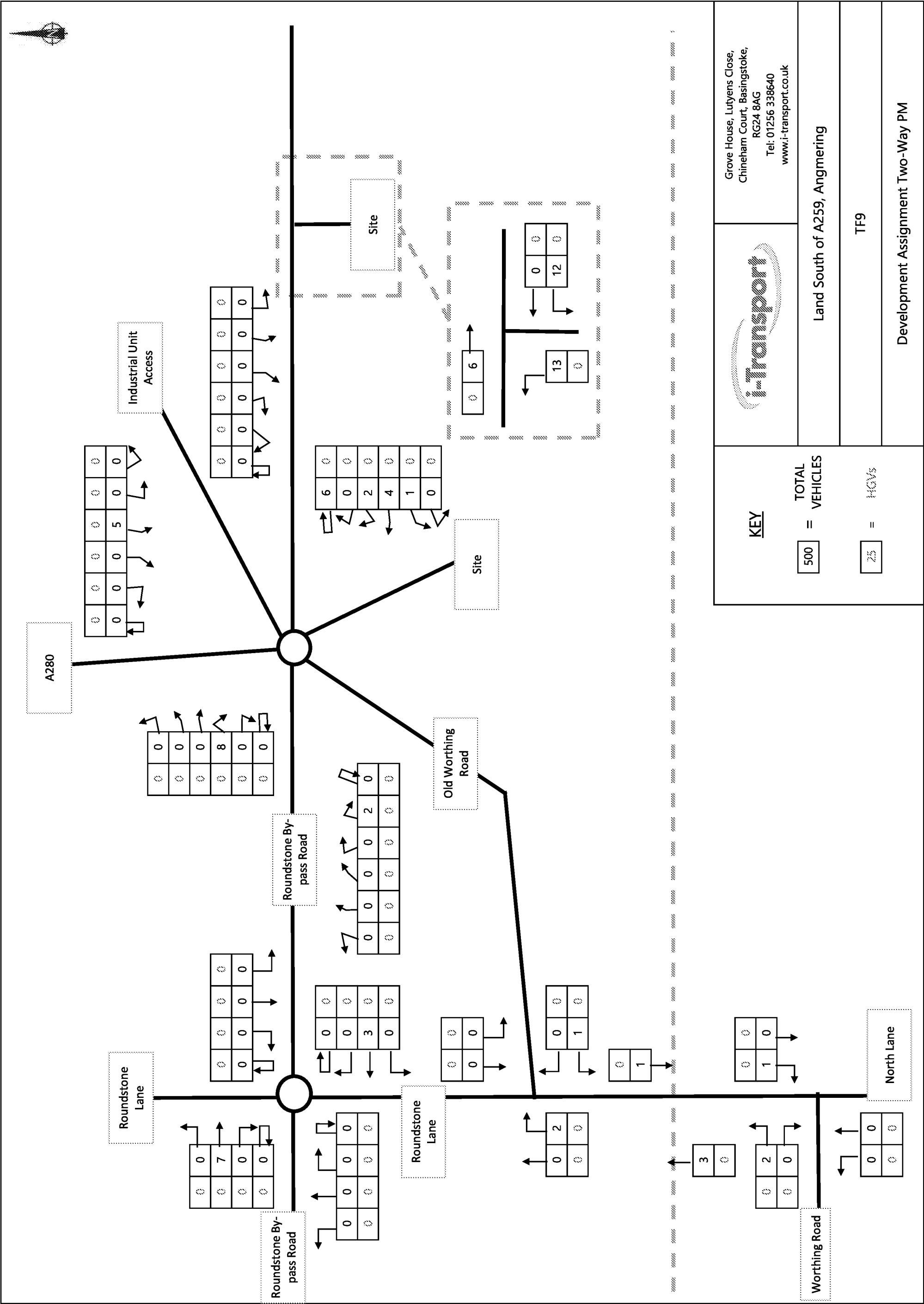
- The opportunities for sustainable travel have been appropriately taken up;
- Safe and suitable access can be achieved; and
- Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development.

- 7.2.2 Further, the proposed development accords with paragraph 109 of the NPPF in that the proposed development does not have an unacceptable impact on highway safety severe impact upon the operation of the highway network; therefore, there are no reasonable grounds to refuse the application on matters of highways and transport.

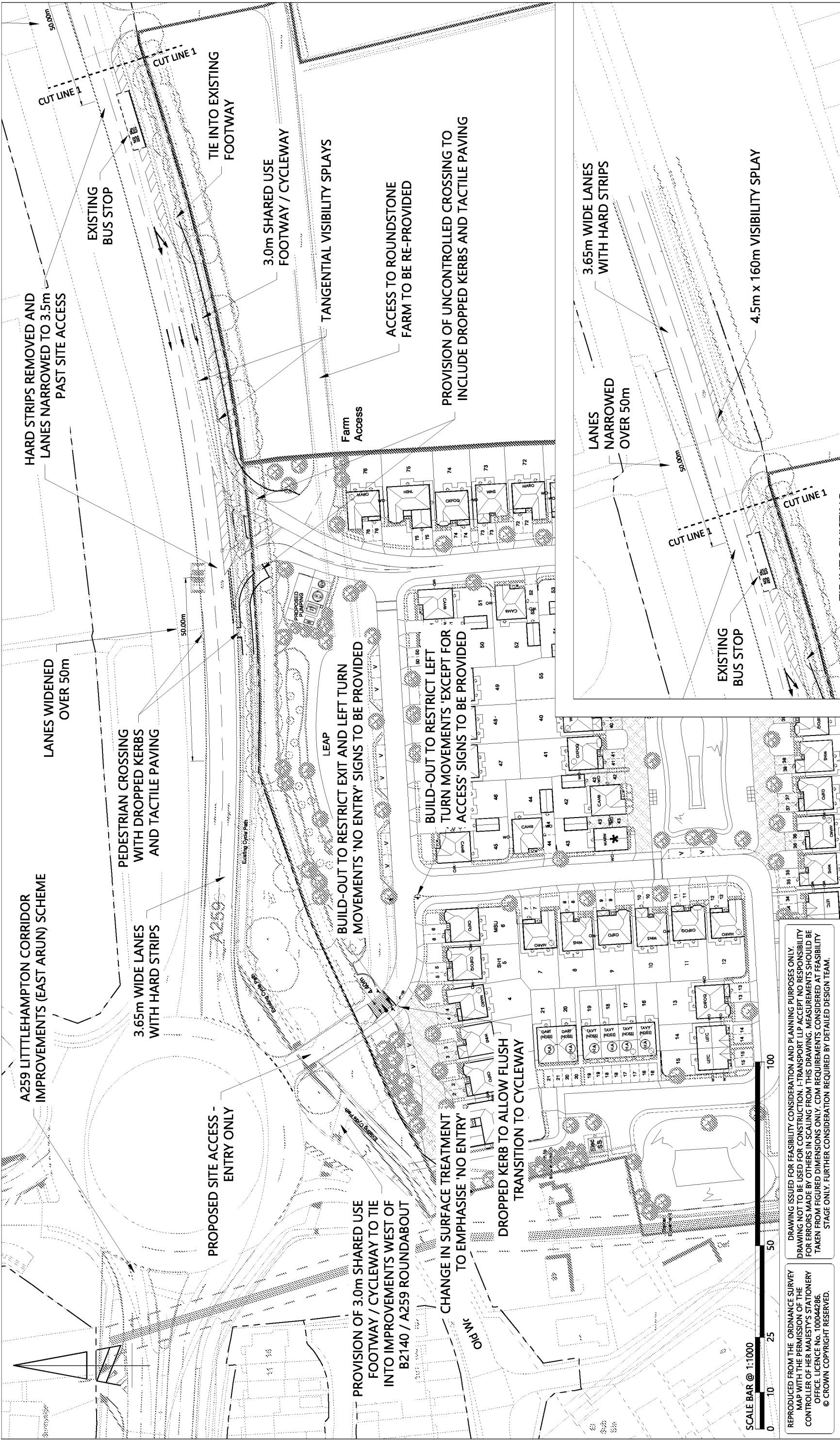
FIGURES







DRAWINGS



 Grove House, Lutyens Close, Chineham Basingstoke, Hampshire, RG24 8AG Tel: 01256 338640 www.i-transport.co.uk										REV DATE BY 25.06.21 11.06.21 23.04.21 16.03.21 JD JD JD JD DESCRIPTION CHK APD SITE LAYOUT UPDATED NO ENTRY ARRANGEMENT AMENDED SITE LAYOUT UPDATED SITE LAYOUT UPDATED STATUS: FOR INFORMATION										TITLE: POTENTIAL SITE ACCESS ARRANGMENT PROJECT: LAND SOUTH OF A259, ANGMERING CLIENT: HAM MANOR FARMS LIMITED										DRAWN: PH				CHECKED: ZB		APPROVED: DS			
PROJECT No: ITB16357				SCALE @ A3: 1:1000				DATE: 05.11.20																															
DRAWING No: ITB16357-GA-003				REV: D																																			



Legend

Application Boundary - to be verified by Land Registry / Client

Indicates 1.8m High Close Boarded Fencing

Indicates 1.8m High Screen Wall

Feature Wall

Protection crossing points

Autumn Gold Block pavilions

Brindle block pavilions

Affordable dwellings

Visitor Parking Space

1 Storey Existing Dwelling

2 Storey Existing Dwelling

Overhead Powerlines

Existing Sewer

Corner Turner with additional window

Application Boundary - to be verified by Land Registry / Client

Indicates 1.8m High Close Boarded Fencing

Indicates 1.8m High Screen Wall

Feature Wall

Protection crossing points

Autumn Gold Block pavilions

Brindle block pavilions

Affordable dwellings

Visitor Parking Space

1 Storey Existing Dwelling

2 Storey Existing Dwelling

Overhead Powerlines

Existing Sewer

Corner Turner with additional window

Accommodation Schedule						
Private Dwellings	No. Beds		No. Units		Total Spelt	
	Type Ref	Spelt	Type Ref	Spelt	Type Ref	Spelt
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	2	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500	3000	3	2700	
	1I	3500	3000	3	2700	
	1J	3500	3000	3	2700	
Affordable 1/2 room	1A	3500	3000	3	2700	
	1B	3500	3000	3	2700	
	1C	3500	3000	3	2700	
	1D	3500	3000	3	2700	
	1E	3500	3000	3	2700	
	1F	3500	3000	3	2700	
	1G	3500	3000	3	2700	
	1H	3500				

APPENDIX A. Pre-Application Engagement



Technical Note

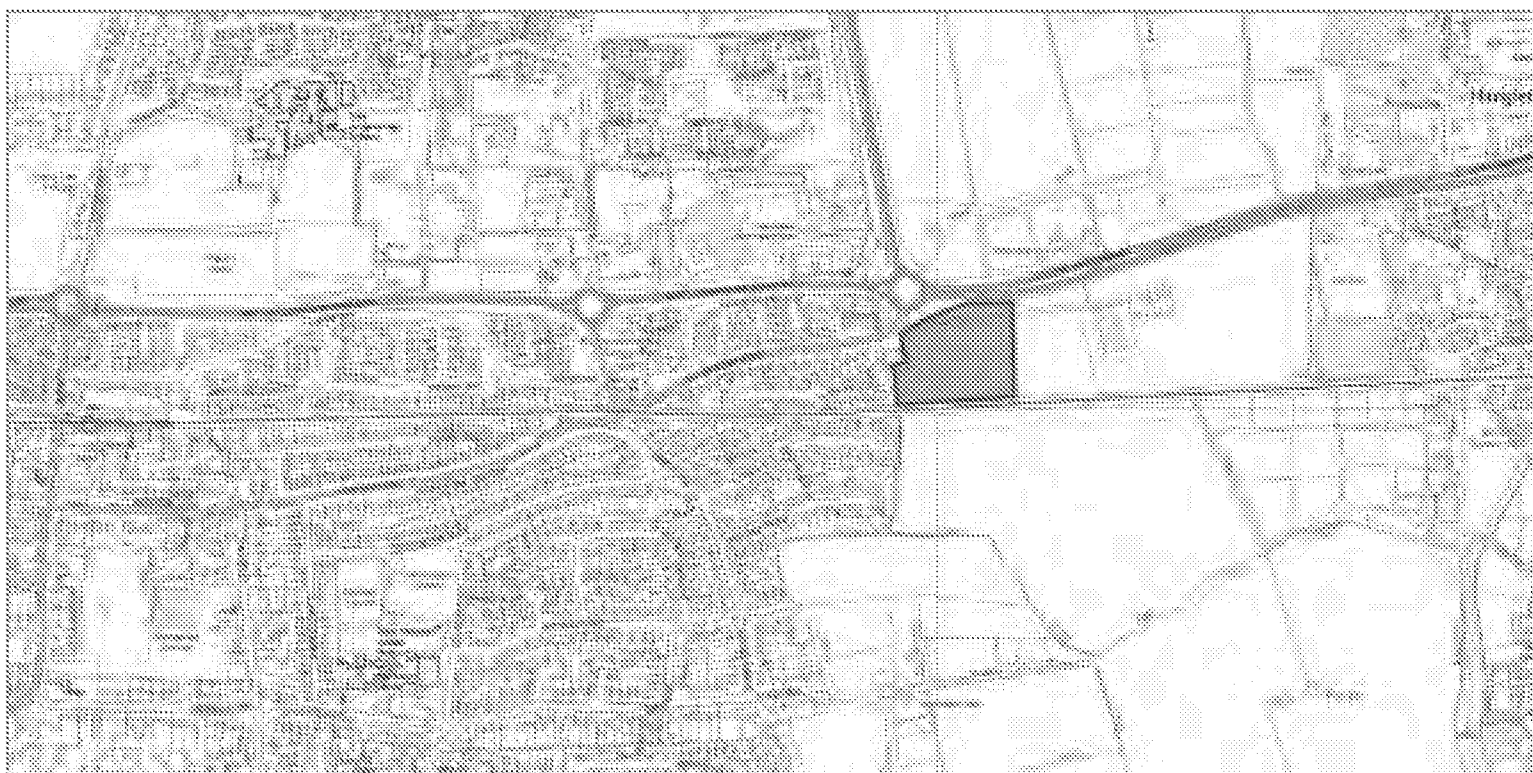
Project No: ITB16357
Project Title: Land South of A259, Angmering
Title: Transport Assessment Scoping Note
Ref: ITB16357-001
Date: 17 December 2020

SECTION 1 INTRODUCTION

1.1 Introduction

- 1.1.1 Redrow Homes has appointed i-Transport to provide highways and transport advice in relation to a full planning application for a proposed residential development of circa 76 dwellings with associated car parking and landscaping, on land south of the A259 in Angmering.
- 1.1.2 The site is located on the eastern edge of Angmering village, immediately adjacent to the existing settlement boundary. The site is bounded to the north by the A259 Littlehampton Road, to the east by Artists in Stone commercial premises, to the south by the West Coastway Railway Line and the west by the B2140 Old Worthing Road and residential development.
- 1.1.3 The location of the site is shown on **Figure 1**, an extract of which is provided as **Image 1.1**.

Image 1.1: Site Location



Source: i-Transport

1.1.4 The purpose of this Transport Assessment (TA) Scoping Note is twofold:

- To agree the scope and parameters for a Transport Assessment of the development proposal with the local highway authority (West Sussex County Council – WSCC); and
- To seek to agreement in principle that the development is deliverable in transport terms, particularly with regard to the proposed access arrangements.

1.1.5 There are three key transport tests identified in paragraphs 108 and 109 of the National Planning Policy Framework (NPPF) and these are summarised as follows:

- **Accessibility** – will the opportunities for sustainable transport modes be appropriately taken up?
- **Site access** – will safe and suitable access to the site be achieved for all users?
- **Traffic impacts** – will the residual traffic impact of the proposal be acceptable (i.e. less than 'severe')?

1.1.6 The Transport Assessment (TA) will respond in detail to each of these tests. This scoping note provides an initial summary of the parameters and proposed methodology to be utilised in the TA to address these tests.

1.2 Background

1.2.1 The site has previously been brought forward for development as a car showroom. At the time of the planning application the highway and transport matters were addressed with development control officers at WSCC satisfactorily, culminating with a 'no objection' to the proposed development.

1.2.2 As part of the planning application, the proposed site access arrangement comprised of a Left In / Left Out type arrangement onto the A259 Littlehampton Road and retention of the existing access from the roundabout as an 'Entry Only' was acceptable. A Stage 1 RSA was undertaken of the proposed access arrangement and all matters addressed in accordance with the Auditor recommendations.

SECTION 2 TRAFFIC IMPACT

2.1 Potential Development – Trip Generation

2.1.1 The potential traffic generation for the development proposal of circa 76 dwellings has been forecast using surveys of similarly located sites of 'houses privately owned' contained in the latest version of the TRICS database. Private housing trip rates are robust as they make no allowance for the lower peak hour traffic generation of any flats and affordable homes.

2.1.2 The trip rates have been obtained using the following search parameters:

- England (excluding Greater London);
- Privately owned houses;
- Surveys in suburban and edge of town locations; and
- Sites with between 40 – 80 houses.

2.1.3 The full TRICS outputs is attached as **Appendix A**. We propose to use the resultant trip rates (as attached) for the residential element of the site. Confirmation is sought from WSCC that the trip rates are acceptable and represent an agreed basis upon which to progress a Transport Assessment.

2.2 Trip Distribution

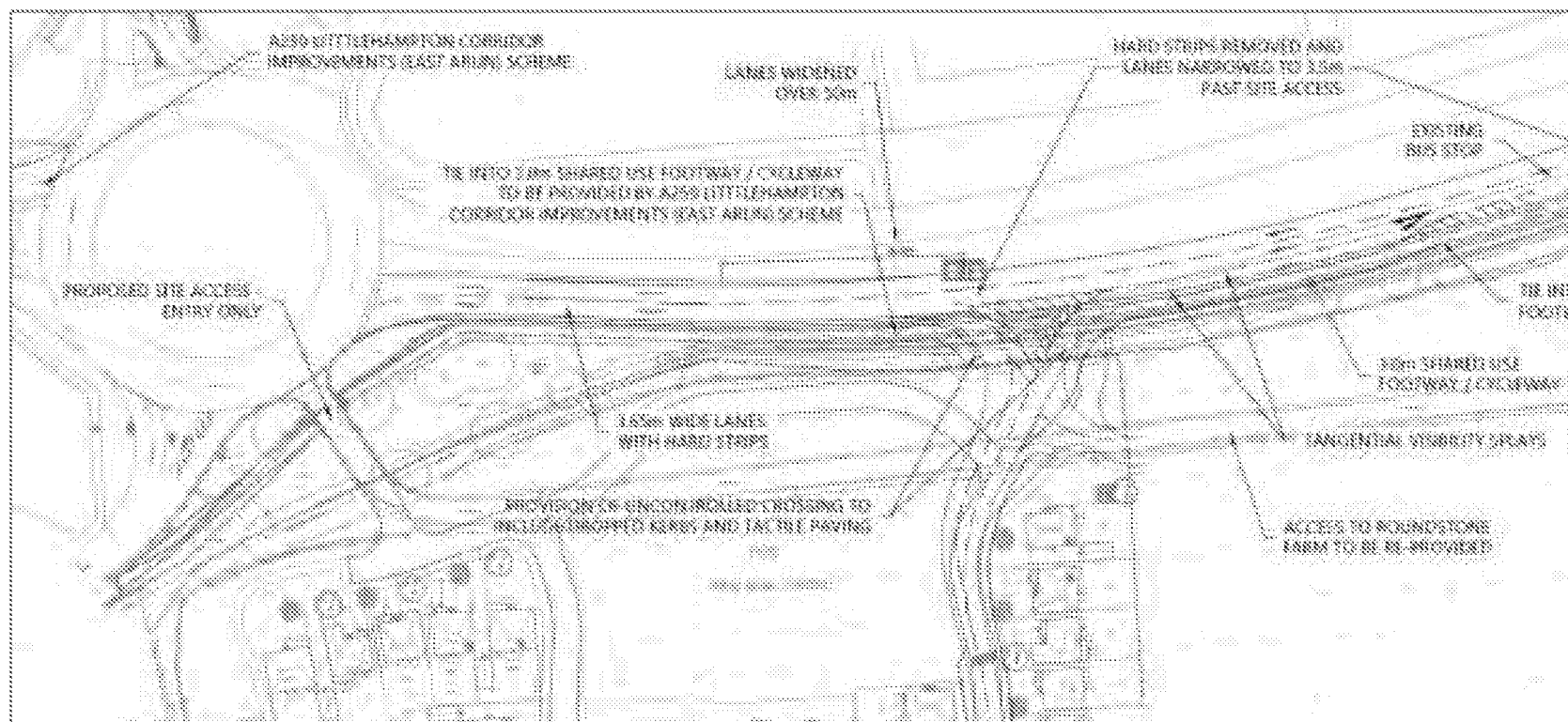
2.2.1 It is proposed to distribute traffic from the site using separate methodologies for commuting / business trips and other trip purposes. In this instance it is proposed to use the following methodologies:

- For commuting and business trips, the 2011 National Census Journey to Work statistics (for car drivers) for the relevant Super Output Area will be used. This dataset will identify existing resident's employment locations and so existing commuting patterns; and
- For other journey purpose trips, a P/T^2 gravity model will be undertaken using the population of key urban areas (from the 2011 Census) within a 30-minute drive time of the site (estimated from Google Maps Directions facility).

SECTION 3 ACCESS

- 3.1.1 The site is currently accessed via a field gate onto the B2140 Old Worthing Road roundabout junction with the A259 Littlehampton Road. This access links within the site to the existing left in / left out access from the A259 Littlehampton Road serving the Artists In Stone commercial premises.
- 3.1.2 It is proposed to utilise a similar access arrangement to that agreed as part of previous planning application on the site, which were deemed acceptable by the local highway authority. The arrangement comprised:
- A new Left In / Left Out type arrangement onto the A259 Littlehampton Road approximately 130m west of the roundabout.
 - Retain the existing access from the roundabout as an 'Entry Only' to the site.
- 3.1.3 Access to the Artists in Stone commercial premises will be retained as per existing, and access rights exist for the landowner of the agricultural fields to the east of the development site to access the land from the roundabout; this movement will be accommodated within the internal layout of the site.
- 3.1.4 The Left In / Left Out site access is located within a 50mph limit and as such, the site access has been designed in accordance with design guidance laid out in the Design Manual for Roads and Bridges (DMRB).
- 3.1.5 Consideration has also been given to the committed improvement scheme identified by West Sussex County Council for this section of the A259 corridor to ensure compatibility. The proposed site access junction arrangement is shown on **Drawing ITB16357-GA-003**, an extract of which is shown at **Image 3.1** below.

Image 3.1: Proposed Site Access Arrangement



Source: Drawing ITB16357-GA-003

- 3.1.6 An updated Stage 1 Road Safety Audit (RSA) will be undertaken of the proposed site access arrangement and submitted alongside the Transport Assessment.
- 3.1.7 Confirmation is sought from WSCC that, subject to the outcome of the RSA, WSCC have no objection in-principle to the proposed site access arrangements.

SECTION 4 STRUCTURE OF THE TRANSPORT ASSESSMENT

4.1 It is proposed to structure the TA as follows:

- Section 1: Introduction
- Section 2: Policy Overview:
 - National;
 - Local.
- Section 3: Existing Conditions:
 - Walking;
 - Cycling;
 - Public transport;
 - Local highway network;
 - Personal injury accident data for the most recently available five-year period.
- Section 4: Development Proposal:
 - Scheme description;
 - Access strategy;
 - Street hierarchy.
- Section 5: Accessibility:
 - The reasons for making a journey;
 - Walking and cycling catchments;
 - Overview of local facilities and services;
 - Opportunities for non-car travel further afield.
- Section 6: Impact Assessment:
 - Trip generation;
 - Trip distribution;
 - Traffic impact;
 - Committed development.
- Section 7: Sustainable Transport Strategy:
- Section 8: Summary and Conclusions.

DRAWINGS

APPENDIX A. TRICS OUTPUT

Calculation Reference: AUDIT-236601-201216-1251

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	2 days
	KC KENT	1 days
	SC SURREY	1 days
	WS WEST SUSSEX	2 days
03	SOUTH WEST	
	DV DEVON	1 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	DH DURHAM	2 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: No of Dwellings
Actual Range: 40 to 79 (units:)
Range Selected by User: 40 to 80 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 19/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	5 days
Thursday	5 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	16 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	7
Edge of Town	9

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

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.

Secondary Filtering selection:

Use Class:
C3 16 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	8 days
10,001 to 15,000	2 days
15,001 to 20,000	3 days
20,001 to 25,000	1 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	3 days
50,001 to 75,000	1 days
75,001 to 100,000	3 days
100,001 to 125,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	2 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	15 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	8 days
No	8 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.

PTAL Rating:

No PTAL Present	16 days
-----------------	---------

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

LIST OF SITES relevant to selection parameters (Cont.)

9	NF-03-A-05	MIXED HOUSES	NORFOLK
	HEATH DRIVE HOLT		
	Edge of Town Residential Zone Total No of Dwellings: 40 Survey date: THURSDAY 19/09/19		Survey Type: MANUAL
10	SC-03-A-04	DETACHED & TERRACED	SURREY
	HIGH ROAD BYFLEET		
	Edge of Town Residential Zone Total No of Dwellings: 71 Survey date: THURSDAY 23/01/14		Survey Type: MANUAL
11	SF-03-A-07	MIXED HOUSES	SUFFOLK
	FOXHALL ROAD IPSWICH		
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 73 Survey date: THURSDAY 09/05/19		Survey Type: MANUAL
12	SH-03-A-05	SEMI-DETACHED/TERRACED	SHROPSHIRE
	SANDCROFT TELFORD SUTTON HILL		
	Edge of Town Residential Zone Total No of Dwellings: 54 Survey date: THURSDAY 24/10/13		Survey Type: MANUAL
13	SY-03-A-01	SEMI DETACHED HOUSES	SOUTH YORKSHIRE
	A19 BENTLEY ROAD DONCASTER BENTLEY RISE		
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 54 Survey date: WEDNESDAY 18/09/13		Survey Type: MANUAL
14	WK-03-A-04	DETACHED HOUSES	WARWICKSHIRE
	DALEHOUSE LANE KENILWORTH		
	Edge of Town Residential Zone Total No of Dwellings: 49 Survey date: FRIDAY 27/09/19		Survey Type: MANUAL
15	WS-03-A-05	TERRACED & FLATS	WEST SUSSEX
	UPPER SHOREHAM ROAD SHOREHAM BY SEA		
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 48 Survey date: WEDNESDAY 18/04/12		Survey Type: MANUAL
16	WS-03-A-10	MIXED HOUSES	WEST SUSSEX
	TODDINGTON LANE LITTLEHAMPTON WICK		
	Edge of Town Residential Zone Total No of Dwellings: 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
NY-03-A-09	mixed housing

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	16	57	0.077	16	57	0.350	16	57	0.427
08:00 - 09:00	16	57	0.118	16	57	0.367	16	57	0.485
09:00 - 10:00	16	57	0.155	16	57	0.186	16	57	0.341
10:00 - 11:00	16	57	0.128	16	57	0.173	16	57	0.301
11:00 - 12:00	16	57	0.154	16	57	0.176	16	57	0.330
12:00 - 13:00	16	57	0.166	16	57	0.156	16	57	0.322
13:00 - 14:00	16	57	0.167	16	57	0.163	16	57	0.330
14:00 - 15:00	16	57	0.159	16	57	0.187	16	57	0.346
15:00 - 16:00	16	57	0.281	16	57	0.180	16	57	0.461
16:00 - 17:00	16	57	0.307	16	57	0.161	16	57	0.468
17:00 - 18:00	16	57	0.350	16	57	0.166	16	57	0.516
18:00 - 19:00	16	57	0.283	16	57	0.154	16	57	0.437
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.345			2.419			4.764

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:40 - 79 (units:)

Survey date date range:01/01/12 - 19/11/19

Number of weekdays (Monday-Friday):16

Number of Saturdays:0

Number of Sundays:0

Surveys automatically removed from selection:3

Surveys manually removed from selection:1

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.

Dominic Smith

From: Stephen Gee <Stephen.Gee@angmering.gov.uk>
Sent: 14 January 2021 11:24
To: Dominic Smith
Subject: Pre 147 20 Development of circa 76 dwellings at Land south of A259 Angmering.

Dom,
Please find your Pre Application Free Written Advice.
Regards

Stephen

Pre-147-20
Development of circa 76 dwellings at Land south of A259 Angmering.

Access

It is proposed to provide an exit only on the A259 J11 and a LILO on the A259 westbound carriageway. There were proposals for a dedicated left turn lane between A259 Westbound and Old Worthing Road which did not make it into the phase 1 A259 improvement works. The inclusion of the LILO in the position proposed would prevent such an improvement taking place at any point in the future, as the LILO access would be too close to the diverge point for the slip lane. If possible, it would be prudent to ensure that future development does not prejudice this improvement coming.

Measures to restrict the entry only to the site from the roundabout maybe required.

A Design Audit and stage 1 RSA and GG119 Appendix F compliant designers' response should support any application.

Pedestrian and Cycle infrastructure

The phase of the A259 Improvement scheme that is currently under construction no longer includes the widening the cycleway on the southern side of the A259 east of the A280 roundabout. This would be expected to be delivered as part of any future application.

Bus stop

When considering the close proximity of the bus stop, and whether it can be relocated please note that the A259 scheme is providing a new westbound bus stop in a layby opposite Haskins. A Departure from standard would be required for the bus stop in close proximity to the site access.

Signs

Please note the presence of a map type ADS sign adjacent to the slip lane, about 20m west of the start of the taper

Loss of hard strip and lane narrowing

The hard strips are required to: ensure that surface water accumulations are clear of the wheel track and support the edge of carriageway. Full lane widths including hard strips may also be required to enable the council to undertake road maintenance activities whilst retaining safe working widths to operatives without the need for road closures.

The loss of hard strips and proposed reduced lane widths are departures from standard, which will require approval prior to their incorporation in a design. In addition to the relevant section of the DMRB relating safe maintenance (GD 304) needs to be given adequate consideration.

Pedestrian and Cycle infrastructure

Consideration should be made to giving enhanced pedestrian and cycle access to the adjacent facilities at the western end of the site nearer the roundabout.

There is a PROW crossing point of the A259 in the vicinity of the LILO which has not been given adequate consideration in the design.

Development Impact

- Trip Generation song TRICS agreed.
- Trip Distribution approach agreed.

- Scope of modelling will depend on distribution and assignment but likely to be limited to site access, A259 J11 and an assessment proposal also needs to be considered in the context of the queuing back from the level crossing.

From: ENV Preappadvice <[REDACTED]>
Sent: 18 December 2020 16:54
To: ENV Preappadvice <E[REDACTED]>
Subject: Pre-planning advice request

If replying directly to this email please remember to double check the email address you are replying to.

Field	Entry
First name	Dominic
Last name	Smith
Email address	dominic.smith@i-transport.co.uk
Phone number	07841455663
Business name	i-Transport LLP
House name or number	Grove House, Lutyens Close
Town or city	Basingstoke
Postcode	RG24 8AG
Grid reference	508056 , 103163
House name or number	Land South of A259
Address line 1	Littlehampton Road
Town or city	Angmering
Postcode	BN12 6FD
Type of advice	Free written response to an initial enquiry – suitable for straightforward small or medium sized developments

Description of the proposal	Development of circa 76 residential units
Location plan and drawings of site	Important: This link will only work for 100 days before this file is automatically deleted. If you need to keep the file for longer than this you will need to download and save it to your team's central file storage location.
Scoping document	1 8 0 Important: This link will only work for 100 days before this file is automatically deleted. If you need to keep the file for longer than this you will need to download and save it to your team's central file storage location.
Local planning authority	Arun
Tick to confirm you agree to the above declaration.	True

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APPENDIX B. PIA

A259 – Angmering – I-Transport

Collision report 01/04/2016 – 31/03/2021

Date produced
21 April 2021

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
P A R T N E R S H I P

Safer Roads
Safer Communities
Sharing the Responsibility

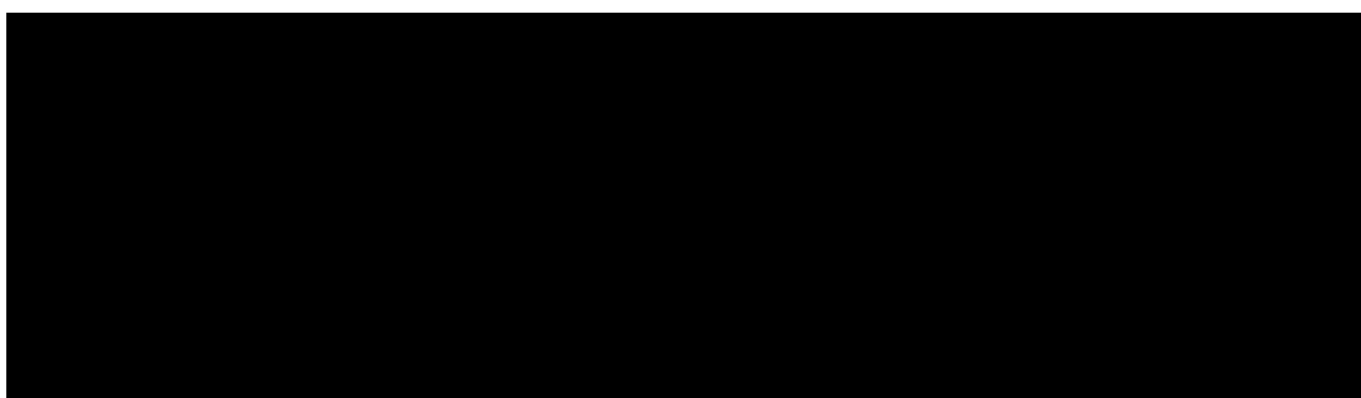
Produced by Sussex Safer Roads Partnership on behalf of Sussex Police

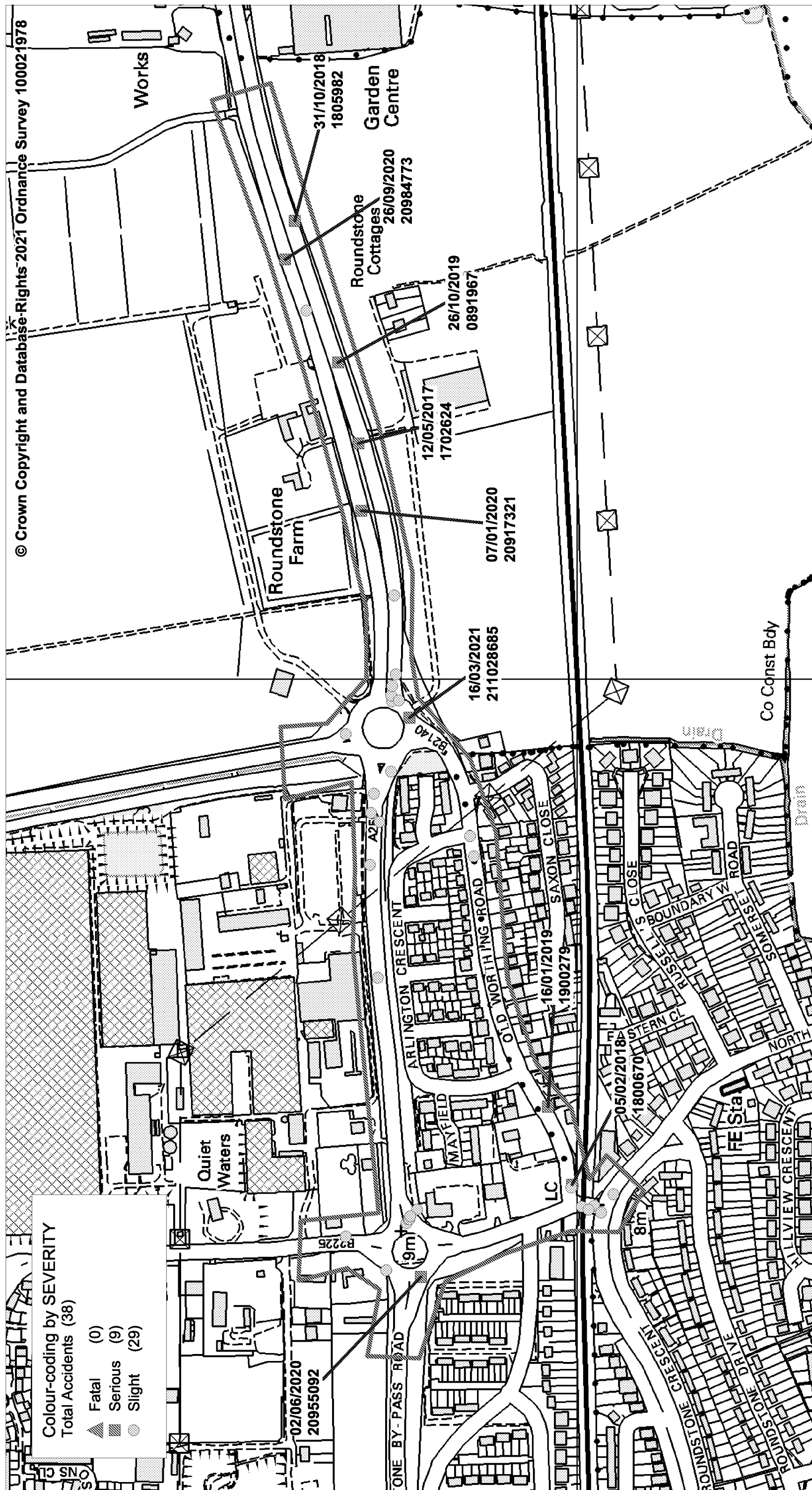
Data regarding personal injury collisions is recorded by Sussex Police in accordance with the DfT Stats 19 requirements. The data is subsequently used by Sussex Safer Roads Partnership for monitoring and planning. While every effort is made to ensure that this data is accurate, it is subject to change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





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A259, Angmering
Collision Dates 01/04/2016 - 31/03/2021
i-Transport

Sussex Safer Roads
P A R T N E R S H I P

SCALE	1 : 5500
DATE	21/04/2021
DRAWING No.	
DRAWN BY	

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection: Notes:
Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

1602469

Friday

A259 LITTLEHAMPTON ROAD

Veh 1 Car

Reversing

E to W

RSP

M

35

Slight

R1: A 259

29/04/2016

ANGMERING AT JUNCTION OF B2225

Veh 1 Car

Reversing

E to W

RSP

F

33

Slight

R2: B 2225

0055hrs

ROUNDSTONE LANE OUTSIDE ON

Veh 2 Car

Parked

0 to 0

E 507,386

Darkness: street lights present b

N 103,198

Dry

Fine without high winds

40 mph

Causation Factor:

Participant:

Confidence:

1st:

Poor turn or manoevre

Vehicle 1

Very Likely

V1 AND V2 WERE FACING EAST BOUND ON MAIN ROAD V1 WAS PARKED IN FRONT OF V2, THERE WAS ANOTHER VEHICLE PARKED IN FRONT OF V1. V1 REVERSED TO GET OUT OF THE PARKING SPACE, WHILST V1 WAS REVERSING IT REVERSED INTO THE FRONT OF V2. CAUSING NO DAMAGE TO EITHE R VEHICLES, TRAVELLING AT VERY LOW SPEED.

1602823

Wednesday

A259 ANGMERING AT JUNCTION OF

Veh 1 Car

Going ahead

E to W

R1: A 259

11/05/2016

A259 LITTLEHAMPTON ROAD

Veh 2 Car

Going ahead

E to W

Dri

F

30

Slight

R2: A 259

0850hrs

E 507,904

Daylight:street lights present

N 103,193

Wet/Damp

Raining without high winds

50 mph

Causation Factor:

Participant:

Confidence:

1st:

Failed to judge other persons path or speed

Vehicle 1

Possible

VEH 2 DRIVING WEST ENTERED ROUNDABOUT ON INSIDE LANE. VEH 1 TRAVELLING WEST ENTERED ROUNDABOUT IN OUTSIDE LANE. BOTH VEHICLES DROVE STRAIGHT ACROSS ROUNDABOUT FROM A DUAL CARRIAGEWAY AND ENTERED A SINGLE CARRIAGEWAY. VEH 1 AS THEY ENTERED WAS BEHIND VEH 2 AND APPEARED TO CUT ACROSS TRAFFIC. TRAFFIC SLOWED AND VEHICLE 1 STRUCK VEHICLE 2 TO THE REAR CAUSING DAMAGE TO BOTH VEHICLES AND INJURY TO DRIVER OF VEH 2.

1605246

Tuesday

A259 ROUNDSTONE BY PASS

Veh 1 Car

Going ahead

W to E

R1: A 259

30/08/2016

ANGMERING 200M WEST OF A280

Veh 2 Pedal cycle

Going ahead

W to E

Dri

M

24

Slight

0700hrs

ANGMERING BY PASS

E 507,690

Daylight:street lights present

N 103,207

Dry

Fine without high winds

50 mph

Causation Factor:

Participant:

Confidence:

1st:

Dazzling sun

Vehicle 1

Very Likely

VEHICLES 1 AND 2 BOTH TRAVELLING EAST TOWARDS THE A280 JUNCTION WHEN VEHICLE 1 COLLIDED WITH VEHICLE 2, KNOCKING SAME TO GROUND.

Selection:	Notes:
Selected using Manual Selection	

V2 WAS TRAVELLING IN A WESTERLY DIRECTION AND HAD SLOWED DOWN DUE TO TRAFFIC GIVING WAY ON ROUNDABOUT. V1 HAS COLLIDED WITH THE REAR OF V2, CAUSING DAMAGE. INITIALLY THE DRIVER OF V1 FAILED TO STOP BUT WAS THEN FOLLOWED AND EVENTUALLY PULLED OVER AND D
ETAILS WERE EXCHANGED. DRIVER OF V2 BELIEVES THAT DRIVER WAS ON THEIR MOBILE PHONE AT THE TIME OF THE ACCIDENT.

V01 AND V02 TRAVELLING WESTWARDS ON ROUNDABOUT. V02 HAD STOPPED AS TRAFFIC AHEAD WAS WAITING TO ALLOW TRAFFIC TRAVELLING SOUTHWARDS TO EXIT ROUNDABOUT. V01 COLLIDED WITH V02, BOTH VEHICLES STOPPED AND EXCHANGED BASIC DETAILS, DRIVER OF V02 HAS INJURIES.

V2 TRAVELLING WEST IN RD STOPPED AT RBT TO ALLOW TRAFFIC ALREADY ON IT TO CLEAR, V1 RAN INTO REAR. V2 DROVE OFF TO FIND SOMEWHERE TO STOP, IN DOING SO LOST SIGHT OF V1. NO DETAILS EXCHANGED.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

1702624

R1: A 259

E 508,245

N 103,227

Friday

12/05/2017

1810hrs

Daylight:street lights present

Dry

Fine without high winds

50 mph

A259 LITTLEHAMPTON ROAD

FERRING 273M EAST OF A280

Veh 1

M/C < 50 cc

Starting

E to W

Dri

M 51

Serious

Veh 2

Goods < 3.5t

Wait go ahead held

0 to 0

Causation Factor:

Participant:

Confidence:

1st: Poor turn or manoeuvre

Vehicle 1

Very Likely

V1 PULLED AWAY AND WAS TRYING TO MANOEUVRE INTO LANE TWO AND CLIPPED V2 WHICH WAS STATIONARY. V1 LOST BALANCE AND FELL OFF MOPED CAUSING INJURY TO HIS RIGHT KNEE.

1701892

R1: U

E 507,421

N 103,240

Wednesday

05/04/2017

1645hrs

Daylight:street lights present

Dry

Fine without high winds

30 mph

U ROUNDSTONE LANE ANGMERING

36M NORTH OF A259 ROUNDSTONE

BY-PASS ROAD OUTSIDE KELSTON

Veh 1

Car

Going ahead

N to S

Veh 2

M/C < 125 cc

Wait go ahead held

N to S

Dri

M 29

Slight

Causation Factor:

Participant:

Confidence:

1st: Aggressive driving

Vehicle 1

Very Likely

CAR PURSUED MOTORBIKE DUE TO DISPUTE. CAR HAS COLLIDED INTENTIONALLY WITH MOTORBIKE WHO IS STATIONARY. CAR DRIVER HAS GOT OUT SHOUTING AND MOTORBIKE DRIVER HAS RUN HOME IN FEAR. CAR DRIVER THEN STEALS MOTORBIKE KEYS AND FLEE'S SCENE ALSO.

1703560

R1: B 2140

R2: U

E 507,453

N 102,982

Monday

26/06/2017

1537hrs

Daylight:street lights present

Dry

Fine without high winds

30 mph

B2140 OLD WORTHING ROAD EAST

PRESTON AT JUNCTION OF U NORTH

LANE OUTSIDE JUNCTION RTC

Veh 1

Car

Turning left

N to SE

Veh 2

Pedal cycle

Going ahead

W to E

Dri

M 10

Slight

Causation Factor:

Participant:

Confidence:

1st: Failed to look properly

Vehicle 1

Very Likely

V1 CAR FACING SOUTH ON OLD WORTHING ROAD WAITING TO ENTER NORTH LANE. V2 CYCLIST TRAVELLING EAST PASSING JUNCTION TO OFFSIDE V1 PULLS OUT AND HITS CYCLIST AT MID JUNCTION CAUSING CYCLIST TO BE KNOCKED OFF.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

1800578

Thursday
25/01/2018
1915hrs

B2140 OLD WORTHING ROAD EAST
PRESTON AT JUNCTION OF U
ROUNDAABOUT LANE OUTSIDE JUST

Veh 1 Car
Veh 2 Pedal cycle

Starting
Going ahead

N to S
S to N

Dri

M 47

Slight

R1: B 2140

R2: U

E 507,452

N 102,995

Darkness: street lights present a
Dry
Unknown
30 mph

VEHICLE TWO TRAVELLING NORTH IN WORTHING ROAD, WHEN LEVEL BARRIER GATES OPENED PULLED AWAY AND STARTED TO TRAVEL IN THIS ROAD, AS ROAD BEARS TO THE RIGHT, VEHICLE 1 TRAVELLING SOUTH IN NORTH LANE PULLED INTO THE OLD WORTHING ROAD AND COLLIDED WITH VEHICL E 2 CAUSING MINOR INJURY AND DAMAGE TO VEHICLE.

1800670

Monday
05/02/2018
0940hrs

B2140 OLD WORTHING ROAD EAST
PRESTON AT JUNCTION OF B2140
OUTSIDE EAST PRESTON LEVEL

Veh 1 Car

Starting

NE to SW

Ped

F 33

Serious

R1: B 2140

R2: B 2140

E 507,475

N 103,005

Daylight:street lights present
Dry
Fine without high winds
30 mph

VEHICLE 1 FROM STATIONARY POSITION IN THE ROAD SWERVED AROUND A VEHICLE AND STRUCK PEDESTRIAN WITH NEARSIDE OF VEHICLE 1 SUSPECTED TO BE INTENTIONAL CAUSING PEDESTRIAN'S LEFT WRIST TO FRACTURE.

1801673

Tuesday
27/03/2018
0810hrs

B2140 OLD WORTHING ROAD EAST
PRESTON AT JUNCTION OF U
ARLINGTON CRESCENT

Veh 1 Car
Veh 2 Car

Turning right
Going ahead

W to S
W to E

Dri

F 63

Slight

R1: B 2140

R2: U

E 507,816

N 103,107

Daylight:street lights present
Wet/Damp
Raining without high winds
30 mph

Causation Factor:

1st:Failed to judge other persons path or speed

2nd:Failed to judge other persons path or speed

Participant:

Vehicle 1

Vehicle 2

Very Likely

Very Likely

Confidence:

V1 IS STATIONARY WANTING TO TURN RIGHT INTO LAY BY ON OPPOSING CARRIAGE. UNKNOWN IF INDICATOR WAS ON. V2 SAW V1 STATIONARY AND THOUGHT IT WAS PARKED. AS V2 PASSES V1, V1 TURNS RIGHT TOWARDS LAY BY.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

1803227

R1: A 259

E 507,807

N 103,215

Tuesday

12/06/2018

1035hrs

Daylight:street lights present

Dry

Fine without high winds

60 mph

A259 ROUNDSTONE BY PASS

ANGMERING 85M WEST OF A280

Veh 1 Car

Veh 2 Car

Going ahead

Going ahead

W to E

W to E

Dri

F

46

Slight

VEHICLES 1 AND 2 TRAVELLING IN SLOW MOVING TRAFFIC. V1 RAN INTO THE BACK OF V2. BOTH PARTIES STOPPED AND EXCHANGED DETAILS. HOWEVER, D2 HAS SUFFERED PAIN TO THE BACK OF HER HEAD AND LEFT ARM/SHOULDER

1802714

R1: A 259

R2: A 259

E 507,449

N 103,166

Monday

14/05/2018

0750hrs

Daylight:street lights present

Dry

Fine without high winds

30 mph

A259 ROUNDSTONE BY PASS

ANGMERING AT JUNCTION OF A259

OUTSIDE ON ROUNDABOUT

Veh 1 Goods < 3.5t

Veh 2 Car

Going ahead

Wait go ahead held

E to W

E to W

Dri

M

18

Slight

VEHICLE 2 TRAVELLING WEST ALONG A259 APPROACHED ROUNDABOUT, STOPPED AT GIVE WAY IN ORDER TO ALLOW VEHICLE ON ROUNDABOUT TO PASS, VEHICLE 1 TRAVELLING BEHIND DID NOT STOP AND SHUNTED VEHICLE 2 INTO ROUNDABOUT, DRIVER WAVED AND CONTINUED JOURNEY, NO DAMAGE CAUSED TO VEHICLE 2, DRIVERS WRIST HURT, MINOR SPRAIN INJURY.

1805772

R1: A 259

R2: B 2140

E 507,852

N 103,205

Sunday

14/10/2018

0745hrs

Daylight:street lights present

Wet/Damp

Fine without high winds

30 mph

A259 LITTLEHAMPTON ROAD

ANGMERING AT JUNCTION 15M

WEST OF B2140 OLD WORTHING

Veh 1 Car

Veh 2 Car

Stopping

Going ahead

W to E

N to SW

Dri

F

19

Slight

Causation Factor:		Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Possible
2nd:	Nervous/Uncertain/Panic	Vehicle 1	Possible
VEHICLE 1 TRAVELLING WEST TO EAST ON A259 APPROACHING ROUNDABOUT JUNCTION B2140/A259/A280. SAW ANOTHER VEHICLE GOING AROUND ROUNDABOUT AT SPEED CAUSING VEHICLE 1 TO BRAKE HEAVY, WHEELS LOCKED AND VEHICLE SPUN OFF ROAD, COLLIDING PARTLY WITH A LAMP POST B UT NO FRESH DAMAGE CAN BE SEEN. VEHICLE 1 DRIVER RECEIVED MINOR LEG INJURY.			

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection: Notes:
Selected using Manual Selection

			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			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
Causation Factor:				

1805982

R1: A 259

E 508,476

N 103,293

Wednesday 31/10/2018 0815hrs
Daylight:street lights present
Dry
Fine without high winds
60 mph

A259 RUSTINGTON 582M EAST OF B2140 OLD WORTHING ROAD

Veh 1

Pedal cycle

O/take s/veh o/side

E to W

Dri

M 47

Serious

Veh 2

Car

Parked

0 to 0

Causation Factor:

Participant:

Confidence:

1st:

Failed to look properly

Vehicle 1

Very Likely

2nd:

Poor turn or manoevre

Vehicle 1

Very Likely

VEHICLE 2 WAS BROKEN DOWN ON THE SIDE OF THE CARRIAGEWAY, PARTIALLY OBSTRUCTING THE LANE ONE OF A 60MPH ROAD. VEHICLE 1 WAS A CYCLIST WHO WAS TRAVELLING ON THE ROAD. AS THEY WERE LOOKING OVER THEIR SHOULDER WAITING FOR A VEHICLE TO ALLOW THEM OUT, THEY H

AVE MADE CONTACT TO THE STATIONARY VEHICLE AT APPROXIMATELY 15MPH. S170 RTA COMPLIED WITH AT SCENE.

1806006

R1: A 259

R2: B 2140

E 507,439

N 103,175

Wednesday 31/10/2018 1450hrs
Daylight:street lights present
Dry
Fine without high winds
40 mph

A259 ROUNDSTONE BY PASS ROAD ANGMERING AT JUNCTION OF B2140 WORTHING ROAD OUTSIDE

Veh 1

Car

Going ahead

E to W

Veh 2

Car

Wait go ahead held

E to W

Dri

F 49

Slight

V2 STOPPED AT RBT DUE TO ON COMING AND STATIONARY TRAFFIC. V1 DRIVE IN TO BACK OF V2, THINKING V2 WAS PULLING ON TO RBT. PARTIES STOPPED AND EXCHANGED DETAILS. V2 DRIVER SUFFER WHIPLASH INJURIES.

1806373

R1: B 2140

R2: U

E 507,837

N 103,111

Monday 19/11/2018 1045hrs
Daylight:street lights present
Dry
Fine without high winds
30 mph

B2140 OLD WORTHING ROAD LITTLEHAMPTON AT JUNCTION OF U ARLINGTON CRESCENT

Veh 1

Car

Turning right

E to N

Dri

F 86

Slight

Veh 2

Car

Going ahead

W to E

Causation Factor:

Participant:

Confidence:

1st:

Poor turn or manoevre

Vehicle 1

Very Likely

2nd:

Uncorrected, defective eyesight

Vehicle 1

Possible

3rd:

Driving too slow for conditions or slow veh

Vehicle 1

VEHICLE 1 WAS TURNING RIGHT WHEN IT TURNED INTO THE PATH OF VEHICLE 2.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:
Selected using Manual Selection

Notes:

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

1807159

R1: A 259

R2: B 2225

E 507,439

N 103,174

Saturday

22/12/2018

1223hrs

Daylight:street lights present

Dry

Fine without high winds

30 mph

A259 ROUNDSTONE BY PASS

LITTLEHAMPTON AT JUNCTION OF B2225 ROUNDSTONE LANE OUTSIDE

Veh 1

Goods < 3.5t

Going ahead

E to W

Veh 2

Car

Wait go ahead held

E to W

Dri

F

30

Slight

V2 TRAVELLING EAST TO WEST IN OFFSIDE LANE ON A259 ROUNDSTONE BYPASS ROUNDABOUT J/W B2225 ROUNDSTONE LANE. V2 WAITING AT THE JUNCTION AS HELD UP BY TRAFFIC. V1 TRAVELLING BEHIND V2 HAS FAILED TO SEE V2 STOP AND HAS DRIVEN INTO THE BACK OF V2 CAUSING DAMA
GE. DRIVER OF V1 HAS GIVEN DETAILS TO DRIVER OF V2 WHO WAS WAITING FOR AN AMBULANCE.DRIVER OF V1 HAD TO LEAVE THE SCENE AS HE WAS GOING TO A FUNERAL. SLIGHT INJURY REPORTED BY DRIVER IF V2.

1900279

R1: B 2140

E 507,556

N 103,030

Wednesday

16/01/2019

1534hrs

Daylight:street lights present

Wet/Damp

Raining without high winds

30 mph

B2140 OLD WORTHING ROAD EAST

PRESTON 46M WEST OF U

ARLINGTON CRESCENT OUTSIDE 35

Veh 1

Goods < 3.5t

Going ahead

W to E

Veh 2

Car

Wait go ahead held

E to W

Ped

M

5

Serious

Causation Factor:

Participant:

Confidence:

1st:

Crossed road masked by stationary veh

Casualty 1

Very Likely

2nd:

Road layout (eg bend, hill etc.)

Casualty 1

Possible

V2 MARKED POLICE VEHICLE IS STATIONARY IN HEAVY TRAFFIC ON THE WESTBOUND CARRIAGEWAY DUE TO THE LEVEL CROSSING BARRIERS BEING DOWN. A FATHER HAS DECIDED TO CROSS THE ROAD WITH HIS 5YR OLD SON FROM BEHIND THE POLICE VEHICLE AND AS THE FATHER IS CHECKING I
F THE ROAD IS CLEAR THE CHILD HAS CONTINUED TO CROSS. V1 TRAVELLING EASTBOUND HAS SEEN THE CHILD AND SWERVEI TO THE LEFT TO ATTEMPT TO AVOID THE CHILD. CHILD HAS HIT THE FRONT OFFSIDE WHEEL SUSTAINING AN OPEN FRACTURE TO LEFT LEG.

1901705

R1: A 259

R2: B 2140

E 507,983

N 103,193

Saturday

30/03/2019

1443hrs

Daylight:street lights present

Dry

Fine without high winds

60 mph

A259 LITTLEHAMPTON ROAD

FERRING AT JUNCTION OF B2140

OLD WORTHING ROAD OUTSIDE R/A

Veh 1

Goods < 3.5t

Wait go ahead held

E to W

Veh 2

Car

Turning right

E to N

Dri

F

20

Slight

Veh 2

Car

Turning right

E to N

FSP

F

24

Slight

V2 WAS STATIONARY AT R/A IN RIGHT HAND LANE WITH A VIEW TO GOING ALL THE WAY AROUND THE R/A AND BACK THE OTHER WAY. V1 HAS GONE IN TO THE BACK OF THEM CAUSING DAMAGE AND MINOR INJURIES

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

1902600

R1: A 259
R2: A 280
E 507,978
N 103,185

Tuesday
21/05/2019
1145hrs
Daylight:street lights present
Dry
Fine without high winds
40 mph

A259 ANGMERING AT JUNCTION OF A280

Veh 1 Car
Veh 2 Car

Starting
Turning right

E to N
E to N Dri M 19 Slight

V2 WAS IN THE OUTSIDE LANE WAITING AT THE ROUNDABOUT TO TURN RIGHT AROUND THE ROUNDABOUT. V2 WAS STATIONARY WAITING TO GO. V1 WENT IN TO THE BACK OF V2 SENDING V2 IN TO THE ROAD OF THE ROUNDABOUT.

0846638

R1: A 259
R2: A 259
E 507,993
N 103,192

Monday
10/06/2019
1230hrs
Daylight:street lights present
Wet/Damp
Raining without high winds
60 mph

LITTLEHAMPTON ROAD (A259) NEAR JUNCTION WITH ROUNDSTONE BYPASS (A259)

Veh 1 Car
Veh 2 Car

Stopping
Wait to turn right

E to W
E to W Dri F 21 Slight

V2 WAS STATIONARY AT THE R/A JUST WEST OF ASDA IN FERRING WHEN V1 HAS GONE IN TO THE BACK - UNKNOWN WHAT DAMAGE HAS BEEN CAUSED BUT DRIVER OF V2 HAS BACK/NECK PAIN

0873084

R1: A 259
R2: A 259
E 507,442
N 103,173

Saturday
31/08/2019
1745hrs
Daylight:street lights present
Dry
Fine without high winds
50 mph

ROUNDSTONE BY-PASS ROAD (A259) NEAR JUNCTION WITH ROUNDSTONE LANE ROUNDABOUT

Veh 1 Car
Veh 1 Car
Veh 2 Car

Starting
Starting
Wait go ahead held

E to W Dri F 71 Slight
E to W FSP M 72 Slight
E to W

Causation Factor:

Participant:

Confidence:

1st: Failed to judge other persons path or speed

Vehicle 1

Very Likely

V1 HAS BEEN DRIVING ALONG BEHIND V2 AS IT WAS STATIONARY AT ROUNDSTON R/B. V1 HAS ANTICIPATED THAT V2 WOULD ENTER THE R/B IN A GAP AND HAS BEEN ANTICIPATING THEIR OWN GAP TO MOVE OFF. V2 HAS NOT MOVED OFF AND V1 HASN'T NOTICED AND GONE INTO THE REAR OF V2. MINOR INJURY CAUSED TO OCCUPANTS OF V1 AND MINOR DAMAGE TO BOTH VEHICLES.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

0891967

R1: A 259

E 508,329

N 103,248

Saturday

26/10/2019

1415hrs

Daylight:street lights present

Wet/Damp

Raining without high winds

50 mph

LITTLEHAMPTON ROAD (A259) - 80 METRES FROM JUNCTION WITH LITTLEHAMPTON ROAD

Veh 1

M/C > 500 cc

O/take s/veh o/side

E to W

Dri

M 22

Serious

Veh 2

Car

Change lane to left

E to W

Causation Factor:		Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Possible
2nd:	Poor turn or manoeuvre	Vehicle 1	Possible
3rd:	Failed to look properly	Vehicle 2	
VEHICLE 2 WAS TRAVELLING WESTBOUND TOWARDS EAST PRESTON IN THE RIGHT HAND LANE, AFTER PASSING A BUS VEHICLE 2 INDICATED TO MOVE INTO THE LEFT HAND LANE AND AS VEHICLE 2 MOVED ACROSS THE LANES VEHICLE 1 HAD PASSED BETWEEN THE BUS AND VEHICLE 2 AND THE Y COLLIDED.			

0898796

R1: A 259

R2: U

E 507,861

N 103,214

Thursday

14/11/2019

1210hrs

Daylight:street lights present

Wet/Damp

Fine without high winds

40 mph

ROUNDSTONE-BY-PASS (A259) AT JUNCTION WITH UNCLASSIFIED ROAD

Veh 1

Car

Going ahead

W to E

Dri

M 81

Slight

Veh 2

Goods < 3.5t

Going ahead

E to W

Causation Factor:		Participant:	Confidence:
1st:	Illness or disability, mental or physical	Vehicle 1	Very Likely
2nd:	Poor turn or manoeuvre	Vehicle 1	Possible
V1 TRAVELLING EAST ON MAIN CARRIAGEWAY APPROACHED JUNCTION AND QUEUING TRAFFIC. DRIVER OF V1 STATES ACCELERATOR STUCK ON AND UNABLE TO SLOW VEHICLE WHEN PRESSING BRAKE. DRIVER OF V1 TOOK AVOIDING ACTION TO PREVENT HITTING VEHICLE IN FRONT. V1 MOUNTED NEARSIDE VERGE AND CONTINUED DRIVING. V1 THEN TURNED INTO ACCESS ROAD, MOUNTED THE KERB AND STRUCK FENCING, KNOCKING IT FLAT. DRIVER ATTEMPTED TO STEER ONTO ROAD AND HIT ONCOMING V2 CAUSING DAMAGE. V1 THEN STEERED TO RIGHT AGAIN AND MOUNTED KERB DE OLISHING FENCE AND TREES BEFORE COMING TO A HALT AGAINST A TREE OFF THE CARRIAGEWAY TO OFFSIDE. SIGNIFICANT DAMAGE SUSTAINED TO V1 AND DRIVER TAKEN TO HOSPITAL AS A PRECAUTION.			

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

0899604

R1: B 2140

R2: U

E 507,449

N 102,988

Sunday

17/11/2019

1045hrs

Daylight:street lights present

Dry

Fine without high winds

30 mph

OLD WORTHING ROAD (B2140)

NEAR JUNCTION WITH NORTH LANE

Veh 1

Car

Going ahead

S to N

Veh 2

M/C > 500 cc

Going ahead LH bend

SW to N

Dri

M

35

Slight

V2 MOTORCYCLE HEADING NORTH IN OLD WORTHING ROAD. AS V2 WAS ABOUT TO TRAVEL ACROSS THE RAILWAY LINE V1 STRUCK V2 TO THE REAR EXHAUST/REAR WHEEL CAUSING RIDER TO FALL TO THE GROUND SUSTAINING INJURY. V1 REGISTERED TO DRIVERS MOTHER.

20917321

R1: A 259

E 508,175

N 103,224

Tuesday

07/01/2020

2340hrs

Darkness: street lighting unkno

Wet/Damp

Fine without high winds

50 mph

LITTLEHAMPTON ROAD (A259) - 79

METRES FROM JUNCTION WITH UNCLASSIFIED ROAD

Veh 1

M/C < 50 cc

Going ahead

W to E

Dri

M

16

Serious

Veh 2

M/C < 50 cc

Stopping

W to E

V1 AND V2 ARE BOTH MOPEDS. V2 TRAVELLING EAST ALONG A259 FERRING. RIDER LOOKED BACK, COULD SEE V1 SLOWING DOWN SO THINKING HE HAD A PROBLEM PULLED OVER TO HIS NEARSIDE. V1 DID NOT SEE V2 STOP, AT THE LAST MOMENT SAW V2 REAR LIGHT AND STRUCK V2. BOTH MOPEDS HAVE DAMAGED, V1 RIDER INJURED.

20955092

R1: A 259

R2: A 259

E 507,379

N 103,162

Tuesday

02/06/2020

1200hrs

Daylight:street lights present

Dry

Fine without high winds

50 mph

ROUNDSTONE BY-PASS ROAD

(A259) NEAR JUNCTION WITH ROUNDSTONE LANE ROUNDABOUT

Veh 1

Car

Change lane to left

S to W

Veh 2

Pedal cycle

Going ahead

S to N

Dri

M

52

Serious

VEHICLE 1 AND 2 TRAVELLING STRAIGHT AHEAD TOWARDS ROUNDSTONE ROUNDABOUT. VEHICLE 1 CONTACTS VEHICLE 2 ON OFFSIDE KNOCKING HIM OFF HIS BIKE.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:
Selected using Manual Selection

Notes:

			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			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
Causation Factor:				

20960930

R1: A 259

R2: U

E 507,881

N 103,211

Monday
29/06/2020
1750hrs
Daylight:street lights present
Dry
Unknown
50 mph

ROUNDSTONE-BY-PASS (A259) AT JUNCTION WITH UNCLASSIFIED ROAD

Veh 1 Pedal cycle
Veh 2 Car

Going ahead
Stopping

N to S
W to E

Dri F 28 Slight

V1 IS A CYCLIST THEY WERE HEADING NORTH TO SOUTH ON THE ROUNDSTONE BY PASS, THERE WAS A VEHICLE IN THE RIGHT HAND LANE AND THEY HAVE BECKONED V1 ACROSS, AS THEY HAVE CROSSED IN TO THE ROAD, V2 HAS COME ALONG AND COLLIDED WITH THEM, KNOCKING THE CYCLI ST TO THE FLOOR. DETAILS WERE EXCHANGED AT SCENE

20969697

R1: A 280

R2: A 259

E 507,943

N 103,240

Tuesday
04/08/2020
0954hrs
Daylight:street lights present
Dry
Fine without high winds
60 mph

A280 NEAR JUNCTION WITH ROUNDSTONE-BY-PASS (A259)

Veh 1 Car
Veh 2 Car

Going ahead LH bend
Going ahead LH bend

N to SE
N to SE

RSP M 78 Slight

Causation Factor:

Participant:

Confidence:

1st: Failed to look properly

Vehicle 1

Very Likely

VEHICLE 2 WAS APPROACHING THE ROUNDABOUT FROM A NORTHERN DIRECTION GOING TOWARDS A SOUTHERN DIRECTION ON THE A280 ANGMERING BYPASS TOWARDS WORTHING. V2 HAS STARTED TO SLOWLY DRIVING ONTO THE ROUNDABOUT IN SLOW TRAFFIC, BUT HESITATED BECAUSE ANOTHER V EHICLE WAS COMING FROM RIGHT HAND SIDE. THIS RESULTED IN V1 COLLIDING WITH THE REAR OF V2 AS THE DRIVER WAS UNABLE TO REACT IN TIME.

20976896

R1: B 2140

R2: U

E 507,446

N 102,975

Sunday
30/08/2020
2104hrs
Darkness: street lights present a
Dry
Fine without high winds
30 mph

OLD WORTHING ROAD (B2140) NEAR JUNCTION WITH NORTH LANE

Veh 1 Car
Veh 2 Pedal cycle

Turning left
Turning right

SE to W
N to W

Dri M 28 Slight

Causation Factor:

Participant:

Confidence:

1st: Failed to look properly

Vehicle 1

Possible

V1 HAD BEEN HEADING NORTH ON NORTH LANE EAST PRESTON AND REACHED THE GIVE WAY JUNCTION WITH WORTHING ROAD AND INTENDING TO TURN LEFT. V2 HAD BEEN WAITING AT LEVEL CROSSING ON WORTHING ROAD HEADING WEST. WHEN RAILWAY CROSSING GATES WERE RAISED, V2 CON TINUED FORWARD AND ROUND THE REAR OF UNKNOWN VEHICLE THAT HAD PULLED OUT OF NORTH LANE TURNING RIGHT. THIS WAS DONE AT THE SAME TIME AS V1 TURNED LEFT AND V2 IMPACTED WITH V1.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection:Notes:

Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

20970250

Wednesday

OLD WORTHING ROAD (B2140)
NEAR JUNCTION WITH
ROUNDSTONE LANE (B2140)

Veh 1 Pedal cycle
Veh 2 Goods < 3.5t
Veh 3 Pedal cycle

Stopping
Stopping
Wait go ahead held

E to N
E to S
E to N

Dri

M 26

Slight

R1: B 2140

05/08/2020

1340hrs

Daylight:street lights present

Dry

Fine without high winds

30 mph

R2: B 2140

E 507,472

N 103,006

V1 PEDAL CYCLE, AVOIDING OTHER PEDAL CYCLE THAT HAD STOPPED COLLIDED WITH SLOW MOVING VAN, PEDAL CYCLIST THEN RODE OFF.

20982988

Monday

LITTLEHAMPTON ROAD (A259) - 137 METRES FROM JUNCTION WITH UNCLASSIFIED ROAD

Veh 1 Car

Going ahead

W to E

Dri

M 54

Slight

R1: A 259

21/09/2020

1303hrs

Daylight:street lights present

Dry

Fine without high winds

50 mph

E 508,383

N 103,281

Causation Factor:

Participant:

Confidence:

1st: Animal or object in carriageway

Vehicle 1

Very Likely

V1 (SOLE VEHICLE INVOLVED) DRIVING EASTBOUND ON THE A259 IN THE DIRECTION OF WORTHING HAVING LEFT LITTLEHAMPTON. V1 LEFT ROUNDABOUT DRIVING ON THE INSIDE LANE. V1 STARTED TO ACCELERATE UP TOWARDS THE SPEED LIMIT OF 50 MPH. V1 DRIVER SAW A FOX ON THE LEFT HAND SIDE/NEARSIDE OF THE A259 WHICH RAN OUT IN FRONT OF THE CAR. DRIVER OF V1 PULLED HARD RIGHT TO AVOID THE FOX WHICH WAS HIT. V1 THEN SAW ANOTHER VEHICLE IN THE FAST LANE (VEHICLE NOT IDENTIFIED) AND PULLED HARD LEFT TO AVOID THE SECONDAR VEHICLE. AT THAT POINT THE DRIVER OF V1 LOST CONTROL OF THE VEHICLE.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection: Notes:
Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

20984773 Saturday LITTLEHAMPTON ROAD (A259) - 159 Veh 1 M/C > 500 cc Going ahead SW to NE Dri M 39 Serious
26/09/2020 METRES FROM JUNCTION WITH
R1: A 259 1940hrs UNCLASSIFIED ROAD
Darkness: street lights present a
E 508,436 Dry
N 103,303 Fine without high winds
50 mph

Causation Factor: Participant: Confidence:
1st: Aggressive driving Vehicle 1 Possible
2nd: Loss of control Vehicle 1 Very Likely
3rd: Impaired by drugs (illicit or medicinal) Vehicle 1
THIS IS A SINGLE VEHICLE SERIOUS INJURY RTC. V1 TRAVELLING EASTBOUND ON THE A259 LITTLEHAMPTON ROAD TOWARDS FERRING. RIDER IS BELIEVED TO HAVE BEEN IN L2 OF 2 IN A 50MPH LIMIT WHEN FOR REASONS UNKNOWN THE VEHICLE HAS LEFT TBE CARRIAGEWAY TO THE OFFSI
DE AND TRAVELLED APPROXIMATELY 70M ON THE GRASS VERGE BEFORE STRIKING A RAISED SECTION OF VERGE AROUND A MANHOLE COVER AT WHICH POINT THE BIKE AND RIDER HAVE SEPARATED. THE RIDER HAS COME TO REST SOME 30M FURTHER EAST IN L2 OF 2. THE BIKE HAS CONTINU
D ACROSS THE CARRIAGEWAY AND LEFT THE CARRIAGEWAY TO THE OFFSIDE BEFORE COMING TO REST 50-60M EAST OF THE RIDER. A WITNESS TRAVELLING WESTBOUND ON THE OPPOSITE CARRIAGEWAY HAS SEEN THE RIDER IF V1 BECOME AIRBORNE AND DID NOT SEE ANY OTHER VEHICL
S ON TBE EASTBOUND CARRIAGEWAY AT THE TIME OF THE COLLISION.

20986435 Friday NORTH LANE NEAR JUNCTION WITH Veh 1 Car Going ahead LH bend SE to W
02/10/2020 OLD WORTHING ROAD (B2140) Veh 2 Car Going ahead RH bend SE to N Dri F 73 Slight
R1: U 1320hrs
R2: B 2140 Daylight:street lights present
E 507,465 Dry
N 102,962 Fine without high winds
30 mph

Causation Factor: Participant: Confidence:
1st: Aggressive driving Vehicle 1 Possible
2nd: Careless/Reckless/In a hurry Vehicle 1 Possible
V2 WAS IN A QUEUE OF TRAFFIC WAITING FOR LEVEL CROSSING GATES TO GO UP. LEVEL GATES WENT UP AND V2 GAVE WAY TO ON-COMING BUS. V1 HAS DRIVEN INTO REAR OF V2, CAUSING DAMAGE. V1 FAILED TO STOP AT THE SCENE TO EXCHANGE DETAILS.

Details of Personal Injury Accidents for Period - 01/04/2016 to 31/03/2021 (60) months

Selection: Notes:
Selected using Manual Selection

Police Ref. Road No. 2nd Road No. Grid Ref.	Vehicles		Casualties	
	Day	Location Description	Veh No / Type / Manv / Dir / Class	Sex / Age / Sev
	Date			
	Time			
	D/L			
	R.S.C			
	Weather			
	Speed			
	Account of Accident			
	Causation Factor:			

211016339 Friday LITTLEHAMPTON ROAD (A259) - 113 Veh 1 Car Going ahead E to W
22/01/2021 METRES FROM JUNCTION WITH Veh 2 Pedal cycle Going ahead N to S Dri M 67 Slight
R1: A 259 1536hrs ROUNDSTONE-BY-PASS (A259)
Daylight:street lights present
E 508,087 Wet/Damp
N 103,190 Fine without high winds
50 mph

Causation Factor:	Participant:	Confidence:
1st: Failed to look properly	Vehicle 2	Very Likely
V1 TRAVELLING WESTBOUND ON A259 IN A 50MPH ZONE IN LANE 2. CYCLIST CROSSING THE ROAD CROSSED INFRONT OF V1. V1 STRUCK CYCLIST. THERE WAS A ROAD WORK SIGN POSSIBLY OBSTRUCTING THE VIEW OF THE CYCLIST WHEN HE WOULD OF LOOKED TO CROSS THE ROAD. OIC SUSPECTS DRIVER OF V1 IS NOT AT FAULT.		

211028685 Tuesday ROUNDSTONE-BY-PASS (A259) AT Veh 1 M/C Unknown Turning left E to SW
16/03/2021 JUNCTION WITH OLD WORTHING Veh 2 Pedal cycle Going ahead E to W Dri M 56 Serious
R1: A 259 1709hrs ROAD (B2140)
R2: B 2140 Daylight:street lights present
E 507,960 Dry
N 103,174 Fine without high winds
50 mph

Causation Factor:	Participant:	Confidence:
1st: Careless/Reckless/In a hurry	Vehicle 1	Very Likely
2nd: Aggressive driving	Vehicle 1	Possible
3rd: Failed to look properly	Vehicle 1	
THE ROUNDSTONE FARM ROUNDABOUT IS LOCATED IN EAST PRESTON AND HAS 5 EXITS. 2 OF THE EXITS LEAD ONTO THE A259, WITH THE OTHER EXITS LEADING TO EITHER OLD WORTHING ROAD, FARM ROAD OR THE A280. THERE ARE CURRENTLY NO TEMPORARY TRAFFIC LIGHTS OR ANY TRAF FIC CALMING MEASURES AT THE ROUNDABOUT. THERE ARE NO PROPERTIES OVERLOOKING THE SCENE. V1 WAS TRAVELLING WESTBOUND ALONG THE A259 AS WAS TRAVELLING APPROXIMATELY 40MPH. V2 WAS TRAVELLING ALONG THE A259 HEADINC WESTBOUND AS IT APPROACHED THE ROUNDA OUT AND WAS INTENDING ON TAKING THE SECOND EXIT AND CONTINUING STRAIGHT ONTO THE A259. V1 THEN COLLIDED WITH V2 AND V1 DID NOT STOP AND INSTEAD TOOK THE FIRST EXIT ONTO OLD WORTHING ROAD AND DROVE OFF. THE RIDER OF V2 CAME OFF AND FELL INTO THE ROAD AUSING INJURIES TO THEMSELVES. PASSERS BY STOPPED TO HELP V2 AND PHONED THE AMBULANCE.		

APPENDIX C. DfS Applications

SUBMISSION TO WEST SUSSEX COUNTY COUNCIL FOR DEPARTURES FROM STANDARD

Project Name	Land South of the A259, Angmering
Applicant Organisation	i-Transport
Applicant Ref	ITB16357
Highway Authority Ref	
Applicant Contact Details	Dominic Smith i-Transport LLP Grove House Lutyens Close Basingstoke RG24 8AG T: 01256 316 574 [REDACTED]
Date Submitted	06/04/21

1) PROJECT DETAILS

A	Description	Development of circa 80 new homes
B	Location	Land South of the A259, Angmering
C	Road Category	TA 46/97 Rural Road
D	Road Type	D2AP
E	Design Speed	85B kph (determined by TD 9/93 Rural Road Design Speed Calculation)
F	Speed Limit	50mph
G	Traffic Flows	A259 EB - 2687 (2026 AM Peak) & 2843 (2026 PM Peak)
H	NMU Flows	Infrequent

2) DEPARTURE DETAILS

A	Discipline	Other: Bus Stop Provision
	Type	Bus Stop Location
B	Relevant Standard(s)	CD123 - Visibility CD169 - Bus Laybys
	Clause	
C	Difference Between Standard(s) and proposed design	Partial obstruction of 160m visibility splay
D	Reason for Departure (overview)	Creation of a site access with diverge lane to provide access to a development of circa 80 residential units resulting in partial obstruction of a 4.5m x 160m visibility splay.
E	Associated Project Departures	Reduction in lane width Removal of hard strip.
F	Other Options Considered	Relocation of bus stop. Removal of bus stop.

3) JUSTIFICATION (POTENTIAL POSITIVE AND NEGATIVE IMPACTS)

A	Safety	The retention of the bus stop would result in temporary, partial obstruction of the visibility splay from the access when a bus is stationary within the bus cage. When stationary, the bus occupies the nearside lane of the carriageway. Westbound vehicles are required to move out into the outside lane in order to manoeuvre past a vehicle. Vehicles emerging from the access will do so into the nearside lane, with clear intervisibility between an oncoming and emerging vehicle. The presence of a bus at the stop does not obscure full visibility to the outside lane. Due to the curvature of the road, the 'shadow' created by a stationary bus creates only a small pocket of obstructed visibility, immediately to the rear of the stationary vehicle, at which time a vehicle travelling at a speed commensurate for a stopping sight distance of 160m (i.e. 50mph) will have moved into the outside lane to undertake a passing manoeuvre, and therefore be visible at all times to a vehicle emerging from the access.
B	Congestion/ Delay	None
C	Environmental / sustainability	A vehicle can be removed from the visibility splay by creating a full or half lay-by utilising the verge to the south of the carriageway. However, this could result in difficulty for a bus reentering the mainline traffic flow.
D	Capital and whole life cost/value	No cost to the County Council.
E	Accessibility	N/A
F	Integration	N/A
G	Structural	N/A
H	Network resilience & Maintenance	N/A

4) COMPENSATORY MEASURES

A	Included Measures	None
B	Rejected Options	Relocation of bus stop - given the presence of bus stop provision at Asda (to the east) and a new stop south of Haskins associated with A259 improvements, there is a small window of opportunity for any relocation to maintain appropriate stop spacing. This would result in relocation of the stop immediately to the east of the existing farm/commercial access which does not benefit from a merge taper, and would result in significant obstruction of the visibility splay from this access. Removal of bus stop - while not a significantly well utilised bus stop given the limited patronage catchment, retention of the stop will continue to provide public transport connectivity for the farm/commercial operation and for the proposed development (in combination with facilities south of Haskins).

5) DESIGN ORGANISATIONS CONCLUDING REMARKS

The stop is not extensively utilised given it serves a limited catchment, thus any limited and partial obstruction to visibility identified above will be infrequent. The DfS has been submitted in response to WSCC PRe-Application Advice and the proposed arrangements are set out in Drawing ITB16357-GA-003 Rev A.

6) ATTACHMENTS AND OTHER INFORMATION

A	List of Attachments	ITB16357-GA-003 Rev A ITB16357-001 TN Scoping Note
B	Consultations	WSCC - Pre-Application Advice
C	Other Information	None.

7) DECISION – (HIGHWAY AUTHORITY USE ONLY)

NAME 1						
ROLE						
SIGNED			DATE			
NAME 2						
ROLE						
SIGNED			DATE			
MARK ONE BOX:	1- APPROVED	☐	2-APPROVED WITH COMMENTS	☐	3- REJECTED	☐
COMMENTS						

SUBMISSION TO WEST SUSSEX COUNTY COUNCIL FOR DEPARTURES FROM STANDARD

Project Name	Land South of the A259, Angmering
Applicant Organisation	i-Transport
Applicant Ref	ITB16357
Highway Authority Ref	
Applicant Contact Details	Dominic Smith i-Transport LLP Grove House Lutyens Close Basingstoke RG24 8AG [REDACTED]
Date Submitted	06/04/21

1) PROJECT DETAILS

A	Description	Development of circa 80 new homes
B	Location	Land South of the A259, Angmering
C	Road Category	TA 46/97 Rural Road
D	Road Type	D2AP
E	Design Speed	85B kph (determined by TD 9/93 Rural Road Design Speed Calculation)
F	Speed Limit	50mph
G	Traffic Flows	A259 EB - 2687 (2026 AM Peak) & 2843 (2026 PM Peak)
H	NMU Flows	Infrequent

2) DEPARTURE DETAILS

A	Discipline	Road Geometry
	Type	Carriageway Width
B	Relevant Standard(s)	CD127
	Clause	
C	Difference Between Standard(s) and proposed design	Carriageway width of 3.65m Narrowing to 3.5m lane width over distance of circa 150m, with narrowing and widening to and from carriageway width over distances of 50m.
D	Reason for Departure (overview)	Creation of a site access with diverge lane to provide access to a development of circa 80 residential units resulting in narrowing of the running lanes, overcoming the need to retain lane width by utilising central reservation that would result in the loss of established vegetation.
E	Associated Project Departures	Removal of 1m hard strip Retention of bus stop on approach to access.
F	Other Options Considered	Retention of lane width through use of central reservation. The associated widening would result in the relocation and set back of the central restraint barrier, causing the loss of established vegetation within the central reservation to the east of the site access.

3) JUSTIFICATION (POTENTIAL POSITIVE AND NEGATIVE IMPACTS)

A	Safety	The narrowing would result in lane widths of 3.5m over a distance of circa 150m. The lane width will return to 3.65m on the approach to the roundabout junction located to the west of the site as not to affect the performance or safety of this junction. The A259 is not a trunk road, and 3.5m provides sufficient width to enable two vehicles to pass side-by-side unconstrained, accommodating all legally permissible vehicles up to the 'abornmal' threshold of 2.9m. The narrowing and widening of the lanes are tapered as not to create a sudden and unexpected deviation in vehicle path.
B	Congestion/ Delay	None
C	Environmental / sustainability	Use of the standard would result in the loss of established vegetation within the central reservation as a result of the repositioning of the central restraint barrier..
D	Capital and whole life cost/value	No cost to the County Council; works are to be delivered by the Developer through S278 Agreement.
E	Accessibility	N/A
F	Integration	N/A
G	Structural	N/A
H	Network resilience & Maintenance	N/A

4) COMPENSATORY MEASURES

A	Included Measures	None
B	Rejected Options	None

5) DESIGN ORGANISATIONS CONCLUDING REMARKS

This Departure from Standards application has been submitted as requested The proposed arrangement is presented in drawing ITB16357-GA-003 Rev A. Further informationr regaring the site is provided in Pre-Appliction Scoping Note ITB16357-001 TN.
--

6) ATTACHMENTS AND OTHER INFORMATION

A	List of Attachments	ITB16357-GA-003 Rev A ITB16357-001 TN Scoping Note
B	Consultations	WSCC - Pre-Application Advice
C	Other Information	None

7) DECISION – (HIGHWAY AUTHORITY USE ONLY)

NAME 1			
ROLE			
SIGNED		DATE	
NAME 2			
ROLE			
SIGNED		DATE	
MARK ONE BOX:	1- APPROVED ☐	2-APPROVED WITH COMMENTS ☐	3- REJECTED ☐
COMMENTS			

SUBMISSION TO WEST SUSSEX COUNTY COUNCIL FOR DEPARTURES FROM STANDARD

Project Name	Land South of the A259, Angmering
Applicant Organisation	i-Transport
Applicant Ref	ITB16357
Highway Authority Ref	
Applicant Contact Details	Dominic Smith i-Transport LLP Grove House Lutyens Close Basingstoke RG24 8AG [REDACTED]
Date Submitted	16/04/21

1) PROJECT DETAILS

A	Description	Development of circa 80 new homes
B	Location	Land South of the A259, Angmering
C	Road Category	TA 46/97 Rural Road
D	Road Type	D2AP
E	Design Speed	85B kph (determined by TD 9/93 Rural Road Design Speed Calculation)
F	Speed Limit	50mph
G	Traffic Flows	A259 EB - 2687 (2026 AM Peak) & 2843 (2026 PM Peak)
H	NMU Flows	Infrequent

2) DEPARTURE DETAILS

A	Discipline	Road Geometry
	Type	Hard Strips
B	Relevant Standard(s)	CD127
	Clause	2.4
C	Difference Between Standard(s) and proposed design	Provision of 1m hard strips Removal of hard strips on the northern side of the westbound carriageway.
D	Reason for Departure (overview)	Creation of a site access with diverge lane to provide access to a development of circa 80 residential units resulting in the removal of the 1m hard strip over a distance of circa 150m overcoming the need to retain hard strip by utilising central reservation that would result in the loss of established vegetation.
E	Associated Project Departures	Reduction in lane width Retention of bus stop on approach to access.
F	Other Options Considered	Retention of hard strip through use of central reservation. The associated widening would result in the relocation and set back of the central restraint barrier, causing the loss of established vegetation within the central reservation to the east of the site access.

3) JUSTIFICATION (POTENTIAL POSITIVE AND NEGATIVE IMPACTS)

A	Safety	The arrangements would result in the removal of hard strips over a distance of circa 150m. This arrangement is replicated on the eastbound carriageway, where the edge of carriageway marking directly abuts the central reservation at a number of locations, as well as further locations on the A259 to the east of the site. A review of PIA data indicates no occurrences where lack of hard strip provision is a contributing factor at these locations. The northern side of the westbound carriageway does not provide for pedestrian infrastructure, and the central reservation is formed of a kerbed arrangement, protecting edge of carriageway stability. Drainage is to be reviewed as part of the S278 Detailed Design to ensure appropriate measures are provided to prevent the accumulation of water.
B	Congestion/ Delay	None
C	Environmental / sustainability	Use of the standard would result in the loss of established vegetation within the central reservation as a result of the repositioning of the central restraint barrier..
D	Capital and whole life cost/value	No cost to the County Council; works are to be delivered by the Developer through S278 Agreement.
E	Accessibility	N/A
F	Integration	N/A
G	Structural	N/A
H	Network resilience & Maintenance	Maintenance of the road would require a single lane closure and this would not be impacted by the removal of the hard strip. In accordance with TSM Chapter 8 p.154, lane width can be reduced to 3.0m and be accompanied by a reduced speed limit to protect operative safety.

4) COMPENSATORY MEASURES

A	Included Measures	None
B	Rejected Options	Retention of hard strip through use of central reservation. The associated widening would result in the relocation and set back of the central restraint barrier, causing the loss of established vegetation within the central reservation to the east of the site access.

5) DESIGN ORGANISATIONS CONCLUDING REMARKS

This Departure from Standards application has been submitted as requested The proposed arrangement is presented in drawing ITB16357-GA-003 Rev A. Further information regarding the site is provided in Pre-Application Scoping Note ITB16357-001 TN. An equivalent "urban all road" would not require the provision of hard strips.
--

6) ATTACHMENTS AND OTHER INFORMATION

A	List of Attachments	ITB16357-GA-003 Rev A ITB16357-001 TN Scoping Note
B	Consultations	WSCC - Pre-Application Advice
C	Other	None.

	Information	
--	--------------------	--

7) DECISION – (HIGHWAY AUTHORITY USE ONLY)

NAME 1			
ROLE			
SIGNED		DATE	
NAME 2			
ROLE			
SIGNED		DATE	
MARK ONE BOX:	1- APPROVED ☐	2-APPROVED WITH COMMENTS ☐	3- REJECTED ☐
COMMENTS			

APPENDIX D.TEMPRO Calculations

AM

Dataset Version:

Result Type: Trip ends by time period

Base Year: 2015

Future Year: 2021

Trip Purpose Group: All purposes

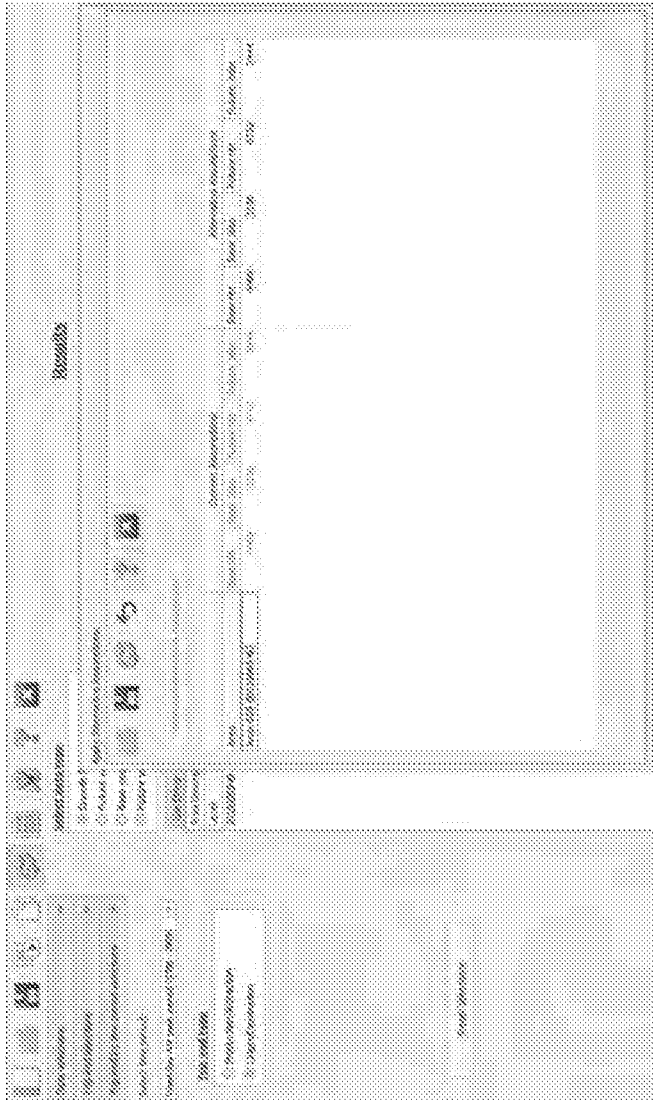
Time Period: Weekday AM peak period (0700 - 0959)

Trip End Type: Origin/Destination

Alternative Assumptions applied No

MSOA Arun 005

Local Growth Figure 1.0687



PM

Dataset Version:

Result Type: Trip ends by time period

Base Year: 2015

Future Year: 2021

Trip Purpose Group: All purposes

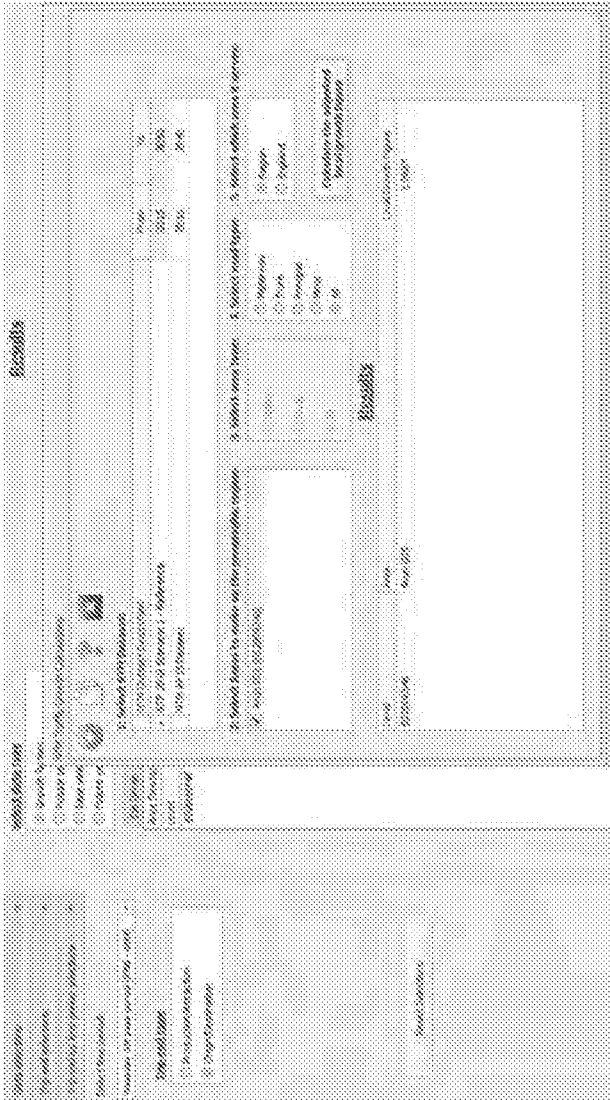
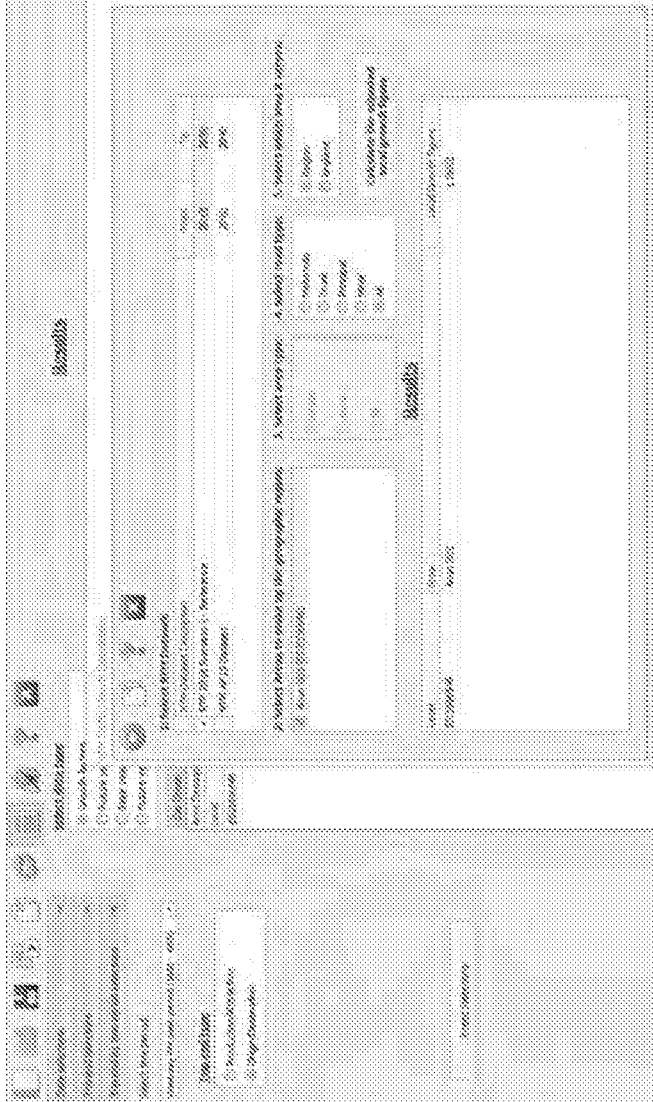
Time Period: Weekday PM peak period (1600-1859)

Trip End Type: Origin/Destination

Alternative Assumptions applied No

MSOA Arun 005

Local Growth Figure 1.0692



AM

Dataset Version:

Result Type:

Base Year:

Future Year:

Trip Purpose Group:

Time Period:

Trip End Type:

Alternative Assumptions applied: No

MSOA

Local Growth Figure

Trip ends by time period

2015

2021

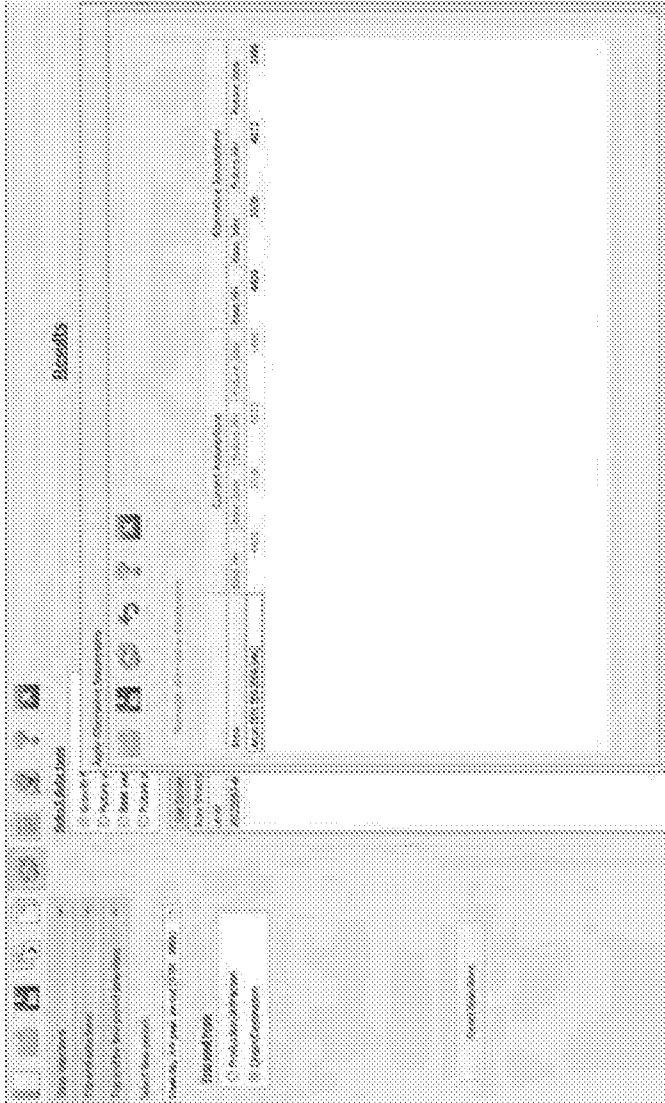
All purposes

Weekday AM peak period (0700 - 0959)

Origin/Destination

Arun 005

1.119



PM

Dataset Version:

Result Type:

Base Year:

Future Year:

Trip Purpose Group:

Time Period:

Trip End Type:

Alternative Assumptions applied: No

MSOA

Local Growth Figure

Trip ends by time period

2015

2021

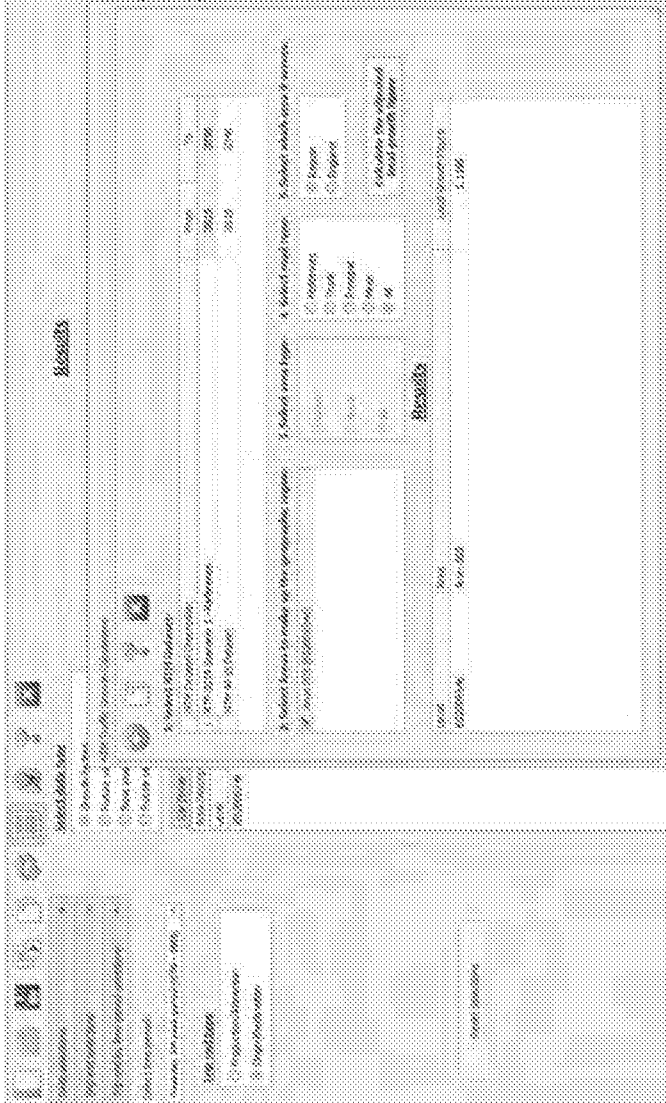
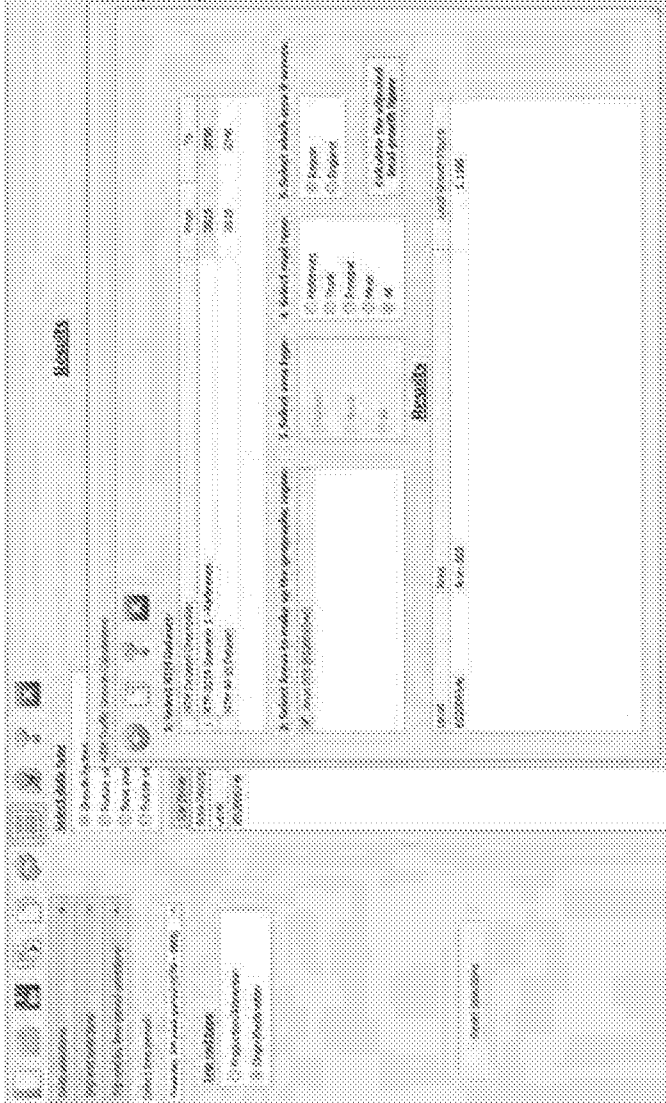
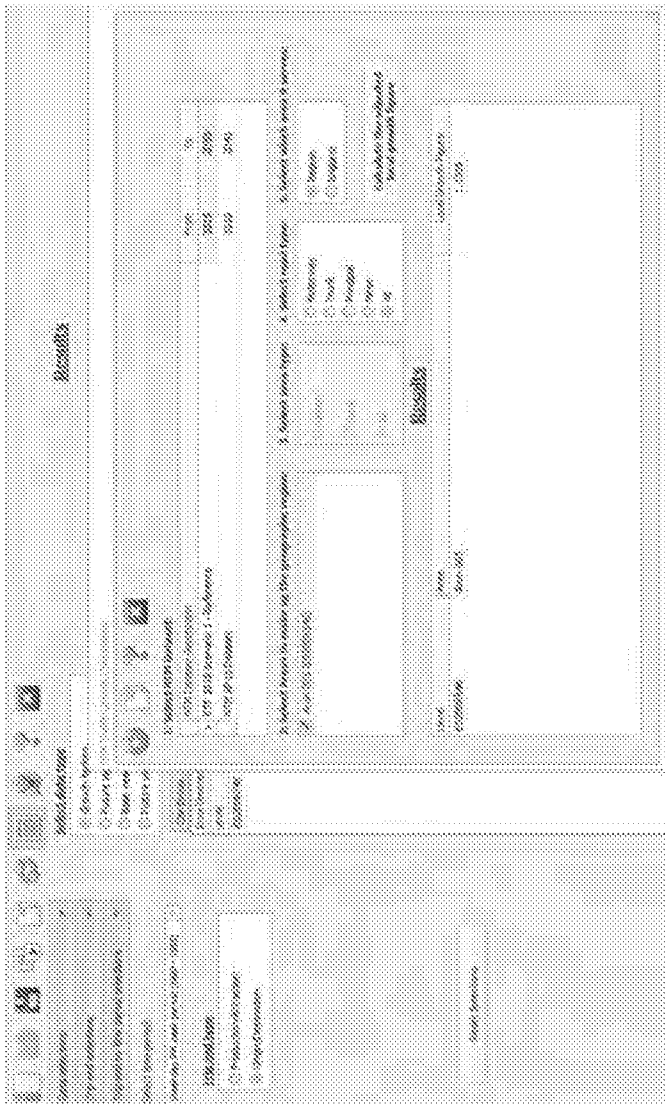
All purposes

Weekday PM peak period (1600-1859)

Origin/Destination

Arun 005

1.1205



APPENDIX E. TRICS Outputs

Calculation Reference: AUDIT-236601-201216-1251

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	2 days
	KC KENT	1 days
	SC SURREY	1 days
	WS WEST SUSSEX	2 days
03	SOUTH WEST	
	DV DEVON	1 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	DH DURHAM	2 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: No of Dwellings
Actual Range: 40 to 79 (units:)
Range Selected by User: 40 to 80 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 19/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	5 days
Thursday	5 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	16 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	7
Edge of Town	9

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

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.

Secondary Filtering selection:

Use Class:

C3	16 days
----	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	8 days
10,001 to 15,000	2 days
15,001 to 20,000	3 days
20,001 to 25,000	1 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	3 days
50,001 to 75,000	1 days
75,001 to 100,000	3 days
100,001 to 125,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	2 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	15 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	8 days
No	8 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.

PTAL Rating:

No PTAL Present	16 days
-----------------	---------

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

LIST OF SITES relevant to selection parameters (Cont.)

9	NF-03-A-05	MIXED HOUSES		NORFOLK
	HEATH DRIVE			
	HOLT			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	40		
	Survey date: THURSDAY	19/09/19		Survey Type: MANUAL
10	SC-03-A-04	DETACHED & TERRACED		SURREY
	HIGH ROAD			
	BYFLEET			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	71		
	Survey date: THURSDAY	23/01/14		Survey Type: MANUAL
11	SF-03-A-07	MIXED HOUSES		SUFFOLK
	FOXHALL ROAD			
	IPSWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:	73		
	Survey date: THURSDAY	09/05/19		Survey Type: MANUAL
12	SH-03-A-05	SEMI-DETACHED/TERRACED		SHROPSHIRE
	SANDCROFT			
	TELFORD			
	SUTTON HILL			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	54		
	Survey date: THURSDAY	24/10/13		Survey Type: MANUAL
13	SY-03-A-01	SEMI DETACHED HOUSES		SOUTH YORKSHIRE
	A19 BENTLEY ROAD			
	DONCASTER			
	BENTLEY RISE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:	54		
	Survey date: WEDNESDAY	18/09/13		Survey Type: MANUAL
14	WK-03-A-04	DETACHED HOUSES		WARWICKSHIRE
	DALEHOUSE LANE			
	KENILWORTH			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	49		
	Survey date: FRIDAY	27/09/19		Survey Type: MANUAL
15	WS-03-A-05	TERRACED & FLATS		WEST SUSSEX
	UPPER SHOREHAM ROAD			
	SHOREHAM BY SEA			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:	48		
	Survey date: WEDNESDAY	18/04/12		Survey Type: MANUAL
16	WS-03-A-10	MIXED HOUSES		WEST SUSSEX
	TODDINGTON LANE			
	LITTLEHAMPTON			
	WICK			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:	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
NY-03-A-09	mixed housing

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	16	57	0.077	16	57	0.350	16	57	0.427
08:00 - 09:00	16	57	0.118	16	57	0.367	16	57	0.485
09:00 - 10:00	16	57	0.155	16	57	0.186	16	57	0.341
10:00 - 11:00	16	57	0.128	16	57	0.173	16	57	0.301
11:00 - 12:00	16	57	0.154	16	57	0.176	16	57	0.330
12:00 - 13:00	16	57	0.166	16	57	0.156	16	57	0.322
13:00 - 14:00	16	57	0.167	16	57	0.163	16	57	0.330
14:00 - 15:00	16	57	0.159	16	57	0.187	16	57	0.346
15:00 - 16:00	16	57	0.281	16	57	0.180	16	57	0.461
16:00 - 17:00	16	57	0.307	16	57	0.161	16	57	0.468
17:00 - 18:00	16	57	0.350	16	57	0.166	16	57	0.516
18:00 - 19:00	16	57	0.283	16	57	0.154	16	57	0.437
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.345			2.419			4.764

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:40 - 79 (units:)

Survey date date range:01/01/12 - 19/11/19

Number of weekdays (Monday-Friday):16

Number of Saturdays:0

Number of Sundays:0

Surveys automatically removed from selection:3

Surveys manually removed from selection:1

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.

APPENDIX F. Census Data – Journey to Work

Travel to Work

Destination	%	43.20%	Time (Mins)	Distance (KM)	1	2	3	Proportion %
Angmering	7.03%	3.04%	4	3	A280	A280	A280	50%
			5	3	A259 W	Roundstone Ln N	Roundstone L	1.52%
			4	3	A259 W	A259 W	Station Rd N	30%
Angmering on Sea	3.30%	1.43%	5	3	Old Worthing Rd	North Ln	North Ln	20%
			5	3	Old Worthing Rd	Worthing Rd	Worthing Rd	0.61%
			6	3	A259 W	Roundstone Ln S	North Ln	40%
			6	3	A259 W	Roundstone Ln S	Worthing Rd	0.57%
Arundel	1.35%	0.59%	10	13	A280	A280	A280	30%
			14	12	A259 W	A259 W	A259 W	70%
			26	30	A280	A280	A280	0.41%
Billingshurst	0.80%	0.35%	35	34	A259 W	A259 W	A259 W	30%
			20	18	A259 W	A259 W	A259 W	80%
Bognor Regis / Felpham	3.68%	1.59%						0.28%
Brighton	3.56%	1.54%	35	28	A280	A280	A280	20%
			35	30	A259 E	A259 E	A259 E	0.07%
Burgess Hill	0.51%	0.22%	40	44	A280	A280	A280	100%
Chichester	5.59%	2.41%	26	29	A280	A280	A280	20%
			35	29	A259 W	A259 W	A259 W	80%
Crawley	4.19%	1.81%	40	48	A280	A280	A280	0.48%
			40	49	A259 E	A259 E	A259 E	60%
Ferring	1.23%	0.53%	6	5	A259 E	A259 E	A259 E	1.09%
Findon / Patching	2.88%	1.24%	8	6	A280	A280	A280	40%
Guildford	0.51%	0.22%	55	58	A280	A280	A280	0.72%
Havant	0.51%	0.22%	35	46	A280	A280	A280	100%
			40	45	A259 W	A259 W	A259 W	70%
Haywards Heath	0.47%	0.20%	35	43	A280	A280	A280	0.15%
Horsham	2.50%	1.08%	28	34	A280	A280	A280	30%
Leatherhead / Dorking	0.68%	0.29%	50	64	A280	A280	A280	0.07%
Lewes	0.76%	0.33%	35	38	A259 E	A259 E	A259 E	100%
Littlehampton	15.20%	6.57%	7	6	A259 W	A259 W	A259 W	0.29%
			10	7	Old Worthing Rd	Worthing Rd	Worthing Rd	100%
London	2.54%	1.10%			A280	A280	A280	70%
Other East	0.30%	0.13%			A259 E	A259 E	A259 E	40%
Other North	3.39%	1.46%			A280	A280	A280	30%
Other West	1.10%	0.48%			A280	A280	A280	100%
					A259 W	A259 W	A259 W	60%
Petworth	0.51%	0.22%	26	30	A280	A280	A280	0.29%
Portsmouth	0.64%	0.27%	40	57	A280	A280	A280	40%
			45	56	A259 W	A259 W	A259 W	0.19%
Pulborough / Storrington	0.97%	0.42%	22	26	A280	A280	A280	70%
			26	25	A259 W	A259 W	A259 W	30%
Reigate / Redhill	0.55%	0.24%	55	65	A280	A280	A280	0.13%
Selsey	0.25%	0.11%	35	41	A280	A280	A280	100%
			40	38	A259 W	A259 W	A259 W	60%
Shoreham by Sea	3.68%	1.59%	24	19	A280	A280	A280	0.07%
			24	17	A259 E	A259 E	A259 E	40%
Steyning / Henfield / Ashington	2.33%	1.01%	20	22	A280	A280	A280	50%
			22	17	A259 E	A259 E	A259 E	80%
West Wittering / Birdham	0.34%	0.15%	35	41	A280	A280	A280	60%
			40	38	A259 W	A259 W	A259 W	0.60%
Westergate / Eastergate / Barnham	0.85%	0.37%	18	20	A280	A280	A280	40%
			16	15	A259 W	A259 W	A259 W	60%
Worthing	25.61%	11.07%	12	9	A259 E	A259 E	A259 E	40%
Yapton	2.20%	0.95%	20	21	A280	A280	A280	50%
			16	13	A259 W	A259 W	A259 W	0.80%
100.00%		43.20%						70%
								43.20%

	1st	2nd	3rd
A280	15.33%	A280	15.33%
A259 W	10.31%	Roundstone Ln N	Roundstone Ln N
		A259 W	Station Rd N
			A259 W
		Roundstone Ln S	North Ln
			Worthing Rd
Old Worthing Rd	2.97%	North Ln	0.57%
		Worthing Rd	2.40%
A259 E	14.59%	A259 E	14.59%
43.20%		43.20%	43.20%

APPENDIX G.Gravity Model

Gravity Model (within 30 mins)

	Location:	Time (mins)	Total Population	P/T	P/T*2	% of P/T*2 Total	Car driver mode split	% Total * Modal Split	% of Car Driver Split	1	2	3	Proportion	%	56.80%
Angmerling		4	9,631	2407.75	5797260	3%	47.16%	0.015648168	0.021483959	A280	A280	Roundstone Ln N	50%	0.010742	0.61%
										A259 W	Roundstone Ln N	Roundstone Ln N	30%	0.006445	0.37%
										A259 W	A259 W	Station Rd N	20%	0.004297	0.24%
Angmerling on Sea		5	7,785	1557	2424249	1%	46.15%	0.006404134	0.008792477	Old Worthing Rd	North Ln	North Ln	40%	0.003517	0.20%
										Old Worthing Rd	Worthing Rd	Worthing Rd	30%	0.002638	0.15%
										A259 W	Roundstone Ln S	North Ln	20%	0.001758	0.10%
										A259 W	Roundstone Ln S	Worthing Rd	10%	0.000879	0.05%
Arundel		10	3,285	328.5	107912.3	0%	80.00%	0.000494124	0.000678402	A280	A280	Worthing Rd	70%	0.000475	0.03%
										A259 W	A259 W	A259 W	30%	0.000204	0.01%
Billinghurst		26	6,911	265.8077	70653.73	0%	100.00%	0.000404399	0.000555215	A280	A280	A280	80%	0.000444	0.03%
										A259 W	A259 W	A259 W	20%	0.000111	0.01%
Bognor Regis / Felpham		20	63,885	3194.25	10203233	6%	72.50%	0.042340026	0.058130214	A259 W	A259 W	A259 W	100%	0.05813	3.30%
Chichester		26	28,657	1102.192	1214828	1%	74.58%	0.005185501	0.007119369	A280	A280	A280	80%	0.005695	0.32%
										A259 W	A259 W	A259 W	20%	0.001424	0.08%
Ferring		6	5,870	978.3333	957136.1	1%	74.36%	0.004073638	0.00559285	A259 E	A259 E	A259 E	100%	0.005593	0.32%
Findon / Patching		8	1,886	235.75	55578.06	0%	80.00%	0.000254489	0.000349397	A280	A280	A280	100%	0.000349	0.02%
Horsham		28	48,041	1715.75	2943798	2%	83.10%	0.014001578	0.019223293	A280	A280	A280	100%	0.019223	1.09%
Littlehampton		7	55,708	7958	63329764	36%	69.04%	0.250250111	0.343577793	A259 W	A259 W	A259 W	70%	0.240504	13.66%
										Old Worthing Rd	Worthing Rd	Worthing Rd	30%	0.103073	5.85%
Petworth		22	2,544	97.84615	9573.87	0%	100.00%	5.47978E-05	7.523939E-05	A280	A280	A280	100%	7.52E-05	0.00%
Pullborough / Storrington		22	8,618	391.7273	153450.3	0%	95.83%	0.000841704	0.001155607	A280	A280	A280	70%	0.000809	0.05%
										A259 W	A259 W	A259 W	30%	0.000347	0.02%
Shoreham by Sea		24	48,487	2020.292	4081578	2%	79.82%	0.018646452	0.025600415	A280	A280	A280	50%	0.0128	0.73%
										A259 E	A259 E	A259 E	50%	0.0128	0.73%
Steyning / Henfield / Ashington		20	9,083	454.15	206252.2	0%	91.67%	0.001082145	0.001485717	A280	A280	A280	60%	0.000891	0.05%
										A259 E	A259 E	A259 E	40%	0.000594	0.03%
Westergate / Eastergate / Barnham		16	10,073	629.5625	396348.9	0%	54.05%	0.001226256	0.001683574	A280	A280	A280	40%	0.000673	0.04%
										A259 W	A259 W	A259 W	60%	0.00101	0.06%
Worthing		12	109,120	9093.333	82688711	47%	77.56%	0.367098236	0.504002981	A259 E	A259 E	A259 E	100%	0.504003	28.63%
Yapton		16	4,307	269.1875	72461.91	0%	86.67%	0.000359449	0.000493501	A280	A280	A280	30%	0.000148	0.01%
										A259 W	A259 W	A259 W	70%	0.000345	0.02%
								0.728365208							
															56.80%

	1st		2nd		3rd
A280	2.97%	A280	2.97%	A280	2.97%
A259 W	17.92%	Roundstone Ln N	0.37%	Roundstone Ln N	0.37%
		A259 W	17.40%	Station Rd N	0.24%
				A259 W	17.16%
		Roundstone Ln S	0.15%	North Ln	0.30%
				Worthing Rd	6.05%
Old Worthing Rd	6.20%	North Ln	0.20%		
		Worthing Rd	6.00%		
A259 E	29.71%	A259 E	29.71%	A259 E	29.71%
	56.80%		56.80%		56.80%

Angmerling	2.15%
Angmerling on Sea	0.88%
Arundel	0.07%
Billinghurst	0.06%
Bognor Regis / Felpham	5.81%
Chichester	0.71%
Ferring	0.56%
Findon / Patching	0.03%
Horsham	1.92%
Littlehampton	34.36%
Petworth	0.01%
Pullborough / Storrington	0.12%
Shoreham by Sea	2.56%
Steyning / Henfield / Ashington	0.15%
Westergate / Eastergate / Barnham	0.17%
Worthing	50.40%
Yapton	0.05%
	100.00%

1.22%
0.50%
0.04%
0.03%
3.30%
0.40%
0.32%
0.02%
1.09%
19.52%
0.00%
0.07%
1.45%
0.08%
0.10%
28.63%
0.03%
56.80%

APPENDIX H. Junctions 9 Outputs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: A259-Old Worthing Rd Rdbt.j9
Path: T:\Projects\16000 Series\16357\ITB Land South of A259, Angmering\Tech\Junction Assessments\Arcady
Report generation date: 23/04/2021 11:50:53

- »2021, AM
- »2021, PM
- »2026 + CD, AM
- »2026 + CD, PM
- »2026 + CD + D, AM
- »2026 + CD + D, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2021							
1 - A280	0.6	4.97	0.35	A	0.5	4.25	0.34	A
2 - A259 E	0.8	2.89	0.44	A	2.3	5.38	0.69	A
4 - Old Worthing Road	1.3	7.14	0.56	A	0.3	5.44	0.25	A
5 - Roundstone By-pass Road	1.9	4.82	0.65	A	1.7	4.04	0.63	A
	2026 + CD							
1 - A280	0.6	5.45	0.38	A	0.6	4.59	0.37	A
2 - A259 E	0.9	3.02	0.46	A	2.7	6.18	0.73	A
4 - Old Worthing Road	1.5	8.03	0.60	A	0.4	5.88	0.27	A
5 - Roundstone By-pass Road	2.2	5.45	0.69	A	2.0	4.45	0.66	A
	2026 + CD + D							
1 - A280	0.7	5.55	0.39	A	0.6	4.68	0.38	A
2 - A259 E	0.9	3.11	0.47	A	2.9	6.44	0.74	A
4 - Old Worthing Road	1.6	8.32	0.61	A	0.4	5.97	0.28	A
5 - Roundstone By-pass Road	2.3	5.58	0.69	A	2.0	4.54	0.67	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	23/04/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	I-TRANSPORT\basingstoke.hotdesk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2015	AM	ONE HOUR	07:45	09:15	15			
D2	2015	PM	ONE HOUR	16:45	18:15	15			
D3	2021	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*G1
D4	2021	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*G2
D5	2026	AM	ONE HOUR	07:45	09:15	15		Simple	D1*G3
D6	2026	PM	ONE HOUR	16:45	18:15	15		Simple	D2*G4
D7	Com Dev	AM	ONE HOUR	07:45	09:15	15			
D8	Com Dev	PM	ONE HOUR	16:45	18:15	15			
D9	2021 + CD	AM	ONE HOUR	07:45	09:15	15		Simple	D3+D7
D10	2021 + CD	PM	ONE HOUR	16:45	18:15	15		Simple	D4+D8
D11	2026 + CD	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D7
D12	2026 + CD	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8
D13	Dev	AM	ONE HOUR	07:45	09:15	15			
D14	Dev	PM	ONE HOUR	16:45	18:15	15			
D15	2021 + CD + D	AM	ONE HOUR	07:45	09:15	15		Simple	D9+D13
D16	2021 + CD + D	PM	ONE HOUR	16:45	18:15	15		Simple	D10+D14
D17	2026 + CD + D	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D11+D13
D18	2026 + CD + D	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D12+D14

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G1	2015-2021 AM		1.0687
G2	2015-2021 PM		1.0692
G3	2015-2026 AM		1.1190
G4	2015-2026 PM		1.1205

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2021 + CD, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A280	
2	A259 E	
3	Access	
4	Old Worthing Road	
5	Roundstone By-pass Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A280	6.08	7.62	28.0	23.9	70.0	39.8	
2 - A259 E	7.30	10.53	12.1	93.6	70.0	65.3	
3 - Access							✓
4 - Old Worthing Road	3.86	6.52	12.9	17.9	70.0	12.5	
5 - Roundstone By-pass Road	7.51	8.90	26.4	25.4	70.0	30.4	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A280	0.575	2180
2 - A259 E	0.613	2510
3 - Access		
4 - Old Worthing Road	0.526	1746
5 - Roundstone By-pass Road	0.659	2660

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2021	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A280		ONE HOUR	✓	371	100.000
2 - A259 E		ONE HOUR	✓	908	100.000
3 - Access					
4 - Old Worthing Road		ONE HOUR	✓	596	100.000
5 - Roundstone By-pass Road		ONE HOUR	✓	1279	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	56	0	74	242
	2 - A259 E	85	0	0	161	662
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	100	482	0	0	14
	5 - Roundstone By-pass Road	150	1119	0	11	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	2	0	4	4
	2 - A259 E	3	0	0	6	3
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	2	3	0	0	0
	5 - Roundstone By-pass Road	10	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A280	0.35	4.97	0.6	A	340	510
2 - A259 E	0.44	2.89	0.8	A	834	1250
3 - Access						
4 - Old Worthing Road	0.56	7.14	1.3	A	547	821
5 - Roundstone By-pass Road	0.65	4.82	1.9	A	1174	1761

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	279	70	1209	1485	0.188	278	252	0.0	0.2	3.089	A
2 - A259 E	684	171	245	2360	0.290	682	1243	0.0	0.4	2.219	A
3 - Access			927				0				
4 - Old Worthing Road	449	112	742	1356	0.331	447	185	0.0	0.5	4.052	A
5 - Roundstone By-pass Road	963	241	501	2330	0.413	960	688	0.0	0.7	2.692	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	333	83	1447	1349	0.247	333	301	0.2	0.3	3.674	A
2 - A259 E	817	204	293	2331	0.350	816	1487	0.4	0.6	2.461	A
3 - Access			1109				0				
4 - Old Worthing Road	536	134	888	1279	0.419	535	221	0.5	0.7	4.955	A
5 - Roundstone By-pass Road	1150	288	600	2265	0.508	1149	824	0.7	1.1	3.306	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	408	102	1770	1163	0.351	407	369	0.3	0.6	4.938	A
2 - A259 E	1000	250	358	2290	0.437	999	1819	0.6	0.8	2.885	A
3 - Access			1357				0				
4 - Old Worthing Road	657	164	1087	1174	0.559	654	270	0.7	1.3	7.069	A
5 - Roundstone By-pass Road	1408	352	733	2177	0.647	1405	1008	1.1	1.9	4.769	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	408	102	1774	1160	0.352	408	369	0.6	0.6	4.965	A
2 - A259 E	1000	250	359	2290	0.437	1000	1824	0.8	0.8	2.888	A
3 - Access			1359				0				
4 - Old Worthing Road	657	164	1088	1174	0.559	657	271	1.3	1.3	7.137	A
5 - Roundstone By-pass Road	1408	352	735	2176	0.647	1408	1010	1.9	1.9	4.818	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	333	83	1453	1345	0.248	334	303	0.6	0.3	3.697	A
2 - A259 E	817	204	294	2330	0.351	818	1494	0.8	0.6	2.467	A
3 - Access			1111				0				
4 - Old Worthing Road	536	134	890	1278	0.420	538	221	1.3	0.7	5.003	A
5 - Roundstone By-pass Road	1150	288	603	2263	0.508	1153	826	1.9	1.1	3.339	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	279	70	1215	1482	0.188	280	253	0.3	0.2	3.109	A
2 - A259 E	684	171	246	2359	0.290	684	1249	0.6	0.4	2.227	A
3 - Access			930				0				
4 - Old Worthing Road	449	112	745	1354	0.332	450	185	0.7	0.5	4.086	A
5 - Roundstone By-pass Road	963	241	504	2328	0.414	964	691	1.1	0.7	2.712	A

2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2021 + CD, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2021	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*G2

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A280		ONE HOUR	✓	414	100.000
2 - A259 E		ONE HOUR	✓	1390	100.000
3 - Access					
4 - Old Worthing Road		ONE HOUR	✓	206	100.000
5 - Roundstone By-pass Road		ONE HOUR	✓	1382	100.000

Origin-Destination Data

Demand (PCU/hr)						
From	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
	1 - A280	0	27	0	156	231
	2 - A259 E	129	0	0	175	1085
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	41	154	0	0	12
	5 - Roundstone By-pass Road	183	1142	0	58	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	0	0	4	2
	2 - A259 E	2	0	0	1	2
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	0	3	0	0	9
	5 - Roundstone By-pass Road	4	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A280	0.34	4.25	0.5	A	380	570
2 - A259 E	0.69	5.38	2.3	A	1275	1913
3 - Access						
4 - Old Worthing Road	0.25	5.44	0.3	A	189	284
5 - Roundstone By-pass Road	0.63	4.04	1.7	A	1269	1903

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	312	78	1016	1596	0.195	311	265	0.0	0.2	2.871	A
2 - A259 E	1046	262	334	2305	0.454	1043	993	0.0	0.8	2.891	A
3 - Access			1377				0				
4 - Old Worthing Road	155	39	1085	1175	0.132	155	292	0.0	0.2	3.633	A
5 - Roundstone By-pass Road	1041	260	243	2500	0.416	1038	997	0.0	0.7	2.489	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	372	93	1216	1482	0.251	372	317	0.2	0.3	3.327	A
2 - A259 E	1250	312	399	2265	0.552	1248	1188	0.8	1.2	3.589	A
3 - Access			1647				0				
4 - Old Worthing Road	186	46	1298	1063	0.174	185	349	0.2	0.2	4.224	A
5 - Roundstone By-pass Road	1243	311	291	2469	0.503	1242	1192	0.7	1.0	2.970	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	456	114	1488	1325	0.344	455	388	0.3	0.5	4.239	A
2 - A259 E	1530	383	489	2210	0.692	1526	1454	1.2	2.2	5.316	A
3 - Access			2015				0				
4 - Old Worthing Road	227	57	1588	911	0.249	227	428	0.2	0.3	5.419	A
5 - Roundstone By-pass Road	1522	381	356	2426	0.628	1519	1459	1.0	1.7	4.012	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	456	114	1490	1324	0.344	456	388	0.5	0.5	4.253	A
2 - A259 E	1530	383	490	2210	0.693	1530	1456	2.2	2.3	5.381	A
3 - Access			2020				0				
4 - Old Worthing Road	227	57	1592	909	0.250	227	428	0.3	0.3	5.442	A
5 - Roundstone By-pass Road	1522	381	357	2425	0.628	1522	1462	1.7	1.7	4.038	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	372	93	1220	1479	0.251	373	318	0.5	0.3	3.341	A
2 - A259 E	1250	312	401	2264	0.552	1254	1192	2.3	1.3	3.632	A
3 - Access			1654				0				
4 - Old Worthing Road	186	46	1303	1060	0.175	186	351	0.3	0.2	4.245	A
5 - Roundstone By-pass Road	1243	311	292	2468	0.504	1245	1197	1.7	1.0	2.992	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	312	78	1020	1594	0.195	312	266	0.3	0.3	2.880	A
2 - A259 E	1046	262	335	2304	0.454	1048	997	1.3	0.9	2.917	A
3 - Access			1383				0				
4 - Old Worthing Road	155	39	1090	1173	0.132	156	293	0.2	0.2	3.648	A
5 - Roundstone By-pass Road	1041	260	244	2499	0.416	1042	1001	1.0	0.7	2.506	A

2026 + CD, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2021 + CD, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2026 + CD	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D7

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A280		ONE HOUR	✓	388	100.000
2 - A259 E		ONE HOUR	✓	951	100.000
3 - Access					
4 - Old Worthing Road		ONE HOUR	✓	624	100.000
5 - Roundstone By-pass Road		ONE HOUR	✓	1339	100.000

Origin-Destination Data

Demand (PCU/hr)						
From	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
	1 - A280	0	58	0	77	253
	2 - A259 E	90	0	0	169	693
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	105	505	0	0	15
	5 - Roundstone By-pass Road	157	1172	0	11	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	2	0	4	4
	2 - A259 E	3	0	0	6	3
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	2	3	0	0	0
	5 - Roundstone By-pass Road	10	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A280	0.38	5.45	0.6	A	356	534
2 - A259 E	0.46	3.02	0.9	A	873	1309
3 - Access						
4 - Old Worthing Road	0.60	8.03	1.5	A	573	859
5 - Roundstone By-pass Road	0.69	5.45	2.2	A	1229	1844

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	292	73	1266	1453	0.201	291	264	0.0	0.3	3.212	A
2 - A259 E	716	179	256	2353	0.304	714	1301	0.0	0.5	2.272	A
3 - Access			970				0				
4 - Old Worthing Road	470	118	777	1337	0.352	468	193	0.0	0.6	4.235	A
5 - Roundstone By-pass Road	1008	252	524	2315	0.436	1005	721	0.0	0.8	2.816	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	349	87	1515	1310	0.267	349	315	0.3	0.4	3.884	A
2 - A259 E	855	214	306	2322	0.368	854	1557	0.5	0.6	2.537	A
3 - Access			1161				0				
4 - Old Worthing Road	561	140	930	1257	0.447	560	231	0.6	0.8	5.289	A
5 - Roundstone By-pass Road	1204	301	628	2247	0.536	1203	862	0.8	1.2	3.536	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	428	107	1852	1116	0.383	426	386	0.4	0.6	5.412	A
2 - A259 E	1047	262	375	2280	0.459	1046	1904	0.6	0.9	3.017	A
3 - Access			1421				0				
4 - Old Worthing Road	687	172	1138	1147	0.599	685	283	0.8	1.5	7.928	A
5 - Roundstone By-pass Road	1475	369	767	2155	0.684	1471	1056	1.2	2.2	5.372	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	428	107	1858	1112	0.384	427	387	0.6	0.6	5.452	A
2 - A259 E	1047	262	376	2280	0.459	1047	1910	0.9	0.9	3.023	A
3 - Access			1423				0				
4 - Old Worthing Road	687	172	1140	1147	0.600	687	283	1.5	1.5	8.034	A
5 - Roundstone By-pass Road	1475	369	770	2153	0.685	1475	1057	2.2	2.2	5.448	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	349	87	1523	1305	0.267	350	317	0.6	0.4	3.916	A
2 - A259 E	855	214	308	2321	0.368	856	1565	0.9	0.6	2.546	A
3 - Access			1164				0				
4 - Old Worthing Road	561	140	932	1256	0.447	564	232	1.5	0.8	5.357	A
5 - Roundstone By-pass Road	1204	301	631	2244	0.537	1208	865	2.2	1.2	3.581	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	292	73	1273	1449	0.202	293	265	0.4	0.3	3.231	A
2 - A259 E	716	179	257	2352	0.304	717	1308	0.6	0.5	2.280	A
3 - Access			974				0				
4 - Old Worthing Road	470	118	780	1336	0.352	471	194	0.8	0.6	4.273	A
5 - Roundstone By-pass Road	1008	252	528	2313	0.436	1010	724	1.2	0.8	2.843	A

2026 + CD, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2021 + CD, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2026 + CD	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A280		ONE HOUR	✓	434	100.000
2 - A259 E		ONE HOUR	✓	1457	100.000
3 - Access					
4 - Old Worthing Road		ONE HOUR	✓	216	100.000
5 - Roundstone By-pass Road		ONE HOUR	✓	1449	100.000

Origin-Destination Data

Demand (PCU/hr)						
From	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
	1 - A280	0	28	0	164	242
	2 - A259 E	136	0	0	184	1137
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	43	161	0	0	12
	5 - Roundstone By-pass Road	192	1197	0	61	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	0	0	4	2
	2 - A259 E	2	0	0	1	2
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	0	3	0	0	9
	5 - Roundstone By-pass Road	4	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A280	0.37	4.59	0.6	A	398	597
2 - A259 E	0.73	6.18	2.7	A	1337	2005
3 - Access						
4 - Old Worthing Road	0.27	5.88	0.4	A	198	298
5 - Roundstone By-pass Road	0.66	4.45	2.0	A	1329	1994

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	326	82	1065	1568	0.208	325	277	0.0	0.3	2.968	A
2 - A259 E	1097	274	350	2296	0.478	1093	1040	0.0	0.9	3.033	A
3 - Access			1443				0				
4 - Old Worthing Road	163	41	1137	1148	0.142	162	306	0.0	0.2	3.761	A
5 - Roundstone By-pass Road	1091	273	255	2492	0.438	1088	1044	0.0	0.8	2.591	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	390	97	1274	1448	0.269	389	332	0.3	0.4	3.485	A
2 - A259 E	1309	327	419	2253	0.581	1308	1245	0.9	1.4	3.860	A
3 - Access			1726				0				
4 - Old Worthing Road	194	49	1360	1031	0.189	194	366	0.2	0.2	4.434	A
5 - Roundstone By-pass Road	1302	326	305	2459	0.530	1301	1249	0.8	1.1	3.144	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	477	119	1559	1284	0.372	477	406	0.4	0.6	4.566	A
2 - A259 E	1604	401	512	2196	0.730	1599	1523	1.4	2.7	6.072	A
3 - Access			2111				0				
4 - Old Worthing Road	238	60	1663	871	0.273	238	448	0.2	0.4	5.849	A
5 - Roundstone By-pass Road	1595	399	373	2415	0.661	1592	1528	1.1	1.9	4.415	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	477	119	1562	1283	0.372	477	407	0.6	0.6	4.586	A
2 - A259 E	1604	401	513	2195	0.731	1604	1526	2.7	2.7	6.178	A
3 - Access			2117				0				
4 - Old Worthing Road	238	60	1668	869	0.274	238	449	0.4	0.4	5.882	A
5 - Roundstone By-pass Road	1595	399	374	2414	0.661	1595	1532	1.9	2.0	4.454	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	390	97	1278	1445	0.270	391	333	0.6	0.4	3.503	A
2 - A259 E	1309	327	420	2253	0.581	1315	1249	2.7	1.4	3.921	A
3 - Access			1735				0				
4 - Old Worthing Road	194	49	1367	1027	0.189	195	368	0.4	0.2	4.462	A
5 - Roundstone By-pass Road	1302	326	306	2458	0.530	1306	1256	2.0	1.1	3.172	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	326	82	1069	1566	0.209	327	279	0.4	0.3	2.983	A
2 - A259 E	1097	274	351	2295	0.478	1099	1045	1.4	0.9	3.063	A
3 - Access			1450				0				
4 - Old Worthing Road	163	41	1142	1145	0.142	163	308	0.2	0.2	3.778	A
5 - Roundstone By-pass Road	1091	273	256	2491	0.438	1092	1050	1.1	0.8	2.610	A

2026 + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2021 + CD, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D17	2026 + CD + D	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D11+D13

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A280		ONE HOUR	✓	390	100.000
2 - A259 E		ONE HOUR	✓	979	100.000
3 - Access					
4 - Old Worthing Road		ONE HOUR	✓	625	100.000
5 - Roundstone By-pass Road		ONE HOUR	✓	1342	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	58	2	77	253
	2 - A259 E	95	12	0	172	701
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	105	505	1	0	15
	5 - Roundstone By-pass Road	157	1172	3	11	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	2	0	4	4
	2 - A259 E	2	0	0	6	3
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	2	3	0	0	0
	5 - Roundstone By-pass Road	10	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A280	0.39	5.55	0.7	A	358	537
2 - A259 E	0.47	3.11	0.9	A	898	1348
3 - Access						
4 - Old Worthing Road	0.61	8.32	1.6	A	574	861
5 - Roundstone By-pass Road	0.69	5.58	2.3	A	1231	1847

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	294	73	1278	1446	0.203	293	267	0.0	0.3	3.234	A
2 - A259 E	737	184	260	2351	0.314	735	1310	0.0	0.5	2.303	A
3 - Access			991				4				
4 - Old Worthing Road	471	118	796	1327	0.355	469	195	0.0	0.6	4.286	A
5 - Roundstone By-pass Road	1010	253	538	2306	0.438	1007	727	0.0	0.8	2.839	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	351	88	1529	1301	0.269	350	320	0.3	0.4	3.923	A
2 - A259 E	880	220	311	2319	0.380	880	1568	0.5	0.6	2.584	A
3 - Access			1186				5				
4 - Old Worthing Road	562	141	953	1245	0.452	561	233	0.6	0.8	5.387	A
5 - Roundstone By-pass Road	1206	302	644	2236	0.540	1205	869	0.8	1.2	3.582	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	429	107	1869	1106	0.388	428	391	0.4	0.7	5.503	A
2 - A259 E	1078	270	381	2277	0.474	1077	1917	0.6	0.9	3.100	A
3 - Access			1452				6				
4 - Old Worthing Road	689	172	1166	1133	0.608	686	286	0.8	1.6	8.202	A
5 - Roundstone By-pass Road	1478	369	787	2141	0.690	1473	1064	1.2	2.2	5.465	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	429	107	1875	1102	0.389	429	392	0.7	0.7	5.548	A
2 - A259 E	1078	270	381	2276	0.474	1078	1923	0.9	0.9	3.106	A
3 - Access			1454				6				
4 - Old Worthing Road	689	172	1168	1132	0.608	689	286	1.6	1.6	8.319	A
5 - Roundstone By-pass Road	1478	369	790	2139	0.691	1477	1066	2.2	2.3	5.582	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	351	88	1537	1297	0.270	352	322	0.7	0.4	3.957	A
2 - A259 E	880	220	312	2318	0.380	881	1577	0.9	0.6	2.594	A
3 - Access			1189				5				
4 - Old Worthing Road	562	141	955	1244	0.452	565	234	1.6	0.9	5.462	A
5 - Roundstone By-pass Road	1206	302	648	2233	0.540	1211	872	2.3	1.2	3.629	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	294	73	1285	1442	0.204	294	269	0.4	0.3	3.256	A
2 - A259 E	737	184	261	2350	0.314	738	1318	0.6	0.5	2.311	A
3 - Access			995				4				
4 - Old Worthing Road	471	118	799	1326	0.355	472	196	0.9	0.6	4.330	A
5 - Roundstone By-pass Road	1010	253	542	2303	0.439	1012	730	1.2	0.8	2.867	A

2026 + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2021 + CD, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D18	2026 + CD + D	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D12+D14

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A280		ONE HOUR	✓	439	100.000
2 - A259 E		ONE HOUR	✓	1470	100.000
3 - Access					
4 - Old Worthing Road		ONE HOUR	✓	218	100.000
5 - Roundstone By-pass Road		ONE HOUR	✓	1457	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	28	5	164	242
	2 - A259 E	138	6	0	185	1141
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	43	161	2	0	12
	5 - Roundstone By-pass Road	192	1197	8	61	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - A280	2 - A259 E	3 - Access	4 - Old Worthing Road	5 - Roundstone By-pass Road
From	1 - A280	0	0	0	4	2
	2 - A259 E	2	0	0	1	2
	3 - Access	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	4 - Old Worthing Road	0	3	0	0	9
	5 - Roundstone By-pass Road	4	1	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A280	0.38	4.68	0.6	A	402	604
2 - A259 E	0.74	6.44	2.9	A	1349	2023
3 - Access						
4 - Old Worthing Road	0.28	5.97	0.4	A	200	300
5 - Roundstone By-pass Road	0.67	4.54	2.0	A	1337	2005

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	330	83	1077	1561	0.212	329	279	0.0	0.3	2.992	A
2 - A259 E	1106	277	361	2289	0.483	1103	1045	0.0	0.9	3.073	A
3 - Access			1452				11				
4 - Old Worthing Road	164	41	1146	1143	0.144	164	307	0.0	0.2	3.784	A
5 - Roundstone By-pass Road	1097	274	262	2487	0.441	1094	1047	0.0	0.8	2.611	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	394	99	1288	1440	0.274	394	334	0.3	0.4	3.527	A
2 - A259 E	1321	330	432	2245	0.588	1319	1250	0.9	1.4	3.942	A
3 - Access			1738				13				
4 - Old Worthing Road	196	49	1371	1025	0.191	196	367	0.2	0.2	4.473	A
5 - Roundstone By-pass Road	1310	327	314	2453	0.534	1308	1253	0.8	1.2	3.180	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	483	121	1576	1274	0.379	482	408	0.4	0.6	4.653	A
2 - A259 E	1618	405	529	2186	0.740	1613	1529	1.4	2.8	6.320	A
3 - Access			2125				16				
4 - Old Worthing Road	240	60	1676	865	0.278	240	449	0.2	0.4	5.931	A
5 - Roundstone By-pass Road	1604	401	384	2407	0.666	1601	1532	1.2	2.0	4.501	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	483	121	1579	1272	0.380	483	409	0.6	0.6	4.675	A
2 - A259 E	1618	405	530	2185	0.740	1618	1533	2.8	2.9	6.443	A
3 - Access			2131				17				
4 - Old Worthing Road	240	60	1681	862	0.279	240	450	0.4	0.4	5.967	A
5 - Roundstone By-pass Road	1604	401	385	2407	0.666	1604	1537	2.0	2.0	4.543	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	394	99	1293	1437	0.274	395	335	0.6	0.4	3.548	A
2 - A259 E	1321	330	434	2244	0.589	1327	1255	2.9	1.5	4.010	A
3 - Access			1747				14				
4 - Old Worthing Road	196	49	1378	1021	0.192	197	369	0.4	0.2	4.502	A
5 - Roundstone By-pass Road	1310	327	315	2452	0.534	1313	1260	2.0	1.2	3.211	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A280	330	83	1082	1559	0.212	331	280	0.4	0.3	3.008	A
2 - A259 E	1106	277	363	2288	0.484	1108	1049	1.5	1.0	3.106	A
3 - Access			1460				11				
4 - Old Worthing Road	164	41	1152	1140	0.144	165	308	0.2	0.2	3.804	A
5 - Roundstone By-pass Road	1097	274	264	2486	0.441	1098	1053	1.2	0.8	2.629	A

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Site Access.j9
Path: T:\Projects\16000 Series\16357\ITB Land South of A259, Angmering\Tech\Junction Assessments\Picady
Report generation date: 23/04/2021 11:40:28

»2026 + D, AM
»2026 + D, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 + D							
Stream B-AC	0.1	6.78	0.05	A	0.0	9.98	0.04	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	23/04/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	I-TRANSPORT\basingstoke.hotdesk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 + D	AM	ONE HOUR	07:45	09:15	15
D2	2026 + D	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2026 + D, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A259 E		Major
B	Site Access		Minor
C	A259 W		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - A259 W	7.30			250.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane	4.66	50	250

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	721	0.124	0.313	0.197	0.447
1	B-C	911	0.132	0.333	-	-
1	C-B	719	0.263	0.263	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 + D	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A259 E		✓	955	100.000
B - Site Access		✓	28	100.000
C - A259 W		✓	1747	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - A259 E	B - Site Access	C - A259 W
	A - A259 E	0	4	951
	B - Site Access	0	0	28
	C - A259 W	1747	0	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - A259 E	B - Site Access	C - A259 W
	A - A259 E	0	0	4
	B - Site Access	0	0	0
	C - A259 W	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.05	6.78	0.1	A
C-AB	0.00	0.00	0.0	A
C-A				
AB				
AC				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21	672	0.031	21	0.0	5.525	A
C-AB	0	530	0.000	0	0.0	0.000	A
C-A	1315			1315			
AB	3			3			
AC	716			716			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	25	626	0.040	25	0.0	5.991	A
C-AB	0	493	0.000	0	0.0	0.000	A
C-A	1571			1571			
AB	4			4			
AC	855			855			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	562	0.055	31	0.1	6.778	A
C-AB	0	442	0.000	0	0.0	0.000	A
C-A	1923			1923			
AB	4			4			
AC	1047			1047			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	562	0.055	31	0.1	6.778	A
C-AB	0	442	0.000	0	0.0	0.000	A
C-A	1923			1923			
AB	4			4			
AC	1047			1047			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	25	626	0.040	25	0.0	5.992	A
C-AB	0	493	0.000	0	0.0	0.000	A
C-A	1571			1571			
AB	4			4			
AC	855			855			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21	672	0.031	21	0.0	5.528	A
C-AB	0	530	0.000	0	0.0	0.000	A
C-A	1315			1315			
AB	3			3			
AC	716			716			

2026 + D, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2026 + D	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A259 E		✓	1469	100.000
B - Site Access		✓	13	100.000
C - A259 W		✓	1392	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - A259 E	B - Site Access	C - A259 W
	A - A259 E	0	12	1457
	B - Site Access	0	0	13
	C - A259 W	1392	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - A259 E	B - Site Access	C - A259 W
	A - A259 E	0	0	2
	B - Site Access	0	0	0
	C - A259 W	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	9.98	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
AC				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	10	545	0.018	10	0.0	6.730	A
C-AB	0	428	0.000	0	0.0	0.000	A
C-A	1048			1048			
A-B	9			9			
AC	1097			1097			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12	473	0.025	12	0.0	7.795	A
C-AB	0	372	0.000	0	0.0	0.000	A
C-A	1251			1251			
A-B	11			11			
AC	1310			1310			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	375	0.038	14	0.0	9.975	A
C-AB	0	294	0.000	0	0.0	0.000	A
C-A	1533			1533			
A-B	13			13			
AC	1604			1604			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	375	0.038	14	0.0	9.977	A
C-AB	0	294	0.000	0	0.0	0.000	A
C-A	1533			1533			
A-B	13			13			
AC	1604			1604			

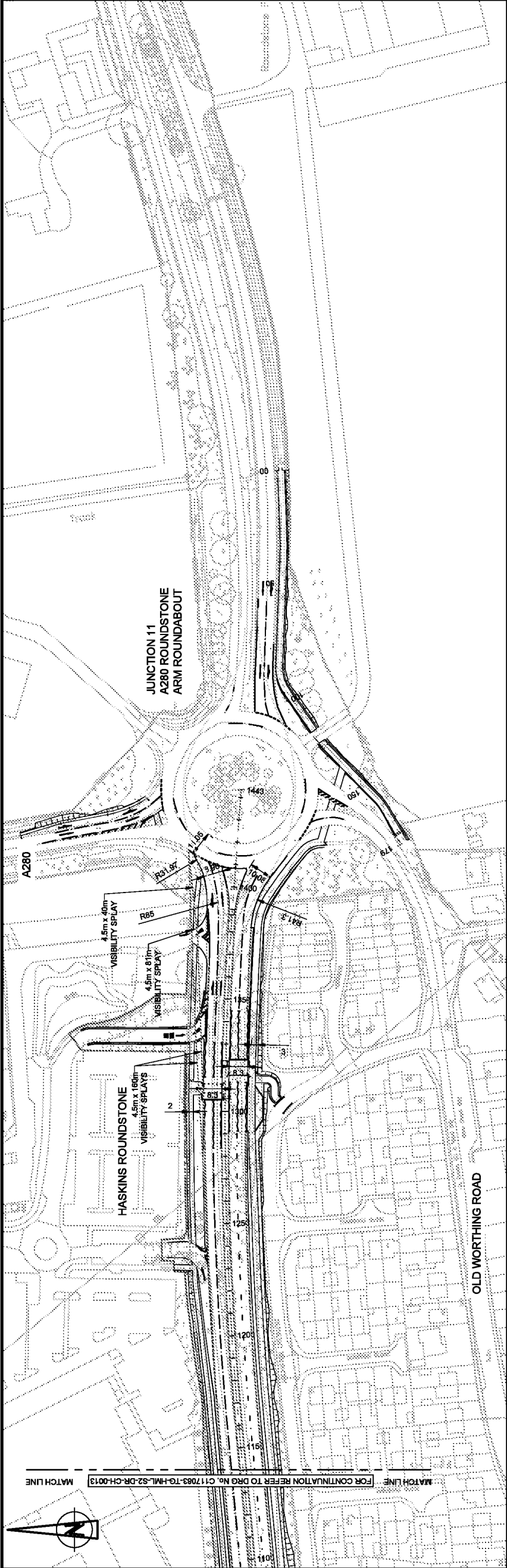
17.45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12	473	0.025	12	0.0	7.798	A
C-AB	0	372	0.000	0	0.0	0.000	A
C-A	1251			1251			
AB	11			11			
AC	1310			1310			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	10	545	0.018	10	0.0	6.733	A
C-AB	0	428	0.000	0	0.0	0.000	A
C-A	1048			1048			
AB	9			9			
AC	1097			1097			

APPENDIX I. WSCC Improvement Scheme



JUNCTION 9-11 (SECTION S2)
SCALE 1:2500

