TRANSPORT ASSESSMENT

Carisbrook Road,
Mitcheldean, Gloucestershire

Client: Gladman Developments Ltd

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CONTENTS

1 INTRODUCTION 3
1.1 Purpose of Report 3
1.2 Previous Application 3
1.3 Scope of Report 4
2 TRANSPORT POLICY AND GUIDANCE 5
2.1 Introduction 5
2.2 National Planning Policy Framework 5
2.3 Active Travel England (ATE) Policy Documents 6
2.4 Gloucestershire's Local Transport Plan 2020-2041 8
2.5 Forest of Dean District Council Core Strategy 2012 8
2.6 Forest of Dean District Council Allocations Plan 2006 - 2026 9
2.7 Forest of Dean Draft Local Plan 2021 - 2041 9
2.8 Manual for Streets 10
2.9 Manual for Gloucester Streets (2020) 10
2.10 Summary 11
3 EXISTING SITUATION 12
3.1 Site Description 12
3.2 Public Rights of Way 12
3.3 Local Highway Network 13
3.4 Existing Traffic Conditions 14
3.5 Accident Summary 18
4 DEVELOPMENT PROPOSAL 20
4.1 Development Description 20
4.2 Access Strategy 20
4.3 Parking 23
4.4 Road Safety Audit 23
4.5 Summary 25
5 ACCESS BY SUSTAINABLE MODES 26
5.1 Introduction to Sustainable Modes of Transport 26
5.2 Access on Foot 26
5.3 Access by Cycle 29
5.4 Access to Local Bus Services 31
5.5 Access to Local Train Services 33
5.6 Travel Plan 34
5.7 Summary 34
6 ROUTE AUDIT 36

6.1 Preamble 36
6.2 PERS Stages 37
6.3 Qualitative Evaluation of Walking Routes 37
6.4 Pedestrian Route Improvements 40
6.5 Summary 40
7 IMPACT ASSESSMENT 42
7.1 Introduction 42
7.2 Traffic Growth 42
7.3 Trip Generation 43
7.4 Trip Distribution 44
7.5 Impact Assessment 45
7.6 Junction Capacity Assessment 46
7.7 Potential Highway Improvements 59
7.8 Summary 61
8 SUMMARY AND CONCLUSION 63
8.1 Summary 63
8.2 Conclusion 64

APPENDICES

Appendix A Scoping Correspondence with GCC
Appendix B Figures
Appendix C ATC Data
Appendix D Traffic Flow Diagrams
Appendix E Accident Plot
Appendix F Technical Drawings
Appendix G Stage 1 RSA
Appendix H ATE Route Check Toolkit
Appendix I RTP Calculation
Appendix J Local Trip Rate Generation
Appendix K Capacity Assessment Report Outputs

1 INTRODUCTION

1.1 Purpose of Report

1.1.1 This report considers the highways and transportation implications associated with Gladman Developments Ltd's (Gladman) proposal for a residential development comprising up to 180 dwellings, 35% of which will be classed as affordable, located on land off Carisbrook Road, Mitcheldean, Gloucestershire.

1.1.2 Prime Transport Planning (Prime) has produced this Transport Assessment (TA) on behalf of the applicant.

1.1.3 This document has been prepared in accordance with the Government's Planning Practice Guidance: *Transport evidence bases in plan making and decision taking* (2014) and *Travel Plans, Transport Assessments and Statements* (2015) as well as the Department for Transport's (DfT) *Guidance on Transport Assessment* (GTA) (2007) and *Manual for Gloucestershire Streets* (2020). It considers the accessibility of the site and safety for all modes of travel but specifically walking, cycling and public transport.

1.1.4 The conclusions and recommendations contained herein have been drawn based on information available and obtained in advance of the planning submission to which this report relates.

1.1.5 Reasonable checks have been carried out on any third-party information used in the preparation of this report but, nonetheless, Prime accepts no liability for the accuracy or otherwise of this data.

1.1.6 Third-party rights are excluded for the use of information contained within this report.

1.2 Previous Application

1.2.1 This is the second outline planning application on the site by Gladman, with the first, for up to 125 dwellings, submitted in 2018 and assigned the reference P1994/18/OUT. This application was subsequently refused by Forest of Dean District Council (FDDC), the Local Planning Authority (LPA), in 2019. One of the reasons for refusal related to insufficient information being submitted to assess highway impact, particularly at the junctions of Hawker Hill/Gloucester Road/New Road and Abenhall Road/Gloucester Road, with this reason provided by Gloucestershire County Council (GCC), the Local Highway Authority (LHA).

1.2.2 Prime were liaising with GCC regarding the assessment of the impact of the proposed development at the aforementioned junctions, however, this work was not completed by the time in which the application was determined.

1.2.3 A TA and Travel Plan (TP) were prepared by Prime and submitted in December 2018 to support the previously proposed development. These documents were informed by pre-application discussions

with Gloucestershire County Council (GCC). At the time of the initial application, the development site was not allocated.

1.3 Scope of Report

1.3.1 As stated above, this report has been prepared in accordance with *Transport evidence bases in plan making and decision taking*, which replaced the DfT's GTA in 2014. However, the new document is not a like-for-like replacement for GTA, providing no guidance on the production of TAs to accompany developments. The latest guidance instead helps local planning authorities assess strategic transport needs to reflect and, where appropriate, mitigate these in their Local Plan.

1.3.2 More relevant information is provided within the PPG under *Travel Plans, Transport Assessments and Statements*, however, this also does not provide the level of detailed guidance that was contained within DfT's GTA.

1.3.3 The lack of current detailed guidance places greater emphasis on agreeing the scope of a TA with the highway authority responsible for the location in which the development is proposed and in employing industry best-practice. Given that GTA was in place for 7-years, Prime believe that assessment in-line with the document still represents industry best-practice, particularly for aspects where the current guidance lacks the necessary detail to form a robust assessment.

1.3.4 Email based scoping exercises were undertaken with the LHA in 2018 which were used to support the original application. Formal planning responses were received from the LHA on 21st February 2019 and 13th March 2019. Further emails were exchanged between Prime and the LHA in June 2019 to which concern relating to the Hawker Hill/Gloucester Road/New Road mini-roundabout and Abenall Road/Gloucester Road priority junction were expressed. These responses are provided for reference in **Appendix A**. They have been provided in chronological order for ease of reference.

1.3.5 Following this introduction, the remainder of this report is structured as follows:

- **Section 2** describes the relevant local and national transport policy and guidance;
- **Section 3** describes the existing situation in terms of the site, local highway network, road collision accidents and traffic conditions in the vicinity of the site;
- **Section 4** details the development proposal including the access strategy and parking arrangements;
- **Section 5** details access to the site by sustainable modes of travel which includes walking, cycling and public transport;
- **Section 6** provides a Pedestrian Environment Review System (PERS) style audit;
- **Section 7** discusses the forecasting methodology, trip generation of the site and the ability of the proposed site access and various off-site junctions to accommodate the generated traffic;
- **Section 8** concludes the findings of the Transport Assessment.

2 TRANSPORT POLICY AND GUIDANCE

2.1 Introduction

2.1.1 It is important that proposed new developments conform to and complement national and local planning policy. This section details the policies that are relevant to this development.

2.2 National Planning Policy Framework

2.2.1 The current *National Planning Policy Framework* (NPPF) was published in December 2024 and sets out the Government's current planning policies. At the heart of NPPF is *'a presumption in favour of sustainable development'* as detailed in paragraphs 10 and 11.

2.2.2 Section 9 of the NPPF, *Promoting sustainable transport*, outlines the important role that the planning system has in facilitating sustainable development. It states in paragraph 110 that:

> *'Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.'*

2.2.3 The document offers guidance for planning policies including:

- supporting appropriate mixes of land uses;
- minimising the number and length of journeys;
- actively involving local highway authorities, transport infrastructure providers and operators and neighbouring councils in order to align strategies and investments for supporting sustainable travel; and
- providing high quality walking and cycling networks and associated supporting facilities such as cycle parking.

2.2.4 Paragraph 115 of the NPPF provides direction for the assessment of sites for development, stating:

> *'…it should be ensured that:*
>
> *a) sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;*
>
> *b) safe and suitable access to the site can be achieved for all users;*
>
> *c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach.'

2.2.5 In determining planning applications, paragraph 116 states that:

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

2.2.6 Paragraph 117 continues:

'Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'

2.2.7 Paragraph 118 highlights the need for planning applications for developments that will *'generate significant amounts of movement'* to be accompanied by a Transport Assessment or Transport Statement and a Travel Plan so that the *'likely impacts of the proposal can be assessed and monitored'*.

2.3 Active Travel England (ATE) Policy Documents

2.3.1 Active Travel England (ATE) is a government agency which is responsible for making walking and cycling the preferred choice of travel for everyone. It has a target for 50% of trips in England's towns and cities to be walking or cycling by 2030. As of June 2023, ATE is a statutory consultee on all planning applications for developments which equal or exceed 150 housing units, 7,500sqm of floor space or an area of 5 hectares.

2.3.2 ATE has numerous documents/policies to help it achieve its walking/cycling target, with some of its main documents outlined and summarised below.

Framework Document (2023)

2.3.3 The ATE Framework Document provides an overview of ATE, their purpose, aims, objectives and responsibilities. The document will be reviewed every 3 years, with their latest review taking place in 2023.

2.3.4 The document outlines the walking and cycling target of 50% for all journeys, with delivery of this target to be achieved through direct relationships with local authorities and a focus on technical advice, technical reviews and inspections. Its aims, as outlined in the Framework Document, are provided below:

- 'creating better streets and networks for cycling and walking that are built to the 'key design principles' as set out in Gear Change and Local Transport Note 1/20
- putting walking and cycling at the heart of transport, place-making, and health policy so travelling without a car is easy and accessible utilising a long-term walking and cycling programme and budget
- empowering and encouraging local authorities who manage their roads to incorporate active travel improvements into all aspects of their functions. This includes access to new powers to manage the highway effectively for active travel and training on all aspects of active travel best practice
- enabling people to cycle and protecting them when they do by reducing road danger through the creation of safe infrastructure based on the key design principles and working with the department and relevant bodies to ensure that the rules of the road work to protect people travelling actively'

Gear Change: A bold vision for cycling and walking

2.3.5 This document sets out the benefits of walking and cycling, as well as the negative effects inactivity can have both physically and mentally.

2.3.6 The report is structured into 4 separate themes, with the first being improving the walking/cycling environment, the second being placemaking and policy to help drive these improvements, the third being empowering local authorities to make these improvements through increased funding, with the fourth being the protection of cyclists through training and other such initiatives.

2.3.7 Through the above themes the documents covers such aspects as key design principles, additional local authority funding and incentivisation for GP Surgeries to prescribe cycling/walking.

ATE Standing Advice Note: Active Travel and Sustainable Development

2.3.8 The advice note has been prepared by ATE to help support design and transport consultants when preparing development proposals.

2.3.9 The document provides an overview of the Planning Application Assessment Toolkit (PAAT) which has been prepared by ATE to help enable applicants to assemble evidence and assess the merits of active travel related to the development proposal. The toolkit includes a range of criteria, ranging from an Active Travel Route Audit, Site Permeability and Travel Planning.

2.3.10 An Active Travel Audit is advised to be undertaken on a qualitative basis, to inform of any necessary improvements related to infrastructure that could be required.

2.4 Gloucestershire's Local Transport Plan 2020-2041

2.4.1 Gloucestershire's Local Transport Plan 2020-2041 (referred to as LTP4) was adopted in March 2021. The overall vision of LTP4 is to create a resilient transport network which reflects the changing nature of the county, with population growth, new technology, health and climate change.

2.4.2 Gloucestershire's vision for transport is:

> *'A resilient transport network that enables sustainable economic growth by providing travel choices for all, making Gloucestershire a better place to live, work and visit'.*

2.4.3 The following are key objectives from the LTP aimed at addressing the above vision and also promoting environmental and public health initiatives:

- *'Protect and enhance the natural & built environment*
- *Support sustainable economic growth*
- *Enable safe and affordable community connectivity*
- *Improve community health and wellbeing and promote equality of opportunity.'*

2.4.4 An integrated transport network, reduction in solo car use and a healthy more active population remain import outcomes from LTP4 and what the document hopes to achieve. The rural aspect of the Forest of Dean area is referenced within the document, although Mitcheldean is not specifically discussed for being an area with any specific transport issues. Instead, the village is referenced as an important economic employment centre with around 3,000 jobs supported around Vantage Point Business Village.

2.5 Forest of Dean District Council Core Strategy 2012

2.5.1 The Core Strategy document sets out the overall vision for the district, with strategic objectives to identify specific areas, strategies to achieve the objectives and an outline of the delivery process and monitoring.

2.5.2 Five core strategy objectives outlined within the document can be seen below:

> *'1 Providing quality environments throughout the district- to protect the environment for the benefit of the community and in order to attract new businesses*
>
> *2 Develop a more self-contained and diverse local economy including tourism- to address out commuting and enable more sustainable transport patterns while providing a greater range and number of jobs, and improving the services and facilities that are accessible*
>
> *3 Providing homes including affordable homes to meet the housing needs of the community*
>
> *4 Facilitate regeneration to support a stronger more sustainable economy in a better-quality environment*
>
> *5 Creating safer communities with better facilities'.*

2.6 Forest of Dean District Council Allocations Plan 2006 - 2026

2.6.1 The FDDC Allocations Plan was adopted by FDDC in 2018, and is a complementary document to the Core Strategy, sharing common objectives.

2.6.2 The allocation plan outlines where new development will be located to meet community needs and address housing targets, focusing on sustainable growth.

2.7 Forest of Dean Draft Local Plan 2021 - 2041

2.7.1 The FDDC Draft Local Plan is a comprehensive document covering the period 2021-2041. It will replace the existing Core Strategy (2012) and Allocation Plan (2018). Public consultations were held between July and August 2024. The purpose of the plan is to guide development and change to benefit an area, either by facilitating new growth or by implementing protective measures to enhance the local environment.

2.7.2 Through review of the draft document, it is noted that the development site in which this report relates is identified (under Policy LP.93) for the development of about 180 dwellings with associated open space. The emerging allocation includes additional land to the north compared to the extent of the site subject to the outline planning application in 2018. The document outlines Mitcheldean as a major village with a good range of services and that necessary ecology mitigation would be required. No constraining highway issues are discussed or stated.

2.8 Manual for Streets

2.8.1 *Manual for Streets* (MfS) was published on behalf of the DfT and Communities and Local Government in March 2007 and provides advice for the design of residential streets in England and Wales.

2.8.2 The focus of MfS is to demonstrate the:

> *'benefits that flow from good design and assigns a higher priority to pedestrians and cyclists, setting out an approach to residential streets that recognises their role in creating places that work for all members of the community. MfS refocuses on the place function of residential streets, giving clear guidance on how to achieve well-designed streets and spaces that serve the community in a range of ways' (MfS page 7).*

2.8.3 The guidance addresses many common design principles and discusses detailed design issues, often presenting recommended design criteria. Some of the key principles of MfS include:

- The need to shift from focusing on designing for motor vehicles to designing streets around the needs of pedestrians, cyclists and public transport users which in turn enhances safety;
- Good design can help to create and strengthen a sense of place and community;
- Creating streets that are permeable and offer good quality connections to main destinations for all road users;
- Inclusive design that recognises the needs of people of all ages and abilities; and
- Cost-effective construction often by avoiding over-designing.

2.8.4 In September 2010 a companion document *Manual for Streets 2 – wider application of the principles* (MfS2) was published. This document expands on some of the design principles of MfS and provides examples of places where designs based on these principles have been implemented.

2.9 Manual for Gloucester Streets (2020)

2.9.1 *Manual for Gloucester Streets* (MfGS) was adopted on 1st April 2016 and has been subsequently updated in July 2020, with an addendum update in October 2021.

2.9.2 MfGS seeks to reflect the advice given in national guidance, such as MfS/MfS2 and the *Design Manual for Roads and Bridges* (DMRB), as well as a wide range of best practice documents covering different aspects of the transport system. MfGS also seeks to strike the right balance between allowing the designer the flexibility needed to create distinctive high-quality developments, whilst also ensuring that layouts stand the test of time and are cost-effective to maintain.

2.9.3 As will be detailed in Section 4 of this report, the access has been designed based on the MfGS standards for a Street with all geometric dimensions meeting these standards.

2.10 Summary

2.10.1 This section has outlined national and local transport policies and guidance which are applicable to the development site. How the site conforms to and complements these policies and guidance will be discussed in the following sections of this report, where relevant.

3 EXISTING SITUATION

3.1 Site Description

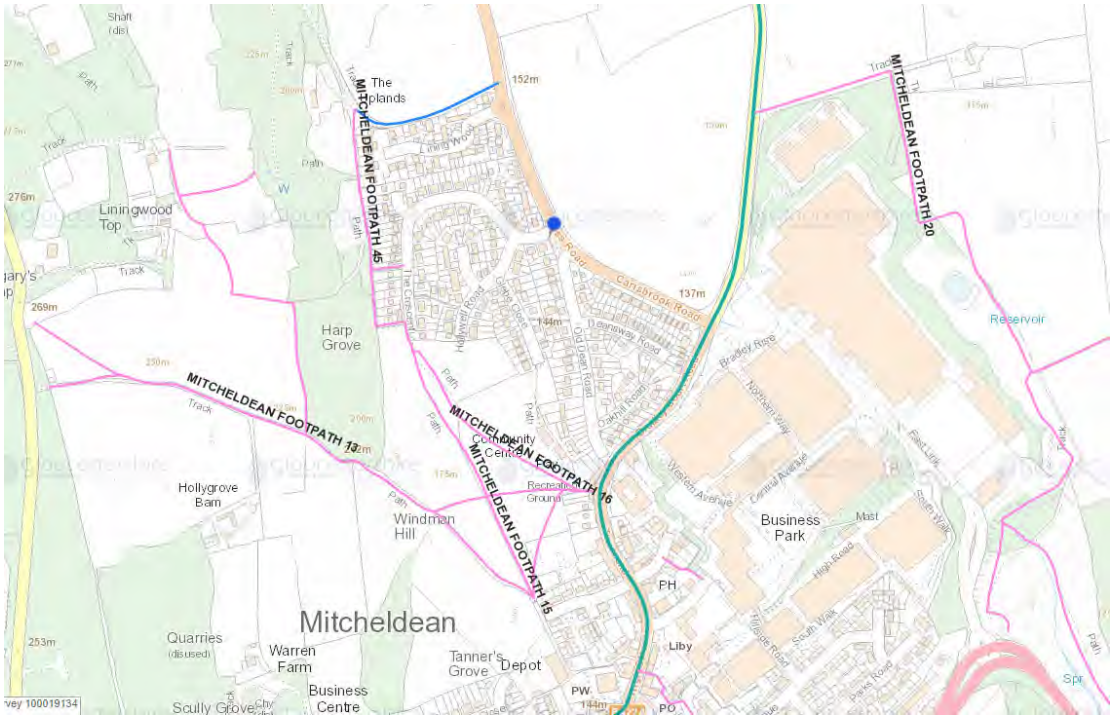
3.1.1 The application site is currently undeveloped and in agricultural use. It is located to the north of Mitcheldean village centre, which is located circa 21km to the west of Gloucester and circa 11km south-east of Ross-on-Wye. Additional agricultural fields exist to the north of the site, with Carisbrook Road (B4224) fronting the site to the south and west and Bradley Court Road fronting the east of the site.

3.1.2 The location of the site, in the context of Mitcheldean and the local highway network, is illustrated in **Figure 1** in **Appendix B**.

3.2 Public Rights of Way

3.2.1 **Image 3.1** below shows the Public Right of Way (PRoW) network within the vicinity of the site, this being an extract of GCC's online mapping system with footpaths being highlighted in pink and bridleways being highlighted in blue. This shows that no PRoWs cross the site but a fairly extensive PRoW network is located to the west, south and east. The Wysis Way, a promoted scenic walking route, is shown in green and runs along Bradley Court Road. Not highlighted on the image below are a number of footpaths that connect the residential streets of the Old Dean Road and Hollywell Road cul-de-sacs, which will be detailed further in **Section 6**.

Image 3.1: Extract from GCC's Online Mapping System Depicting the Public Rights of Way



Source: https://maps.gloucestershire.gov.uk/MapThatPublic/Default.aspx?treeid=81@82@83

3.3 Local Highway Network

B4224 Carisbrook Road (Ross Road)

3.3.1 The B4224 Carisbrook Road runs along the south-western boundary of the site from Bradley Court Road to Old Dean Road where it becomes Ross Road (B4224) running to the A40 to the north of the settlement at Lea. The road provides access to a number of residential cul-de-sacs locally, including Old Dean Road, Hollywell Road and Lining Wood. Carisbrook Road (B4224) forms a priority controlled junction with Bradley court Road which also forms part of the B4224 running to the village centre but is unclassified running north.

3.3.2 Carisbrook Road is a circa 7m wide two-way single carriageway. Footway exists along the southern verge of the carriageway only, this being approximately 2m in width, with some sections of footway increasing to approximately 4m. A compact roundabout exists circa 420m north from Bradley Court Road (B4224). The road is subject to a 30mph speed limit which extends from the north of this roundabout to the village centre. Ross Road north of the roundabout has a derestricted speed limit. Street lighting exists along the road, with traffic calming measures including 'SLOW' road markings and vehicle activated electronic 30mph speed warning signs. Two bus stops exist along the road, serving both north and southbound services, and are linked by an uncontrolled crossing (dropped kerbs and tactile paving).

Bradley Court Road (B4224)

3.3.3 Bradley Court Road lines the eastern boundary of the site. It is a two-way single carriageway road, circa 6.5m in width from the Carisbrook Road (B4224) priority junction. This width is consistent for the first 270m north from this junction, before narrowing to approximately 5m in width. The road is subject to a 30mph speed limit for the first 100m north of this junction, after which the road becomes subject to national speed limit (60mph for cars and motorcycles). The current change in speed limit is demarcated by signage, a roundel on high-friction surface and wide edge of carriageway markings.

3.3.4 No footways exist along the carriageway north of the junction with Carisbrook Road but they are present to the south of it providing contiguous connection to the village centre. A gated access to Vantage Point Business Village is located adjacent to the change in speed limit with a second access to the south however both do not appear to have been in-use for a number of years.

3.3.5 The B4224 becomes Townsend on approach to the village centre where it is named High Street, then Hawker Hill to the south of the village centre on approach to the A4136 Gloucester Road/New Road.

3.3.6 The B4224 is subject to a 7.5 tonne weight restriction between the A4136 and the A40, except for loading.

Strategic Network

3.3.7 The A40 can be accessed via Ross Road or Bradley Court Road although the more popular route is likely to be via the A4136 to the south of the village centre given its higher standard. The A4136 forms a signal controlled junction with the A40 which is National Highways controlled towards Gloucester.

3.4 Existing Traffic Conditions

Site Visits

3.4.1 A site visit was undertaken on Wednesday 28th November 2018 for the original planning application. During the site visit it was observed that traffic was free-flowing through the village with very few queues observed on any side roads. The walking environment was pleasant and convenient with many pedestrian trips observed during the visit. A second recent site visit has been completed on Friday 5th July 2024. It was noted that minimal development has taken place in the surrounding area since the original submission in 2018 and traffic movements were noted largely to be the same with pedestrian trips observed during the visit.

Traffic Surveys

3.4.2 Several traffic surveys were undertaken in November 2018. Given this survey information is almost 6 years old, the independent traffic survey and data collection specialist Paul Castle Associates (formerly 360TSL) has been commissioned to undertake fresh surveys. The location of the traffic surveys is shown on **Figure 1** in **Appendix B**. It should be noted that that these survey locations were previously accepted by the LHA. This information has been utilised in the design of the site access arrangement in **Section 4** and the traffic impact assessment detailed in **Section 7**.

3.4.3 Two automatic traffic counters (ATCs) were originally installed for a 7-day period from Thursday 15th November 2018, one on Carisbrook Road close to the proposed site access, the other on Bradley Court Road at the change in speed limit.

3.4.4 Updated ATCs surveys have similarly been placed for a 7-day period from Tuesday 4th June 2024 in the same locations. Speeds were recorded by these ATCs with a summary provided in **Table 3.1** and the raw data included in **Appendix C**. The table compares both the 2018 speeds and the 2024 speeds.

Table 3.1: 2018/2024 ATC Speed Survey Results Summary

2024				
	Carisbrook Road		Bradley Court Road	
Direction	Average	85th %ile	Average	85th %ile
Southbound	30.0	35.3	36.1	42.4
Northbound	28.3	33.7	40.3	47.5
2018				
	Carisbrook Road		Bradley Court Road	
Direction	Average	85th%ile	Average	85th%ile
Southbound	29.5	34.8	39.6	47.6
Northbound	28.5	33.3	43.4	51.2

3.4.5 The speeds on Carisbrook Road have remained encouraging with the average speeds remaining within the signed speed limit whilst the 85th percentile speeds are only 3.7-5.3mph higher. The speeds on Bradley Court Road are not unusual for a speed limit transition area although clearly it would be more desirable from a safety perspective if they were lower, particularly on approach to the settlement.

3.4.6 A positive observation which can be deduced from **Table 3.1** is the circa 5mph reduction in 85th percentile speeds southbound on Bradley Court Road, from 47.6mph to 42.4mph. A circa 4mph reduction is similarly apparent for northbound 85thpercentile speeds.

3.4.7 Following the original scoping correspondence with GCC, Classified turning count and queue length surveys were undertaken at the following locations:

- Ross Road/Hollywell Road (3-arm priority);
- Carisbrook Road/Bradley Court Road (3-arm priority);
- Hawker Hill/Gloucester Road/New Road/Abenhall Road (3-arm mini-roundabout with adjacent 3-arm priority); and
- A40/A4136 Longhope Road (3-arm signals).

3.4.8 As stated previously, fresh survey data has been collected for the area, with the above junctions having fresh turning count surveys collected on Thursday 6th June 2024. This is considered a typical weekday within a neutral month, as defined by DfT's transport analysis guidance (TAG). As such, the data is considered appropriate for the purposes of assessment.

3.4.9 The above counts were carried out between 07:00 and 10:00 and 15:30 and 18:30 to ensure that the commuter peaks were surveyed, allowing the morning (AM) and evening (PM) peak hours to be determined.

3.4.10 The utilisation of the results of these surveys in ascertaining the capacity of the abovementioned junctions is described in **Section 7**.

3.4.11 The traffic survey data has been interrogated to derive the AM and PM peak hours of the local highway network which are found to be as follows:

- AM Peak: 08:00 – 09:00; and
- PM Peak: 16:30 – 17:30

3.4.12 **Traffic Flow Diagrams 1 and 2**, included at **Appendix D**, summarise the observed peak hour traffic flows and queue lengths. In order to aid the capacity assessment modelling detailed in **Section 6**, the three user classes surveyed have been condensed into two, with buses added to the 'heavy' user class. The queue length surveys recorded the maximum queue lengths every five minutes at the various junctions surveyed. Queues were measured as stationary and/or slow-moving traffic less than 5mph.

3.4.13 The observed peak hour traffic flows along Carisbrook Road and Bradley Court Road in the vicinity of the site based on the turning count at the junction between the two roads is provided in **Table 3.2** below.

Table 3.2: Link Flows along Carisbrook Road and Bradley Court Road in the Vicinity of the Site

Peak	Direction	Link Flow			Heavy %
		Lights	Heavies	Total	
Carisbrook Road					
AM	South-eastbound	169	0	169	0.00%
	North-westbound	111	3	114	2.63%
	2-Way	**280**	**3**	**283**	1.06%
PM	South-eastbound	131	3	134	2.24%
	North-westbound	161	1	162	0.62%
	2-Way	**292**	**4**	**296**	1.35%
Bradley Court Road					
AM	Southbound	93	3	96	3.13%
	Northbound	127	0	127	0.00%
	2-Way	**220**	**3**	**223**	1.35%
PM	Southbound	109	1	110	0.91%
	Northbound	127	0	127	0.00%
	2-Way	**236**	**1**	**237**	0.42%

3.4.14 The information contained in **Table 3.2** suggest that traffic flows on both roads are relatively low with the heavy vehicle flows being particularly low. The south-east bound direction was the busiest in the AM peak with north-west bound flows being busiest in the PM peak on Carisbrook Road. The flows being tidal in nature. The northbound flows on Bradley Court Road are the highest in both peaks.

3.4.15 **Table 3.3** below highlights a comparison between the 2018 observed base surveys that were originally completed and the latest up to date observed surveys of 2024 for all junctions.

Table 3.3: Comparison of 2018 Observed Traffic Survey Flows to 2024 Observed Traffic Surveys

Junction	AM Peak			PM Peak		
	2018	2024	Difference	2018	2024	Difference
Hollywell Road / Ross Road	282	283	1	275	298	23
Bradley Court Road / Carisbrook Road	518	497	-21	463	481	18
A4136 New Road / B4224 Hawker Hill / A4136 Gloucester Road	1450	1434	-16	1600	1391	-209
A4136 Gloucester Road / Abenhall Road	1244	1249	5	1299	1117	-182
A40 / A4136 Longhope Road	919	1037	119	1121	1219	98

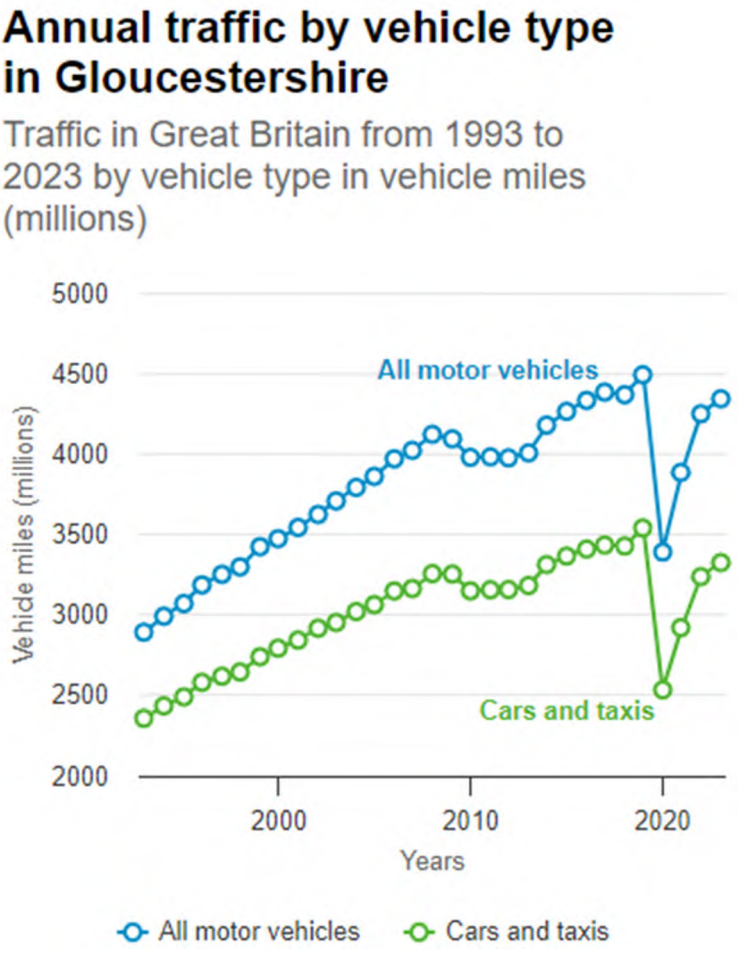
3.4.16 From review of **Table 3.3,** the most notable difference observed between the two years is for the Hawker Hill mini-roundabout and the Gloucester Road/Abenhall Road priority junction. In the PM peak a net reduction of 209 and 182 vehicles respectively from 2018 is apparent. The AM peak has a much less noticeable difference, with a net loss of 16 on the Hawker Hill mini-roundabout and a net increase of 5 on the Gloucester Road/Abenhall Road priority. The other junctions within the village (i.e. Hollywell Road/Ross Road and Bradley Court Road/Carisbrook Road) have minimal differences, with a net loss of 21 in the AM peak and a net increase of 18 in the PM peak for Bradley Court Road/Carisbrook Road, and a net increase of 1 and 23 in AM/PM peak respectively for Hollywell Road/Ross Road.

3.4.17 The A40/A4136 Longhope Road has an approximate net increase of 100 vehicles in both the AM and PM peak.

3.4.18 Whilst traffic flows can typically have a daily or seasonal variation of 5-10%, the local reduction may be as a result of increased levels of working from home following the Covid-19 pandemic. It does suggest that there has been very limited traffic growth in the last 6-years. We do however accept that the two sets of survey data are 'snapshots' of time.

3.4.19 The DfT Road Traffic Statistics website (https://roadtraffic.dft.gov.uk/#10/51.8468/-2.1526/basemap-localauthorities-countpoints) has been visited to consider recent trends in traffic volume across the county. Chart 3.1 is taken from the website and shows traffic levels from 1993 up to 2023.

Chart 3.1: DfT Annual Traffic Volume – Gloucestershire



3.4.20 In 2018 the annual traffic volume for all motor vehicles was 4,367.6 million miles reducing to 4,342.4 million miles in 2023, equivalent to around a 0.58% reduction in total traffic volume, with the negative growth somewhat aligning with the local survey data.

3.4.21 The raw turning count data has not been included as part of this report due to its size but is available on request.

3.5 Accident Summary

3.5.1 Personal injury accident data was obtained from GCC with the original application for a five-year period between 1st January 2013 and 31st December 2017. Minimal incidents were noted to have occurred within this period, with 3 'slight' collisions being recorded. In order to provide an up-to-date assessment, new collision data has been purchased from a 3rd party source (www.crashmap.co.uk). This information covers the latest 5 years' worth of data available (2018-2022) and can be viewed in **Appendix E** of this report. The accident study area covers the entirety of Mitcheldean

3.5.2 In total there were 8 accidents within the study area, of which two were classed as serious and the remaining 6 were classed as slight. The annual breakdown is shown in **Table 3.4** below.

Table 3.4: Summary of Reported Personal Injury Accidents

Year	Severity			Total
	Slight	Serious	Fatal	
2018	1	-	-	**1**
2019	-	-	-	**-**
2020	1	-	-	**1**
2021	3	-	-	**3**
2022	1	2	-	**3**
Total	**6**	**2**	**-**	**8**
Severity %	**75%**	**25%**	**-**	**100%**

3.5.3 Of the accidents, 3 involved pedestrians. The first occurred in 2018 at the pelican crossing on New Road, south of the Hawker Hill mini-roundabout. The information provided suggests that a vehicle has reversed, but an impact has not occurred.

3.5.4 The second and third incidents involving a pedestrian both occurred in 2022. The first of these happened in August, south of the pelican crossing on New Road. The information provided suggests that a pedestrian has attempted to cross the carriageway from the driver's nearside when the vehicle has then struck them. The second 2022 incident took place in October on High Street, north of the Stenders Road junction on the zebra crossing. The pedestrian has been using the crossing facility when a vehicle has struck them. Both of these incidents were classed as 'serious'.

3.5.5 None of the information provided for the serious/pedestrian incidents suggest that they occurred for any other reason than driver/pedestrian error.

3.5.6 All other incidents reported were slight in nature and did not involve either pedestrians or cyclists. In a similar vein to the previously discussed incidents, there is no information to suggest that they occurred for any other reason than driver error.

3.5.7 The data shows that the number of traffic incidents that have occurred within the latest 5 years of information is low, with approximately 1 occurring each year on average. All accidents appear to have been as a result of road user error. There is no evidence of any accident black-spots or any highway safety issues that could be exacerbated by the development proposals.

4 DEVELOPMENT PROPOSAL

4.1 Development Description

4.1.1 Gladman is seeking outline planning permission for up to 180 dwellings on land off Carisbrook Road, Mitcheldean, Gloucestershire. The site is located to the north of the village centre. The nature of the application will mean that all matters will be reserved except for the main motor vehicle access.

4.1.2 A Development Framework Plan has been produced by CSA Environmental and forms part of the supporting documentation for the planning application. The Development Framework Plan shows a singular area of development fringed by green landscaping and a scenic walking/cycling route. A new drainage feature is to be provided at the southern tip of the site that should also help to alleviate existing drainage issues on Bradley Court Road. A potential location for a children's play area has been identified roughly halfway along the Carisbrook Road frontage.

4.1.3 It should be noted that the only differences between this application and the original application is an uplift in the proposed dwelling numbers (125 to 180) and a minor relocation of the site access further west. This uplift was suggested by FDDC in its latest Draft Allocations Plan, with the minor movement of the site access being in order to accommodate an appropriately sized drainage basin for the proposed number of dwellings.

4.1.4 The LHA had no concerns to raise with regard to vehicular access or pedestrian/cycle improvements with the original application and it is not anticipated that the uplift in dwellings will change this opinion. Aside from updating certain elements (i.e. visibility splays) the proposals have therefore remained largely the same.

4.2 Access Strategy

Vehicular Access

4.2.1 Given the upper number of dwellings proposed as part of this scheme, a single access will be appropriate to serve the site, this being in the form of a priority-controlled junction to be located on the B4224 Ross Road, slightly to the north of the Hollywell Road junction. The access has been based on guidance contained within MfS and MfGS and provides for a 5.5m wide carriageway, 2 x 2m footways and 6m corner radii.

4.2.2 The dimensions suggested above will also ensure an allowance is made for the largest vehicles expected to regularly access the site, such as refuse collection vehicles, to do so in a safe manner without disruption to other road users and without over-designing (i.e. a wider carriageway or greater corner radii). 6m corner radii are generally considered to be pedestrian friendly without making turning movements difficult for vehicles.

4.2.3 In order to ensure that the proposed vehicular access is a safe design, the visibility splays have been calculated based on the stopping sight distance (SSD) for vehicles. MfS2 contains the following calculation for SSD:

$SSD = vt + v^2/2(d+0.1a)$

where:

v = speed (m/s)

t = driver perception-reaction time (seconds)

d = deceleration (m/s^2)

a = longitudinal gradient (%)

4.2.4 Table 10.1 in MfS2 provides a recommendation of variable SSD criteria. For speeds of 60kph (37mph) and below, a reaction time of 1.5s and deceleration rate of 0.45g (equivalent to 4.41m/s^2) should be used; for speeds above 60kph, a reaction time of 2s and deceleration rate of 0.375g (3.68m/s^2) (absolute), or 0.25g (2.45m/s^2) (desirable), should be used.

4.2.5 **Table 3.1** gives a southbound 85th percentile speed of 35.3mph and a northbound speed of 33.7mph for use in the derivation of the SSD. Applying these figures in the SSD calculation provided above, alongside the 'below 60kph' reaction time (1.5s) and deceleration rate (4.41m/s^2) gives the appropriate stopping sight distance inclusive of a bonnet length adjustment, otherwise known as the 'y' distance, of 54.3m to the right on exit and 50.7m to the left on exit.

4.2.6 In-line with MfS guidance, an 'x' distance of 2.4m will be used, which *'represents a reasonable maximum distance between the front of the car and the driver's eye'* (MfS2 paragraph 10.5.6). Collectively the 'x' and 'y' distances are referred to as the visibility splay.

4.2.7 Visibility splays of 2.4m x 54.3m to the right on exit and 2.4m x 50.7m to the left on exit have therefore been shown at the proposed access point on the Proposed Access Arrangement **Drawing P24048-101D** contained with **Appendix F**.

4.2.8 Almost identical visibility splays were provided with the original application and were acceptable to the Highway Officer. It should be noted that the slight relocation of the site access (compared to the previous submission) is being proposed to best work with the level differences within the site, to allow for the development of an enlarged drainage feature in the development's southern portion and to avoid open ditches.

Additional Accesses for Pedestrians and Cyclists

4.2.9 Pedestrians and cyclists will have access via the main vehicular entrance, which includes a new footway extending south to the existing uncontrolled crossing near the bus stops between Hollywell Road and Old Dean Road. Additionally, a dedicated pedestrian and cyclist entrance can be created near the site's southern corner, adjacent to the existing footpath connecting to Deansway Road and

Oakhill Road. This shared footway and cycleway is strategically designed to align with natural pedestrian routes for convenience and accessibility, whilst minimising the ecological and drainage impact on the ditch that runs along the Carisbrook Road/Ross Road verge.

4.2.10 Uncontrolled crossings consisting of dropped kerbs and tactile paving will be provided across the site access with further crossings over Carisbrook Road. One is located at the aforementioned pedestrian cycle access at the sites southern corner and the other is from the northern footway at the site access.

Access for Commercial Vehicles & Internal Layout

4.2.11 To demonstrate that such an access will be safe and suitable to serve the site for larger vehicles, a swept path analysis using the industry approved *AutoTrack* software package has been undertaken for a typical non-commercial refuse collection vehicle (3 axle Dennis Eagle Elite) which is the largest vehicle expected to regularly access the site. The swept path analysis has been illustrated in **Drawing P24048-102A** also in **Appendix F** which demonstrates that the vehicle can safely access and egress the site in forward gear.

4.2.12 The vehicle will need to cross both sides of the site access road, but this should be agreeable as such vehicles will only access the site once every week and MfS guidance states that good design should not cater for infrequent movements and vehicle types (over-designing). Furthermore, egressing traffic flows on the minor arm will be minimal in the peak hours (see Section 7.3) so it is unlikely that there will be egressing traffic when the refuse collection vehicle is accessing the site and any delay incurred will be minimal.

4.2.13 The design speed of the access road will be 20mph. While the internal layout will be subject to a separate reserved matters application by the potential house builder, it is expected that it will be based on guidance provided in MfGS/MfS meaning that the layout will focus on the needs of pedestrians, cyclists and public transport users, create a sense of place and community, create permeable streets offering good quality connections and will recognise the needs of people of all ages and abilities. All of these should be achieved without over-designing.

Gateway Features

4.2.14 In recognition of the signed 30mph speed limit being exceeded at the existing change in speed limit on Bradley Court Road, the applicant is willing to provide additional gateway features to encourage slower speeds on approach to the settlement. **Drawing P24048-101D** in **Appendix F** shows the provision of dragon's teeth to supplement the existing features. The existing signage could also be replaced with speed limit signage on a yellow highlighting background, similar to what is present on other roads in the area. We are happy to discuss these improvements and other potential gateway features with GCC.

Pedestrian Route Improvements

4.2.15 Additional offsite pedestrian improvements are proposed to further enhance the accessibility of the development. These improvements are discussed further in Section 6.4 below.

4.3 Parking

4.3.1 As the final housing mix is not known and subject to future submissions, calculations relating to detailed parking provision have not been undertaken. Reserved matters applications will specify sufficient parking, both in terms of numbers and dimensions, to comply with the relevant standards at the time of submission.

4.3.2 Electric vehicle charging facilities will be provided in line with *Approved Document S: Infrastructure for charging electric vehicles*.

4.4 Road Safety Audit

4.4.1 Road Safety Audit Stage 1 (RSA) was completed with the original application in accordance with GCC requirements. The site access surroundings have remained largely the same, with little changing in the area since the original application. The location of the site access has only changed slightly, and no accidents have been noted to occur across the site frontage in the most recent 5 years of data reviewed. However, in the interests of providing an up-to-date assessment, a new RSA has been completed and a new designers' response provided below. The RSA can be viewed in Appendix G.

4.4.2 The independent consultant six:TEN Highways & Traffic Ltd (six:TEN) was commissioned to undertake the audit based on the DMRB document *GG119 – Road Safety Audit* and GCC's *Guidance Note for the Provision of Safety Audit*. The RSA was completed by two Society of Road Safety Auditors qualified professionals who undertook a site visit as part of the RSA on 18th November 2024.

4.4.3 The audit has been based on **Drawing P24048-101C**, which reflects **Drawing P24048-101D** contained in **Appendix F** in every way, with the latest **101D** version only including a minor redline amendment**.** The RSA was also based on **Drawing P24048-102A** also in **Appendix F.**

4.4.4 No problems were identified relating to 'general' road safety issues, 'local alignment' or 'road signs, carriageway markings and lighting'. The RSA did identify two 'problems', relating to 'junctions' and 'walking, cycling and horse riding'. These are detailed below along with a Designers' Response provided to each:

Problem 2.3.1

Location: At the proposed junctions on Carisbrook Road

Summary: Excessive vehicular encroachment into opposing lanes when turning into/out of the proposed access

The refuse vehicle swept path analysis provided for audit shows the vehicle encroaching into opposing lanes when turning into/out of the proposed access road. Whilst it is recognised that some encroachment may occur, this excessive encroachment by a refuse vehicle into the opposing traffic lanes especially when making the left-turn into the proposed development may increase the risk of low-speed head-on or side-impact collisions. (Risk Rating: LOW).

Recommendation

It is recommended that amendments should be made to the proposed design to ensure any vehicle encroachment into opposing lanes is kept to a minimum.

Designers Response to 2.3.1

4.4.5 The proposed junction geometries and the existing widths of the main carriageway are consistent with typical adoption standards for residential developments and comply with both local and national design standards. Forward visibility along Ross Road in both directions is more than adequate.

4.4.6 Regarding the specific concern about a left-turning refuse vehicle entering the site, it is deemed highly improbable that either the refuse vehicle driver or an approaching driver would be unaware of each other's presence and one would simply wait for the other to pass. Furthermore, refuse and recycling collection takes place every two weeks, with the two collections staggered on a weekly basis, meaning that such vehicles will only require access to the site once a week. Therefore, the likelihood of a refuse collection vehicle turning into the path of an oncoming vehicle is minimal.

4.4.7 No changes to the access design are proposed as the current layout aligns with the previously submitted proposal which GCC reviewed without raising any concerns. Any geometric amendments to the access to minimise infrequent refuse vehicle crossover is likely to result in an over engineered design that is contrary to the recommendations of MfS. This in turn is likely to result in other issues such as increased vehicles speed upon access/exit.

Problem 2.4.1

Location: Uncontrolled pedestrian crossings at the existing bus stops on Carisbrook Road

Summary: Excessive dropped kerb height/upstand may increase the risk of pedestrian trips/falls

It was observed during the site visit that the height/upstand of the dropped kerb at the existing uncontrolled pedestrian crossings at the bus stops on Carisbrook Road appeared to be in excess of 6mm. Generally, the height of the kerb upstand at uncontrolled pedestrian crossings should be between 0mm and 6mm. Excessive dropped kerb upstand/height may result in a trip hazard for pedestrians crossing the carriageway and

manoeuvrability issues for those with pushchairs, wheelchairs or mobility scooters. It is noted that this is an existing issue, however, the proposed development may increase the use of the uncontrolled pedestrian crossings. (Risk Rating: LOW)

Recommendation

It is recommended that the height of the dropped kerbs at the uncontrolled pedestrian crossing on the north-western side of the pedestrian refuge island be investigated, and remedial works should be carried out to reduce the height of the dropped kerbs to between 0mm and 6mm if required.

Designers Response to 2.4.1

4.4.8 Noted, the applicant is happy to amend the concern raised as part of detailed design.

4.5 Summary

4.5.1 As described in this section, the development proposals, particularly the vehicular, pedestrian and cycle only accesses will conform to national and local guidance. Minor comments from a Stage 1 RSA have been considered where applicable with a single outstanding issue best addressed at the detailed design stage.

4.5.2 The design of the access road is compliant with the standards contained in the MfGS and MfS. The safe design of the vehicular access and additional gateway features will help to achieve LTP4's objectives of better safety and reduced risk of injury while the pedestrian/cycle accesses and associated infrastructure will help to provide individuals with the confidence to consider all travel choices.

4.5.3 The site design reflects the MfS principles of inclusive design, shifting from focusing on designing for motor vehicles to designing streets around the needs of pedestrians, cyclists and public transport users, controlling speeds, not overdesigning and creating permeable streets. These principles in turn help the site to conform to NPPF guidance including paragraph 115 in terms of promoting sustainable transport and achieving *'safe and suitable access to the site… for all users'* as well as paragraph 117 by giving priority to pedestrian and cycle movements and creating *'places that are safe, secure and attractive'* minimising the potential for conflict between pedestrians, cyclists and vehicles.

5 ACCESS BY SUSTAINABLE MODES

5.1 Introduction to Sustainable Modes of Transport

5.1.1 National and local transport planning policy centres on the importance of sustainable development, meaning that new developments should be located in areas where there is access to sustainable modes of travel, or where sustainable modes of travel can be introduced. *The National Design Guide* (2021) defines sustainable transport modes as:

> *'Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra-low emission vehicles, car sharing and public transport.'*

5.1.2 Walking, cycling and public transport are commonly regarded to be the most sustainable modes of transportation. This section of the report will describe how accessible the site is by these modes.

5.1.3 As part of the site's emerging allocation status under Policy LP.93 in the Draft Local Plan, FDDC consider Mitcheldean to have a:

> *'good range of services and a great deal of employment. There is a local secondary and a primary school along with a range of community facilities.'*

5.1.4 The development site is ideally located to access these services, employment opportunities, schools and community facilities via sustainable transport as presented below, and as commented by the LHA Officer with the original application (as seen in Appendix A):

> *'The site benefits from an appropriate level of accessibility to walking, cycling, bus and rail modes for its location.'*

5.2 Access on Foot

5.2.1 The site is located to the north of the village centre of Mitcheldean. Footways will be provided throughout the site which will connect the development to the existing footway provision on Ross Road via the access locations described in **Section 4.2** above. The western vehicular access will provide a convenient connection to the existing Ross Road bus stops and an uncontrolled crossing will be provided to reach the western side. A shared footway/cycleway to the south of the site will meet the northern verge of Carisbrook Road. This will lead to an uncontrolled crossing with dropped kerbs and tactile paving that connects to the footway on the southern side of Carisbrook Road and an existing footpath through to the Old Dean Road residential area to the south.

5.2.2 The major village of Mitcheldean has an extensive network of pedestrian infrastructure in the form of well-established footways linking many of the local amenities, with street lighting provided throughout. Multiple traffic-free footpaths are also provided through the Hollywell Road and Old

Dean Road residential estates. Further details of the local pedestrian infrastructure are provided in the route audit presented in **Section 6** and assessed in detail with the ATE Route Check Toolkit in **Appendix H**.

5.2.3 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area and other local facilities. The Chartered Institution of Highways and Transportation (CIHT) document entitled *Providing for Journeys on Foot* (2000) suggests walking distances which are relevant to this application. These distances are shown in **Table 5.1**.

Table 5.1: Suggested Acceptable Walking Distances

Criteria	Town Centres (m)	Commuting/School/ Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

Source: CIHT Document 'Providing for Journeys on Foot' (2000)

5.2.4 In order to highlight the site's accessibility on foot, an indicative walking isochrone has been produced using the Geographic Information System (GIS) software Visography TRACC. **Figure 2** in **Appendix B**, represents the site's walking catchment with the CIHT's *'Preferred Maximum'* distances of 1200m and 2000m for local service and commuting/school trips respectively illustrated.

5.2.5 In order to provide an accurate representation of the future highway and PRoW network, the site's proposed vehicular and pedestrian accesses have been manually added to the network used for the isochrone. The accessibility distance is based on an origin/destination point in the approximate centre of the developed portion of the site.

5.2.6 **Table 5.2** below summarises the distance and the typical time it would take to walk from the centre of the site to the local amenities and centres of employment and education identified in **Figure 2** of **Appendix B** via the road/footway network. It provides a comparison against those distances recommended in the CIHT's *Providing for Journeys on Foot*. The time it takes is based on a walking speed of 4.8kph which corresponds with the TRACC default, which itself is based on advice in the DfT document *Transport Connectivity Travel Time Indicators: Guidance Notes*.

5.2.7 It is acknowledged that the local area has a varying topography which is very much a feature of this part of Gloucestershire. Some walking trips will involve walking up a gradient which may slightly increase the typical walking times shown below but this is likely to be balanced out by sections where people will be walking down a gradient.

Table 5.2: Distance and Walking Time Taken from Site to Local Amenities

Attraction	Distance from Site (m)	Preferred Max Walk Distance (m)	Walk Time (mm:ss)
Community Centre/ Playing Fields	539	1200	06:45
The White Horse Public House	723	1200	09:04
GP Surgery	757	1200	09:29
Pharmacy	765	1200	09:35
Library	799	1200	10:00
The Mews	817	1200	10:14
Local Shops	835	1200	10:28
Co-op Food/Post Office	860	1200	10:46
Parish Church	872	1200	10:54
Playground	902	1200	11:19
Estate Agent	903	1200	11:18
Sunbeams Day Nursery	1093	2000	13:41
Mitcheldean Endowed Primary School	1133	2000	14:17
The Lamb Inn Public House	1209	1200	15:08
Off-licence	1237	1200	15:29
Fast Food Takeaway	1266	1200	15:51
Garage and MOT Centre	1280	1200	16:01
Forest Gate Church	1309	1200	16:24
Dene Magna School	1566	2000	19:35
Vantage Point Business Village	1572	2000	19:40
Mia Rose Nursery	1932	2000	24:11
Bus Stops		1200	
Ross Road (nr & opp) Hollywell Road, Mitcheldean	224	-	02:48
Stars Pitch (opp & o/s) Dunstone Place, Mitcheldean	963	-	12:03

5.2.8 The results in **Table 5.2** show that many of the local amenities in Mitcheldean are within the preferred maximum walking distance of 1200m for local services trips and 2000m for commuting/education trips. The amenities within the 1200m walking distance include the community centre, playing fields, a public house, GP surgery, pharmacy, library, local shops, playground, Co-op convenience store with Post Office, Parish church and a children's day nursery.

5.2.9 The Mews is accessible within an approximate 800m walk. This site offers a range of amenities, including a hardware store, café, craft beer shop and children's centre. The local shops are just to the south of The Mews, offering a range of services, these being a salon, butchers and multiple hot food takeaway establishments. The local shops and The Mews may also offer employment opportunities.

5.2.10 Mitcheldean Endowed Primary School is within a 1200m walk from the site and Dene Magna High School within a 1600m walk, both of which being well-within the preferred maximum walking distance of 2000m for education trips. An additional nursery is also accessible within this distance.

5.2.11 Vantage Point Business Village is a large industrial/business area which exists to the south-east of the proposed development site. The site provides opportunities for employment across a wide spectrum

of job types, with over 100 different companies operating from the site. The site provides conference facilities, as well as an onsite café/restaurant, gym and salon. The circa 1600m distance presented in the table above is based on use of the access off Eastern Avenue, as it appeared during the site visit that both Bradley Court Road accesses are no longer in use. The Business Park is therefore well within the preferred maximum walking distance of 2000m.

5.2.12 Given the evidence presented in **Figure 2** of **Appendix B** and **Table 5.2**, walking can be considered a realistic and viable method of travel indicating that the site's location is accessible via this sustainable mode. It is our opinion that the existing facilities provide ample opportunity for education, employment, top-up shopping and dining.

5.3 Access by Cycle

5.3.1 It is widely recognised that cycling can offer an attractive alternative to short car trips, particularly those under 5km, and also as part of longer journeys by public transport.

5.3.2 The CIHT document Cycle Friendly Infrastructure (2004) states in paragraph 2.3 that:

> *'Three quarters of journeys by all modes of travel are less than five miles (8km) and half under two miles (3.2km) (DoT 1993, table 2a). These are distances that can be cycled comfortably by a reasonably fit person.'*

5.3.3 LTN 1/20 Cycle Infrastructure Design states similar, that 'Two out of every three personal trips are less than five miles [8km] in length - an achievable distance to cycle for most people'. The National Travel Survey states that in 2022, the average cycling trip took 24-minutes, equivalent to 6,400m (based on an average speed of 16kph), again this being an average with a proportion of respondents cycling a greater distance than this.

5.3.4 A cycling isochrone showing the site's catchment has also been produced using TRACC and is shown as **Figure 3** in **Appendix B**. The figure illustrates 2,000m, 5,000m and 8,000m catchment ranges which equate to 10-minute, 25-minute and 40-minute journey times respectively which are based on the somewhat conservative or leisurely cycle speed of 12kph. Anecdotally, commuting cyclists are generally thought to travel at speeds between 15-20kph and are often willing to cycle up to 8km so a greater catchment may be more realistic.

5.3.5 The cycling distances and times to a selection of key local centres of education, employment and amenities, as well as neighbouring settlements, are shown in **Table 5.3**, although the cycle times detailed in the table are based on a cycling speed of 16kph which corresponds with the TRACC default, which the software developer has based on DfT advice. It should be noted that some of the cycle distances differ from the walking distances as cycling along PRoWs is typically not allowed unless designated as cycleways, bridleways or byways. Again, it is acknowledged that the varying local topography may have an influence on cycle times but downhill sections will counter uphill ones.

Table 5.3: Distance and Cycling Time Taken from Site to Local Centres of Employment, Education, Amenities and Neighbouring Settlements

Employment/ Education/ Amenity/ Settlement	Distance from Site (m)	Cycle Time (mm:ss)
Community Centre/Playing Fields	639	02:46
The White Horse Public House	723	02:49
GP Surgery	757	02:57
Pharmacy	765	02:58
Library	799	03:03
The Mews	817	03:10
Local Shops	835	03:14
Co-op Food/Post Office	860	03:18
Parish Church	872	03:17
Playground	902	04:02
Estate Agent	903	03:28
Sunbeams Day Nursery	1093	04:14
Mitcheldean Endowed Primary School	1133	04:47
The Lamb Inn Public House	1209	04:40
Off-licence	1237	04:45
Fast Food Takeaway	1266	04:51
Garage and MOT Centre	1280	04:51
Forest Gate Church	1309	05:05
Dene Magna School	1566	05:54
Vantage Point Business Village	1572	05:57
Mia Rose Nursery	1932	07:22
Drybrook	2916	10:58
Lea	3107	11:41
Harrowhill	3393	12:50
Longhope	4396	16:34
Cinderford	5522	20:52
Gloucestershire College	5717	21:28
Forest Vale Industrial Estate	6322	23:53

5.3.6 **Figure 3** in **Appendix B** and **Table 5.3** above illustrate that there is a considerable range of local amenities, places of employment, places of education and settlements within the cycle catchment. All of the local amenities mentioned in the Access on Foot section above are within the 2,000m approximate catchment of the site.

5.3.7 An examination of the above table shows that in addition to the amenities found within the 2,000m catchment, the residential settlements of Drybrook, Lea, Harrowhill and Longhope are accessible within a 5,000m cycling range, with these offering their own amenities/employment opportunities. Further to this, the larger settlement of Cinderford, Gloucestershire College and Forest Vale Industrial Estate can be accessed within an approximate 6,300m cycling range. Despite these locations

exceeding the 5,000m cycle range, they can still be accessed within a 24-minute journey time, which may be a reasonable cycling time for some future residents of the site.

5.3.8 **Figure 3** within **Appendix B** and **Table 5.3** suggest that cycling will be a viable mode of travel for access to a range of local amenities and places of employment and education. It is important to note that many of the local roads are relatively lightly trafficked which, coupled with low HGV volumes, is naturally conducive to cycling.

5.3.9 Clearly the site location and the surrounding infrastructure will mean that travel on foot and by cycle will be realistic and convenient modes of travel for future residents of the site. The potential numbers of walking and cycling trips that the site will generate will be discussed in **Section 6** of this report, but clearly the scale of the site is not such that it will disadvantage existing pedestrians and cyclists.

5.3.10 Clearly the site location and the surrounding infrastructure will mean that travel on foot and by cycle will be realistic and convenient modes of travel for future residents of the site.

5.4 Access to Local Bus Services

5.4.1 The CIHT document, *Planning for Public Transport in Development* recommends that developments should ideally be located within 400m of a bus stop. The existing stops on Carisbrook Road and Bradley Court Road are well within this distance, as seen from **Table 5.2** above.

5.4.2 The facilities at the Ross Road bus stops consist of shelters, seating and timetable information. Dropped kerbs and tactile paving is present to aid in pedestrian movements across Carisbrook Road between the stops. The Bradley Court Road bus stops consist of flag and pole, providing timetable information. As well as providing a direct pedestrian connection from the site to the Carisbrook Road stops, additional bus stops improvements could be funded through the application, this could include raised boarding areas to enhance their accessibility.

5.4.3 **Table 5.4** below summarises the bus services that can be accessed via the bus stops within close proximity to the site. Copies of the timetable information at the time of writing are available on request.

Table 5.4: Summary of Key Bus Services from Carisbrook Road (times shown)/Bradley Court Road Stops (1-minute later)

Service	Route	Monday-Friday			Saturday	Sunday
		AM	Inter	PM		
33	Ross-on-Wye - Gloucester	0730, 0900, 1000	1 per hour	1604, 1704, 1804, 1834, 1909, 2052	0734 - 2051 with approx. 1 per hour	0935-1940 with approx. 1 every 2 hours
	Gloucester – Ross-on-Wye	0615, 0704,0808, 0920	1 per hour	1641, 1743, 1840	0720 - 1840 with approx. 1 per hour	0920-1740 with approx. 1 every 2 hours

5.4.4 The 33 service is operated by Stagecoach. Both directional services operate similar frequencies, with the Ross-on-Wye to Gloucester service operating slightly later and the Gloucester to Ross-on-Wye service operating slightly earlier. The hours of operation are suitable for commuting trips to Gloucester during typical working hours.

5.4.5 **Table 5.5** below summarises the additional bus services to the 33 that can be accessed within Mitcheldean. It is noted that these services require a walking distance of circa 1000m in order for them to be utilised by future residents which may well be reasonable. The closest stops providing these additional services are called the Mill End School Stop (Stenders Road) and the Dunstone Place stops (Stars Pitch). Despite these stops being approximately 1000m away, the good quality footways, together with street lighting, pedestrian crossing infrastructure and the village centre environment help to create a conducive walking environment. Copies of the timetable information at the time of writing are available on request.

Table 5.5: Summary of Key Bus Services from Stars Pitch Stops

Service	Route	Weekday Service	Saturday Services	Sunday Services
24	Coleford - Gloucester	0705 - 2233	0705 - 2233	0900 – 1700
		0705, 1035 then approx. 2-hour frequency	0705, 1035 then approx. 2-hour frequency	0900, 1100, 1300, 1500, 1700
	Gloucester - Coleford	0658 - 2332	0658 - 2332	1018-1818
		0658, 0828, 1050 then approx. 2-hour frequency	0658, 0851, 1049 then approx. 2-hour frequency	1018, 1218, 1418, 1618, 1818
35A	Monmouth - Cinderford	1836	-	-
72	Mitcheldean - Chepstow	1031, 1231, 1431	1031, 1231, 1431, 1631	-
746	Forge Hammer - Ross on Wye	0947	0947	-

5.4.6 The above services are operated by Stagecoach, Forest Community Transport, and FR Newport Bus. Although the number 35A, 72 and 746 services are limited, the number 24 has a reasonable frequency considering the relatively rural nature of Mitcheldean.

5.4.7 Combined with the number 33 service previously discussed, It is evident that future residents of the site will benefit from bus services that will allow them to commute to and from Gloucester and several surrounding settlements. These locations, particularly Gloucester, provide access to an extensive range of employment, education, retail and leisure opportunities.

5.4.8 To demonstrate the accessibility of local bus services, an isochrone has been produced using TRACC and is shown in **Figure 4** in **Appendix B** which highlights the destinations served by the regular daily bus services that are described above. The calculation involved in producing the catchment plan includes only direct services to destinations within one hour's journey time. A greater range of destinations will be available if passengers make connections to other bus services. The isochrone was produced for the typical commuter hours of 0700-0900 using the National Public Transport Data Repository (NPTDR) dataset from the second quarter of 2024 for a typical Monday.

5.4.9 **Figure 4** in **Appendix B** demonstrates that the bus services provide convenient connections to several destinations. It is evident that Ross-on-Wye can be reached within an approximate 15-30 minute journey time, with Cinderford reached within 30-45 minutes and Gloucester city centre within a similar time.

5.4.10 The NPPF, at paragraph 110, states that developments should be focused on locations which are or can be made sustainable. The paragraph also continues to state that opportunities to maximise sustainable travel will vary between urban and rural locations.

5.4.11 The existing bus service provision in Mitcheldean is considered appropriate and reasonable for the size of development proposed and the nature of area in which it is situated. The development, by providing good quality footway connections to the abovementioned bus stops, does provide *'a genuine choice of transport modes'* (Paragraph 110 NPPF). The applicant's offer to provide raised boarding areas at the Carisbrook Road stops will enhance the bus accessibility for wheelchair and buggy users.

5.5 Access to Local Train Services

5.5.1 Although not within what could be considered a reasonable walking or cycling distance, Gloucester Train Station can be accessed by the no.33 bus service in a circa 30-minute journey, or via a car in a 25-minute travel time (short car trips to access such things as train or bus travel can form part of a longer sustainable journey).

5.5.2 Gloucester Train Station provides journeys to such places as Liverpool, London and Edinburgh (and many destinations in between). The station offers services to these destinations on an approximate

hourly frequency throughout the day, with 200 car parking spaces and 32 cycle storage spaces also provided.

5.6 Travel Plan

5.6.1 An Interim Travel Plan (TP) has been produced as part of the package of documents supporting the planning application. The document forms the start of an ongoing process to encourage and monitor the use of sustainable modes of travel. As many aspects of the TP will be applicable to this TA, a summary of the key points is as follows:

- Outlines the key local and national objectives of the TP process;
- Sets targets for the reduction of car or van driver trips by 6%;
- Indicates potential measures that can be implemented to achieve these targets; and
- Provides details of how the TP will be managed, monitored and reviewed.

5.6.2 It should however be noted that in order to provide a robust assessment, the traffic impact assessment detailed in **Section 7** of this TA, does not take into account any trip reduction as part of the TP.

5.7 Summary

5.7.1 This section of the report has demonstrated that the site is in a sustainable location with local amenities within nationally recognised acceptable walking distances, with additional places of employment and education, as well as neighbouring settlements within acceptable cycling distances.

5.7.2 The local bus services also provide connection to multiple locations in the area making bus travel a viable option for some of the residents of the site.

5.7.3 Mentioned above is the fact that a TP will also be produced in support of the development which will provide encouragement for potential residents of the site to use sustainable modes of transport. It is hoped that a combination of the site's sustainable location/design and adoption of the TP will help to maximise the use of sustainable modes of transport.

5.7.4 A key theme of national and local transport planning policy is that development should be located where the need to travel will be limited and the use of sustainable transport modes can be promoted. As detailed in **Section 2** of this report, the NPPF states that developments should *'give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport'* and developments should provide *'safe and suitable'* access for all.

5.7.5 It is acknowledged that the proposed development is designed to give priority to pedestrian, cycle and public transport movements. Furthermore, as demonstrated above the development site is in a location that provides access to a range of amenities and sustainable transport modes. It can be

concluded therefore that the development accords to the NPPF guidance in that *'significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport'*.

5.7.6 It has been demonstrated that the site location and design conform to the overarching strategy of the LTP4 as well as many of the objectives, including an increased uptake of sustainable transport modes and a healthy more active population. As stated previously the LHA had no issues with the original application in relation to the accessibility of the site by sustainable modes. The above information has further reiterated this continued accessibility and the opportunities that exist for future residents to take up sustainable travel options.

6 ROUTE AUDIT

6.1 Preamble

6.1.1 At the request of GCC following scoping for the original application, the pedestrian environment in the vicinity of the site has been considered in detail. A site visit was undertaken on Friday 5th July 2024 and the surrounding highway network has been verified to have remained largely the same since the original submission. The below audit and subsequent text were completed as a PERS style assessment as part of the original submission. Following the formation of ATE in more recent years and their ensuing toolkits (namely the ATE Route Check Tool) the audit method utilised previously is now outdated. However, the review and its finding are nonetheless thorough and with minimal changes occurring along the route since the original assessment, can be considered valid.

6.1.2 However, the ATE Route Check Tool assessment has been completed and a subsequent score of 69% has been achieved. The results have been included in **Appendix H**. No significant changes are proposed for the route from the development site to the Hawker Hill mini roundabout, with the route considered conducive to both walking and cycling. However, some improvement, by way of tactile dropped kerbs and a short section of footway widening is proposed to help ensure pedestrian accessibility towards the centre of Mitcheldean.

6.1.3 The site is located immediately adjacent to existing residential areas and close to the centre of Mitcheldean. Acting as a natural extension to the current boundary of the built form, the development site will tie into existing pedestrian infrastructure. Details of the infrastructure provision to enable this are provided in **Section 4**, but in summary it consists of pedestrian accesses to the west (Ross Road) and east (Bradley Court Road) of the site. The western access will provide a direct connection to the existing bus stops and uncontrolled crossing, a footway linking the vehicular access with the eastern pedestrian access and a series of uncontrolled crossings on pedestrian desire lines.

6.1.4 The location of local amenities, and the likely pedestrian routes between them and the development site, have been identified and a comprehensive appraisal of those routes is provided as part of this pedestrian infrastructure review.

6.1.5 **Figure 5 of Appendix B** identifies the pedestrian routes between the site and the local amenities which predominantly fall within village centre. The following text considers the pedestrian environment along each of the routes identified in the figure, providing a PERS (Pedestrian Environment Review System) type qualitative review.

6.1.6 In reiteration of previous points made, the LHA had no issue with the following assessment or conclusions made. Given that minimal changes have occurred since the original planning submission for the development site, the conclusions and assessment overall are considered to remain valid.

6.2 PERS Stages

6.2.1 A full PERS audit comprises five stages with the two final stages involving the input of data collected into the PERS software. Here the data can be analysed before the display and review of the output reports and charts. The software, developed by TRL (Transport Research Laboratory) with input from TfL (Transport for London), is more commonly used in the London Boroughs and as such we do not have access to it. The final two stages have therefore been replaced with a qualitative audit of the pedestrian environment.

6.2.2 Stage 1 involves defining the study area, which in this instance will be the likely routes between the site and the local amenities that predominantly fall within the village centre which is within a 1200m catchment, as per the CIHT 'preferred maximum' distance to walk for the purpose of local services as detailed in **Section 5**. The study area also includes the amenities on New Road to the south of the village centre.

6.2.3 Stage 2 breaks that study area down to look specifically at links (footways, footpaths or highway), crossings (formal and informal), routes (a combination of links and crossings), public transport waiting areas and public spaces. Given the relatively small network and limited number of likely pedestrian destinations, our assessment has concentrated on appraising the likely routes between the site and the village centre amenities including schools and places of employment. An appraisal of the public transport waiting areas nearest the site has been provided in **Section 5.4**. As stated above, **Figure 5** illustrates the likely pedestrian routes.

6.2.4 Stage 3 is the on-street evaluation of the routes, public transport waiting areas and relevant public space, followed by our Stage 4, which involves the reporting of the on-street evaluation herein.

6.2.5 The site visit undertaken on Wednesday 28th November 2018 has been used to assess the existing pedestrian network. On the day of the site visit, the weather was wet and it followed a period of several days of persistent rainfall.

6.3 Qualitative Evaluation of Walking Routes

Primary Route: Carisbrook Road – Bradley Court Road – Townsend – High Street – Hawker Hill

6.3.1 The primary pedestrian route between the site and the village centre will be utilising any of the proposed uncontrolled crossing facilities on Carisbrook Road to cross to the existing footway provision on the southern side, this provision being circa 2m in width, street-lit, relatively uncluttered and generally of a good quality.

6.3.2 These characteristics continue south along the western side of Bradley Court Road with a footway also commencing along the eastern side to the south of the Business Village access. An informal crossing point consisting of dropped kerbs is provided over Bradley Court Road from the footpath at the southern turning head of Old Dean Road.

6.3.3 To the south of the existing uncontrolled crossing, the footway narrows to less than 1m over a short section of circa 4m in length where it passes a property named Pike House that is close to the carriageway north of a white-lined parking layby. Given that the narrowing occurs over a very short section, this should not pose a particular obstacle to walking trips.

6.3.4 Beyond this point the footway remains contiguous although it narrows to around 1m along several sections. Some of these sections have flush kerbs outside of houses, particularly where there are parking laybys. We consider this section of footway to be suitable for most pedestrians, however those walking in groups or with buggies may find the wider footway on the eastern side of the road more comfortable to navigate. People will clearly have a choice of which footway to use and the aforementioned uncontrolled crossing coupled with fairly low traffic volumes will make crossing of the road relatively easy for all abilities. It is likely that he majority of pedestrians will choose to cross the road before reaching the narrower sections given the wider footway and greater number of amenities on the eastern side.

6.3.5 The primary route provides access to the shops on High Street, GP surgery, pharmacy, The Mews, Vantage Point Business Village, Mitcheldean Endowed Primary School and several other amenities.

6.3.6 A zebra crossing with Belisha Beacons is provided north of Stenders Road and an uncontrolled crossing is provided at the priority chicane south of the primary school. Both of these demarcate safe and convenient locations to cross High Street/Hawker Hill.

6.3.7 A puffin crossing is provided over New Road close to the mini-roundabout with Hawker Hill/Gloucester Road. This crossing provides safe access to the amenities on the southern side of New Road including the convenience store and take-away. It also provides connection to Abenhall Road which has a footway along its western edge to the High School, with the footway being separated from the carriageway over a circa 230m long section with the footway running at a higher level to the carriageway and with a safety barrier in place.

Secondary Routes: PRoWs and Off-road Footpaths

6.3.8 Clearly the above primary routes offer the most direct and convenient routes to the local amenities, however people may choose traffic-free routes as alternatives or for more leisurely purposes. The residential estates of Hollywell Road and Old Dean Road are afforded a number of convenient footpath connections, or 'cut-throughs', between the cul-de-sacs.

6.3.9 As stated in **Section 4**, an uncontrolled crossing is to be provided from the proposed footway on Carisbrook Road to the footpath that runs between property numbers 31 and 33 through to Deansway Road. The crossing may need to be supplemented by guard rails to prevent people, particularly young children, from running or walking into the road. This can be considered at the detailed design stage. The path to Deansway Road is of a reasonable width at circa 2m with some natural surveillance from adjacent properties. There is however a flight of circa 10 steps with handrail leading to Deansway

Road making the path unsuitable for wheelchair/buggy users, but the route around the corner of Carisbrook Road and Bradley Court Road or from Old Dean Road using the site's western pedestrian access would both act as suitable alternatives.

6.3.10 A footpath 'cut-through' connects the end of Deansway Road to Bradley Court Road with guardrail in place. Again, this footpath is of a reasonable width with some natural surveillance and this path does not have steps.

6.3.11 A third cut-through runs from Deansway Road, this onto Oakhill Road although it requires the negotiation of several flights of stairs with handrail. Such a connection may well be convenient for leisure use including users of the community centre, playing fields and playground.

6.3.12 The above facilities can be accessed from the southern end of Old Dean Road which also provides a pedestrian connection onto Bradley Court Road at the uncontrolled pedestrian crossing mentioned in the primary route description above, with 'sheep pen' guard rails provided. The gated car park access to the community centre, with pedestrian 'gap', provides connections to Footpaths 14, 15, 16 and 17 to be described below. This connection can be made via a surfaced footpath that runs alongside the community centre and playing fields running north-south from the ungated car park access with speed bumps off Townsend Road (Bradley Court Road), to Glebe Close. The path to Glebe Close is around 1m wide and is a little steep but with guardrail and without steps, with a flatter section further north passing through what appears to be public open space. Cycling is not permitted along this path as indicated by signage.

6.3.13 A 'cut-through' path runs between Glebe Close and Old Dean Road at the junction with Deansway Road, this path is of a good standard being circa 2m wide with natural surveillance from neighbouring properties.

6.3.14 Mitcheldean Footpath 15 runs alongside The Crescent which also provides access to it via a stepped 'cut-through' between properties 53 and 55, but more conveniently from its southern end there the path continues south through a scenic area with Footpath 16 spurring off it close to its gated access. The scenic area is a designated dog walking area with litter/foul bins provided. This route was observed to be particularly popular with both walkers and dog walkers during the site visit.

6.3.15 Footpath 15 continues south to Churchill Way where it forms a junction with Footpaths 13 and 17, the former continuing west through a scenic area to an unnamed rural road via Hollygrove Barn, the latter running north-east around the playground to the community centre car park. Churchill Way provides access to the pharmacy, a florist and a charity shop. Footpath 14 runs west-east from the community centre vehicular car park access joining Footpath 17, crossing 15 and joining 13.

6.3.16 Connection can be made to Mitcheldean Endowed Primary School by continuing south onto Stenders Road then via the footpaths off May Meadow Lane or Baynham Road with Footpath 14 linking the

two and connecting to the school. Connection can then be made onto New Road via Colchester Close or Baynham Road.

6.3.17 There are various other PRoWs and 'cut-throughs' further south in the village. These provide convenient connection between the various residential areas, with Footpath 22 notably running south-east from High Street to Gloucester Road with sections being traffic-free and others being very lightly trafficked.

6.3.18 From our on-site observations, we believe the secondary routes consisting of designated PRoWs and non-designated 'cut-through' footpaths to be of good quality, are well-maintained, well-signed, often overlooked (natural surveillance), many sections street lit, generally all-weather, are well-trodden/popular with local residents/walkers and may offer convenient routes for future residents of the site, particularly for leisure/recreational use. We did not identify any areas that require improvement in order to facilitate delivery of the development proposals. Should GCC feel otherwise, we will be happy to discuss this with them.

6.4 Pedestrian Route Improvements

6.4.1 In the interests of enhancing the pedestrian environment to help ensure accessibility, several improvements are proposed for the primary pedestrian walking route discussed above.

6.4.2 **Drawing P24048-103** in **Appendix F** highlights 10 separate locations on route towards the centre of Mitcheldean where the provision of tactile paving would benefit both existing and future residents. A proposal to widen an existing footway pinch point to a 2m width is also highlighted. This would allow/encourage pedestrians to access the village centre without the need to cross the carriageway which will be particularly beneficial to pram or wheelchair users. **Drawing P24048-103** further shows that two buses can continue to travel along the road with ample space following any footway widening.

6.5 Summary

6.5.1 Prime have first-hand experience from a site visit in which the local pedestrian routes in the vicinity of the site were walked. All routes were navigable without specialist walking footwear i.e. walking boots, wellingtons etc. despite the poor weather conditions during and prior to the visit.

6.5.2 PRoWs and 'cut-through' footpaths were observed to be of a good quality, some of which will offer largely traffic-free or lightly trafficked routes for future residents of the site, particularly for leisure use.

6.5.3 The main walking route along the B4224 Bradley Court Road/Townsend/High Street/Hawker Hill is well-established and of good quality with contiguous footways on both sides of the road south of the southern closed access to Venture Point. From this point, the footways on the eastern side of the road tend to be wider. Street lighting is present on both sides of the road. The signed speed limit along the

road is 30mph which along with low traffic volumes and limited HGV numbers, makes the route pleasant and safe for pedestrians.

6.5.4 The proposed pedestrian infrastructure as part of the proposed site access arrangement consisting of footways along the vehicular access, two pedestrian accesses along with a couple uncontrolled crossings over Carisbrook Road, will help the site to integrate with the existing infrastructure. The scenic walking route to be provided on the site will complement the existing scenic walking routes in the vicinity of the site. Proposals to enhance the primary walking route towards the centre of Mitcheldean has also been offered.

6.5.5 A general observation on the capacity of pedestrian footways and crossings during the site visit was that this would not be compromised by the development proposals. The likely number of pedestrians to be generated by the development proposals is provided in **Section 7**.

7 IMPACT ASSESSMENT

7.1 Introduction

7.1.1 This section of the report details the methodology used to predict the demand associated with the development and provides an assessment of the potential impact of the development on the highway network. Based on the findings of the assessment, this section discusses whether mitigation measures are required to accommodate the additional trips generated by the development.

7.1.2 Much of the following assessments have followed the same methodology as previously applied and approved by the LHA. Some time-sensitive elements of the traffic forecasting process detailed in this section however, namely the trip generation for the proposal and traffic growth, has been updated to provide a more accurate assessment.

7.2 Traffic Growth

7.2.1 In accordance with GTA, the forecast year of assessment is 2029 which represents the year of application (2024) plus 5 years. It is expected that the site will be fully built-out and occupied by this forecast year.

7.2.2 The 2024 observed traffic flows were factored to the assessment year using the DfT software TEMPro (Trip End Model Presentation Program) version 8.1. This package allows access to data used in the National Trip End Model (NTEM) and can be used to provide summaries of traffic growth using data from the National Transport Model (NTM).

7.2.3 In order to derive local traffic growth factors, the Forest of Dean 003 mid layer super output area (MSOA) was selected as it contains Mitcheldean and neighbouring settlements. Trip end growth factors for car drivers were derived and adjusted by NTM dataset National Road Traffic Projections (NRTP) 2022 Core for 'A Road' road types, with the factors for this road type being slightly higher than the applicable alternatives.

7.2.4 DfT derived NRTP growth factors for the South West region have been applied to heavy vehicles as TEMPro is not applicable to such vehicle classes as detailed in TAG guidance. The NRTP calculation for heavy vehicles is provided in **Appendix I**.

7.2.5 The subsequent growth factors derived from the above and applied to the observed flows are shown in **Table 7.1**.

Table 7.1: Traffic Growth Factors 2024-2029

Source	TEMPro (Lights)		RTF (Heavies)
Peak	AM	PM	Both
Factor	1.0396	1.0402	1.0062

7.2.6 The above growth factors include forecast development in the area as well as background traffic growth. It is acknowledged that DfT guidance states that TEMPro growth can be modified to take into account local committed developments. Although some committed developments have been identified in the area, they are not considered large enough, or of a land use type, to which a notable number of vehicles could be generated. As such, they have not been considered and TEMPro has not been adjusted, with the planning assumptions within TEMPro likely to reasonably account for them.

7.2.7 The 2024 Observed flows are shown in **Traffic Flow Diagrams 1 and 2**. The growth factors have been applied to these flows to form the 2029 Base flows shown in **Traffic Flow Diagrams 3 and 4**. All Traffic Flow Diagrams are included in **Appendix D**.

7.3 Trip Generation

7.3.1 Throughout the original scoping deliberations (**Appendix A**), the use of local trip rates was discussed. Subsequently trip rates were derived from traffic survey data and turning counts for the Ross Road/Hollywell Road junction. Hollywell Road forms the single vehicular access to a cul-de-sac that consists of Hollywell Road, Glebe Close and Ash Grove. At the time it was deemed reasonable to assume that the existing cul-de-sac would share similar characteristics to the proposed development, both in terms of housing mix, trip generation and distribution.

7.3.2 According to Royal Mail, the cul-de-sac serves a total of 127 dwellings. Local trip rates have been derived by dividing the peak hour trips recorded by the traffic survey of the junction by the 127 dwellings served by the single access. A summary of the 2018 derived figures in comparison to the 2024 figures are shown in **Table 7.2** below.

Table 7.2: Local Trip Rates

	2018 Holywell Road Observed Trips			2018 Hollywell Road Observed Trip Rates		
Peak	Arrivals	Departures	Totals	Arrivals	Departures	Totals
AM	12	42	54	0.094	0.331	0.425
PM	31	26	57	0.244	0.205	0.449
Peak	2024 Holywell Road Observed Trips			2024 Holywell Road Observed Trips		
AM	11	30	41	0.087	0.236	0.323
PM	36	21	57	0.283	0.165	0.449

7.3.3 As can be seen from **Table 7.2**, the AM two way observed trip rates are 0.102 less in the most up to date 2024 traffic data when compared to the 2018 data. The PM peak two way observed trip rates have remained the same. The drop in vehicle trips in the AM peak is common for housing sites across the UK following the impacts Covid-19 has had on working arrangements and a much greater flexibility in terms of home working. The reduced trip rates also align with the findings of the TRICS *Guidance Note on Changes in Travel Behaviour* (2019) which follows *All Change? The future of travel demand and the implications for policy and planning* (2018) by The Commission on Travel Demand, with these pre-pandemic studies showing a general decline in private car trips each year, a decline likely

accelerated by the pandemic. The review of the traffic survey data and county level data provided in Section 3.4 also aligns with this reduction.

7.3.4 Through previous scoping discussions with the LHA for the original application, a notably robust trip generation methodology was requested. This methodology involved multimodal trip rates being derived from TRICS but with the modal split derived from census method of travel to work (MTW) data. Whilst this is not an uncommon methodology, it should be noted that use of MTW data arguably produces higher trip rates as it is based solely on trips to work rather than other trip purposes such as education and leisure, which often have lower car usage than trips to work.

7.3.5 Further to the above, given the impacts Covid-19 had on the 2021 Census (and its arguably none-representative journey to work responses), it is not considered appropriate to recreate the previous assessment with up to date census information. In a similar vein, 2011 census data is 13 years old and is considered outdated and non-representative of current travel behaviours and habits. This is particularly prevalent when considered in line with Covid-19 impacts.

7.3.6 The continued use of the previously adopted trip generation methodology does not conform to the nationally agreed perspective of 'Decide and Provide' and instead focuses upon an outdated 'Predict and Provide' demand management methodology. Both the 2011 census and 2021 census would not produce a realistic representation of the vision of the proposed development.

7.3.7 It is therefore Prime's professional opinion that the use of locally derived trip rates would not only account for existing amenities/public transport/road composition of the surrounding area, and subsequent need to travel by car as a result, but also current travel patterns and characteristics.

7.3.8 The subsequent trip generation for the development, utilising the 2024 local trip rates from **Table 7.2,** are provided in **Table 7.3** below**.** The calculations and raw data is provided in **Appendix J.**

Table 7.3: Vehicle Trip Generation Utilising Local Trip Rates (180 Dwellings)

	Trip Generation		
Peak	Arrivals	Departures	Totals
AM	16	43	58
PM	51	30	81

7.3.9 As seen from the above table, the site could be expected to generate 58 two way AM trips (16 arrivals and 43 departures), equivalent to around 1 trip per minute, and 81 two way PM trips (51 arrivals and 30 departures), equivalent to less than 3 trips every 2 minutes.

7.4 Trip Distribution

7.4.1 Given the proximity of the Hollywell Road cul-de-sac to the site, the development traffic distribution has been derived based on the observed distribution at each of the junctions surveyed starting with

the Ross Road/Hollywell Road junction. This is deemed to be more appropriate than using census MTW data which, as stated above, ignores non-commuting trips as well as basing it on the large middle layer super output area which spans almost 5-miles west to east. As the traffic volume on the local roads, with the exception of the A4136, is fairly low, the majority of local trips will be residential in nature rather than more strategic through movements and therefore share the characteristics of the proposed development trips. The distribution is shown in **Traffic Flow Diagrams 5 and 6**. The distribution appears to be logical with the majority of traffic heading to/from the A4136.

7.4.2 The distribution has been applied to the forecast development trips as shown in **Traffic Flow Diagrams 7 and 8**. These have then been added to the 2024 Observed flows forming the 2029 With Development flows shown in **Traffic Flow Diagrams 9 and 10**.

7.4.3 The above methodology was utilised for the original application and agreed with the LHA.

7.5 Impact Assessment

7.5.1 Having derived estimated traffic flows for the forecast year in the 2029, both with and without the development, it is possible to compare expected traffic flows within the study area.

7.5.2 **Table 7.4** below provides a comparison of flows in the forecast year for the Without (Base) and With Development scenarios summarising the difference. This exercise has been carried out for all off-site junctions surveyed with the exception of the Ross Road/Hollywell Road junction which was surveyed for trip rate and distribution purposes only.

Table 7.4: Comparison of Two-Way Traffic Flows through Study Area Junctions Without and With Development

Junction	2029 AM Peak				2029 PM Peak			
	Without Dev	With Dev	Abs Diff	% Diff	Without Dev	With Dev	Abs Diff	% Diff
1. Carisbrook Road/Bradley Court Road	516	561	45	8.7%	499	564	65	13.0%
2. Hawker Hill/ Gloucester Road/ New Road	1487	1530	43	2.9%	1446	1511	65	4.5%
3. Abenhall Road/ Gloucester Road	1295	1320	25	1.9%	1160	1194	34	2.9%
4. A40/ A4136 Longhope Road	1076	1092	16	1.5%	1266	1294	28	2.2%

7.5.3 Based on the flow differences in **Table 7.4,** the greatest impact of the development will be on the Carisbrook Road/Bradley Court Road junction, which is expected to experience an increase of 45 and

65 two-way trips in the respective peak hours, equivalent to an 8.7% and 13.0% proportionate increase. The increase in trips at the Hawker Hill/Gloucester Road/New Road mini-roundabout is forecast to be 43 and 65 trips in the peak hours, equivalent to fairly small percentage increases of 2.9% and 4.5% respectively or less than 1 trip per minute in the AM peak and slightly more than this in the PM peak. As a proportion of the traffic heads to/from the west at this junction, the impact to the east reduces to 25 (1.9%) and 34 (2.9%) trips at the Abenhall Road junction with just 16 (1.5%) and 28 (2.2%) continuing east to the A40 signals.

7.5.4 It is worth noting that GCC had no major issue with any junction following the original submission, aside from the Hawker Hill/Gloucester Road/New Road mini-roundabout and the Abenhall Road/Gloucester Road priority junction, which raised concerns. As such, an additional comparison is made between the original assessment and the current assessment with the most up to date traffic information. A detailed review of these junctions has been discussed in the relevant subsections below.

7.5.5 During original scoping discussions GCC requested capacity assessments at all of these junctions. The details of this assessment are provided below.

7.6 Junction Capacity Assessment

7.6.1 As all junctions are/will be priority-controlled and mini-roundabouts, the capacity assessment has been undertaken using the industry standard software Junctions 10, developed by TRL software. This software includes the PICADY module which is used to model priority-controlled junctions and the ARCADY module which is used to model roundabouts.

7.6.2 When interpreting the results, the capacity of each arm or movement is calculated as the Ratio of Flow to Capacity (RFC) with 0.85 representing the practical capacity threshold of the arm and 1.00 representing the theoretical capacity threshold. It is above the practical capacity threshold where capacity problems may begin to occur while exceeding the theoretical capacity means that arms are over capacity.

7.6.3 Modelled queues are shown in passenger car units (PCUs), this being equivalent to a distance of 5.75m which is the length of road space (car length plus gap length) that a typical car will occupy when queueing. In order to convert the traffic flows into PCUs, which is the requisite input flow unit required in the modelling software, a factor of 2.0 has been applied to the heavy vehicle user class, while cars effectively have a factor of 1.0. These factors are widely accepted in transport modelling.

7.6.4 Junction geometry has been coded into the models based on a mixture of topographical survey, OS mapping and aerial photography.

7.6.5 Traffic flows were initially input based on the 'ONE HOUR' (ODTAB) option which synthesises a 'peak within a peak' at the middle of the time period modelled and is generally seen as being the worst-case form of assessment in terms of impact. However, where this has led to results that appear unrealistic, other flow input methods have been considered.

7.6.6 The results of the capacity assessment for each of the junctions are described below. The proposed site access has been assessed for the With Development scenario only.

7.6.7 All model report outputs are included in **Appendix K**.

Proposed Site Access

7.6.8 As noted in Section 4, it is proposed that the development will be accessed from a new simple priority-controlled junction on Carisbrook Road.

7.6.9 Table 7.5 below provides a summary of the results of the capacity assessment.

Table 7.5: Capacity Assessment Results - Ross Road Site Access

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2029 With Development				
Proposed Site Access	0.09	0.1	0.06	0.1
B4224 Carisbrook Road (Eastern Arm)	0.02	0.0	0.09	0.1

7.6.10 The results show that the proposed site access will provide sufficient capacity to serve the development and operate with a considerable level of spare capacity.

Carisbrook Road/Bradley Court Road

7.6.11 Whilst the existing junction could be modelled as one lane plus flare, the width of the minor arm approach will reduce slightly as a result of the pedestrian refuge island suggested as part of the proposed access arrangements. Therefore the junction has been modelled with the minor arm being a single lane in all scenarios for robustness. The results of the capacity assessment are summarised in Table 7.

Table 7.6: Capacity Assessment Results - Carisbrook Road/Bradley Court Road

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2024 Observed				
B4224 Carisbrook Road	0.38	0.6	0.31	0.4
B4224 Bradley Court Road (Northern Arm)	0.00	0.0	0.01	0.0
2029 Without Development				
B4224 Carisbrook Road	0.39	0.6	0.32	0.5
B4224 Bradley Court Road (Northern Arm)	0.00	0.0	0.01	0.0
2029 With Development				
B4224 Carisbrook Road	0.48	0.9	0.37	0.6
B4224 Bradley Court Road (Northern Arm)	0.00	0.0	0.01	0.0

7.6.12 The results show that the junction will continue to operate with a considerable level of spare capacity with the development in place, with the highest RFC being 0.48 on the Carisbrook Road arm in the AM peak.

Hawker Hill/A4136 Gloucester Road/A4136 New Road

7.6.13 As discussed above, concern was raised by the local highway officer regarding the Hawker Hill mini-roundabout and the adjacent Gloucester Road/Abenhall Road priority junction. The concern centred on the interaction between the two closely spaced junctions, and the officer requested that a microsimulation model be produced to assess the junction. We do however feel that microsimulation is unnecessary, and we have used alternative tools to consider the traffic impact.

7.6.14 Firstly, comparisons can be made between the current modelling scenarios in support of this planning application and the previous modelling scenarios prepared in support of the 2018 planning application.

7.6.15 Table 7.7 below has been provided to show this comparison between the future assessment years.

Table 7.7: Comparison of Two-Way Traffic Flows for Hawker Hill Mini-roundabout Without and With Development (2024/2029)

Assessment Years	AM Peak		PM Peak	
	Without Dev	With Dev	Without Dev	With Dev
2024 (2018 assessment) Hawker Hill/ Gloucester Road/ New Road	1595	1655	1759	1803
2029 (2024 assessment) Hawker Hill/ Gloucester Road/ New Road	1487	1530	1446	1511
Difference (2024 - 2029)	-108	-125	-313	-292

7.6.16 It can be seen from Table 7.7 the notable difference between the previous 2024 future assessment year with the original application and the latest future assessment year of 2029. The most notable

difference is in the PM peaks with a net difference of circa 300 vehicles less in 2029, both with and without the development in place. The AM scenario has a net difference of approximately 100 less vehicles in 2029.

7.6.17 The Hawker Hill mini-roundabout could have been expected to accommodate circa 1,595 vehicles in the AM 2024 peak without the development in place and 1,759 vehicles in the PM 2024 peak without the development in place. So far as Prime are aware, no improvements were/are proposed for the mini-roundabout to be delivered by GCC. As such, it can be assumed that GCC were/are satisfied with the mini-roundabout's safe operation and capacity to accommodate the level of traffic which was highlighted with the original 2024 Without Development assessment i.e. five years of traffic growth from 2018 base levels.

7.6.18 It can be seen from Table 7.7 that the future 2029 traffic scenario, with the inclusion of the development traffic, is less than the 2024 Without Development flows (which we assume GCC were satisfied with). In addition to this, it can be seen from Table 7.4 that the development could only be expected to contribute at most circa one additional vehicle per minute.

7.6.19 Traffic Flow Diagrams 7 and 8 in Appendix D present the forecast development traffic turning movements. In the AM peak, of the 43 trips that will utilise one or both junctions, 25 will head to/from the west on New Road, 16 will head to/from the east on Gloucester Road and 9 will head to/from the south Abenhall Road. The equivalent figures in the PM peak are 31 west, 28 east and 6 south. This means that there are just 25 trips in the AM peak and 34 trips in the PM peak pass through both junctions.

7.6.20 Much of the original comments provided by GCC in relation to the mini-roundabout and Abenhall Road refer to the existing operation of the junctions, with specific reference made to both the local primary school and high school traffic. These points are noted, however one additional vehicle per minute cannot reasonably be attributed to negatively exacerbating the existing operation of this junction (or indeed any junction). It cannot be used as a foundation for a highways objection which must be substantiated by a *'severe'* impact or warrant the need for a microsimulation assessment.

7.6.21 To further supplement this latest assessment, drone footage has been captured at the time of the turning count survey so that we can better consider the alleged issues at the junctions and the interaction between the two. The drone footage is discussed in more detail below with still images provided. We invite the LHA to review this footage and it will be available at request.

7.6.22 Prime acknowledges the existence of some queueing at the mini-roundabout and this can be seen through review of the drone footage. Quantitively this has been provided below in Table 7.8.

Table 7.8: Peak Hour Traffic Queues for Hawker Hill Mini-roundabout and Gloucester Road/Abenhall Road Priority Junction

Time	Hawker Hill	Gloucester Road	Abenhall Road	New Road
08:00	0	1	0	0
08:05	0	0	1	0
08:10	0	0	0	1
08:15	6	0	0	0
08:20	2	0	1	3
08:25	6	0	0	0
08:30	7	0	0	10
08:35	0	0	2	2
08:40	1	0	7	1
08:45	3	0	25	0
08:50	2	1	0	0
08:55	2	0	0	0
16:30	2	0	0	3
16:35	0	0	1	0
16:40	2	2	0	0
16:45	0	6	0	1
16:50	0	1	0	0
16:55	0	0	0	0
17:00	0	0	0	0
17:05	0	0	0	0
17:10	0	0	0	0
17:15	0	7	3	3
17:20	0	0	0	0
17:25	0	0	0	0

7.6.23 From review of Table 7.8 above, during the AM peak hour queueing on all arms remains minimal, except for New Road between 0830-0835 where a queue of 10 vehicles forms and Abenhall Road between 0845-0850 where 25 vehicles can be seen to queue. These queues coincide with the typical school drop-off period, with this time also referenced by the LHA with the original application.

7.6.24 Both of the queues discussed can be seen to dissipate quickly, with Abenhall Road at 0850 having no queue at all and New Road at 0835 having a queue of 2.

7.6.25 Through review of drone footage and the following images, the operation of these junctions can be viewed. Image 7.1 highlights an 0845 snapshot of Abenhall Road with its associated queue, which includes what is assumed to be a school bus. Image 7.2 then highlights a snapshot circa 2 minutes later with queueing noticeably reduced. This statement remains true for all arms of the mini-roundabout, with traffic dissipating quickly.

Image 7.1: 0845 Traffic Snapshot (Abenhall Road)

Image 7.2: 0847 Traffic Snapshot (Abenhall Road)

7.6.26 Similarly, when viewing the New Road arm of the junction (Image 7.3) for the time period discussed, the highlighted queue can be seen. Again, only a short circa 2 minutes later (Image 7.4) the queue can be seen to be dissipated.

Image 7.3: 0831 Traffic Snapshot (New Road)

Image 7.4: 0833 Traffic Snapshot (New Road)

7.6.27 Through further review of the acquired drone footage, it is noted that the mini-roundabout is intermittently hindered in flow by the existing puffin crossing on New Road and right turning traffic to Abenhall Road. A pedestrian demand count for the crossing was completed as part of the traffic and drone survey with the summarised results of this count presented in **Table 7.9**.

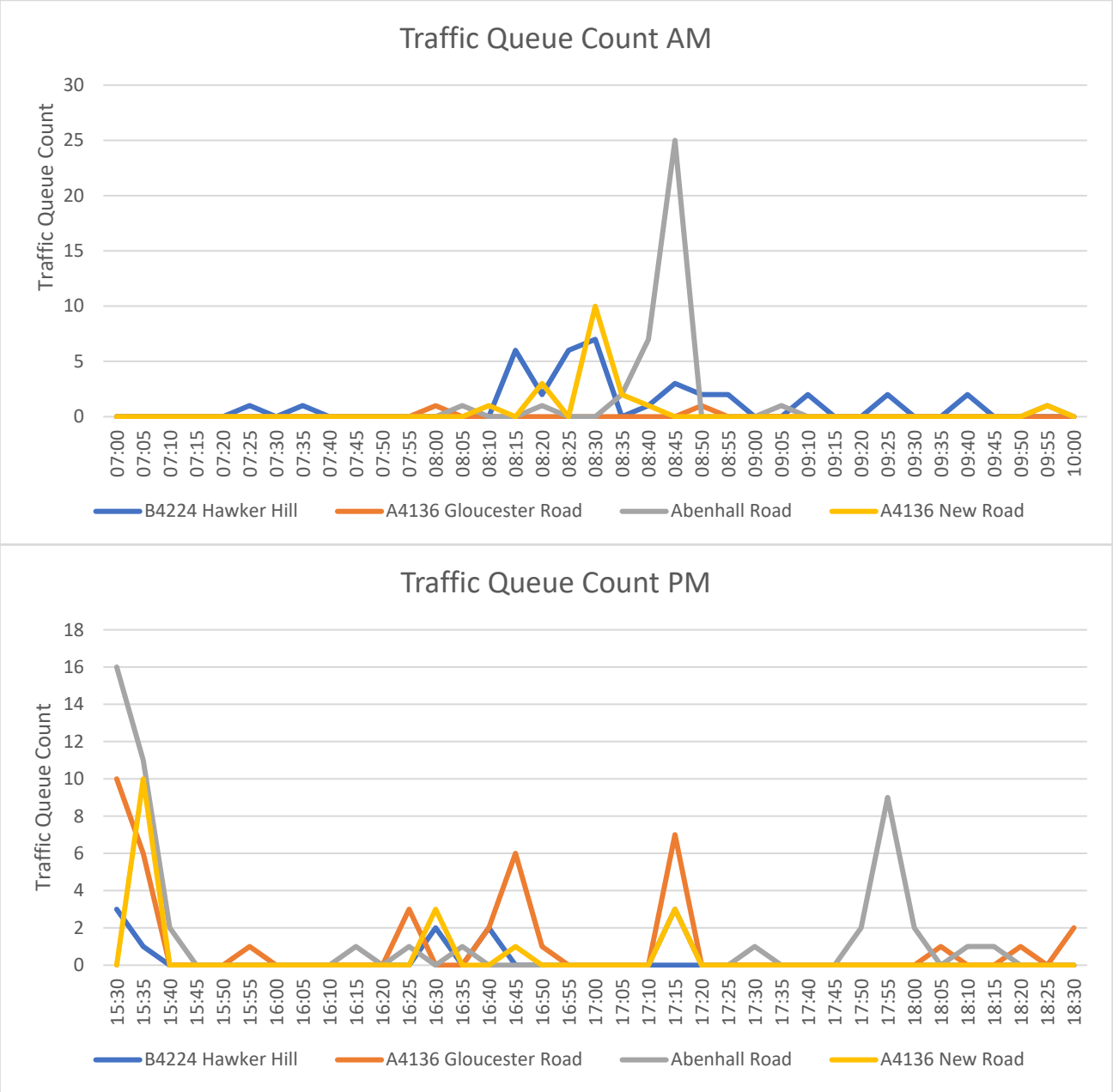
Table 7.9: Pedestrian Demand for Pelican Crossing on New Road

Peak	Pedestrian Demand			
	North to South	South to North	Total	% Activating Crossing
AM (0800-0900)	75	13	88	78%
PM (1630-1730)	13	8	20	90%

7.6.28 The pedestrian movements highlighted above for the AM peak coincide with the observations made from the drone footage, with most movements being north to south and associated with students accessing Abenhall Road to walk to school. Although not assessed, as it falls outside of the PM traffic peak, a queue on New Road of circa 10 vehicles is recorded at 1535. This time, in a similar fashion to the AM peak, it is associated to school closure times for students and push-button activations for the crossing. The smaller number of movements at the crossing point during the PM peak, outside of peak school times, coincides with the minimal lengths of traffic queues which were recorded.

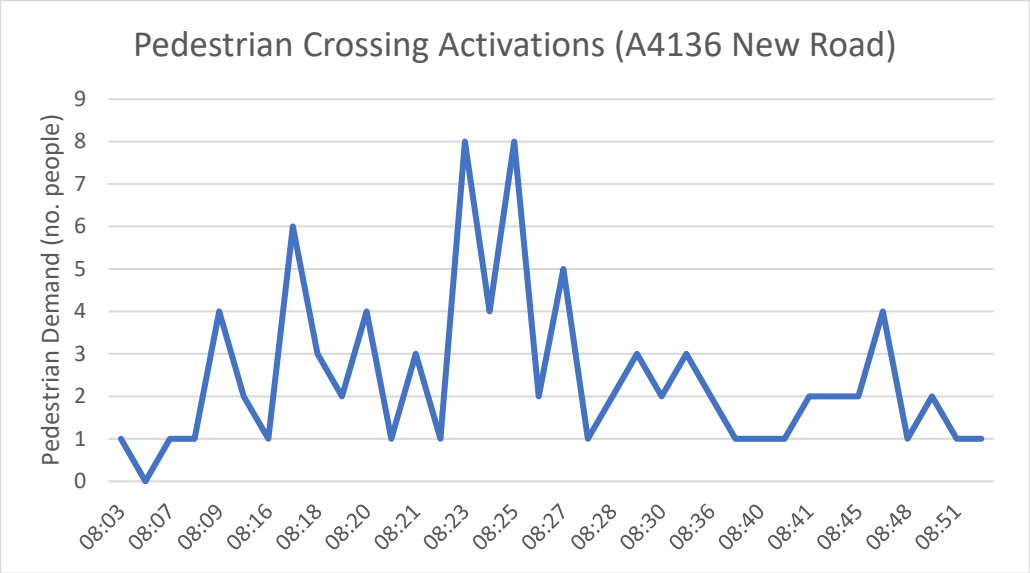
7.6.29 **Chart 7.1** below has been provided for ease of reference and to visually represent queueing for the Hawker Hill mini-roundabout and Abenhall Road priority junction. As seen for the AM peak, queueing is focused into a small segment of time, between approximately 0825 and 0845. The PM peak chart supports the statement made in Paragraph 7.6.23, in that queueing significantly drops following the typical school closure time after 15:40, followed by some mild fluctuations.

Chart 7.1: AM and PM Traffic Queue Counts for Hawker Hill Mini-roundabout and Abenhall Road Priority Junction



7.6.30 **Chart 7.2** has been provided to highlight the pedestrian demand for the crossing facility on A4136 New Road.

Chart 7.2: Pedestrian Demand in AM Peak for Crossing Facility on New Road



7.6.31 Through an in-depth study of the pedestrian demand during the morning peak, specifically with a focus on the queue peak period of 0825-0845 (as seen in Chart 7.1) some deductions can be made. The pedestrian demand for the crossing during the 0825-0845 peak queue period can be calculated to be 37 people, or approximately 2 people every minute. For the remainder of the AM peak period, i.e. 0800-0825 and 0845-0900, pedestrian demand can be calculated to be 51, or circa 1 person per minute. In summary, the peak queue period coincides with a portion of time when students/pedestrians utilising the crossing is at a frequency on average of circa double than that of any other time during the AM peak.

7.6.32 In reiteration of a previous statement, the proposed development could only be expected to add one additional vehicle per minute during either of the peak highway periods, with one additional vehicle every two minutes at the Abenhall Road/Gloucester Road junction. This minimal additional traffic and its impact is reflected within the modelling scenarios outlined below. It is clear from the above that any operational issues with the Hawker Hill mini-roundabout and Abenhall road are short lived. Any queues which form are associated primarily with students/pedestrians utilising the crossing facilities on New Road or parents/guardians driving to drop their children at school. The school is with an easily accessible walking distance of the proposed development (circa 1500m) and it can be reasonable to assumed that parents/guardians would not drive to drop their children at school.

7.6.33 Nevertheless, any issues which may be perceived to exist are pre-existing. Traffic queues dissipate quickly and largely result from the use of the crossing facilities on New Road, or from traffic turning right at Abenhall Road. Developers cannot be expected to rectify existing issues, particularly when they occur for such a limited time period each day of the school term only. Isolated traffic delays around schools are commonplace across the UK. The small quantum of additional traffic that could be associated to the development cannot be considered as having a *severe* impact on the junctions' existing operations, which this statement supports with the modelling results provided below.

7.6.34 The observed flow profile for this junction was reviewed and a summary of the flows and profile is provided in **T**able 7.10 below.

Table 7.10: Observed Flow Profile

Time	Flow	%
0800-0815	311	24.8%
0815-0830	314	25.0%
0830-0845	312	24.9%
0845-0900	317	25.3%
0800-0900	**1254**	**100%**
1630-1645	338	24.7%
1645-1700	368	26.9%
1700-1715	336	24.6%
1715-1730	324	23.7%
1630-1730	**1366**	**100%**

7.6.35 Both peak profiles appear flat (i.e. close to 25%), thus, the use of a FLAT profile, rather than the bell-shaped curve of the synthesised peak used in the ONE HOUR option, is therefore appropriate and justified.

7.6.36 The puffin crossing and the associated demand on the New Road arm has been included in the model The results are summarised in Table 7.11.

Table 7.11: Capacity Assessment Results - Hawker Hill/A4136 Gloucester Road/A4136 New Road

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2024 Observed				
1 - B4224 Hawker Hill	0.48	1.0	0.41	0.7
2 - A4136 Gloucester Road	0.59	1.5	0.78	3.5
3 - A4136 New Road	0.65	1.9	0.40	0.7
2029 Without Development				
1 - B4224 Hawker Hill	0.51	1.1	0.43	0.8
2 - A4136 Gloucester Road	0.61	1.7	0.81	4.2
3 - A4136 New Road	0.62	1.7	0.41	0.7
2029 With Development				
1 - B4224 Hawker Hill	0.56	1.3	0.46	0.9
2 - A4136 Gloucester Road	0.62	1.8	0.85	5.4
3 - A4136 New Road	0.63	1.7	0.43	0.8

7.6.37 The results show that in the PM peak the A4136 Gloucester Road arm will operate at practical capacity with the development in place, with an RFC of 0.85. In the AM peak, the A4136 Gloucester Road arm and all remaining arms in both peaks will operate with spare capacity.

7.6.38 The maximum increase in RFC as a result of the development traffic is just 0.05 on the Hawker Hill arm in the AM peak, with the RFC increase on the other two arms in this peak being just 0.01. In the

PM peak, the maximum increase is just 0.04 on the Gloucester Road arm with 0.03 on Hawker Hill and 0.02 on New Road.

Abenhall Road/A4136 Gloucester Road

7.6.39 The observed flow profile for this junction was reviewed and a summary of the flows and profile is provided in Table 7.12 below.

Table 7.12: Observed Flow Profile

Time	Flow	%
0800-0815	141	24.7%
0815-0830	144	25.2%
0830-0845	158	27.6%
0845-0900	129	22.6%
0800-0900	**572**	**100%**
1630-1645	182	25.7%
1645-1700	180	25.4%
1700-1715	178	25.1%
1715-1730	168	23.7%
1630-1730	**708**	**100%**

7.6.40 Both peak profiles appear flat (i.e. close to 25%), thus, the use of a FLAT profile, rather than the bell-shaped curve of the synthesised peak used in the ONE HOUR option, is therefore appropriate and justified.

Table 7.13: Capacity Assessment Results - Abenhall Road/A4136 Gloucester Road

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2024 Observed				
Abenhall Road	0.51	1.1	0.18	0.2
A4136 Gloucester Road (Western Arm)	0.56	2.0	0.32	0.7
2029 Without Development				
Abenhall Road	0.53	1.2	0.20	0.2
A4136 Gloucester Road (Western Arm)	0.59	2.3	0.33	0.8
2029 With Development				
Abenhall Road	0.54	1.2	0.20	0.3
A4136 Gloucester Road (Western Arm)	0.62	2.6	0.35	0.8

7.6.41 The results show that the junction will continue to operate with a considerable level of spare capacity with the development in place, with the highest RFC being 0.54 on the Abenhall Road arm in the AM peak. The proposed development increases the RFC by just 0.03 in the AM peak and 0.02 in the PM peak, with both of which occurring on the Gloucester Road arm.

Linked Assessment - Hawker Hill/A4136 Gloucester Road/A4136 New Road/Abenhall Road

7.6.42 The Junctions 10 software now enables users to link closely spaced junctions, however, a shortfall of utilising this method is that it only provides the results of the queue lengths and not RFC values.

7.6.43 The results of the linked capacity assessment are shown in Table 7.14.

Table 7.14: Linked Capacity Assessment Results - Hawker Hill/A4136 Gloucester Road/A4136 New Road/Abenhall Road

Arm	AM Q (PCU)	PM Q (PCU)
2024 Observed		
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 1 - B4224 Hawker Hill	2.4	1.0
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 2 - A4136 Gloucester Road	0.7	0.9
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 3 - A4136 New Road	5.9	1.1
2 - A4136 Gloucester Road/Abenhall Road - A - A4136 Gloucester Road (Eastern Arm)	0.2	2.0
2 - A4136 Gloucester Road/Abenhall Road - B - Abenhall Road	9.0	2.9
2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm)	0.5	0.3
2029 Without Development		
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 1 - B4224 Hawker Hill	2.6	1.2
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 2 - A4136 Gloucester Road	0.8	0.9
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 3 - A4136 New Road	7.2	1.3
2 - A4136 Gloucester Road/Abenhall Road - A - A4136 Gloucester Road (Eastern Arm)	0.2	2.0
2 - A4136 Gloucester Road/Abenhall Road - B - Abenhall Road	13.4	4.6
2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm)	0.5	0.3
2029 With Development		
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 1 - B4224 Hawker Hill	3.7	1.3
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 2 - A4136 Gloucester Road	0.8	0.9
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road - 3 - A4136 New Road	9.0	1.4
2 - A4136 Gloucester Road/Abenhall Road - A - A4136 Gloucester Road (Eastern Arm)	0.3	2.7
2 - A4136 Gloucester Road/Abenhall Road - B - Abenhall Road	15.0	7.1
2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm)	0.5	0.3

7.6.44 The linked model results suggest that the proposed development will increase queues by up to just 1.8 PCUs in the AM peak and 2.5 PCUs in the PM peak. Again, such minor increases should not be

considered to be a severe impact, particularly given that the forecast traffic growth (without development) is shown to increase the queue lengths by up to 4.4 PCUs.

A40/A4136 Longhope Road

7.6.45 GCC specifically requested a capacity assessment of this junction during the original scoping discussions, however, the junction is controlled by National Highways (NH), not GCC. Prime formally contacted NH with the original application to obtain the traffic signal controller specification sheets, an essential input when creating a model of an existing signal junction. Failure to use this information can result in an invalid model and incorrect outputs. NH acknowledged the request but never provided the requested information. Prime have similarly requested the signal controller specification sheets with this latest submission.

7.6.46 Whilst we are happy to construct a LinSig model of the junction we believe this is unnecessary given that, according to Table 7.4, the development could only be expected to add an additional 16 and 28 trips in the AM and PM peaks respectively, which equates to a vehicle movement every circa 4 and 2 minutes respectively. This falls below the 30 two-way trip threshold for capacity assessment suggested by the DfT's GTA and still used by many highway authorities. The presence of modern traffic signal control equipment, which appears to have recently been installed, including detector loops as observed during the site visit, suggests that the junction operates with an advanced form of signal control such as MOVA. The controller will simply adjust greentimes, if necessary, to accommodate increased demand.

7.7 Potential Highway Improvements

7.7.1 This section outlines some potential improvements that could be made around the Hawker Hill mini-roundabout and the Abenhall Round priority junction. Whilst the impact of the proposed development is not severe, several observations have been made during the site visits and from review of the survey data and drone footage.

7.7.2 Cluttered signage at the junction limits visibility from the Abenhall Road minor arm, as shown in **Images 7.5 and 7.6** below, as it sits within the sightlines. Consideration could be given to rationalising the signage and either relocating it away from natural sightlines or mounting them on higher poles above driver eye height. The applicant is willing to provide funding for this given that it should improve safety and capacity at this important junction that leads to the local high school.

7.7.3 The applicant is also willing to provide 'KEEP CLEAR' markings across the mouth of the junction to provide traffic to and from Abenhall Road with greater opportunity to turn and further encourage good driver courtesy. Such arrangements across the country often provide traffic turning from and to the minor arm with greater informal priority. An advancement of this would be to provide yellow box junction markings which would require a Traffic Regulation Order.

7.7.4 In addition to the above, Prime would be happy to engage with GCC's Traffic Signal team to discuss options related to upgrading the puffin crossing controller and detection equipment on A4136 New Road. Whilst pedestrian activation/deactivation sensors are already provided, there may be opportunity to upgrade the equipment to provide more accurate green-man activations and deactivations.

7.7.5 The above options have been present on **Drawing P24048-004 in Appendix F**.

Image 7.5: Cluttered Street Signage at Abenhall Road/A4136 Junction - Visibility Right

Image 7.6: Cluttered Street Signage at Abenhall Road/A4136 Junction - Visibility Left

7.8 Summary

7.8.1 This section has detailed the traffic forecasting methodology and capacity assessment used to determine the suitability of the proposed site access and the surrounding highway network to accommodate the development proposal.

7.8.2 It has been demonstrated that the proposed site access will operate with a good level of spare capacity, while the impact of the development on the local highway network will be negligible and no mitigation is required.

7.8.3 It has been shown that queueing on the mini-roundabout is short lived (pre-existing), lasting just a few minutes a day during school term time, with any disruption to traffic flow primarily resulting from the activation of the New Road crossing facility by students/students and isolated peaks in demand associated with school traffic. Similarly, some disruption has also been observed to occur as a result of right turning traffic to Abenhall Road blocking the Gloucester Road carriageway whilst waiting to make this manoeuvre. The Applicant cannot be expected to address existing problems associated with school traffic, however, some improvements have been suggested for the mini-roundabout and Abenhall Road junction, to help facilitate free-flowing traffic movements as much as possible.

7.8.4 The development proposals are unlikely to result in an *'unacceptable impact on highway safety'* and the cumulative impact of the development can certainly not be considered *'severe'* meaning that

according to paragraph 116 of the NPPF, as described in Section 2 of this report, the development should not be refused on transport grounds.

8 SUMMARY AND CONCLUSION

8.1 Summary

8.1.1 This TA has been produced by Prime Transport Planning to consider the highways and transportation implications associated with an outline proposal by Gladman Developments Ltd for a proposed residential development comprising up to 180 residential dwellings, on land off Carisbrook Road, Mitcheldean, Gloucestershire.

8.1.2 The site is to be accessed via a single priority controlled junction designed in accordance with modern standards and with sufficient visibility based on local observed speeds. Dedicated pedestrian/cycle accesses are to be provided, consisting of one to the existing bus stops on Ross Road and one onto Bradley Court Road. These connections and associated footways will provide a choice of walking routes to the village centre and its numerous amenities. The applicant is to provide up to three uncontrolled crossing facilities over Carisbrook Road to provide safe connection to the existing provision on the southern side including the numerous off-road footpaths that cut-through the adjacent streets. The proposed access arrangement has been subject to an independent Stage 1 RSA that did not raise any significant issues.

8.1.3 A review of accident data for the local area has been undertaken for the most recent five years, with an analysis of the accidents occurring across the entirety of Mitcheldean being included in this review. Only 8 accidents occurred, of which 3 were classed as serious. The accidents were largely dispersed across the study area rather than concentrated in any single location and driver or pedestrian error appears to have been a key factor in all three serious accidents. It is therefore concluded that there are no deficiencies in the highway network, or existing safety issues in the vicinity of the site, that would be exacerbated by the development proposals. The applicant is however willing to provide additional traffic calming features at the existing change in speed limit point on Bradley Court Road in the vicinity of the site to encourage slower speeds on approach to the settlement.

8.1.4 An assessment has been undertaken of the site's level of accessibility by sustainable modes of transportation, from which it can be concluded that realistic options exist for access to local amenities, education, and employment opportunities on foot, by cycle, and by public transport.

8.1.5 In order to further encourage bus travel for all users, the applicant is willing to provide funding to provide raised boarding areas at the pair of Ross Road bus stops closest to the site.

8.1.6 It is proposed that occupiers of the development will be made aware of the options available for sustainable modes of travel through the site's Travel Plan and also through welcome packs provided to residents at the development.

8.1.7 A PERS style walking audit has been undertaken, with accompanying ATE Route Check Tool also completed, which has concluded that the primary route into the village centre and to the south of the

settlement along Bradley Court Road/Townsend/High Street and Hawker Hill, which consists of established, street-lit footways, uncontrolled crossings, zebra crossing (High Street) and puffin crossing (New Road), is a safe and pleasant walking route that provides access to key local amenities, schools and places of employment. The primary route is well supplemented by a number of traffic-free PRoWs and cut-through footpaths between residential areas.

8.1.8 Junction capacity assessments have been undertaken at the proposed site access and at three off-site junctions on the local highway network. It has been demonstrated that the proposed site access junction will operate with a good level of spare capacity, while the impact of the development on the local highway network will be negligible.

8.1.9 We recognise through the previous application, that GCC has concerns with the operation of the Hawker Hill mini-roundabout and adjacent Abenhall Road junction. Detailed surveys have been undertaken at this junction. The surveys show that forecast traffic levels are lower than they were when recorded in 2018 for the previous application so the two junctions would have been expected to continue to operate without improvements whilst accommodating lower levels of traffic than that forecast with the development in place. From further review of the data, it has been shown that queues and delays at the junction are limited to just a few minutes of the day during school term, with the issues caused by both school traffic and school pedestrian demand. New developments cannot be expected to address existing traffic problems, particularly where their impact is shown to be negligible.

8.1.10 We have however considered a number of measures to improve safety and capacity at the Abenhall Road/A4136 junction. These include provision of 'KEEP CLEAR' markings across Abenhall Road, rationalise of the excessive signage that currently restricts visibility from Abenhall Road and a potential upgrade of the puffin crossing technology on the New Road arm.

8.2 Conclusion

8.2.1 It is concluded that the proposed development would not result in an *'unacceptable impact on highway safety'* nor have a *'severe'* impact on the operation of the highway network terms of capacity. The impact is best described as negligible.

8.2.2 As the proposal complies with local and national planning policy and guidance with respect to sustainable accessibility, safety and impact on the highway network, there are no highways or transportation related reasons why planning permission should not be granted. Should the highway authority have any concerns, we are happy to consult further with them.

APPENDIX A

SCOPING CORRESPONDENCE WITH GCC

Highways Development Management
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Gloucester
GL1 2TH

Tony Pope
Forest of Dean District Council
Council Offices
High Street
Coleford
Gloucestershire
GL16 8HG

email: mark.sweet@gloucestershire.gov.uk

Please ask for: Mark Sweet

Our Ref: F/2018/042045 Your Ref: P1994/18/OUT Date: 21 February 2019

Dear Tony Pope,

TOWN AND COUNTRY PLANNING ACT 1990
HIGHWAY RECOMMENDATION

LOCATION: Land North Of Carisbrook Road Mitcheldean Gloucestershire
PROPOSED: Outline planning permission for the erection of up to 125 dwellings with public open space, landscaping and sustainable drainage system and vehicular access point from Carisbrook Road and associated ancillary works. All matters to be reserved except for means of access.

The junction modelling assessment provided in the application Transport Assessment has significant input discrepancies which will be bourne out in the full forthcoming review. This is an initial holding response from the Highway Authority.

From the observations on-site it is evident that the Mitcheldean junctions, and the adjacent pedestrian crossing, interact with each other in a significant manner and impact upon each other's performance, and should therefore not be treated in isolation. Key initial observations were as follows:

- The peak within the peak hour occurs between 08:15-08:45. This is associated with school start times at Mitcheldean Primary School (served off Hawker Hill) and Dene Magna School (served off Abenhall Road);
- There is storage of up to 1 vehicle between the mini-roundabout and priority junction. Vehicles turning right into Abenhall Road often have to queue, which can lead to blocking back onto the mini-roundabout, which can be a particular barrier to movements from right-turn movements from Gloucester Road to Hawker Hill. Right-turning traffic to Abenhall Road is often reliant on informal give-way behaviours from westbound traffic on Gloucester Road. This issue is more prevalent during the first half of the peak within the peak hour (i.e. 08:15-08:30), associated with the peak in arrivals at the school;

- The situation is reversed during the second half of the peak within the peak hour (i.e. 08:30-08:45) where vehicles that have dropped off students then depart the school. This results in a peak in queuing on Abenhall Road, with vehicles turning left (i.e. to the mini-roundabout) reliant on gaps in traffic or informal give-way behaviours from westbound traffic on Gloucester Road. Right-turn manoeuvres face particularly difficulties and are typically reliant on informal give-way behaviours from westbound/eastbound traffic on Gloucester Road and gaps in eastbound traffic created by the neighbouring pedestrian crossing;
- The pedestrian crossing on New Road is infrequent demand during the peak hour, primarily associated with pupils walking to school. This has an affect on the operation of the junction network. During the red stage, westbound vehicles will often queue back onto the mini-roundabout due to limited storage in between;
- There is significant queuing on New Road, primarily associated with the frequency of demand for the pedestrian crossing and blocking to eastbound movements associated with right-turning movements to Abenhall Road. Queueing on New Road is at its peak between 08:15-08:35 and was observed as extending back to the change of speed limit to 40mph (around 300m southwest). This queue dissipates reasonably quickly once demand for the crossing and right-turn reduces; and
- The network becomes reasonably clear by 08:45.

It is the view of the Highway Authority that Junctions 9 used to seperately model the Gloucester Road/Hawker Hill/New Road mini-roundabout and Abenhall Rd/Gloucester Rd junctions cannot likely replicate the complexity of interactions and the effect of the pedestrian crossing observed on-site, and therefore is not the appropriate tool for assessment in this case. It is considered that that a microsimulation package such as VISSIM would be an appropriate tool for modelling.

The modelling of the junctions separately in Junctions 9 has also been identified on application P0998/18/OUT which is noted as an allocated site and should be accounted for in modelling. This development will generate approximately 60 and 44 movements at the combined junctions (Gloucester Road/Hawker Hill/New Road mini-roundabout and Abenhall Rd/Gloucester Rd) network during the AM and PM peak hours (based on the TA). This is not insignificant and, when combined with the forecast traffic for the Richard Read scheme, could justify the requirement for VISSIM or similar modelling with the cumulative impact of both schemes.

Such a mitigation scheme for the network could involve the use of signalised-control for the four arms, particularly given the importance of the signalised crossing to pedestrian connectivity. However there are likely to be constraints to this (for example, insufficient intervisibility between the likely position of stoplines) that may require departures from standards.

Please see below the junction modelling audits for the submitted assessments. There are issues in the parameters and traffic flow/HGV proportion entry in each that need to be addressed before I can comment on the results. However, it should be noted that, as mentioned above, due to the close working of the junctions it may not be possible to suitably model the junctions using junctions 9 and ideally a joint microsim from both sites would be created to ensure that a robust conclusion can be made.

The proposed highway works with NMU connections around the proposed site access junction are still being assessed and full highways response will be subsequently provided. However there will be required changes to the proposed highway works around the site access to ensure safe and suitable access in the direct site vicinity.

The Travel Plan assessment is also subject to further comments, but initially requires changes to ensure a suitably stretching and achievable plan with suitable targets, monitoring and funding mechanisms are included according to County Council and national guidance.

Due to inaccuracies particularly within the modelling input data on the surrounding junctions particularly the close proximity Gloucester Road/Hawker Hill/New Road mini-roundabout and Abenhall Rd/Gloucester Rd junctions affected by the signal pedestrian crossing particularly in the AM peak period submitted in support of application the Highway Authority currently recommend refusal based on insufficient information.

A more favourable response may be given subject to revised modelling, changes to proposed highway works approaching the site access and Travel Plan details to address details in forthcoming full response.

Statement of Due Regard

Consideration has been given as to whether any inequality and community impact will be created by the transport and highway impacts of the proposed development. It is considered that no inequality is caused to those people who had previously utilised those sections of the existing transport network that are likely to be impacted on by the proposed development.

It is considered that the following protected groups will not be affected by the transport impacts of the proposed development: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation, other groups (such as long term unemployed), social-economically deprived groups, community cohesion, and human rights.

Yours sincerely,

Mark Sweet

Development Co-ordinator

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Please ask for: Mark Sweet

Our Ref: F/2018/042045 Your Ref: P1994/18/OUT Date: 13 March 2019

Dear Tony Pope,

TOWN AND COUNTRY PLANNING ACT 1990
HIGHWAY RECOMMENDATION

LOCATION: Land North Of Carisbrook Road Mitcheldean Gloucestershire
PROPOSED: Outline planning permission for the erection of up to 125 dwellings with public open space, landscaping and sustainable drainage system and vehicular access point from Carisbrook Road and associated ancillary works. All matters to be reserved except for means of access.

A Transport Assessment (TA) (dated December 2018) and Travel Plan (TP) have been submitted in respect of a planning application for 125 dwellings on land north of Carisbrook Road in Mitcheldean, Gloucestershire.

The submission has been prepared following pre-application discussions with Gloucestershire County Council (GCC).

TA – Section 2: Transport Policy and Guidance

National Planning Policy Framework (NPPF, 2019)

The NPPF is the primary national planning policy relevant to the proposed development. The main considerations of the NPPF, in transport terms, are set out in Paragraphs 108 and 109.

Paragraph 108 indicates that Transport Statements or Assessments will be required for significant traffic generating developments and it should be ensured that:

- *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- *safe and suitable access to the site can be achieved for all users; and*

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

Paragraph 109 states *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

Planning Practice Guidance (2014)
The *Planning Practice Guidance* (PPG) replaced the Department for Transport's (DfT's) *Guidance on Transport Assessment* in March 2014. The PPG 'Travel Plans, Transport Assessments and Statements in Decision-Taking' provides advice on when transport assessments are required and what they should contain.

Gloucestershire County Council Local Transport Plan 2015-2031 (LTP3)
LTP3 sets the long□term transport strategy for Gloucestershire up to 2031. It comprises an overarching strategy, Connecting Places Strategies (CPS) relating to six geographical areas, and six separate transport policy documents relating to particular transport topic areas. The site lies within the designation 'CPS 2 – Forest of Dean'.

Key policies in relation to the development proposals are as follows:

- LTP PD 1.7 – Integration with new developments (contained in Policy Document 1 – Bus);
- LTP PD 2.3 – Integration with new developments (contained in Policy Document 2 – Cycle); and
- LTP PD 6.2 – Managing car use from new developments (contained in Policy Document 6 – Thinktravel).

Forest of Dean Local Plan
The Forest of Dean Local Plan includes the *Core Strategy* (adopted in February 2012) and *Allocations Plan 2006 to 2026* (adopted in June 2018).

Key policies in relation to the development proposals are as follows:

- Policy CSP.1 (Design, environmental protection and enhancement) – Seeks to ensure design and construction of new development takes in to account important environmental characteristics;
- Policy CSP.4 (Development at settlements) – Seeks to ensure proposals are resource efficient and make best use of available infrastructure, with additional infrastructure provided where needs cannot be met. New housing will be concentrated where there is already good access to employment and where additional employment can be provided; and
- Policy CSP.16 – Identifies Mitcheldean as a major village, defined as *"large villages with employment and/or services important to a wider area"* with *"some scope for additional development"*.

Design Guidance
The TA refers to the following guidance that has been considered in the design of the development:

- *Manual for Streets* (MfS), published in March 2007;

- *Manual for Streets 2: Wider Application of the Principles* (MfS2), published in September 2010; and
- *Manual for Gloucestershire Streets: 4th Edition* (MfGS), published in April 2016.

MfGS has been temporarily revoked until account can be taken of the Department for Transport's (DfT's) *Inclusive Transport Strategy*. In the meantime, practitioners are directed to refer to GCC's *Technical Specification for New Streets First Edition*, published in September 2018.

TA – Section 3: Existing Situation

Section 3 of the TA provides a description of the site, Public Rights of Way (PRoW), the local highway network, existing traffic conditions and highway safety.

Site Description

The site is located on agricultural land north of Carisbrook Road, approximately 500m north of Mitcheldean village centre. It is bound by agricultural land to the north, Bradley Court Road to the east, and Carisbrook Road/Ross Road to the south and west.

Public Rights of Way

There are no PRoWs that cross the site, but there are existing footpaths accessed via the neighbouring residential development to the south/west. The Wysis Way, a promoted route, runs along Bradley Court Road.

Local Highway Network

The description of the local highway network covers Carisbrook Road/Ross Road and Bradley Court Road. Carisbrook Road/Ross Road serve residential development to the south/west of the site. It routes northwest to provide access to the A40 and connects to Bradley Court Road. Bradley Court Road routes south towards the village centre and the A4136.

All are single carriageway roads and are street lit. Carisbrook Road/Ross Road is subject to a 30mph speed limit and has a footway on the south/west side carriageway only, of 2m minimum width; this is potential barrier to pedestrian movement to/from the site but is addressed through the proposed access arrangements. Bradley Court Road is subject to a 30mph speed limit, increasing to the national speed limit of 60mph approximately 100m north of its junction with Carisbrook Road. There is a footway of 2m minimum width on the west side of the carriageway, south of its junction with Carisbrook Road.

Existing Traffic Conditions

The TA has utilised traffic data from a number of surveys to inform the existing traffic conditions. Automatic Traffic Count (ATC) surveys were undertaken on Carisbrook Road and Bradley Court Road for a 7-day period during November 2018 to establish existing traffic flows and speeds.

Appendix C of the TA contains the raw data from the ATC surveys; this is limited to information on vehicle speeds. This shows that, on Carisbrook Road, the ATC recorded 85th percentile speeds of 34.8mph (55.7kph) eastbound and 33.3mph (53.3kph) westbound; these measurements inform the proposed visibility splays at the proposed access, discussed at Section 4 of the TA.

Junction Turning Count (JTC) and queue length surveys were undertaken on Thursday 15th November 2018 during the periods 07:45-10:00 and 15:30-18:30 at the following junctions:

- Ross Road/Hollywell Road priority junction;
- Carisbrook Road/Bradley Court Road priority junction;
- Hawker Hill/Gloucester Road/New Road/Abenhall Road network (comprising a three-arm mini-roundabout and a priority junction); and
- A40/A4136 Longhope Road signal-controlled junction.

This data has informed the traffic generation methodology and capacity assessment. The Applicant has analysed the data and identified that the weekday AM and PM peak hours are 07:45-08:45 and 16:30-17:30. Carisbrook Road was identified as carrying 269 and 240 vehicles (two-way) during these periods. Bradley Court Road was identified as carrying 258 and 241 vehicles (two-way) during these periods. HGVs account for less than 2% of movements.

Accident Summary
The TA provides an analysis of highway safety in the study area based on a review of Personal Injury Collision (PIC) data for the five-year period between 1 January 2013 and 31 December 2017. The study area covered Mitcheldean in its entirety, extending to around 350m north of the settlement.

The TA reports that there have been three PICs in the five-year period, but only two appear to be shown on the plot reproduced at Appendix E of the TA. The TA reports that the three PICs were all 'slight', occurring in different locations. It concludes that there is no evident pattern to suggest there are any highway safety issues that could be exacerbated by the development proposals. While this would seem reasonable based on the information presented, the TA does not include the PIC reports to enable GCC confirm whether this conclusion is appropriate, which are sought although from a separate collision records search there does not appear to be multiple collisions demonstrating highway safety issues exacerbated by the development.

TA – Section 4: Development Proposal

Access Strategy

Vehicular Access
It is proposed to provide a single point of vehicular access from Carisbrook Road, located between Bradley Court Road and Old Dean Road. This is considered appropriate given the scale of the proposals. It is proposed that this takes the form of a priority junction, with a 5.5m wide carriageway for the site access road, 2m wide footways on both sides of the site access road and 6m corner radii. This form of junction and the geometric parameters are considered appropriate to the type and scale of the proposals, and the characteristics of Carisbrook Road.

Carisbrook Road is subject to a 30mph speed limit at the point of the proposed vehicular access. The Applicant has identified 85th percentile vehicle speeds of 34.8mph (55.7kph) eastbound and 33.3mph (53.3kph) westbound. The Applicant has based visibility splays on the 85th percentile speeds and applied no wet weather reduction, which is robust. The Applicant has calculated visibility requirements using the formula in MfS/MfS2, resulting in visibility splays of 2.4m x 48m to the left (i.e. the east) and 2.4m x 51m to the right (i.e. to the west) for vehicles exiting the site access. This is an appropriate approach and GCC confirms that the resulting visibility splays have been calculated correctly and demonstrate that sufficient visibility can be achieved.

Additional Accesses for Pedestrians and Cyclists

In addition to pedestrian/cycle access at the proposed vehicular access, the Applicant proposes the following:

- Pedestrian/cycle access onto Ross Road, providing a direct route to existing bus stop facilities;
- Pedestrian/cycle access onto Bradley Court Road, served via a new section of footway from the Carisbrook Road/Bradley Court junction;
- New section of footway on the north side of Carisbrook Road, between the site access junction and the Carisbrook Road/Bradley Court Road junction;
- Dropped kerb crossing with tactile paving on Carisbrook Road, between the site access junction and the Carisbrook Road/Bradley Court Road junction; and
- Dropped kerb crossing with tactile paving and central refuge on Carisbrook Road at the Carisbrook Road/Bradley Court Road junction.

These proposals provide direct routes for pedestrians and cyclists travelling to/from the site and will therefore enhance the attractiveness of these modes. GCC requires that this is secured by planning condition and considers that this could be covered in a single condition relating to Drawing No. P18081-001F, which shows each of these measures.

With regard to the provision of a central refuge on Carisbrook Road, the Applicant has undertaken Swept Path Analysis (SPA) to demonstrate that this will not restrict larger vehicles. This shows that buses and refuse vehicles will not be affected. The Applicant reports that a 16.5m articulated vehicle will also not be affected but does not include this in the SPA.

The design of the proposed footways and crossings will be agreed at the detailed design stage, but the general form and location are considered reasonable.

Access for Commercial Vehicles and Internal Layout

The Applicant has undertaken SPA of a large refuse vehicle entering/exiting the site access junction. This shows that the site access can accommodate this vehicle type. While the vehicle does enter the opposite side of the carriageway on the site access road, this is considered reasonable given the frequency of movements by large vehicles and street function. The access details do not include two-way estate car passing or inter-visible refuse vehicle and estate car passing, however it is considered sufficient space is available for two-way inter-visible passing.

The internal layout will be set out at the reserved matters stage.

Gateway Features

The ATC survey recorded 85th percentile speeds of 51.2mph northbound and 47.6mph southbound on Bradley Court Road at the change in speed limit from 30mph to the national speed limit, around 100m north of the Carisbrook Road/Bradley Court Road junction.

The Applicant has offered to provide additional gateway features to encourage reduced speeds on entering the 30mph speed restriction. The indicative proposals include the provision of dragon's teeth to supplement the existing features. The Applicant also identifies that existing signage could be replaced with speed limit signage on a yellow highlighting background, similar to what is present on other roads in the area.

Parking

Parking provision will need to be set out in accordance with adopted policy at the reserved matters stage and based on justification from similar site parking demand surveys to ensure

suitable provision for dwelling types for this location and providing 0.2 visitor spaces or 1 space per 5 dwellings.

All residential off-street parking spaces should be either designed or have space to be expanded to accommodated disabled visitor or occupant parking at 3.6m x 6m (4.8m x 2.4m with 1.2m clearance) if perpendicular to comply with National Planning Policy Framework (NPPF) paragraph 110. At least 5% of visitor parking spaces should also designed to disabled dimensions. All residential parking spaces would also be sought to enable charging by electric and ultra-low emission plug in vehicles in accordance with NPPF paragraph 110.

Road Safety Audit
A Stage 1 Road Safety Audit (RSA) of the proposed access arrangements has been undertaken by a third party consultant on behalf of the Applicant. The RSA was based on a previous iteration of the access design. The key difference between the previous iteration (Revision E) and the submitted version (Revision F) is the addition of a pedestrian refuge on Carisbrook Road at its junction with Bradley Court Road; this follows a recommendation in the RSA.

GCC notes that the RSA identified three problems in respect of non-motorised user provision. These related to the position of the proposed eastern pedestrian crossing on Carisbrook Road, the footway on the northern side of Carisbrook Road and tactile paving at the proposed western pedestrian crossing on Carisbrook Road. The Applicant has sufficiently addressed these problems in its designer's response and subsequent revisions to the design. The Stage 1 RSA would ideally be updated such that that auditor can confirm the problems have been addressed.

TA – Section 5: Access by Sustainable Modes
Section 5 of the TA sets out the accessibility of the site in terms of the opportunities for walking, cycling and public transport to travel to day-to-day facilities. A PERS Audit has been undertaken to assess the condition of walking and cycling infrastructure in the vicinity of the site, discussed at Section 6 of the TA.

Access on Foot
The site and its proposed access arrangements will connect with the existing network of footways and PRoWs in the surrounding area. The surrounding roads have footways on one or both sides of carriageway, are street lit, and pedestrian crossings are generally uncontrolled.

The TA identifies the walking distance from the site to key day-to-day-facilities and refers to 'acceptable' walking distances in the Institution of Highways and Transport (IHT) document *Providing for Journeys on Foot*, published in 2000. This sets out 'Desirable', 'Acceptable' and 'Preferred Maximum' distances by trip purpose. The Applicant has plotted walking distance catchments of 1.2km and 2km, based on use of existing/proposed footways and PRoWs. The distances relate to the 'Preferred Maximum' distances for local services and commuting/school purposes. The analysis identifies that there is a reasonable range of day-to-day facilities within the 'Preferred Maximum' walking distances; these include education, employment, retail and community facilities.

Access by Cycle
There are no dedicated cycle facilities serving the site and the surrounding area, with cyclists being accommodated on-carriageway. The Applicant has plotted cycling distance isochrones of 2km and 5km; 5km is generally considered an acceptable cycling distance, although it is recognised that longer distances are possible for some cyclists. The analysis identifies that

there is a reasonable range of day-to-day facilities and neighbouring settlements within 5km cycling distance.

The Applicant suggests that many of the local roads are lightly trafficked and have low HGV volumes, meaning it is reasonable to cycle on-carriageway. While this is considered reasonable for cycling trips within Mitcheldean, GCC considers that uptake of cycling by residents for longer journeys is likely to be limited to more confident cyclists due to higher speeds on roads outside of Mitcheldean (40mph and above), topographical constraints and the need to cycle on-carriageway.

Access to Local Bus Services
The TA presents information on bus services accessed from the 'Hollywell Road' bus stops. These are located on Ross Road, well within the 400m distance specified in the IHT's *Guidelines for Planning for Public Transport in Developments*, published in 1999. These comprise a shelter, flag and printed timetable information; these have recently been installed. Pedestrian movements between the southbound and northbound bus stops are facilitated through an uncontrolled crossing.

These bus stops provide access to Service 33 (operated by Stagecoach West), which routes between Hereford and Gloucester, generally operating at an hourly frequency on weekdays and Saturdays. This is considered a reasonable level of frequency for the rural location. The service times make the use of this service a viable option for commuting to/from these locations.

The TA also identifies additional services accessed from the 'Mill End School' and 'Dunstone Place' bus stops located on Stenders Road and Stars Pitch respectively; these are around 900m walk from the site. The IHT's guidelines state that the 400m walking distance should not be *"slavishly adhered to"* rather the frequency of services and quality of bus stop facilities should be taken into consideration. The services from these stops are of low frequency (i.e. two hourly and upwards) and, combined with the walking distance from the site, are unlikely to be attractive to residents of the proposed development.

The Applicant has undertaken analysis of journey times for direct services. This has identified that Gloucester city centre is within 45/60 minutes by bus, and Ross-on-Wye is within 30/45 minutes by bus.

The Applicant has offered to provide raised boarding areas at the 'Hollywell Road' bus stops to enhance accessibility for wheelchair and buggy users, which is welcomed.

It is noted that the Applicant has not reviewed the accessibility to rail transport, but it is recognised by GCC that opportunities for this mode are limited given the location of the site. However, Gloucester and Hereford railway stations can be accessed via bus service 33.

Summary
The site benefits from an appropriate level of accessibility to walking, cycling, bus and rail modes for its location.

TA – Section 6: PERS Audit
A 'PERS Audit' has been undertaken to consider the requirements of pedestrians, cyclists and vulnerable road users. PERS is an auditing tool developed by Transport Research Laboratories (TRL), typically used to assess walking routes in London to meet the requirements for Transport for London (TfL). This approach has been followed by the Applicant, with reference made to

appropriate stages of the PERS review process including definition of the study area, identification of review stages and on-street evaluation.

The audit has focussed on primary and secondary routes to amenities located in the village centre:

- Primary Route: Carisbrook Road, Bradley Court Road, Townsend, High Street and Hawker Hill; and
- Secondary Routes: PRoWs and off-road footpaths.

The Applicant considers that most walking trips will follow the primary route as this is most direct and convenient route but acknowledges that pedestrians may wish to follow traffic-free routes as alternatives or for more leisurely purposes.

Primary Route
GCC's review of the audit identifies that the route is generally of good standard, with footways on one or both sides of carriageway. Street lighting is present on both sides of the road. It is noted that there is some localised narrowing on the footway on the west side of the carriageway on Bradley Court Road and Townsend, but opportunities for widening of the footway are limited due to frontage development/carriageway extent. The Applicant notes that the footway on the eastern side is likely to be more attractive for some users, with a dropped kerb to facilitate crossing movements between these footways (at Old Dean Road).

Secondary Routes
The secondary routes can include the use of Hollywell Road, Deansway, Oakhill Road Old Dean Road as 'cut-throughs' to Bradley Court Road. Some of these include features such as steps, which will be a barrier to some users. There are numerous public footpaths which provide off-road routes, which are more likely to be used for leisure purposes. Overall, the audit notes that the secondary routes are of good quality, well-maintained, well-signed, often overlooked (natural surveillance), many sections street lit, generally all-weather, and popular with local residents/walkers, therefore offering alternatives to the primary route or serving as a leisure route.

Summary
The PERS audit concludes that the routes are of good standard and the development proposals will provide connections to them. The Applicant considers that the scale of development proposals is such that the impact on infrastructure will be immaterial. In accordance with National Planning Policy Framework (NPPF) paragraphs 108 and 110 it is sought in order that appropriate opportunities to promote sustainable transport modes can be - or have been - taken up and give first priority to pedestrian and cycle movements maximising catchment for bus services with appropriate facilities.

TA – Section 7: Impact Assessment

Traffic Growth
The impact of the development proposals has been assessed in a forecast year of 2024; this is six years after the date of the planning application and is considered a reasonable time by which the development will be built-out.

Traffic growth factors have been applied to the traffic survey data collected in 2018 to reflect the future traffic conditions in 2024. These have been obtained from TEMPro for the 'Forest of Dean 003' Middle Super Output Area (MSOA) and rural, principal road types; these parameters

and the derived growth factors are appropriate. These growth factors have been applied to light vehicles only. Separate growth factors have been applied to HGVs, obtained from the DfT's Road Traffic Forecast (RTF) for the south west region.

Committed Development
The assessment has included traffic generated by a consented development of up to 60 dwellings at Mannings Farm, Drybrook (Ref: P1729/16/OUT). The TA has used traffic generation details from the accompanying Transport Statement. The assignment of committed development onto the study area network has been reviewed and may be considered reasonable, if it accounts for the allocated Richard Reed Transport, Longhope site or otherwise such potential trips included. Confirmation should be provided that the Local Planning Authority does not consider there to be other committed developments which require inclusion in the assessment from their records.

Trip Generation
The Applicant has undertaken a comparison of trip rates obtained from a local donor site and those derived from an analysis of TRICS and the 2011 Census.

In the case of the former, a traffic survey was undertaken at the Ross Road/Hollywell Road junction. Hollywell Road forms the single vehicular access to a cul-de-sac that comprises Hollywell Road, Glebe Close and Ash Grove. The analysis of traffic generated by the existing residential development derived two-way vehicle trip rates of 0.425 and 0.449 during the AM and PM peak hours respectively, although the raw traffic data is not included in the TA to enable GCC to confirm the derived rates are correct.

The Applicant has compared the local trip rates with those derived from an analysis of TRICS and the 2011 Census. Person trip rates have first been obtained from the 'Houses Privately Owned' dataset in TRICS; this is considered a robust approach given the tenure of the proposed development is not confirmed. This has derived two-way person trip rates of 0.891 and 0.783 during the AM and PM peak hours respectively. From a review of the TRICS outputs, it is noted that the Applicant has not refined the site selection criteria in terms of population levels in the surrounding area, local car ownership levels and to omit sites with a Travel Plan. GCC has undertaken its own analysis with adjustments to these criteria to reflect the location; this has resulted in lower person trip rates and therefore the person trip rates presented in the TA are considered robust. Applied to the proposed development, the Applicant's rates result in 111 and 98 two-way person trips being generated during the AM and PM peak hours.

The Applicant has then applied mode share proportions derived from 2011 Census Journey to Work (JtW) data. The data has been derived from output areas that make up the Mitcheldean built-up area; these have been reviewed and are considered appropriate. The resulting mode share proportions have been applied to the person trip generation to derive the trip generation on each mode. The analysis shows car driver trips account for 70% of trips, equating to 78 and 69 two-way trips during the AM and PM peak hours respectively. The arrival/departure proportions from TRICS have been applied to these trips. The resulting two-way vehicle trip rates are 0.624 and 0.552 during the AM and PM peak hours. GCC has reviewed the data and calculations and confirm the derived rates are correct.

The Applicant has taken forward the vehicle trip rates obtained from the analysis of TRICS and the 2011 Census for assessment purposes, which is a robust approach.

Trip Distribution

The vehicle trip distribution has been based on observed turning proportions at the surveyed junctions. The Ross Road/Hollywell Road junction has been used as a proxy for distribution of movements at the site access; this is considered reasonable given this junction serves existing residential development, the traffic patterns of which the proposed development is likely to resemble. The Applicant considers that this is appropriate method for this reason. Furthermore, the Applicant states that the use of the 2011 Census only includes for commuting destinations, whereas the use of observed turning proportions includes non-commuting purposes also. The level of analysis of 2011 Census data (for car driver mode) also covers a wide geographical analysis. This is accepted.

The analysis shows that, at the site access, 79% and 70% of traffic will route to/from the Carisbrook Road/Bradley Court Road junction during the AM and PM peak hours respectively. 77% and 64% of traffic will route to/from the Hawker Hill(Merrin St)/Gloucester Road/New Road/Abenhall Road network during the AM and PM peak hours respectively; this equates to an additional 60 and 44 movements through the centre of the village and through this junction network during the AM and PM peak hours respectively.

Impact Assessment
The TA has assessed the following scenarios:

- 2024 Without Development: Includes traffic growth + committed development; and
- 2024 With Development: Includes traffic growth + committed development + proposed development.

Traffic flow diagrams/figures have been included in the TA. GCC has reviewed these and confirm that traffic growth, committed development and proposed development have been correctly applied and the derived flows are correct.

The Applicant presents the changes in traffic flows at the assessment junctions in 2024. This shows the following increases:

- Carisbrook Road/Bradley Court Road: Increases of 62 (11%) and 48 (9%) movements during the AM and PM peak hours respectively;
- Hawker Hill(Merrin Hill)/Gloucester Road/New Road: Increases of 60 (4%) and 44 (3%) movements during the AM and PM peak hours respectively;
- Gloucester Road/Abenhall Road: Increases of 33 (2%) and 24 (2%) movements during the AM and PM peak hours respectively; and
- A40/A4136 Longhope Road: Increases of 22 (2%) and 20 (2%) movements during the AM and PM peak hours respectively.

Junction Capacity Assessment
The Applicant has included capacity assessment of the junctions listed above, with the exception of the A40/A4136 Longhope Road junction, which is part of Highways England's network. The Applicant has also assessed the proposed site access junction.

The TA has utilised the Transport Research Laboratories (TRL) software 'Junctions 9' software (containing ARCADY and PICADY modules) to assess the capacity of the junctions; this is the industry standard modelling software to assess priority and roundabout junctions. For junctions assessed using 'Junctions 9', results are presented for the Ratio of Flow to Capacity (RFC) and queue in vehicles or PCUs. Junctions are considered to operate within practical capacity at an RFC of below 0.85, and operate within absolute capacity at an RFC of below 1.00.

GCC has undertaken an audit of the modelling parameters, which is appended to this review. The findings of the review and suitability of modelling approach are discussed for each junction below.

Proposed Site Access

The values entered for the key geometric parameters are reasonable and the traffic flows and HGV proportions have been entered correctly. The model shows that the junction operates well within practical capacity during all assessment scenarios.

Carisbrook Road/Bradley Court Road

The values entered for the key geometric parameters are reasonable and the traffic flows and HGV proportions have been entered correctly. The model shows that the junction operates well within practical capacity during all assessment scenarios. The proposed development will not result in a material increase in queueing and delay.

Hawker Hill(Merrin St)/Gloucester Road/New Road and Gloucester Road/Abenhall Road

These two junctions are in proximity and interact with each other yet have been modelled in isolation. The review of the Junctions 9 models has identified a number of issues that would need to be addressed by the Applicant. Notwithstanding this, GCC has concerns regarding the modelling approach taken to these junctions following on-site observations. It is evident that the junctions, and the adjacent pedestrian crossing, interact with each other in a significant manner and impact upon each other's performance, and should therefore not be treated in isolation. Key observations were as follows:

- The peak within the peak hour occurs between 08:15-08:45. This is associated with school start times at Mitcheldean Primary School (served off Hawker Hill) and Dene Magna School (served off Abenhall Road);
- There is storage of up to 1 vehicle between the mini-roundabout and priority junction. Vehicles turning right into Abenhall Road often have to queue, which can lead to blocking back onto the mini-roundabout, which can be a particular barrier to right-turn movements from Gloucester Road to Hawker Hill. Right-turning traffic to Abenhall Road is often reliant on informal give-way behaviours from westbound traffic on Gloucester Road. This issue is more prevalent during the period 08:15-08:30, associated with the peak in arrivals at the school;
- The situation is reversed during the period 08:30-08:45 where vehicles that have dropped off students then depart the school. This results in a peak in queueing on Abenhall Road, with vehicles turning left (i.e. to the mini-roundabout) reliant on gaps in traffic or informal give-way behaviours from westbound traffic on Gloucester Road. Right-turn manoeuvres face particularly difficulties and are typically reliant on informal give-way behaviours from westbound/eastbound traffic on Gloucester Road and gaps in eastbound traffic created by the neighbouring pedestrian crossing;
- The pedestrian crossing on New Road is in frequent demand during the peak hour, primarily associated with pupils walking to school. This has an effect on the operation of the junction network. During the red stage, westbound vehicles will often queue back onto the mini-roundabout due to limited storage in between; and
- There is significant queuing on New Road, primarily associated with the frequency of demand for the pedestrian crossing and blocking to eastbound movements associated with right-turning movements to Abenhall Road. Queuing on New Road is at its peak between 08:15-08:35 and was observed as extending back to the change of speed limit to 40mph (around 300m southwest). This queue dissipates reasonably quickly once demand for the crossing and right-turn reduces.

GCC considers that Junctions 9 cannot replicate the complexity of interactions and the effect of the pedestrian crossing observed on-site, and therefore is not the appropriate tool for assessment in this case. The Applicant has agreed to undertake modelling of this junction network using the microsimulation package 'VISSIM'. This is welcomed and the results of this analysis will inform the traffic impact assessment conclusions in this location, however without this the Highway Authority has insufficient information to determine junction impact.

Travel Plan

Introduction

A Travel Plan (TP) has been prepared for the proposed development. This is an Outline TP, which includes a commitment to prepare a Full TP at the reserved matters stage. However, GCC considers that it would be more appropriate for the Full TP to be prepared once the site is partially occupied following baseline travel surveys. A Full TP broadly in line with an approved Outline TP will be secured through planning condition.

Sections 2 (Travel Plan Policy, Guidance and Objectives), 3 (Existing Situation), 4 (Development Proposal) and 5 (Access by Sustainable Model) are generally as per the corresponding section numbers in the TA, but with added references to local TP guidance such as GCC's *Travel Plan Guide for Developers* (July 2011).

Objectives

Five objectives have been set for the TP. The objectives are reasonable, covering enabling sustainable travel choices, design of the development, raising awareness of sustainable transport options, ensuring sustainable transport options are convenient, and encouraging sustainable travel choices. These would typically fall under a central "aim", e.g. a reduction in Single Occupancy Vehicle (SOV) use.

Targets, Monitoring and Review

The TP states that it is difficult to set targets at this stage as the development is not yet built and occupied. For the purpose of the Outline TP, 2011 Census data has been used suggesting that SOV usage will be circa 70% of all travel. A 6% mode shift is targeted, to be achieved within five years of full occupation of the site; the time period of five years is reasonable but should be tied to the baseline travel survey, not full occupation of the site, which could theoretically never occur. There should also be interim targets for Years 1 and 3.

The baseline mode share will be established through the baseline travel survey. This should occur at 50% occupancy (i.e. 63 dwellings) to provide a good chance of achieving a representative sample size whilst not occurring too late in the development programme. A response rate of 40% should be targeted, with incentives offered to enhance the response rate if necessary.

The TP states that monitoring surveys will be undertaken annually for a period of five years; this should be for a minimum of 10 years following the baseline travel survey. An annual report will be submitted to GCC setting out a summary of the monitoring results, progress that has been made in terms of implementation and against the target. This would be in order that the TP accords with its further statement that the TP will be monitored annually for a period of at least 10 years post 100% occupation.

Management

The management and resourcing of a TP is important to its success as it is the process by which the measures are delivered. The appointment of a Travel Plan Co-ordinator (TPC) is

proposed three months prior to occupation. The roles and responsibilities of the TPC are reasonable. The duration of the TPC role will need to cover the extent of the monitoring period (i.e. five years following baseline travel survey).

Measures
A Welcome Pack (also referred to as a Travel Information Pack) is proposed. This will include details of the TP, literature on sustainable modes of transport, maps of local walking and cycling routes, details of public transport provision and details of the TPC.

The TIP should include public transport taster tickets, offers of Personalised Travel Planning (PTP), and potentially cycling measures such as discounts at local cycling outlets. Other measures proposed in the measures section and the Action Plan are reasonable. These include the provision of notice boards, promotion of events, links to resources and car sharing schemes. The Applicant also states that it is willing to accept a condition requiring the housebuilder(s) to provide sufficient electrical circuitry to allow electric vehicle charging ports to be installed in the garages or parking areas of the dwellings proposed.

The TP states that should it be identified that the TP is underachieving, a remedial strategy will need to be set out; this would be developed in consultation with GCC.

Action Plan
An Action Plan with an appropriate content and structure has been included. The key actions have been covered, for example, appointment of the TPC, preparation/dissemination of Welcome Packs and monitoring surveys.

Funding
The TP states that the TP will be secured via the planning process or a S106 agreement, and that the housebuilder will need to agree and commit levels of funding for both the registration, monitoring and implementation of the TP.

GCC requires TPs to be secured by way of Planning Obligation. Funding will cover the initial TP, including the TPC role in addition to the remedial measures. TPs in Gloucestershire need to be operated based on Option 1 or Option 2 as set out in GCC's *Transport Planning Advice Sheet No.7: Residential Travel Plans* (see: https://www.gloucestershire.gov.uk/media/5864/advice_sheet_no_7_residential_travel_plans_02_2011-44239.pdf).

- Option 1 - The developer/owner is responsible for funding and implementing the TP, incentives, the appointment of a TPC etc. This option requires a non-refundable monitoring fee and a bond/deposit, repayable on successful completion of the TP or kept to implement remedial measures if the developer/owner does not comply with the agreement.
- Option 2 – GCC would absorb all risk and be responsible for the implementation of the TP, incentives, the appointment of a TPC etc. This option requires a non-refundable monitoring fee and a contribution, repayable only on expiry of planning permission with no building having started. The premium for GCC to deliver the TP is to cover the additional risk the organisation incurs and to plan for remedial measures. This option removes any responsibility from the developer for the implementation of the plan (other than hard measures such as walk/cycle links, cycle parking etc., which are separate to the TP).

It is not clear from the TP which of these options will be pursued. The tariff of contribution costs/deposits is set out in Table 1 of the advice sheet. The costs associated with a development of up to 130 dwellings will apply. Under Option 1, the developer will need to provide £42,350. Under Option 2, the developer will need to provide £50,820. These amounts include the non-refundable monitoring fee of £5,000. The Applicant needs to confirm which of these funding options will be chosen.

Summary and Conclusions

The application and supporting documents currently provide insufficient information to determine the highway impact of the proposed development on the surrounding highway network particularly the Hawker Hill/Gloucester Road/New Road and Gloucester Road/Abenhall Rd junctions accounting committed developments. The application details do not include swept path analyses for the the largest legal vehicles of 16.5m articulated vehicles at the Carisbrook Road/Bradley Court Road junction. Further information is also needed regarding travel plan amendments and funding clarification, trip generation raw traffic data for trip rate confirmation and the applicant/agent should also provide collision (PIC) data used and consideration of for crossingimprovements. Therefore currently the application fails to demonstrate safe and suitable access contrary to paragraph 108 and 110 of the National Planning Policy Framework (NPPF) and the Local Plan.

It is therefore sought that the Applicant provide further information including the following:

- Highway Safety: Provide PIC data used for analysis.
- SPA: Include a 16.5m articulated vehicle at the Carisbrook Road/Bradley Court Road junction.
- PERS Audit: Consideration to opportunities for improvements to crossing provision.
- Trip Generation: Provide raw traffic data to confirm derived local trip rates are correct.
- Junction Capacity Assessment: Microsimulation modelling of the Hawker Hill/Gloucester Road/New Road and Gloucester Road/Abenhall Road network, as agreed with GCC.
- Travel Plan: Appropriate amendments and clarification of funding.

A more favourable response may be given subject to suitable information be given to address the above issues and demonstration any mitigation required can be delivered.

Statement of Due Regard

Consideration has been given as to whether any inequality and community impact will be created by the transport and highway impacts of the proposed development. It is considered that no inequality is caused to those people who had previously utilised those sections of the existing transport network that are likely to be impacted on by the proposed development.

It is considered that the following protected groups will not be affected by the transport impacts of the proposed development: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation, other groups (such as long term unemployed), social-economically deprived groups, community cohesion, and human rights.

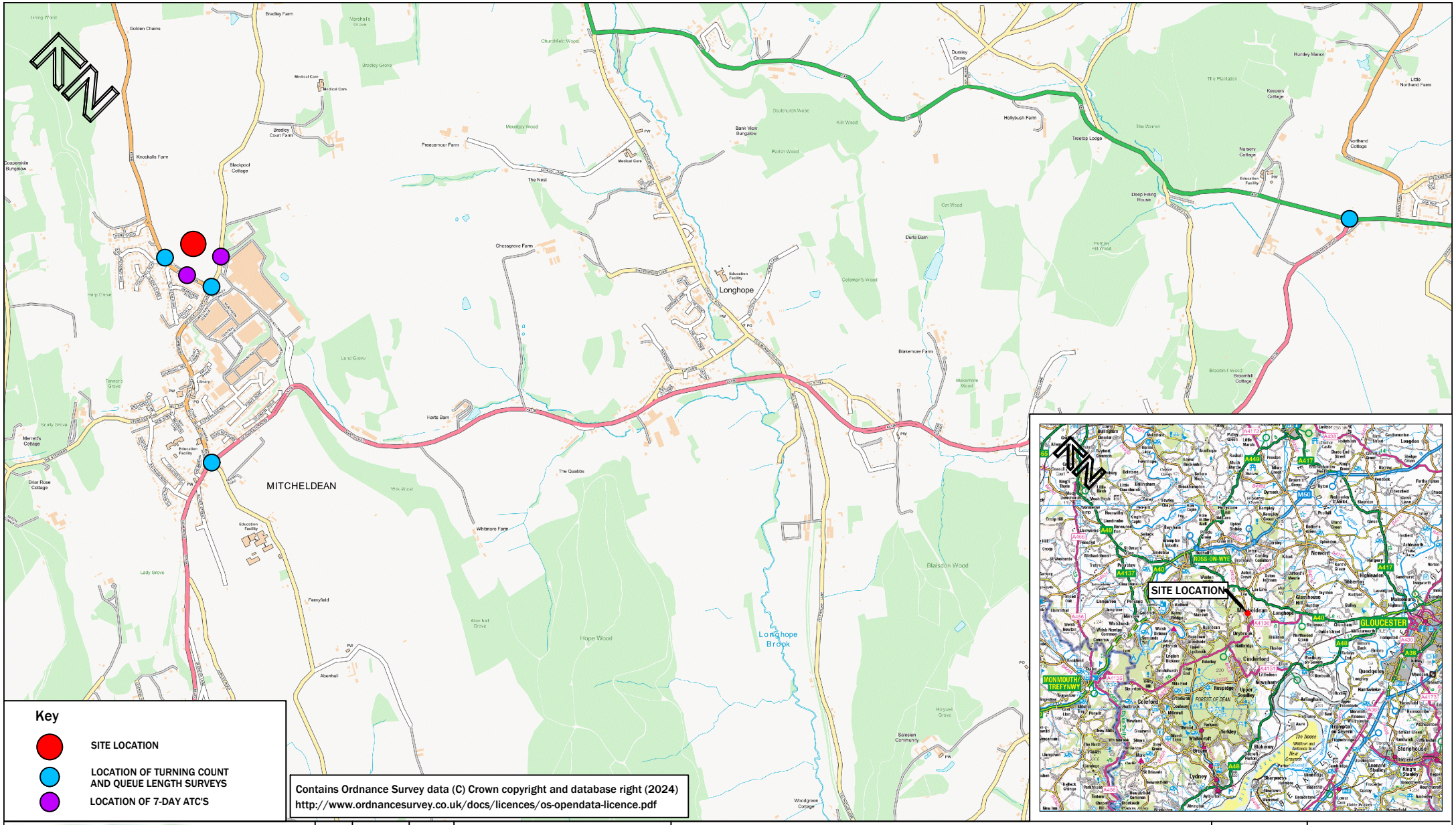
Yours sincerely,

Mark Sweet

Development Co-ordinator

APPENDIX B

FIGURES



Rev	Date	By	Revision notes
*	*	*	*

Status: FINAL

Project: CARISBROOK ROAD, MITCHELDEAN

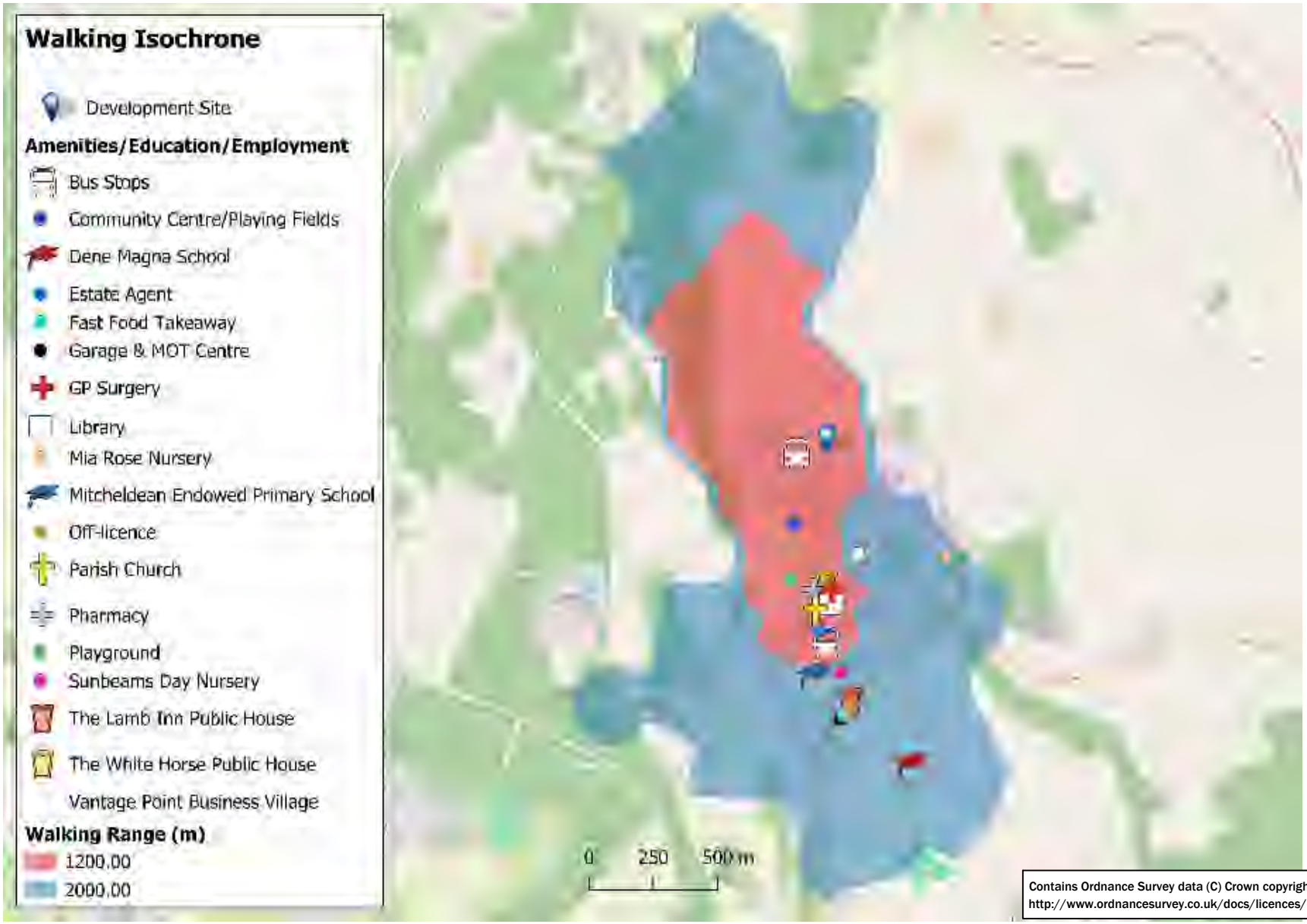
Title: SITE AND TRAFFIC SURVEY LOCATION PLAN

Drawn by: VB

Issue date: 03 JUL 2024

Scale(s): NTS

Drawing No: FIGURE 1



Rev	Date	By	Revision notes
*	*	*	*

Status: FINAL

Project: CARISBROOK ROAD, MITCHELDEAN

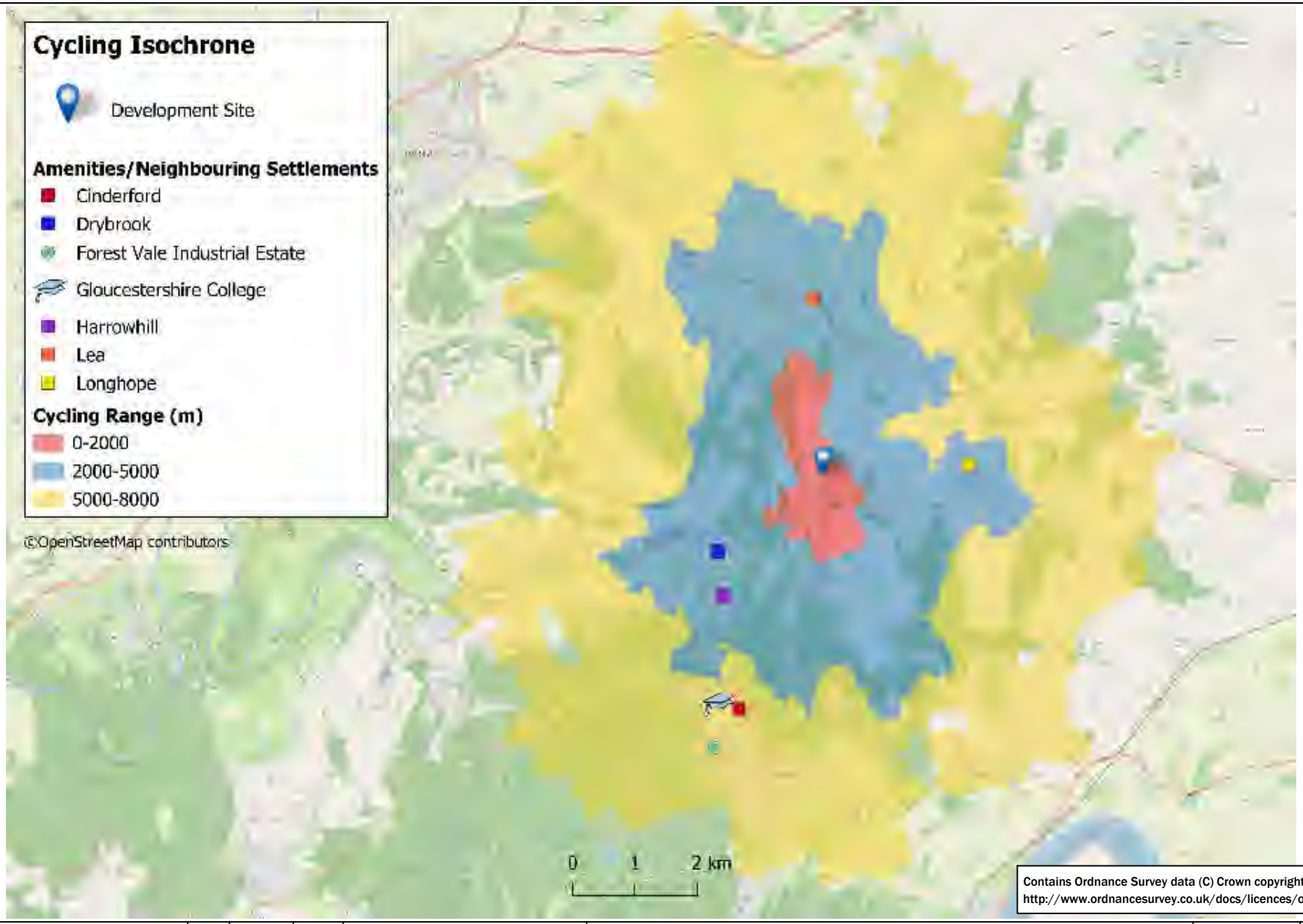
Title: WALKING ISOCHRONE

Drawn by: VB

Issue date: 08 NOV 2024

Scale(s): NTS

Drawing No: FIGURE 2



Rev	Date	By	Revision notes
*	*	*	*

Status: FINAL

Project: CARISBROOK ROAD, MITCHELDEAN

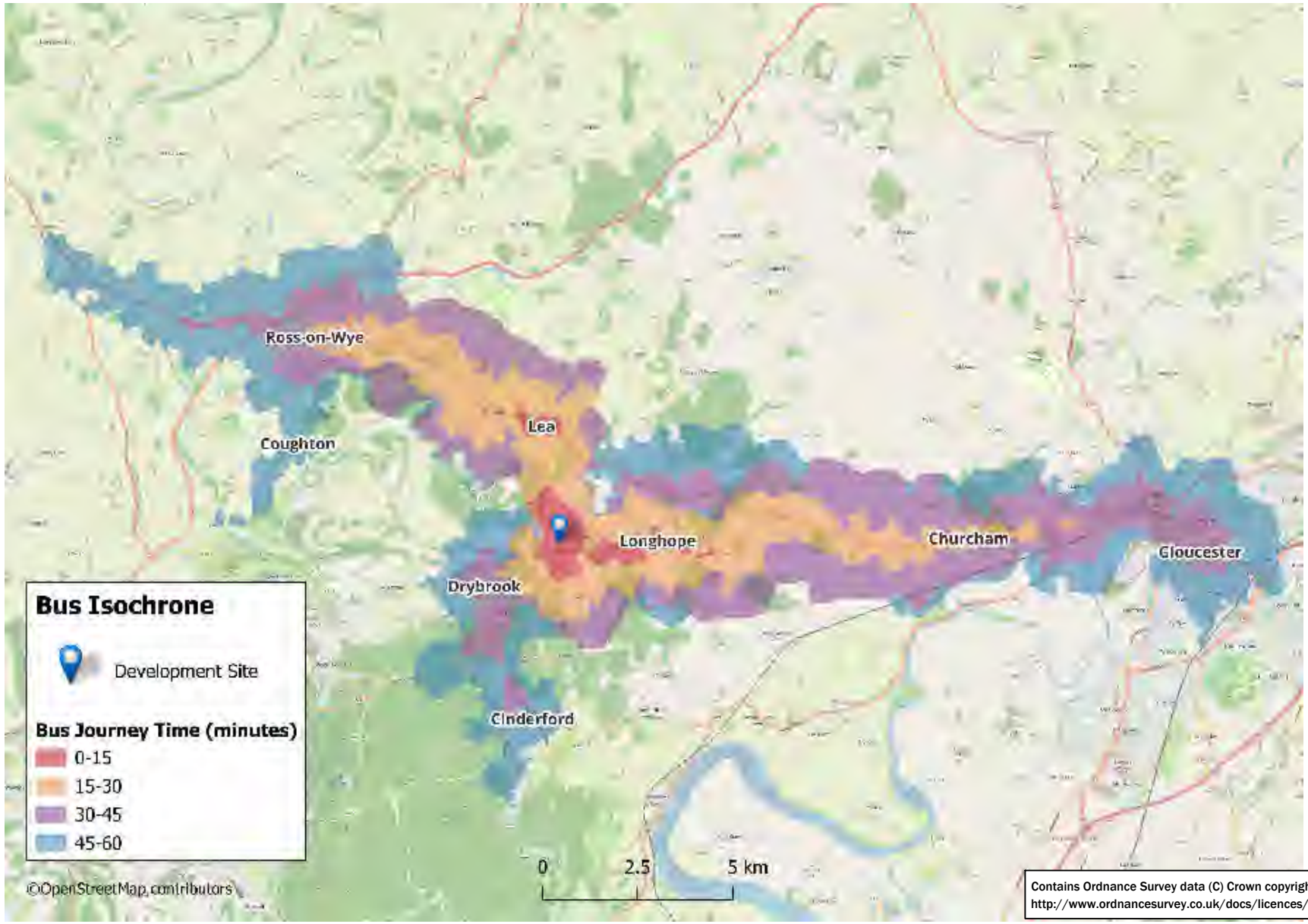
Title: CYCLING ISOCHRONE

Drawn by: VB

Issue date: 08 NOV 2024

Scale(s): NTS

Drawing No: FIGURE 3



Rev	Date	By	Revision notes
*	*	*	*

Status: FINAL

Project: CARISBROOK ROAD, MITCHELDEAN

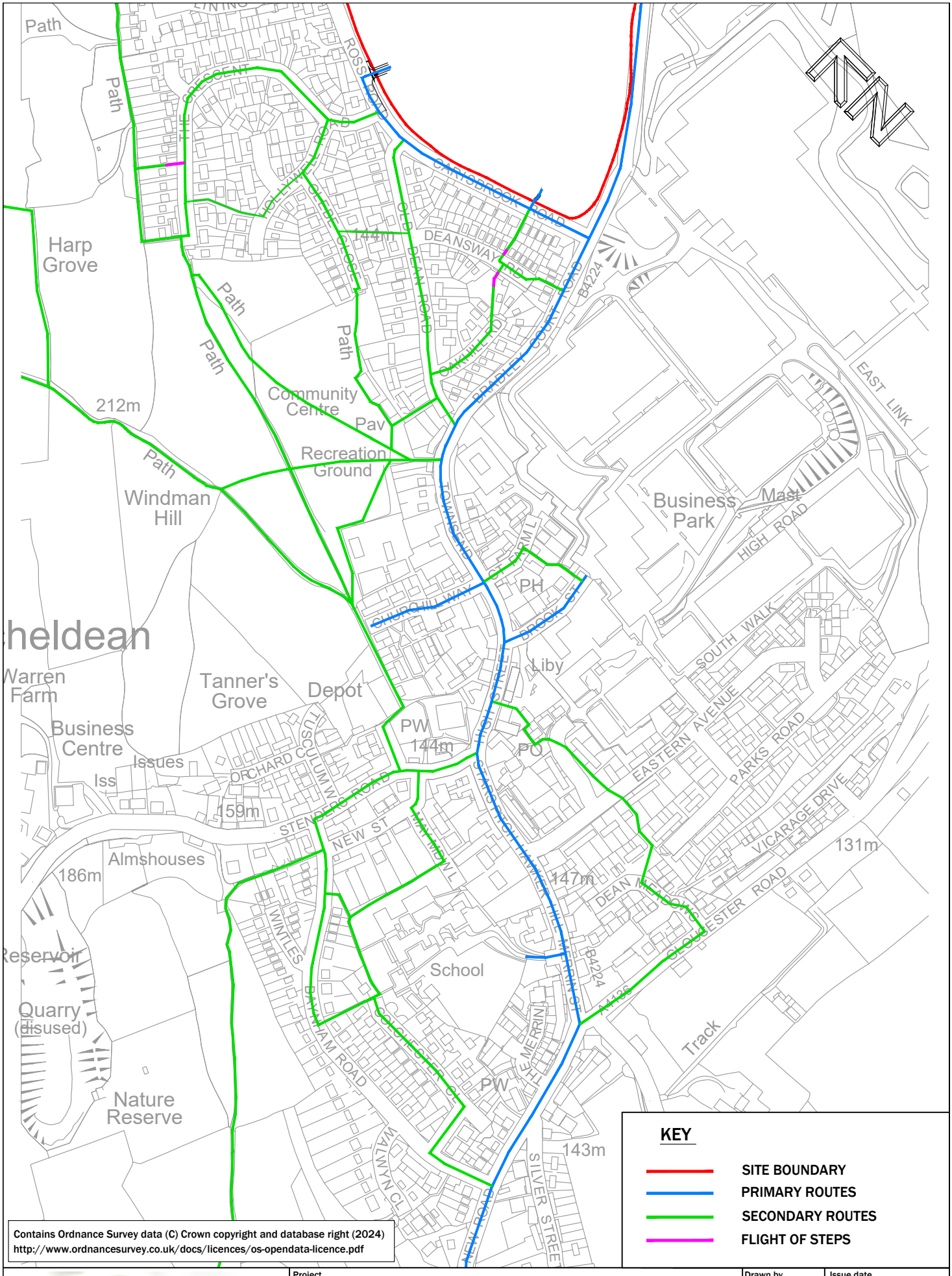
Title: BUS CATCHMENT PLAN

Drawn by: VB

Issue date: 08 NOV 2024

Scale(s): NTS

Drawing No: FIGURE 4



Project
CARISBROOK ROAD, MITCHELDEAN

Drawn by
VB

Issue date
03 JUL 2024

Scale(s)
NTS

Title
PEDESTRIAN ROUTES

Drawing No
Figure 5

APPENDIX C

ATC DATA

Mitcheldean ATC, Carisbrook Road

Direction: Eastbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 4 Jun 2024	1419	35.0	29.7	5.1	4	9	18	163	542	524	128	25	6	0	0	0
Wed 5 Jun 2024	1488	35.6	30.3	5.1	2	9	27	122	550	563	177	30	8	0	0	0
Thu 6 Jun 2024	1511	35.0	29.8	5.0	3	10	31	154	579	543	168	22	1	0	0	0
Fri 7 Jun 2024	1543	35.3	30.1	5.0	2	7	29	135	590	567	186	22	4	1	0	0
Sat 8 Jun 2024	1208	35.6	30.1	5.3	2	6	31	118	428	444	150	23	5	1	0	0
Sun 9 Jun 2024	1019	35.3	29.9	5.2	1	8	17	91	430	331	116	19	3	2	1	0
Mon 10 Jun 2024	1428	35.1	30.1	4.8	0	4	24	135	548	539	152	22	2	1	1	0
5 Day Ave.	1478	35.2	30.0	5.0	2	8	26	142	562	547	162	24	4	0	0	0
7 Day Ave.	1374	35.3	30.0	5.1	2	8	25	131	524	502	154	23	4	1	0	0

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Direction: Westbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 4 Jun 2024	1404	34.0	28.5	5.3	9	15	41	233	554	443	99	8	1	1	0	0
Wed 5 Jun 2024	1447	33.7	28.3	5.2	3	12	54	270	593	396	103	15	1	0	0	0
Thu 6 Jun 2024	1475	33.5	28.4	4.9	1	12	46	254	623	438	87	11	3	0	0	0
Fri 7 Jun 2024	1528	33.5	28.1	5.2	3	13	67	300	600	442	88	12	1	2	0	0
Sat 8 Jun 2024	1091	34.1	28.1	5.7	8	18	59	155	452	320	66	9	2	1	0	1
Sun 9 Jun 2024	1003	33.4	28.1	5.1	4	13	32	175	447	276	44	8	4	0	0	0
Mon 10 Jun 2024	1361	33.9	28.3	5.4	2	12	57	247	543	397	83	15	4	0	0	1
5 Day Ave.	1443	33.7	28.3	5.2	4	13	53	261	583	423	92	12	2	1	0	0
7 Day Ave.	1330	33.7	28.3	5.3	4	14	51	233	545	387	81	11	2	1	0	0

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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<15	Bin 3 15<20	Bin 4 20<25	Bin 5 25<30	Bin 6 30<35	Bin 7 35<40	Bin 8 40<45	Bin 9 45<50	Bin 10 50<55	Bin 11 55<60	Bin 12 >=60
Tue 4 Jun 2024	2823	34.5	29.1	5.2	13	24	59	396	1096	967	227	33	7	1	0	0
Wed 5 Jun 2024	2935	34.7	29.3	5.2	5	21	81	392	1143	959	280	45	9	0	0	0
Thu 6 Jun 2024	2986	34.3	29.1	5.0	4	22	77	408	1202	981	255	33	4	0	0	0
Fri 7 Jun 2024	3071	34.5	29.1	5.2	5	20	96	435	1190	1009	274	34	5	3	0	0
Sat 8 Jun 2024	2299	35.0	29.2	5.6	10	24	90	273	880	764	216	32	7	2	0	1
Sun 9 Jun 2024	2022	34.4	29.0	5.3	5	21	49	266	877	607	160	27	7	2	1	0
Mon 10 Jun 2024	2789	34.6	29.2	5.2	2	16	81	382	1091	936	235	37	6	1	1	1
5 Day Ave.	2921	34.5	29.2	5.2	6	21	79	403	1144	970	254	36	6	1	0	0
7 Day Ave.	2704	34.6	29.1	5.2	6	21	76	365	1068	889	235	34	6	1	0	0

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Mitcheldean ATC, Bradley Court Road

Direction: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 4 Jun 2024	1083	46.3	39.6	6.5	0	1	27	42	137	358	342	127	36	8	5	0
Wed 5 Jun 2024	1087	46.9	39.8	6.9	0	12	9	40	144	366	322	121	57	11	5	0
Thu 6 Jun 2024	1150	47.5	40.2	7.1	0	8	15	37	155	387	296	167	58	22	4	1
Fri 7 Jun 2024	1154	48.0	40.8	6.9	0	2	9	46	148	311	372	176	60	19	11	0
Sat 8 Jun 2024	845	48.9	41.1	7.5	1	7	3	24	99	246	257	133	41	22	10	2
Sun 9 Jun 2024	798	48.3	40.8	7.2	1	6	1	15	102	255	244	114	36	13	7	4
Mon 10 Jun 2024	1038	47.0	40.0	6.8	1	3	20	37	136	328	312	142	39	16	4	0
5 Day Ave.	1102	47.1	40.1	6.8	0	5	16	40	144	350	329	147	50	15	6	0
7 Day Ave.	1022	47.5	40.3	7.0	0	6	12	34	132	322	306	140	47	16	7	1

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Direction: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 4 Jun 2024	1150	41.7	35.7	5.8	0	2	23	142	352	400	179	40	7	3	2	0
Wed 5 Jun 2024	1119	42.4	36.3	5.9	0	5	22	117	295	427	193	44	10	4	2	0
Thu 6 Jun 2024	1073	42.4	36.0	6.2	0	11	22	113	308	382	172	49	11	5	0	0
Fri 7 Jun 2024	1086	42.2	36.0	6.0	0	2	20	123	330	387	162	44	8	6	4	0
Sat 8 Jun 2024	815	43.2	36.6	6.3	0	4	10	77	228	303	139	32	13	6	1	2
Sun 9 Jun 2024	713	42.7	36.1	6.3	0	1	9	88	216	250	105	24	13	2	4	1
Mon 10 Jun 2024	1013	42.3	35.9	6.2	0	8	23	119	285	365	152	44	13	2	2	0
5 Day Ave.	1088	42.2	36.0	6.0	0	6	22	123	314	392	172	44	10	4	2	0
7 Day Ave.	996	42.4	36.1	6.1	0	5	18	111	288	359	157	40	11	4	2	0

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Direction: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10mph	Bin 2 10<20	Bin 3 20<25	Bin 4 25<30	Bin 5 30<35	Bin 6 35<40	Bin 7 40<45	Bin 8 45<50	Bin 9 50<55	Bin 10 55<60	Bin 11 60<70	Bin 12 >=70
Tue 4 Jun 2024	2233	44.3	37.6	6.4	0	3	50	184	489	758	521	167	43	11	7	0
Wed 5 Jun 2024	2206	44.9	38.0	6.6	0	17	31	157	439	793	515	165	67	15	7	0
Thu 6 Jun 2024	2223	45.4	38.1	7.0	0	19	37	150	463	769	468	216	69	27	4	1
Fri 7 Jun 2024	2240	45.7	38.5	6.9	0	4	29	169	478	698	534	220	68	25	15	0
Sat 8 Jun 2024	1660	46.5	38.9	7.3	1	11	13	101	327	549	396	165	54	28	11	4
Sun 9 Jun 2024	1511	46.1	38.6	7.2	1	7	10	103	318	505	349	138	49	15	11	5
Mon 10 Jun 2024	2051	45.0	37.9	6.8	1	11	43	156	421	693	464	186	52	18	6	0
5 Day Ave.	2191	45.0	38.0	6.8	0	11	38	163	458	742	500	191	60	19	8	0
7 Day Ave.	2018	45.4	38.2	6.9	0	10	30	146	419	681	464	180	57	20	9	1

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Mitcheldean A1, Carisbrook Road

Channel 1 - Eastbound **Average Speed** **Week 1**

Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	27.4	30.5	30.8	32.2	28.0	28.5	29.2
2	38.0	38.0	26.8	33.8	41.3	38.0	38.0
3	25.5	25.5	34.7	38.0	25.5	25.5	25.5
4	25.5	29.2	25.5	24.2	25.5	25.5	25.5
5	33.4	34.7	38.0	25.5	33.4	33.4	33.4
6	33.7	32.3	34.2	34.9	32.4	35.0	30.4
7	29.8	30.2	31.9	27.0	29.9	30.1	29.8
8	30.5	29.8	30.8	30.1	30.3	30.9	30.7
9	29.2	29.9	29.6	29.5	30.0	29.0	29.4
10	29.1	29.6	29.1	30.6	29.2	29.7	29.3
11	27.7	29.0	29.4	29.9	28.6	27.0	28.4
12	29.1	29.2	30.3	30.7	29.4	29.8	28.9
13	28.8	29.2	29.4	28.8	28.9	27.6	29.0
14	29.1	29.4	31.8	30.2	29.8	28.7	30.3
15	29.0	27.8	28.5	29.2	27.4	28.3	27.4
16	30.2	28.3	29.4	29.0	28.3	30.7	28.9
17	28.3	28.8	30.1	29.0	28.2	27.6	27.6
18	29.1	29.3	29.4	29.5	29.4	29.2	29.0
19	29.7	29.8	29.8	30.8	30.6	30.4	30.6
20	29.1	29.2	28.1	30.4	29.7	28.6	29.8
21	28.5	30.1	28.9	30.8	30.3	28.2	30.0
22	29.4	30.8	32.6	28.5	30.6	29.2	31.0
23	30.6	31.3	31.1	32.4	31.6	31.3	31.4
24	30.9	31.6	33.3	38.0	32.0	30.4	30.4
10-12	28.5	29.1	29.9	30.3	29.1	28.8	28.7
14-16	29.6	28.1	28.9	29.1	28.0	29.5	28.3
0-24	29.3	29.4	29.9	29.8	29.5	29.2	29.3

Average	29.5

Channel 1 - Eastbound **85th Percentile**

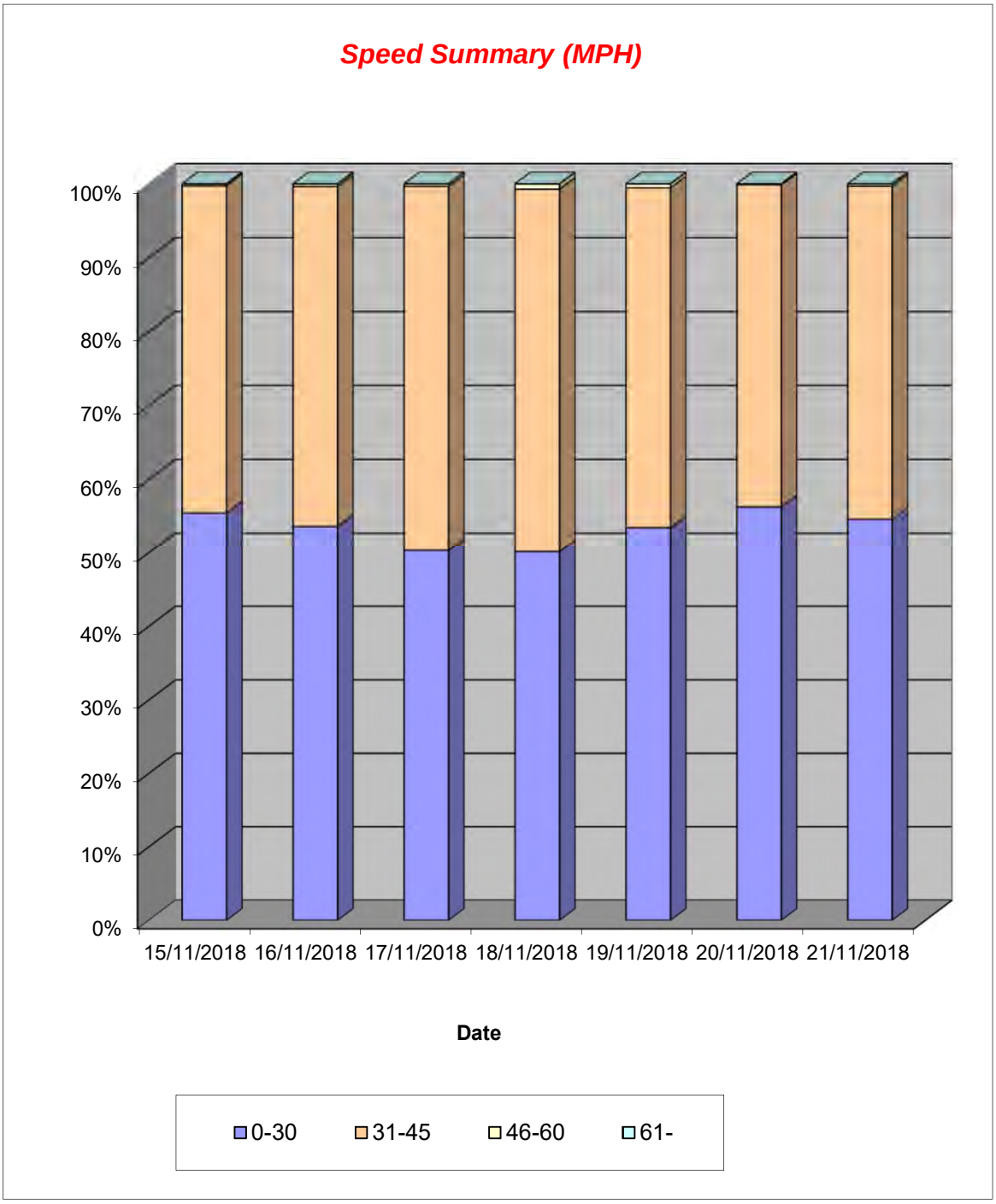
Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	33.7	38.6	39.0	38.7	33.9	33.7	33.2
2	43.5	-	33.4	43.9	48.7	43.9	43.5
3	-	-	38.3	-	-	-	-
4	-	33.8	-	33.0	-	-	-
5	38.3	38.8	-	-	38.1	38.8	38.0
6	38.8	33.6	43.6	43.9	38.8	38.4	38.5
7	38.0	39.0	38.4	38.4	38.5	38.5	38.2
8	38.8	38.9	38.4	38.7	38.8	38.5	38.9
9	33.8	33.2	33.7	33.5	38.6	33.2	33.6
10	33.7	38.7	33.3	38.5	33.8	38.3	33.8
11	33.0	34.0	33.6	38.5	33.0	33.1	33.9
12	33.4	33.2	33.2	38.4	33.2	38.6	33.3
13	33.9	38.5	38.2	33.4	38.1	33.2	38.5
14	33.8	33.1	38.6	38.3	33.1	33.9	33.1
15	33.4	34.0	33.1	33.1	33.3	33.1	33.6
16	39.0	33.7	38.5	33.2	33.1	38.4	33.4
17	33.9	33.0	33.9	34.0	33.0	33.3	34.0
18	33.1	33.6	33.3	38.1	33.5	33.9	33.1
19	33.9	33.1	38.8	38.4	38.7	38.8	38.9
20	38.4	33.1	33.4	33.4	33.5	33.3	33.6
21	33.5	33.8	38.3	38.5	33.8	33.7	33.3
22	38.8	38.3	38.9	38.2	38.1	33.3	38.1
23	38.1	38.0	38.6	38.5	38.2	38.1	43.5
24	38.6	38.3	38.6	48.3	38.7	38.0	33.2
10-12	33.5	33.4	33.4	38.6	33.5	33.3	34.0
14-16	33.3	33.3	33.1	33.5	33.4	33.8	33.1
0-24	33.6	33.9	38.6	38.2	33.1	33.3	33.0

85th %ile	34.8

Mitcheldean A1, Carisbrook Road

Channel 1 - Eastbound **Speed Summary** **Week 1**

Speed (MPH)	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
0-30	878	875	615	489	867	925	874
31-45	701	750	603	479	746	716	721
46-60	4	6	4	7	9	2	5
61-	0	0	0	0	0	0	0
TOTAL	**1583**	**1631**	**1222**	**975**	**1622**	**1643**	**1600**



Mitcheldean A1, Carisbrook Road

Channel 2 - Westbound **Average Speed** **Week 1**

Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	31.8	27.2	29.4	25.0	29.7	29.7	29.7
2	29.0	33.0	25.5	30.5	29.9	29.0	32.5
3	38.0	29.2	33.6	33.0	38.0	38.0	38.0
4	25.5	33.0	25.5	23.0	25.5	25.5	25.5
5	29.7	30.5	28.0	34.2	29.7	31.8	28.6
6	29.9	32.1	35.5	29.7	31.5	27.2	28.8
7	28.9	32.7	33.6	27.8	30.6	28.3	31.0
8	29.3	28.6	30.8	33.5	29.8	29.4	28.7
9	28.5	29.5	29.4	29.2	29.2	28.3	28.5
10	30.9	30.9	28.7	29.7	31.1	31.0	31.1
11	27.6	27.4	29.6	26.3	27.5	27.6	27.9
12	28.8	28.3	28.8	27.9	28.6	29.7	29.0
13	28.6	27.7	27.6	29.0	28.2	28.3	27.1
14	27.5	26.3	28.7	27.3	26.8	27.3	26.8
15	26.7	25.5	28.7	28.2	25.3	26.5	26.0
16	29.5	26.7	27.5	27.9	26.7	29.6	27.1
17	24.8	25.6	28.2	29.2	24.5	24.2	24.9
18	27.3	29.7	28.8	29.5	29.6	27.8	30.0
19	28.9	29.1	29.0	29.1	29.0	28.3	29.7
20	28.5	29.9	32.1	29.6	30.4	29.0	29.9
21	27.7	28.5	31.2	28.8	29.1	28.8	29.3
22	27.4	28.9	29.8	29.8	28.1	27.7	27.7
23	28.5	29.8	28.8	28.0	29.4	28.8	28.2
24	30.3	27.4	28.0	35.5	29.2	30.1	29.5
10-12	28.2	27.8	29.2	27.2	28.0	28.6	28.4
14-16	28.1	26.2	28.0	28.0	26.1	28.0	26.6
0-24	28.2	28.4	29.0	28.7	28.4	28.3	28.4

Average	28.5

Channel 2 - Westbound **85th Percentile**

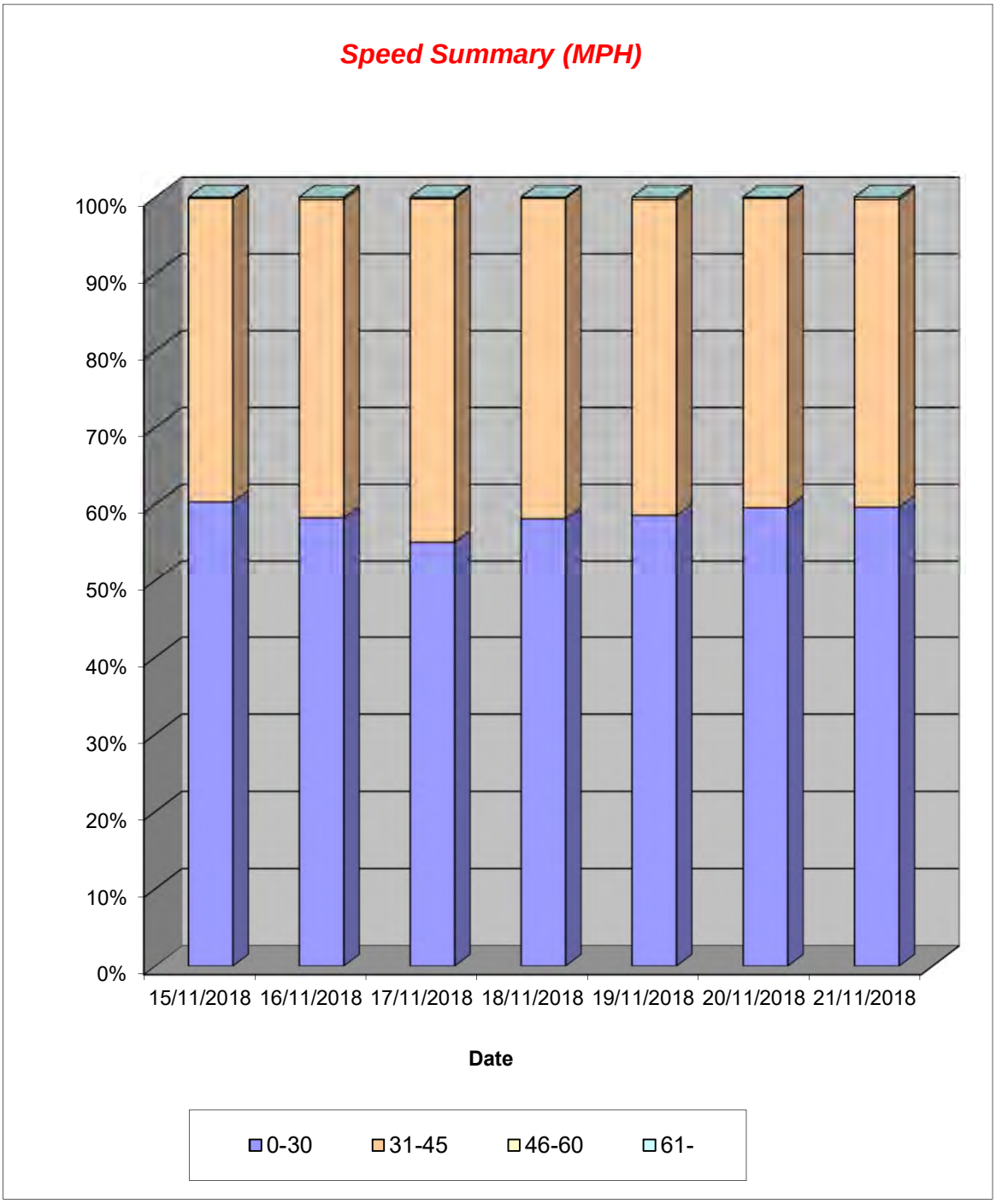
Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	38.3	33.3	33.7	33.6	38.2	38.6	38.8
2	43.5	-	26.0	38.3	43.2	43.8	43.3
3	-	33.2	38.6	33.1	-	-	-
4	26.0	-	25.7	25.7	-	25.7	-
5	38.4	38.2	33.5	43.1	38.1	38.9	38.8
6	38.8	38.6	38.7	38.4	38.5	33.4	38.7
7	33.8	38.4	43.8	34.0	38.8	33.3	38.4
8	38.7	33.9	33.4	38.5	38.8	38.8	33.1
9	33.7	33.5	33.9	38.5	33.3	33.2	33.4
10	39.0	38.2	33.7	34.0	39.0	33.4	38.3
11	33.3	33.7	33.1	33.2	33.8	33.2	33.7
12	38.5	33.7	33.6	33.4	33.7	38.9	38.3
13	33.4	33.6	33.7	33.4	33.9	38.6	33.8
14	33.7	33.8	33.0	33.3	33.9	33.4	33.2
15	33.2	33.2	38.4	33.5	33.4	33.4	33.6
16	38.4	33.8	33.4	33.1	33.1	33.9	34.0
17	33.5	33.2	33.3	33.5	34.0	33.6	33.2
18	33.8	34.0	34.0	39.0	38.8	33.9	38.9
19	38.5	33.1	33.8	33.6	33.7	33.5	38.1
20	33.4	33.1	38.7	38.9	33.4	33.3	34.0
21	33.5	33.8	38.4	33.7	38.0	33.9	38.6
22	33.2	33.4	38.7	38.4	33.2	33.3	33.6
23	33.6	33.5	33.3	33.7	33.2	33.3	33.9
24	33.5	33.1	33.4	38.1	33.5	33.2	33.6
10-12	33.7	33.1	33.4	33.8	33.4	33.3	33.2
14-16	33.9	33.2	33.9	33.7	33.1	33.0	33.9
0-24	33.4	33.0	33.1	33.5	33.3	33.7	33.1

85th %ile	33.3

Mitcheldean A1, Carisbrook Road

Channel 2 - Westbound **Speed Summary** **Week 1**

Speed (MPH)	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
0-30	810	723	555	426	722	773	759
31-45	531	514	451	306	507	523	510
46-60	2	4	2	1	4	2	4
61-	0	0	0	0	0	0	0
TOTAL	**1343**	**1241**	**1008**	**733**	**1233**	**1298**	**1273**



Mitcheldean A2, Bradley Court Road

Channel 1 - Northbound **Average Speed** **Week 1**

Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	46.3	53.0	39.2	39.2	48.0	45.0	43.0
2	33.0	43.0	50.5	43.0	33.0	33.0	33.0
3	-	58.0	-	-	-	-	33.0
4	58.0	58.0	46.8	-	58.0	58.0	58.0
5	50.5	43.0	48.0	43.0	50.5	50.5	46.8
6	45.7	44.2	56.8	48.0	47.2	46.9	45.6
7	43.2	44.0	41.5	42.4	44.4	42.9	44.4
8	45.1	44.6	43.7	45.8	45.0	45.6	44.9
9	45.3	44.8	43.9	44.4	44.9	45.5	45.1
10	43.7	43.8	43.2	45.2	43.8	44.2	43.4
11	41.1	41.6	41.3	43.0	41.5	39.2	40.8
12	41.5	42.5	42.8	43.7	41.5	41.5	40.1
13	42.8	43.6	41.9	44.8	43.3	43.5	43.2
14	43.1	43.7	44.4	45.2	43.3	42.9	43.1
15	42.8	45.0	43.8	43.3	45.3	43.1	44.4
16	43.7	41.8	43.3	46.5	41.2	43.4	41.5
17	43.0	43.6	43.9	41.6	42.6	42.8	41.6
18	43.0	41.9	41.0	43.5	41.9	43.0	43.3
19	41.4	41.5	43.7	44.8	40.3	41.6	41.8
20	43.9	41.4	41.3	42.1	41.5	43.1	42.0
21	50.1	39.5	42.6	46.9	39.3	51.3	37.0
22	43.9	46.2	44.9	43.7	44.0	44.4	42.4
23	45.1	42.2	43.2	43.9	41.7	46.6	42.5
24	40.5	46.0	41.8	43.0	46.3	40.5	47.2
10-12	41.3	42.0	42.0	43.3	41.5	40.4	40.4
14-16	43.3	43.3	43.5	44.8	43.0	43.3	42.6
0-24	43.6	43.4	43.0	44.1	43.1	43.7	43.0

Average	43.4

Channel 1 - Northbound **85th Percentile**

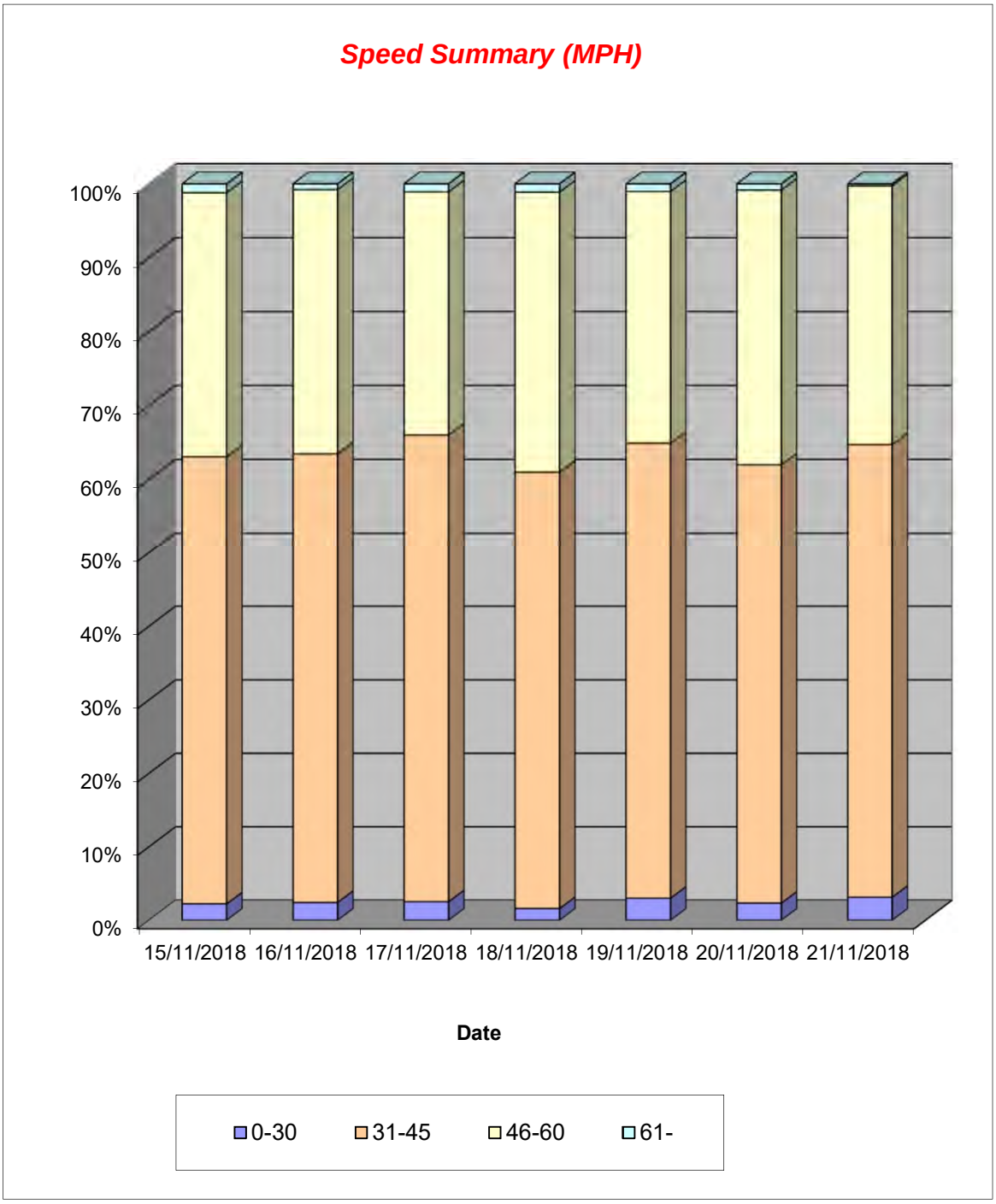
Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	53.7	53.6	43.9	43.1	53.3	53.2	43.3
2	-	-	66.5	-	-	33.7	33.1
3	-	-	-	-	-	-	-
4	-	-	53.4	-	-	-	58.3
5	58.3	-	-	48.7	58.2	58.4	58.8
6	53.3	53.8	65.7	-	53.9	53.1	48.3
7	48.8	53.6	48.2	48.8	53.7	48.7	53.2
8	53.0	54.0	48.6	53.0	53.5	53.9	53.5
9	58.8	53.9	53.4	53.5	53.4	53.5	53.3
10	53.8	53.2	48.4	48.9	53.1	53.1	48.3
11	48.7	48.7	48.7	48.4	48.8	48.8	48.0
12	48.0	54.0	48.3	48.7	48.5	48.4	48.5
13	48.4	48.2	48.6	53.5	48.8	48.5	48.2
14	48.9	53.5	48.2	53.5	48.6	48.5	48.9
15	48.8	53.1	53.2	53.5	53.8	48.2	53.6
16	53.4	49.0	48.6	53.4	48.0	53.3	48.8
17	49.0	48.7	48.1	48.4	48.2	48.1	48.9
18	48.9	48.0	48.5	53.3	48.1	48.6	48.3
19	48.1	53.6	48.9	53.1	48.1	48.2	53.5
20	53.9	48.1	48.3	48.2	48.3	48.9	48.1
21	58.4	48.1	48.8	59.0	48.1	65.6	43.6
22	48.5	53.8	53.4	53.1	53.0	48.4	48.4
23	53.8	53.3	53.3	53.4	48.5	53.3	54.0
24	43.1	48.0	48.9	-	48.7	43.9	48.1
10-12	48.6	48.3	48.6	48.5	48.5	48.8	48.9
14-16	53.5	48.4	53.6	53.2	48.8	48.3	48.6
0-24	53.3	53.3	48.4	53.5	48.1	53.7	48.3

85th %ile	51.2

Mitcheldean A2, Bradley Court Road

Channel 1 - Northbound **Speed Summary** **Week 1**

Speed (MPH)	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
0-30	24	25	21	10	32	25	33
31-45	656	630	527	373	658	639	648
46-60	385	369	273	238	362	398	368
61-	13	8	9	7	11	9	3
TOTAL	**1078**	**1032**	**830**	**628**	**1063**	**1071**	**1052**



Mitcheldean A2, Bradley Court Road

Channel 2 - Southbound **Average Speed** **Week 1**

Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	45.5	33.0	39.7	40.5	48.0	41.8	44.0
2	25.5	-	43.0	44.0	25.5	25.5	25.5
3	33.0	-	-	46.3	-	-	-
4	-	-	43.0	58.0	-	-	-
5	-	-	38.0	-	-	-	-
6	39.6	53.0	45.5	-	38.4	40.5	38.4
7	40.0	42.5	42.0	44.5	41.1	41.6	40.0
8	43.0	43.9	40.1	43.5	43.3	42.0	42.7
9	38.7	38.8	41.4	42.7	39.1	38.3	39.2
10	38.8	39.5	38.6	39.9	39.0	39.4	39.3
11	35.6	37.1	39.1	40.5	37.2	34.6	36.8
12	37.4	37.8	40.2	39.9	37.9	37.0	38.0
13	39.4	39.5	41.5	42.3	39.4	39.3	39.2
14	40.2	39.6	42.8	41.6	40.0	39.6	40.3
15	39.0	40.6	41.8	40.1	40.2	38.9	40.3
16	39.8	38.6	39.5	39.7	38.3	40.1	38.3
17	39.6	36.8	37.9	38.1	36.8	39.6	36.7
18	38.2	39.9	38.8	40.1	39.9	38.7	40.8
19	41.0	38.7	38.1	40.9	39.7	40.3	39.5
20	40.9	39.5	39.6	41.8	40.1	40.8	40.3
21	42.4	39.1	38.0	39.6	38.7	41.7	39.2
22	45.6	39.0	43.5	42.4	40.0	45.2	40.0
23	46.6	38.0	39.1	40.5	36.6	46.8	36.6
24	41.0	40.5	41.8	40.0	40.5	39.0	41.8
10-12	36.4	37.4	39.6	40.1	37.5	35.6	37.4
14-16	39.5	39.6	40.8	39.9	39.3	39.5	39.2
0-24	39.5	39.1	40.1	40.6	39.1	39.4	39.1

Average	39.6

Channel 2 - Southbound **85th Percentile**

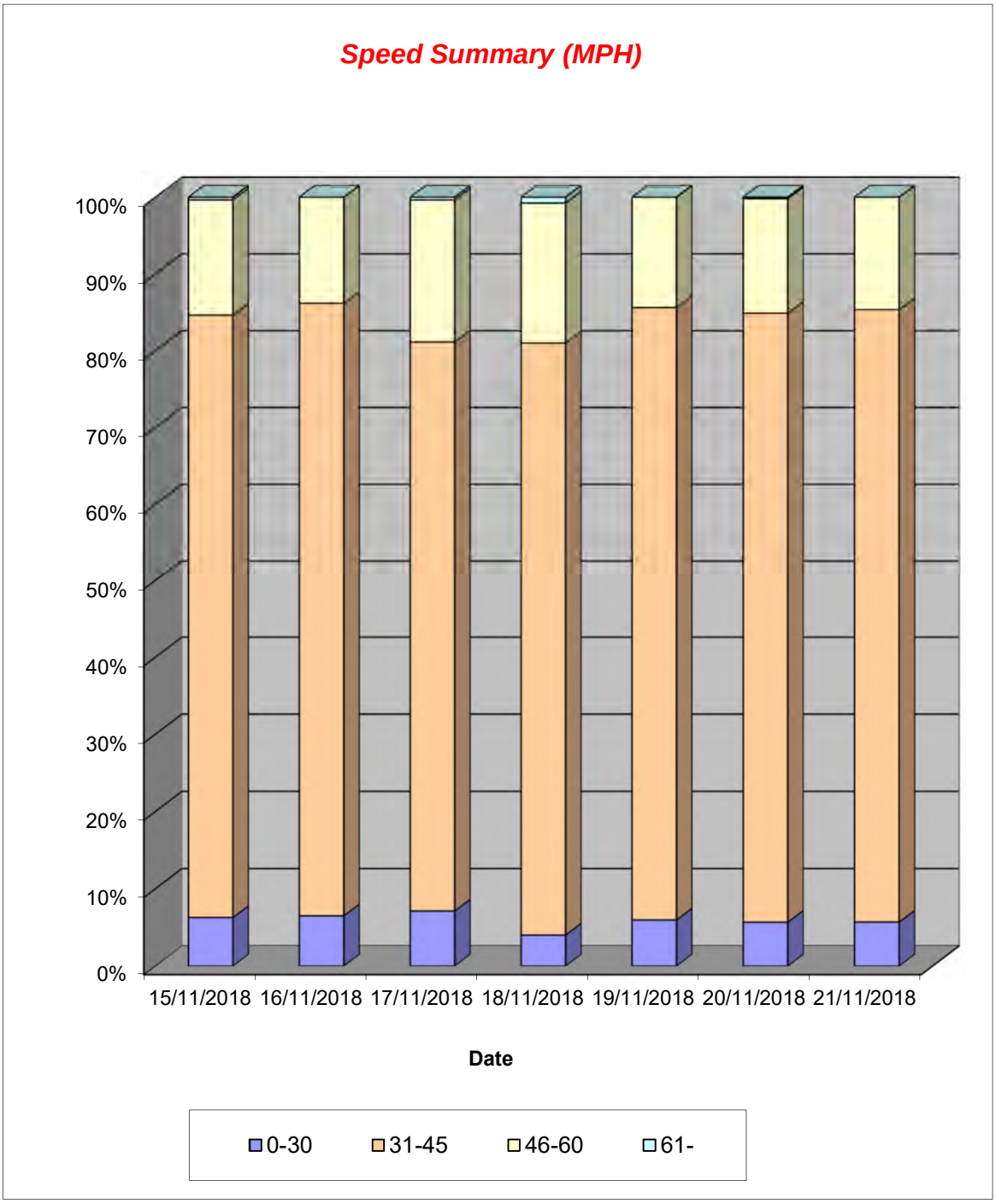
Hr Ending	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
1	53.1	-	48.8	48.4	53.4	54.0	53.3
2	26.0	-	48.2	53.4	-	26.3	26.3
3	-	-	-	53.3	-	-	-
4	-	-	49.0	-	-	-	-
5	-	-	-	-	-	-	-
6	44.0	58.5	48.1	-	48.5	43.7	48.2
7	43.1	53.2	48.8	66.3	48.1	48.9	43.4
8	53.0	53.6	48.4	48.7	53.5	48.9	48.2
9	43.3	43.5	48.5	48.4	44.0	43.4	43.9
10	43.5	43.7	48.1	48.7	43.6	43.1	43.6
11	43.9	43.9	48.1	48.3	48.9	44.0	48.4
12	48.5	48.4	48.2	48.4	48.7	48.8	48.4
13	43.4	48.3	48.0	48.4	43.4	48.7	43.9
14	48.8	43.3	48.7	48.9	48.7	48.4	48.6
15	43.8	48.2	48.5	48.1	48.1	43.0	48.9
16	48.7	43.5	48.6	43.6	43.8	48.2	43.5
17	43.7	43.2	43.2	43.3	43.7	43.2	43.3
18	44.0	48.6	43.5	48.1	48.5	43.5	48.9
19	48.3	43.4	43.7	48.2	48.2	48.4	48.3
20	48.5	43.9	43.8	43.1	43.2	48.1	43.3
21	48.4	48.5	48.4	48.4	48.3	48.3	48.2
22	53.7	43.2	53.9	49.0	48.8	48.6	43.3
23	53.2	43.7	43.7	43.5	43.1	53.8	43.0
24	48.4	43.7	48.1	53.5	43.5	43.5	43.7
10-12	43.5	43.6	48.6	49.0	48.8	43.2	48.8
14-16	48.8	48.8	48.7	43.2	43.8	48.9	48.3
0-24	48.5	43.2	48.0	48.4	48.3	48.4	48.7

85th %ile	47.6

Mitcheldean A2, Bradley Court Road

Channel 2 - Southbound **Speed Summary** **Week 1**

Speed (MPH)	15/11/2018 Thursday	16/11/2018 Friday	17/11/2018 Saturday	18/11/2018 Sunday	19/11/2018 Monday	20/11/2018 Tuesday	21/11/2018 Wednesday
0-30	72	73	59	26	66	65	65
31-45	899	895	613	499	882	907	910
46-60	172	155	153	118	159	171	167
61-	4	0	3	5	0	2	0
TOTAL	**1147**	**1123**	**828**	**648**	**1107**	**1145**	**1142**



APPENDIX D

TRAFFIC FLOW DIAGRAMS

Traffic Flow Diagrams			
Reference	**Scenario**	**Peak**	**Derivation**
1	Traffic Flow Diagram 1 - 2024 Observed Flows	AM (0800-0900)	Raw data
2	Traffic Flow Diagram 2 - 2024 Observed Flows	PM (1630-1730)	Raw data
3	Traffic Flow Diagram 3 - 2029 Base Flows	AM (0800-0900)	1*TEMPro
4	Traffic Flow Diagram 4 - 2029 Base Flows	PM (1630-1730)	2*TEMPro
5	Traffic Flow Diagram 5 - Development Traffic Distribution	AM (0800-0900)	Observed Turning Proportions
6	Traffic Flow Diagram 6 - Development Traffic Distribution	PM (1630-1730)	Observed Turning Proportions
7	Traffic Flow Diagram 7 - Development Traffic Flows	AM (0800-0900)	5*Local Trip Rate
8	Traffic Flow Diagram 8 - Development Traffic Flows	PM (1630-1730)	6*Local Trip Rate
9	Traffic Flow Diagram 9 - 2029 With Development Flows	AM (0800-0900)	3+7
10	Traffic Flow Diagram 10 - 2029 With Development Flows	PM (1630-1730)	4+8

Project: Carisbrook Road, Mitcheldean

Scenario: Traffic Flow Diagram 1 - 2024 Observed Flows

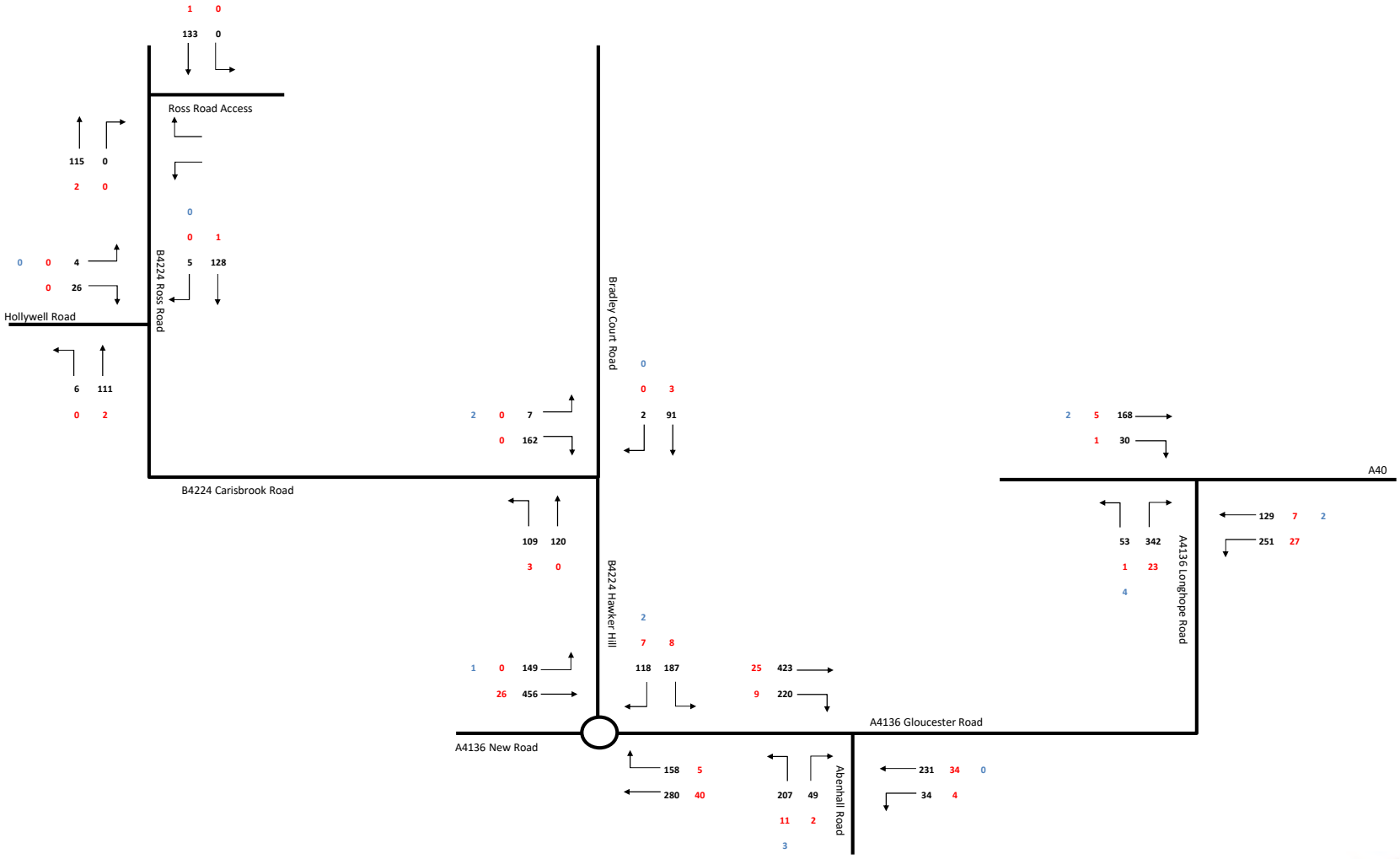
Peak AM (0800-0900)

Notes: All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red

Observed queues in blue



Project: Carisbrook Road, Mitcheldean

Scenario: Traffic Flow Diagram 2 - 2024 Observed Flows

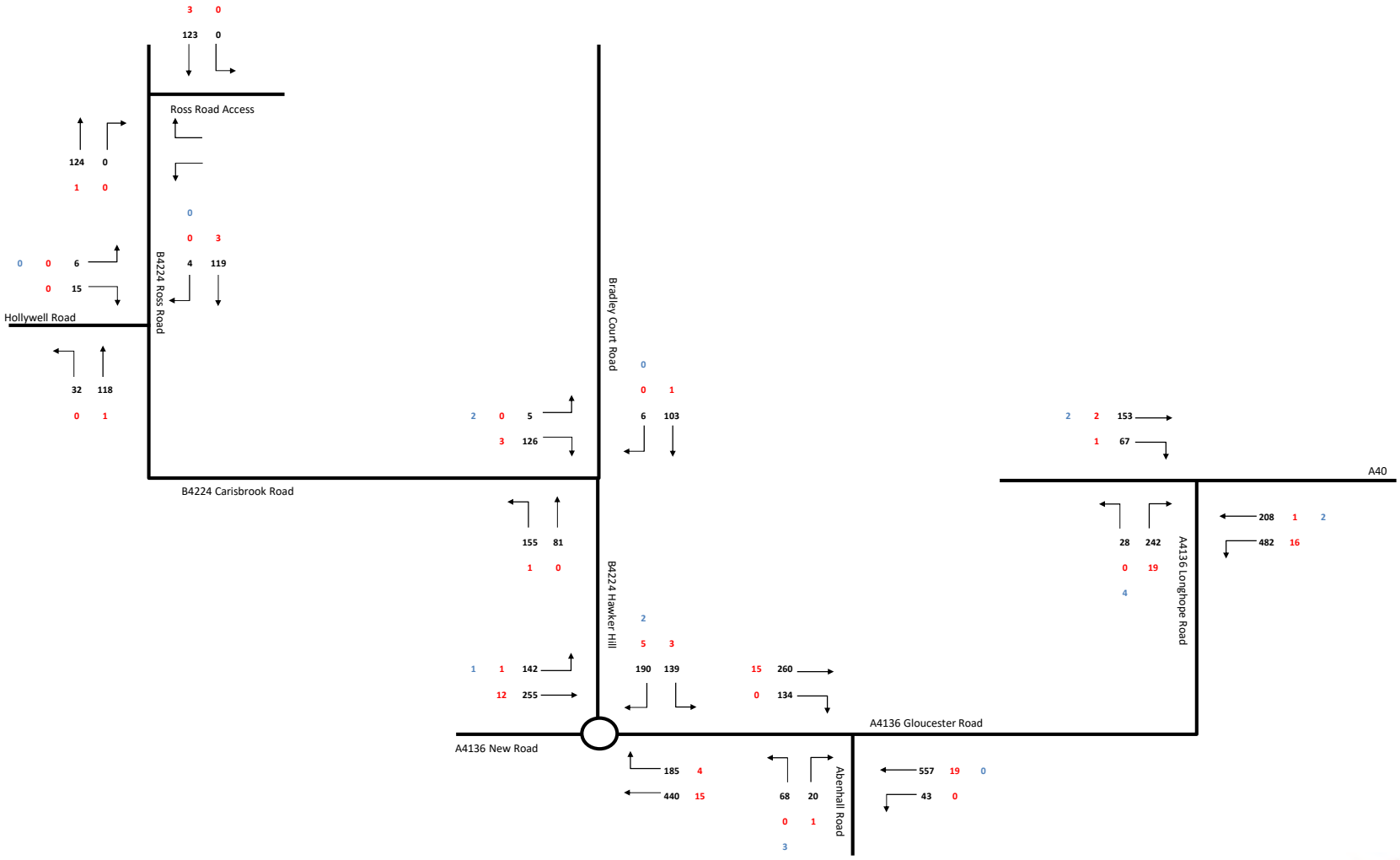
Peak PM (1630-1730)

Notes: All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red

Observed queues in blue



Project: Carisbrook Road, Mitcheldean

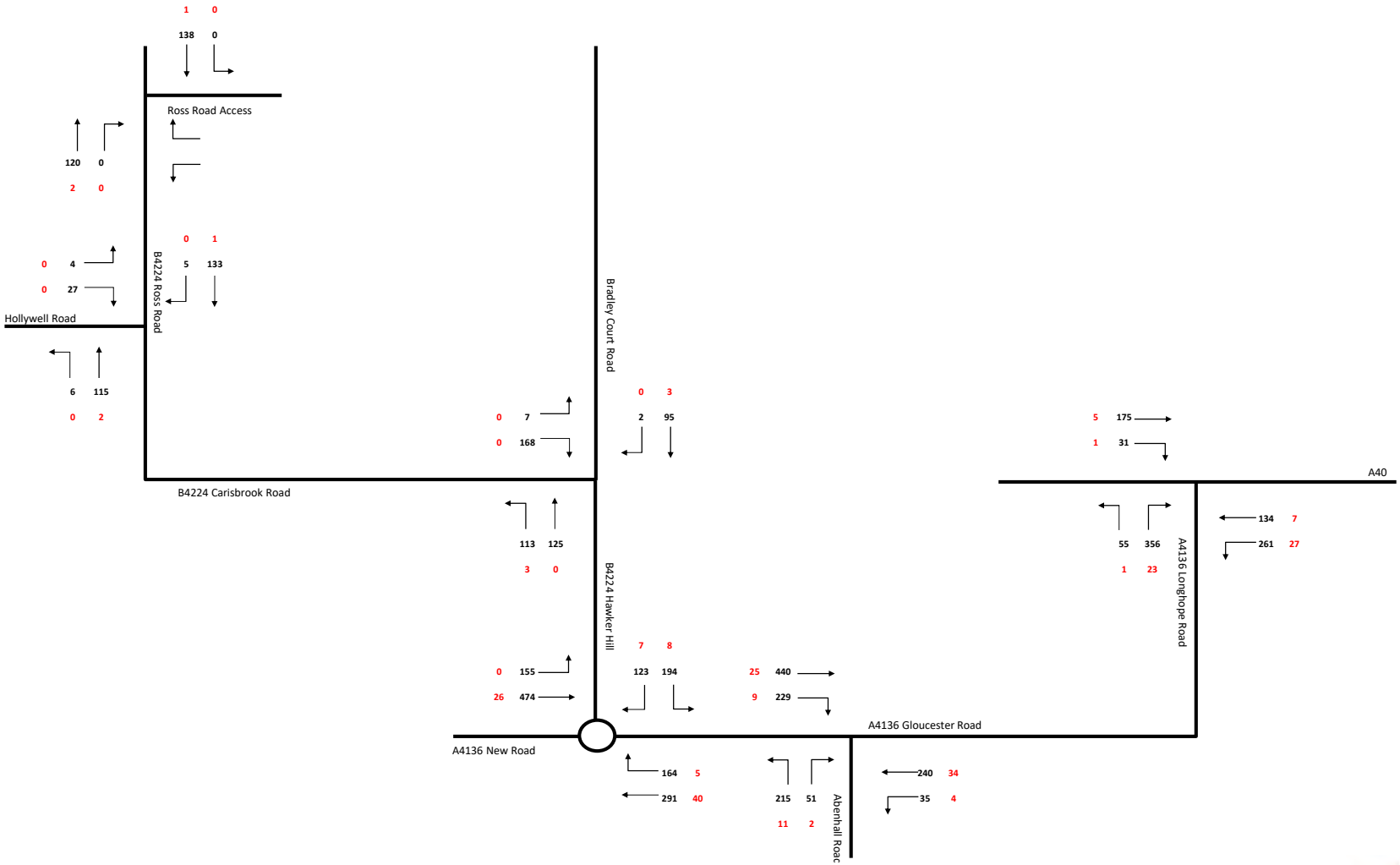
Scenario: Traffic Flow Diagram 3 - 2029 Base Flows

Peak AM (0800-0900)

Notes: All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red



Project: Carisbrook Road, Mitcheldean

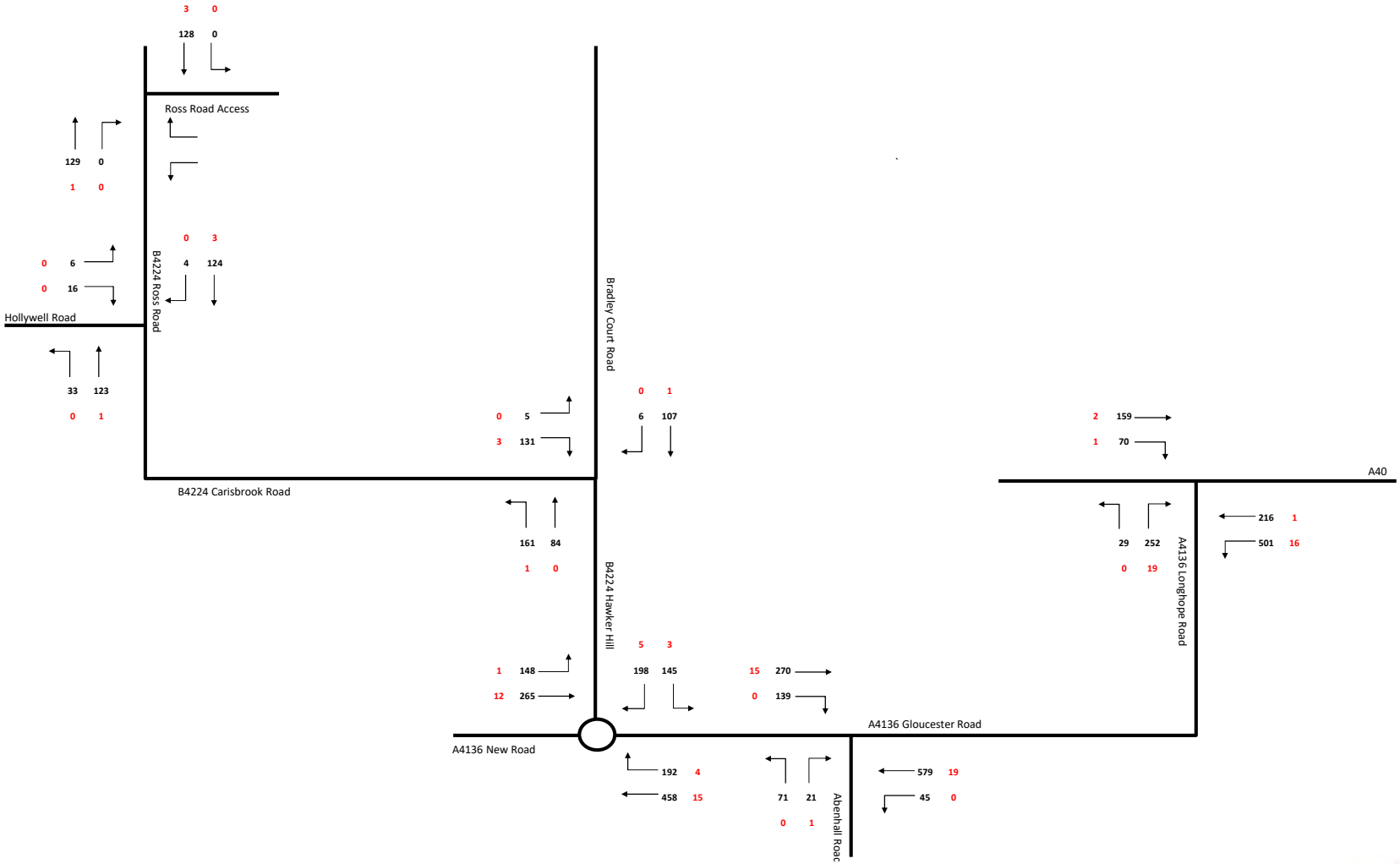
Scenario: Traffic Flow Diagram 4 - 2029 Base Flows

Peak PM (1630-1730)

Notes: All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red



Project: Carisbrook Road, Mitcheldean

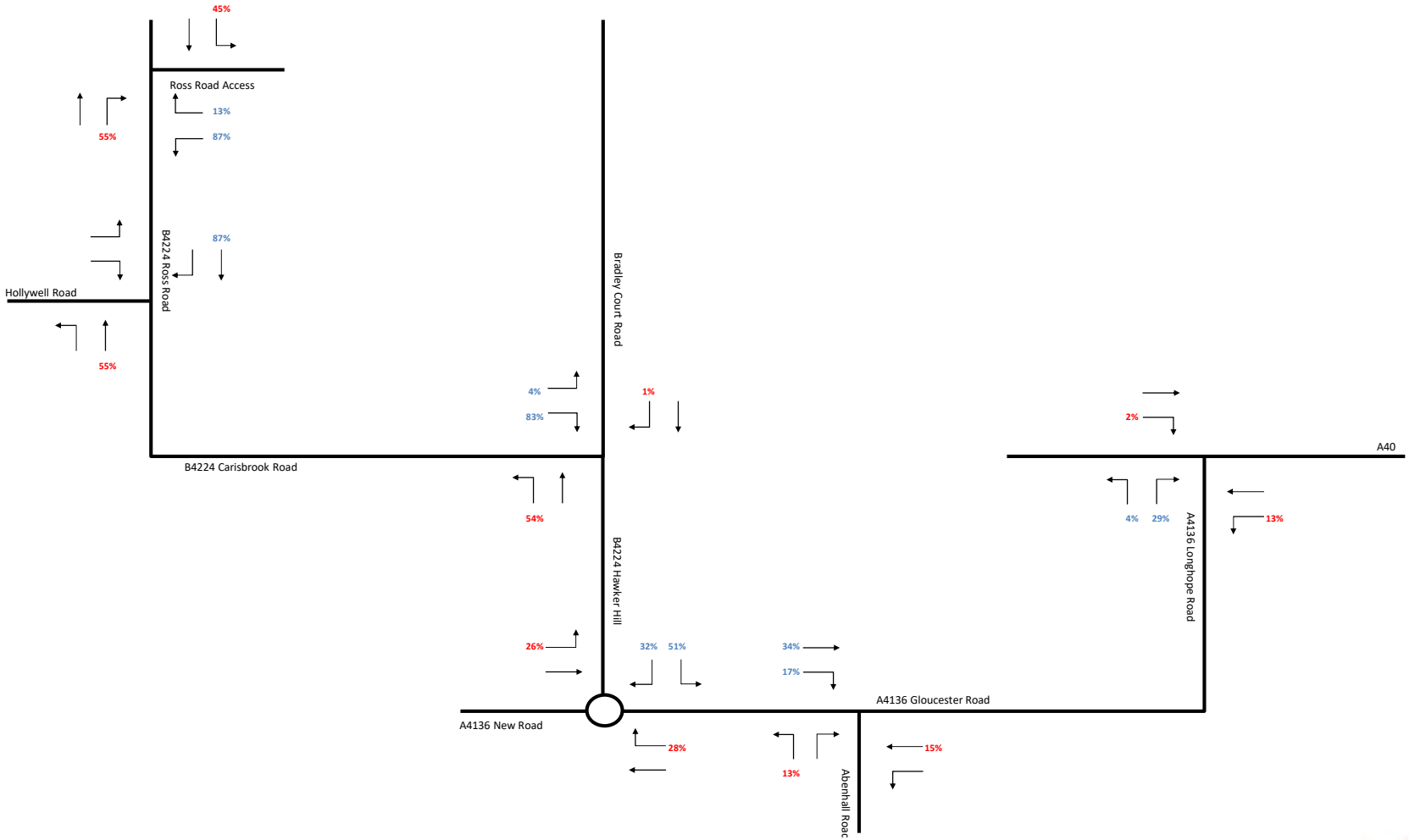
Scenario: Traffic Flow Diagram 5 - Development Traffic Distribution

Peak AM (0800-0900)

Notes: Based on observed turning proportions with Hollywell Road/B4224 junction as the starting point

Arrivals in red

Departures in blue



Project: Carisbrook Road, Mitcheldean

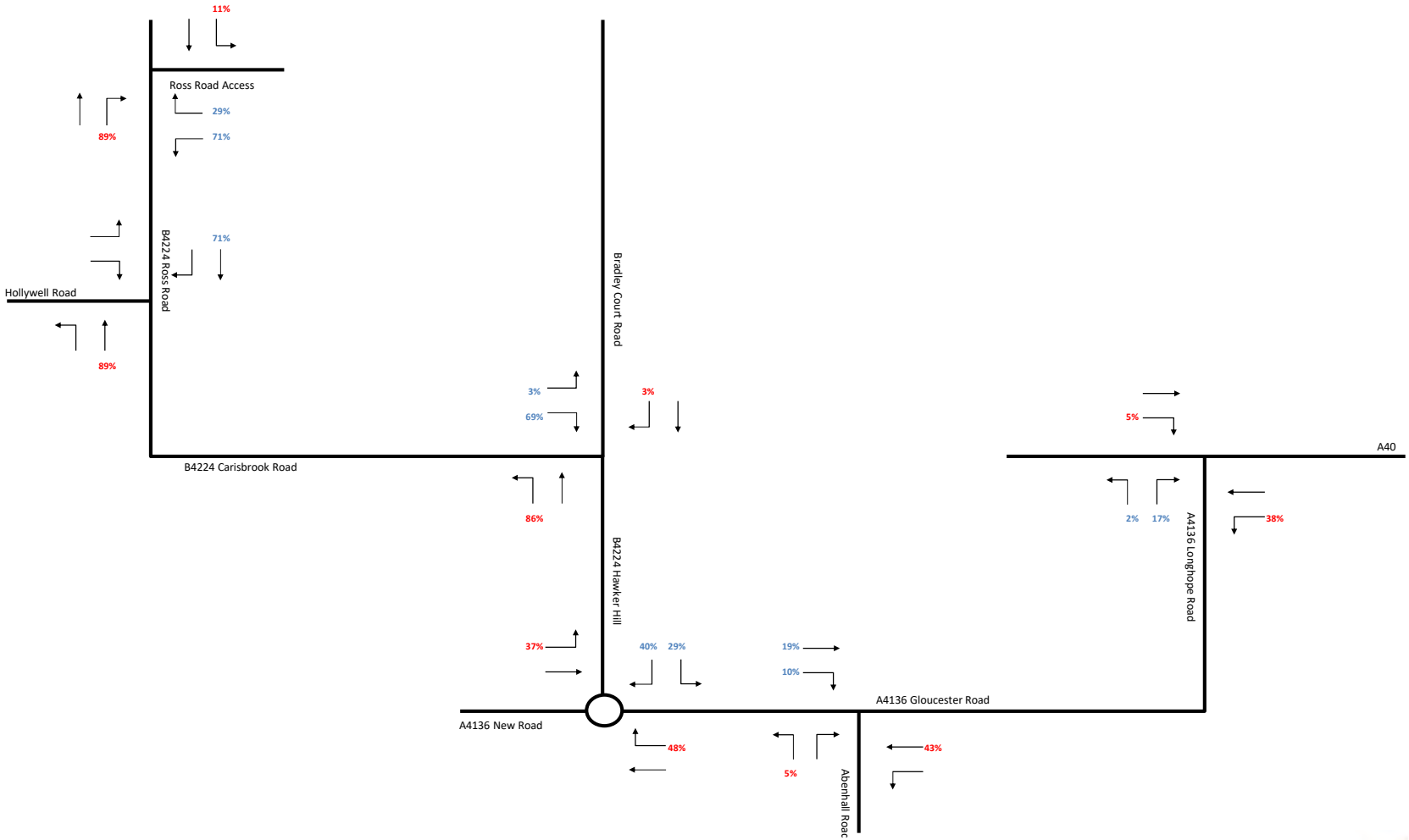
Scenario: Traffic Flow Diagram 6 - Development Traffic Distribution

Peak PM (1630-1730)

Notes: Based on observed turning proportions with Hollywell Road/B4224 junction as the starting point

Arrivals in red

Departures in blue



Project: Carisbrook Road, Mitcheldean

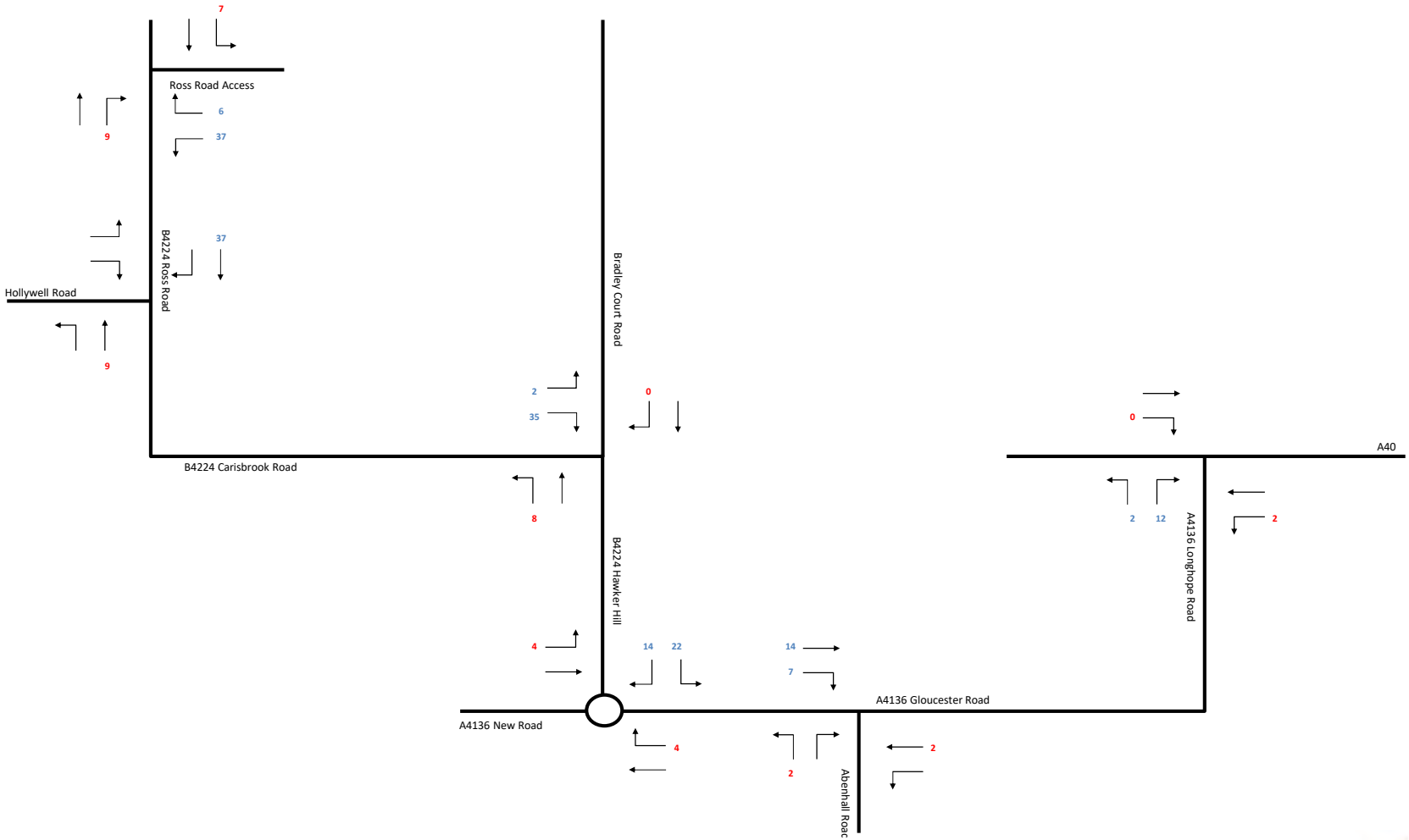
Scenario: Traffic Flow Diagram 7 - Development Traffic Flows

Peak AM (0800-0900)

Notes: All flows are in vehicles

Arrivals = 16

Departures = 43



Project: Carisbrook Road, Mitcheldean

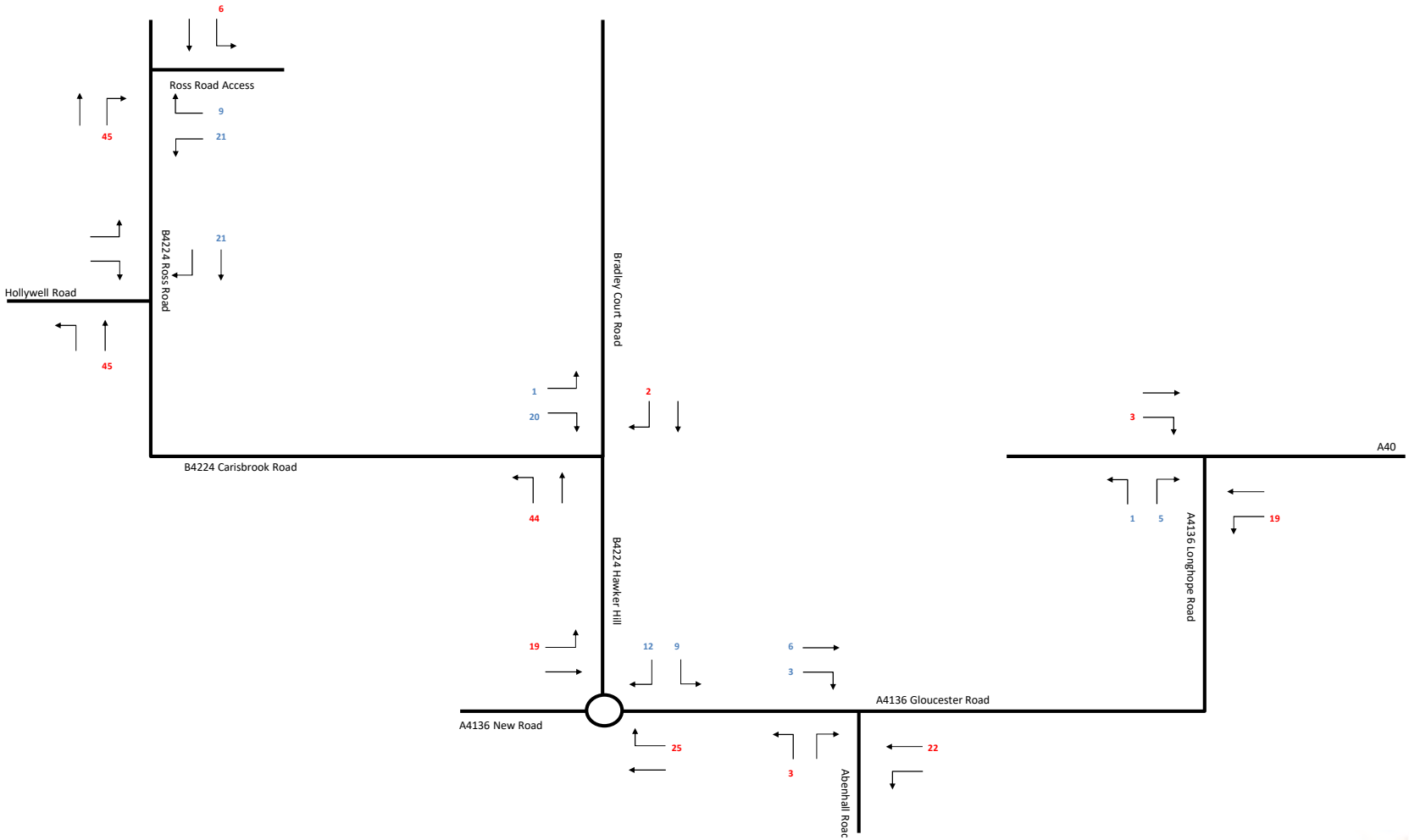
Scenario: Traffic Flow Diagram 8 - Development Traffic Flows

Peak PM (1630-1730)

Notes: All flows are in vehicles

Arrivals = 51

Departures = 30



Project: Carisbrook Road, Mitcheldean

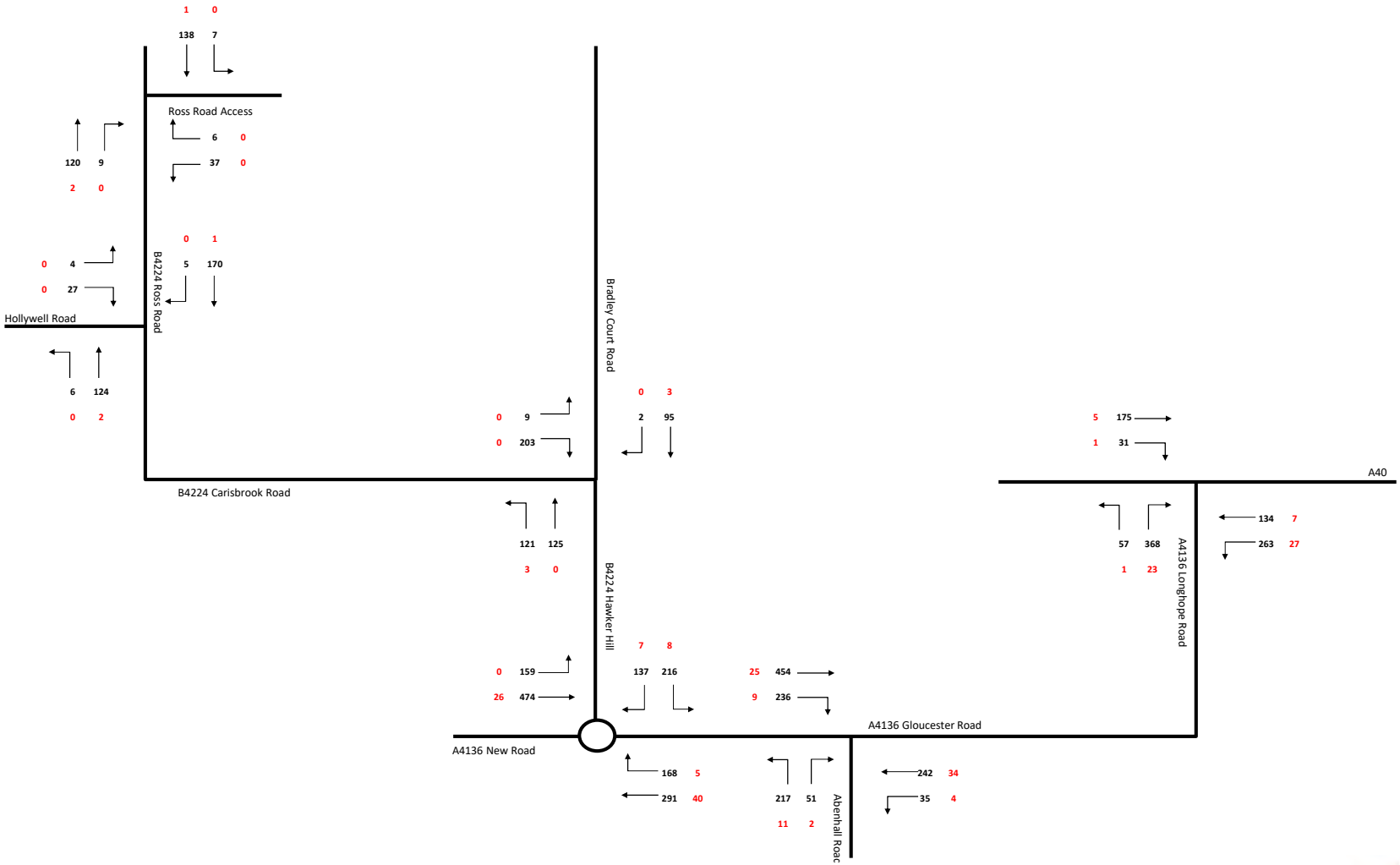
Scenario: Traffic Flow Diagram 9 - 2029 With Development Flows

Peak AM (0800-0900)

Notes: All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red



Project: Carisbrook Road, Mitcheldean

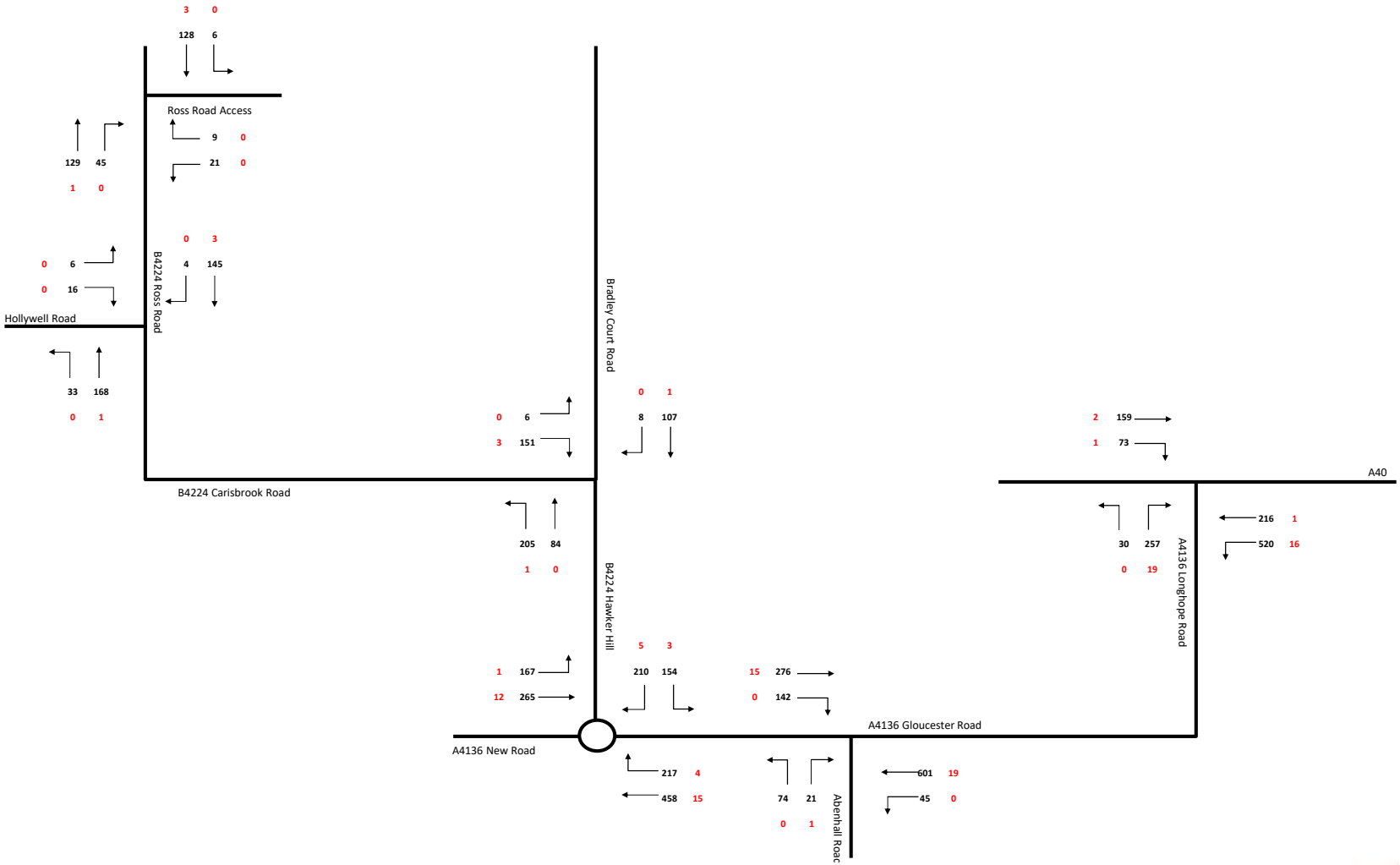
Scenario: Traffic Flow Diagram 10 - 2029 With Development Flows

Peak PM (1630-1730)

Notes: All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red



APPENDIX E

ACCIDENT PLOT

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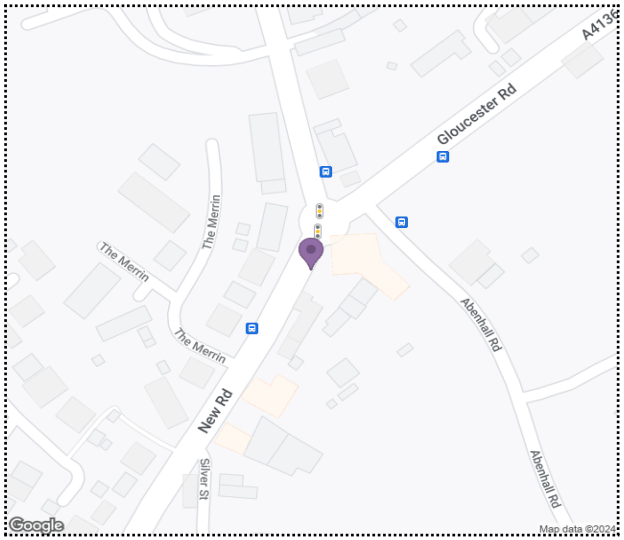
Validated Data

Crash Date:	Thursday, January 18, 2018	**Time of Crash:**	15:30:00	**Crash Reference:**	2018530274467
Highest Injury Severity:	Slight	**Road Number:**	A4136	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	1
Local Authority:	Forest of Dean			**OS Grid Reference:**	366493 218263
Weather Description:	Unknown				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Mini roundabout				
Junction Pedestrian Crossing:	Pelican, puffin, toucan or similar non-junction pedestrian light crossing				
Road Type:	Dual carriageway				
Junction Control:	Auto traffic signal				



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Crash Date: Thursday, January 18, 2018 **Time of Crash:** 15:30:00 **Crash Reference:** 2018530274467

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Unknown	Unknown	Vehicle is reversing	Did not impact	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Female	11 - 15	On footway or verge	Unknown or other

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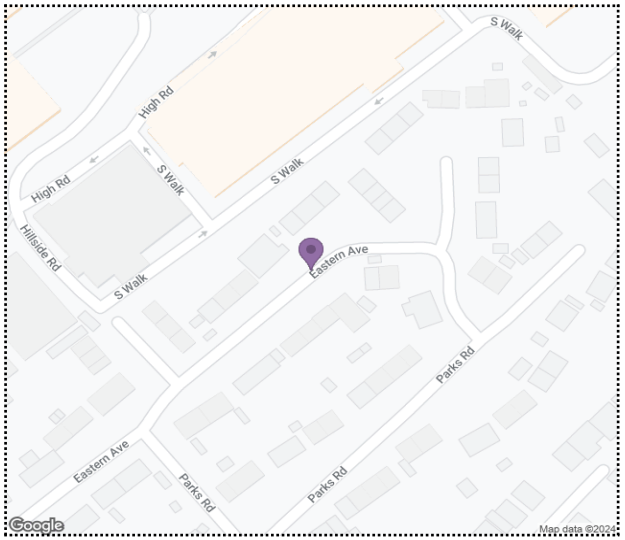
Validated Data

Crash Date:	Tuesday, September 22, 2020	**Time of Crash:**	21:34:00	**Crash Reference:**	2020530989640
Highest Injury Severity:	Slight	**Road Number:**	U0	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	1
Local Authority:	Forest of Dean			**OS Grid Reference:**	366682 218650

Weather Description:	Fine without high winds
Road Surface Description:	Dry
Speed Limit:	30
Light Conditions:	Darkness: street lights present and lit
Carriageway Hazards:	None
Junction Detail:	Not at or within 20 metres of junction
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres
Road Type:	Single carriageway
Junction Control:	Not Applicable



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Crash Date: Tuesday, September 22, 2020 **Time of Crash:** 21:34:00 **Crash Reference:** 2020530989640

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	9	Male	56 - 65	Vehicle proceeding normally along the carriageway, on a left hand bend	Front	Other	None	Other permanent object

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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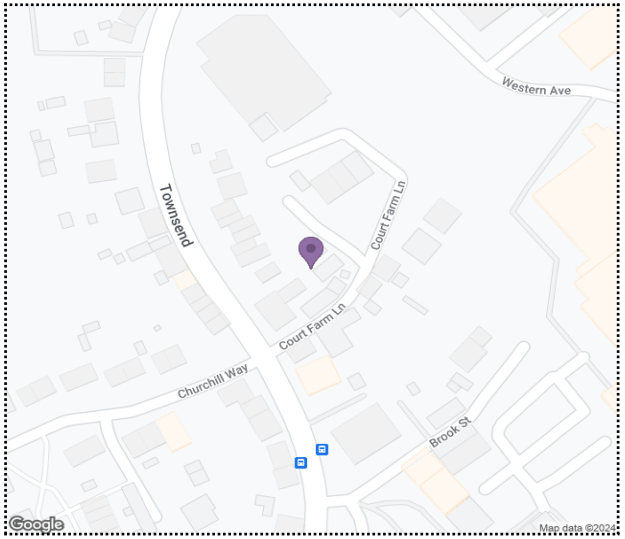
Validated Data

Crash Date:	Saturday, February 20, 2021	**Time of Crash:**	20:29:00	**Crash Reference:**	2021531022892
Highest Injury Severity:	Slight	**Road Number:**	B4224	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	2
Local Authority:	Forest of Dean			**OS Grid Reference:**	366420 218771
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Crossroads				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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Crash Date: Saturday, February 20, 2021 **Time of Crash:** 20:29:00 **Crash Reference:** 2021531022892

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Female	66 - 75	Vehicle is moving off	Front	Other	None	None
2	Motorcycle over 50cc and up to 125cc	-1	Male	16 - 20	Vehicle is moving off	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

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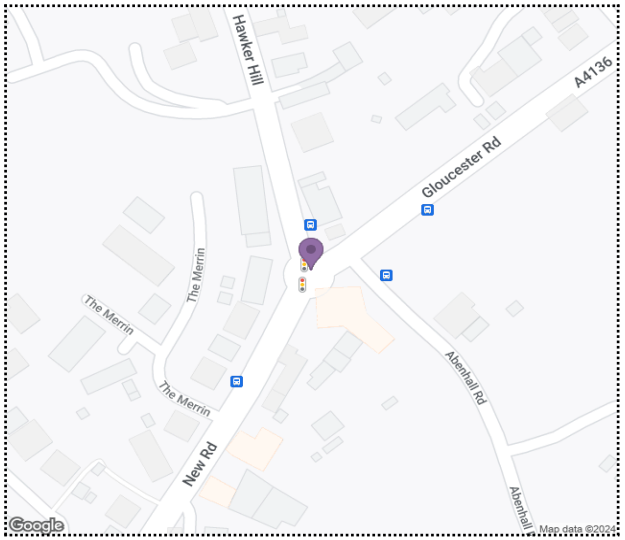
Validated Data

Crash Date:	Thursday, April 1, 2021	**Time of Crash:**	17:51:00	**Crash Reference:**	2021531032436
Highest Injury Severity:	Slight	**Road Number:**	A4136	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	2
Local Authority:	Forest of Dean			**OS Grid Reference:**	366499 218285
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Mini roundabout				
Junction Pedestrian Crossing:	Pelican, puffin, toucan or similar non-junction pedestrian light crossing				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



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Validated Data

Crash Date: Thursday, April 1, 2021 **Time of Crash:** 17:51:00 **Crash Reference:** 2021531032436

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	14	Male	21 - 25	Vehicle is in the act of turning right	Front	Other	None	None
2	Car (excluding private hire)	11	Female	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	46 - 55	Unknown or other	Unknown or other

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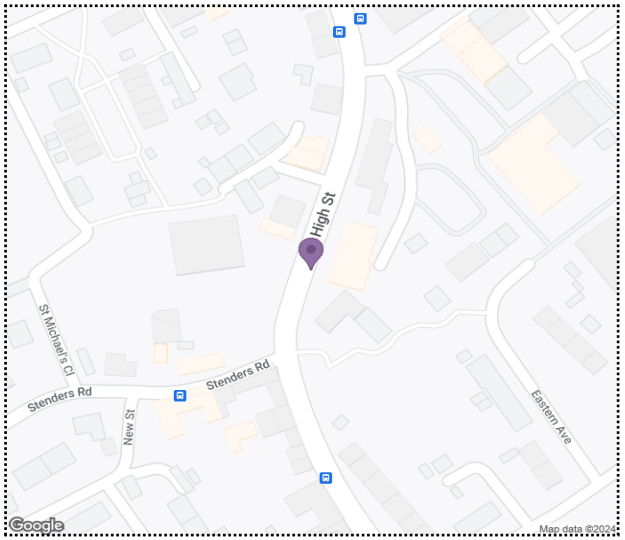
Validated Data

Crash Date:	Friday, April 9, 2021	**Time of Crash:**	18:50:00	**Crash Reference:**	2021531036801
Highest Injury Severity:	Slight	**Road Number:**	B4224	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	2
Local Authority:	Forest of Dean			**OS Grid Reference:**	366404 218591
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	Zebra crossing				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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Crash Date: Friday, April 9, 2021 **Time of Crash:** 18:50:00 **Crash Reference:** 2021531036801

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	2	Female	46 - 55	Vehicle is slowing down or stopping	Back	Unknown	None	None
2	Motorcycle over 50cc and up to 125cc	4	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

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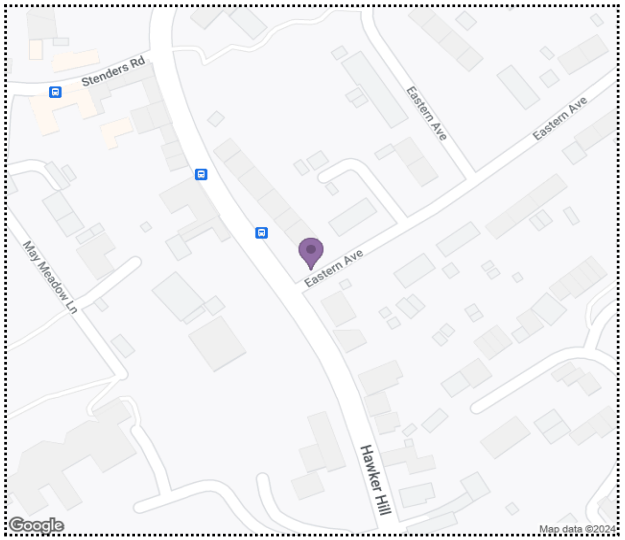
Validated Data

Crash Date:	Sunday, May 22, 2022	**Time of Crash:**	11:39:00	**Crash Reference:**	2022531180077
Highest Injury Severity:	Slight	**Road Number:**	U0	**Casualties:**	2
Highway Authority:	Gloucestershire			**Vehicles:**	2
Local Authority:	Forest of Dean			**OS Grid Reference:**	366451 218465

Weather Description:	Fine without high winds
Road Surface Description:	Dry
Speed Limit:	30
Light Conditions:	Daylight: regardless of presence of streetlights
Carriageway Hazards:	None
Junction Detail:	T or staggered junction
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres
Road Type:	Single carriageway
Junction Control:	Give way or uncontrolled



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Crash Date: Sunday, May 22, 2022 **Time of Crash:** 11:39:00 **Crash Reference:** 2022531180077

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	17	Male	21 - 25	Vehicle is in the act of turning right	Offside	Other	None	None
2	Car (excluding private hire)	9	Male	56 - 65	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	56 - 65	Unknown or other	Unknown or other

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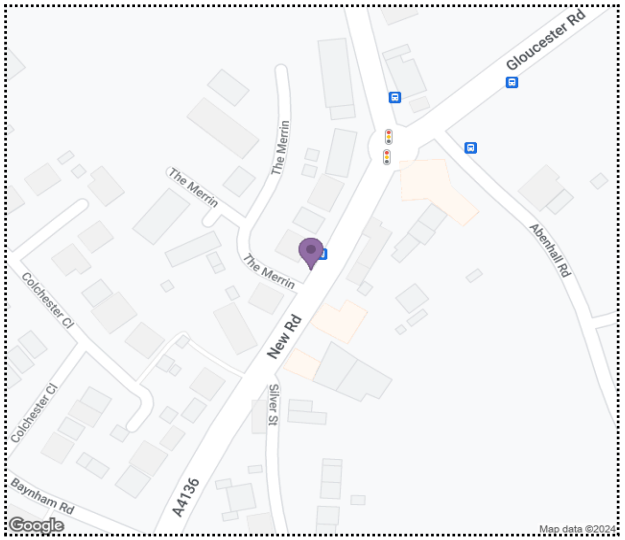
Validated Data

Crash Date:	Wednesday, August 3, 2022	**Time of Crash:**	10:27:00	**Crash Reference:**	2022531205376
Highest Injury Severity:	Serious	**Road Number:**	A4136	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	1
Local Authority:	Forest of Dean			**OS Grid Reference:**	366466 218233

Weather Description:	Fine without high winds
Road Surface Description:	Dry
Speed Limit:	30
Light Conditions:	Daylight: regardless of presence of streetlights
Carriageway Hazards:	None
Junction Detail:	T or staggered junction
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres
Road Type:	Single carriageway
Junction Control:	Give way or uncontrolled



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Crash Date: Wednesday, August 3, 2022 **Time of Crash:** 10:27:00 **Crash Reference:** 2022531205376

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	8	Female	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Female	11 - 15	Unknown or other	Crossing from driver's nearside

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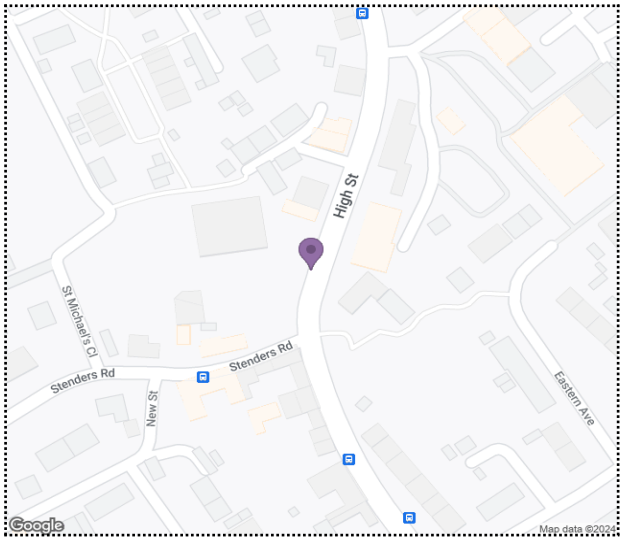
Validated Data

Crash Date:	Sunday, October 23, 2022	**Time of Crash:**	18:10:00	**Crash Reference:**	2022531233654
Highest Injury Severity:	Serious	**Road Number:**	B4224	**Casualties:**	1
Highway Authority:	Gloucestershire			**Vehicles:**	1
Local Authority:	Forest of Dean			**OS Grid Reference:**	366395 218584
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lighting unknown				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	Zebra crossing				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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Crash Date: Sunday, October 23, 2022 **Time of Crash:** 18:10:00 **Crash Reference:** 2022531233654

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	12	Male	21 - 25	Vehicle is moving off	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Male	11 - 15	In carriageway, crossing on pedestrian crossing facility	Crossing from driver's nearside

For more information about the data please visit: www.crashmap.co.uk/home/faq

To subscribe to unlimited reports using CrashMap Pro visit: www.crashmap.co.uk/home/premium_services

APPENDIX F

TECHNICAL DRAWINGS

Proposed pedestrian dropped kerb crossing with tactile paving

Access footway to connect into existing footway

Existing footway connection to crossing point at bus stop

Additional gateway features to be provided at change in speed limit

3m wide shared footway cycleway connection exact details subject to reserved matters

3.0m

Proposed access location

Proposed pedestrian/ cycle connection

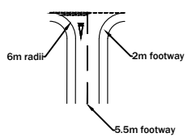
KEY

SITE BOUNDARY

2.4m x 54.3m VISIBILITY SPLAY (BASED ON 85%ILE SPEEDS @ 35.3mph)

2.4m x 50.7m VISIBILITY SPLAY (BASED ON 85%ILE SPEEDS @ 33.7mph)

Access Dimensions



0m 50m

SCALE BAR (1:1000)

Rev	Date	By	Revision notes
D	29.05.25	RO	RED LINE AMENDED
C	06.11.24	RO	PEDESTRIAN / CYCLE INFRASTRUCTURE AMENDED
B	25.10.24	RO	PEDESTRIAN / CYCLE INFRASTRUCTURE AMENDED
A	06.08.24	RO	TREE SURVEY ADDED

Status

PRELIMINARY

Project

CARISBROOK ROAD, MITCHELDEAN

Title

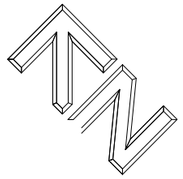
PROPOSED ACCESS ARRANGEMENT

Drawn by RO

Issue date 05 AUGUST 2024

Scale(s) 1:1000 @A3

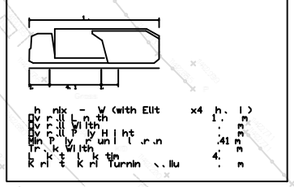
Drawing No P24048-101D



0m 10m 20m

SCALE BAR (1:500)

VEHICLE MODEL USED IN SWEPT PATH ANALYSIS



Rev	Date	By	Revision notes
A	06.11.24	RO	PEDESTRIAN / CYCLE INFRASTRUCTURE AMENDED

Prime

Status

PRELIMINARY

Project

CARISBROOK ROAD, MITCHELDEAN

Title

SWEPT PATH ANALYSIS OF REFUSE VEHICLE AT SITE ACCESS

Drawn by	Issue date
RO	05 AUGUST 2024

Scale(s)

1:500 @A3

Drawing No

P24048-102A

Proposed pedestrian/cycle access

Inset: Proposed widening of footway

Existing Zebra crossing

Existing chicane

Existing Puffin crossing

Propose footway widening to 2m whilst maintaining a circa 6m carriageway width

2.0m

6.1m

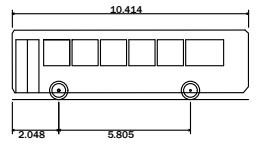
Lay-by and centreline markings to be re-painted to tie in with carriageway realignment

1:500 @A3

KEY

- SITE BOUNDARY
- PRIMARY ROUTE
- PROPOSED TACTILE PAVING PROVISION

VEHICLE PROFILE



Dart SLF 10.50m

Overall Length	10.414m
Overall Width	2.360m
Overall Body Height	3.067m
Min Body Ground Clearance	0.302m
Track Width	2.300m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	9.499m

Rev	Date	By	Revision notes
*	*	*	*

Project: **CARISBROOK ROAD, MITCHELDEAN**

Drawn by: VB

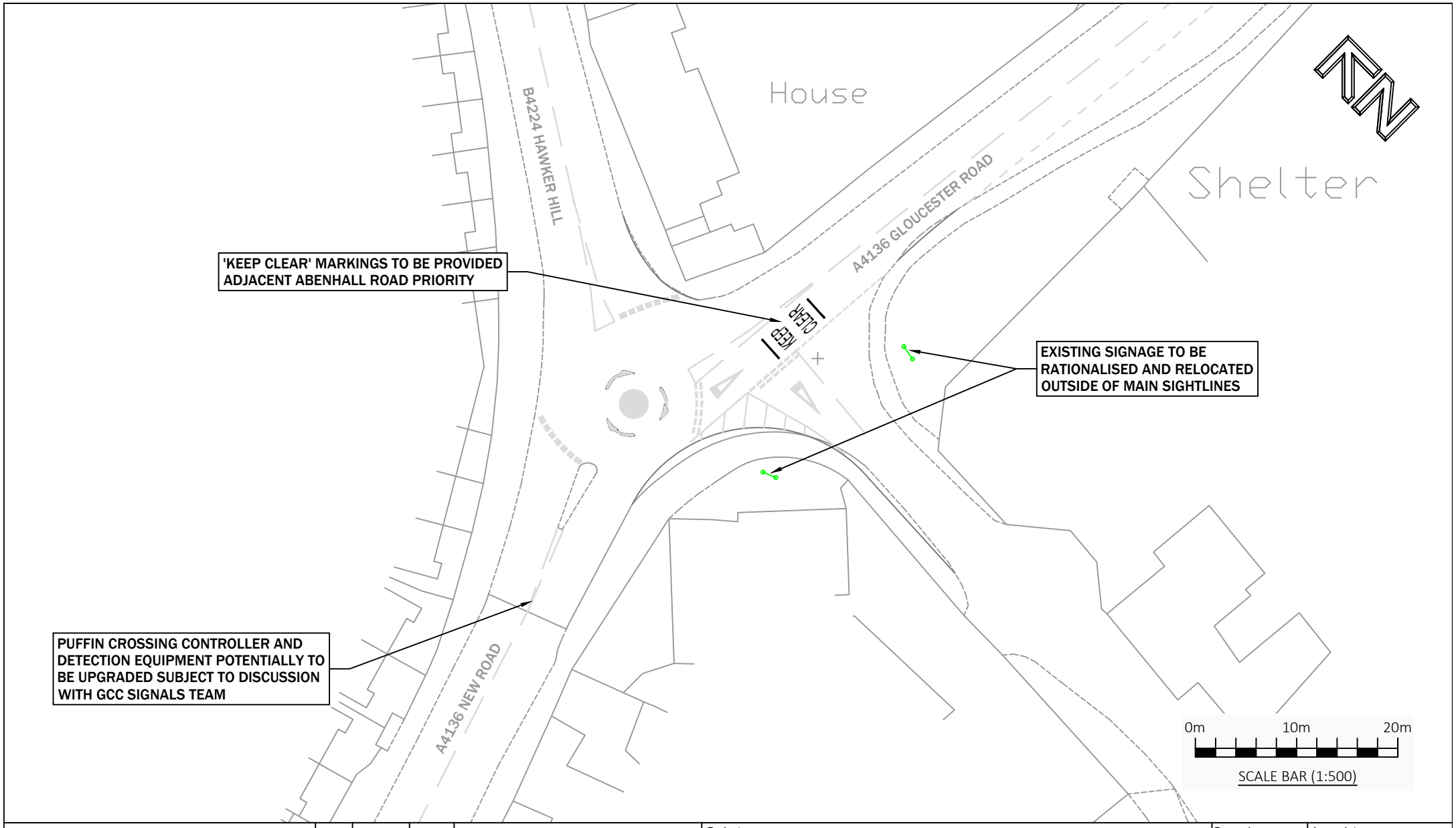
Issue date: 31 OCT 2024

Scale(s): 1:2500 @A3, 1:500 @A3

Status: **FOR INFORMATION**

Title: **PRIMARY ROUTE PROPOSALS**

Drawing No: **P24048-103**



Rev	Date	By	Revision notes
*	*	*	*

DISCLAIMER

- PROPOSALS ARE PRELIMINARY ONLY, NOT FOR CONSTRUCTION PURPOSES
- PROPOSALS WILL BE SUBJECT TO UTILITY AND DRAINAGE INVESTIGATIONS
- PROPOSALS WILL BE SUBJECT TO EXTENT OF ADOPTED HIGHWAY
- DO NOT SCALE THIS DRAWING. DIMENSIONS ARE FOR REPRESENTATIONAL AND INFORMATIONAL PURPOSES ONLY AND SUBJECT TO DETAILED DESIGN
- THIS DRAWING MUST ONLY BE USED FOR THE PURPOSE FOR WHICH IT HAS BEEN SUPPLIED

Project

CARISBROOK ROAD, MITCHELDEAN

Title

GLOUCESTER ROAD/ NEW ROAD/ HAWKER HILL JUNCTION MITIGATION

Drawn by: VB	Issue date: 04 JUL 2024
Scale(s): 1:500 @ A3	
Drawing No: P24048-004	
Status: INFORMATION	

APPENDIX G

RSA

CARISBROOK ROAD, MITCHELDEAN
PROPOSED ACCESS ARRANGEMENT

STAGE 1 ROAD SAFETY AUDIT

610/2024/175/01 Rev 1

28 November 2024

six:TEN Highways & Traffic Ltd
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Rev:	Issue Status:	Prepared by/Date:	Checked by/Date:	Approved by/Date:
0	DRAFT	Jon Preston 27 November 2024	Tristan Brooks 27 November 2024	
1	FINAL	Jon Preston 28 November 2024	Tristan Brooks 28 November 2024	Jon Preston 28 November 2024

Report Title:	Carisbrook Road, Mitcheldean – Proposed Access Arrangement Stage 1 Road Safety Audit
Date:	28 November 2024
Document Reference & Revision:	610/2024/175/01 Rev 1
Prepared by:	Six Ten Highways & Traffic Ltd
On behalf of:	Prime

CONTENTS

1.0 INTRODUCTION 2

2.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFEFY AUDIT 4

3.0 ROAD SAFETY AUDIT TEAM STATEMENT 6

APPENDICES

APPENDIX ONE

4.0 LIST OF DRAWINGS AND DOCUMENTS SUPPLIED BY THE DESIGN ORGANISATION 7

APPENDIX TWO

5.0 PROBLEM LOCATION PLAN 8

APPENDIX THREE

6.0 PHOTOGRAPHS 9

APPENDIX FOUR

7.0 ROAD SAFETY AUDIT RISK ASSESSMENT MATRIX 10

1.0 INTRODUCTION

1.1 This report results from a preliminary design Stage 1 Road Safety Audit (RSA) carried out on the proposed access arrangement at Carisbrook Road, Mitcheldean at the request of Prime the designer of the scheme who provided the audit information, and although there was no formal 'audit brief' the RSA team has accepted that sufficient information has been provided to undertake the Stage 1 RSA. The audit team has been approved by the Overseeing Organisation Gloucestershire County Council to carryout RSAs on their highway network.

1.2 The Road Safety Audit Team was as follows:

Jon Preston MCIHT MSoRSA
Audit Team Leader

Tristan Brooks* Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Comp
Audit Team Member

1.3 Audit Team members marked with an asterisk above hold a Highways England approved Certificate of Competency (CoC) in Road Safety Audit, in accordance with Article (1–3) of EC Directive 2008/96/EC.

1.4 The audit took place at the Manchester office of six:TEN Highways and Traffic between 13 November 2024 and 28 November 2024. The Road Safety Audit was undertaken in accordance with the Road Safety Audit information provided. The audit comprised an examination of the documents provided as detailed in Appendix One.

1.5 The Audit Team visited the site together on Monday 18 November 2024 between 18:30hrs and 19:00hrs. During the site visit the weather was raining and the carriageway surface was wet. During the site visit, traffic movements in the vicinity of the proposed highway works were low with no pedestrian or cyclist movements observed.

1.6 Carisbrook Road is currently subject to a 30mph speed limit and is street lit.

1.7 The terms of reference of the audit are as described in Gloucestershire County Council Guidance Note on the Provision of Road Safety Audits (June 2019). The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Collision Investigation, Road Safety Engineering and Road Safety Audits.

1.8 Additionally, the risk assessment process, as described within Gloucestershire County Council's Guidance Note for the Provision of Safety Audit has been incorporated into this RSA. The risk assessment of each issue raised within the audit has been carried out in accordance with the Risk Assessment Matrix shown in Appendix Four and is based on the audit team's engineering judgement and the information provided for review as part of the RSA.

1.9 The proposed highway works are associated with a potential residential development and in summary includes:

- Provision of a major/minor priority-controlled T-junction on the north-eastern side of Carisbrook Road;
- Provision of a footway on the north-eastern side of Carisbrook Road between the proposed access and the existing bus stop to the south;
- Provision of an uncontrolled pedestrian crossing on Carisbrook Road to the north of the proposed junction;
- Provision of a 3m wide shared footway/cycleway link to/from the proposed development on Carisbrook Road to the south of the proposed junction; and
- Additional gateway features at the existing 30mph terminal speed limit on Bradley Court Road.

1.10 A Stage 1 RSA was undertaken in December 2018 on a previous design of the proposed scheme which has now been superseded by this Stage 1 RSA.

1.11 The Audit Team have not been informed of any Departures from Standard for the proposed scheme.

1.12 Personal injury collision data has been obtained from the online Crashmap database which shows there has been no personal injury collisions in the vicinity of the proposed highway works during the latest five-year period for which data is available 2018 to 2022.

1.13 The scheme has been examined and this report compiled only regarding the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.

1.14 Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG 119 Rev 2, and in no way, imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

2.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

2.1 General

2.1.1 No road safety issues identified at this stage.

2.2 Local Alignment

2.2.1 No road safety issues identified at this stage.

2.3 Junctions

2.3.1 Location: At the proposed junctions on Carisbrook Road

Problem

Summary: Excessive vehicular encroachment into opposing lanes when turning into/out of the proposed access

The refuse vehicle swept path analysis provided for audit shows the vehicle encroaching into opposing lanes when turning into/out of the proposed access road. Whilst it is recognised that some encroachment may occur, this excessive encroachment by a refuse vehicle into the opposing traffic lanes especially when making the left-turn into the proposed development may increase the risk of low-speed head-on or side-impact collisions. **(Risk Rating: LOW).**

Recommendation

It is recommended that amendments should be made to the proposed design to ensure any vehicle encroachment into opposing lanes is kept to a minimum.

2.4 Walking, Cycling and Horse Riding

2.4.1 Location: Uncontrolled pedestrian crossings at the existing bus stops on Carisbrook Road

Problem

Summary: Excessive dropped kerb height/upstand may increase the risk of pedestrian trips/falls

It was observed during the site visit that the height/upstand of the dropped kerb at the existing uncontrolled pedestrian crossings at the bus stops on Carisbrook Road appeared to be in excess of 6mm. Generally, the height of the kerb upstand at uncontrolled pedestrian crossings should be between 0mm and 6mm. Excessive dropped kerb upstand/height may result in a trip hazard for pedestrians crossing the carriageway and manoeuvrability issues for those with pushchairs, wheelchairs or mobility scooters. It is noted that this is an existing issue, however, the proposed development may increase the use of the uncontrolled pedestrian crossings. **(Risk Rating: LOW).**

Recommendation

It is recommended that the height of the dropped kerbs at the uncontrolled pedestrian crossing on the north-western side of the pedestrian refuge island be investigated, and remedial works should be carried out to reduce the height of the dropped kerbs to between 0mm and 6mm if required.

2.5 Traffic Signs, Carriageway Markings and Lighting

2.5.1 No road safety issues identified at this stage.

3.0 ROAD SAFETY AUDIT TEAM STATEMENT

We certify that the audit has been carried out in accordance with Gloucestershire County Council Guidance Note on the Provision of Road Safety Audits (June 2019).

AUDIT TEAM LEADER

Jon Preston MCIHT MSoRSA

Director — Signed:

six:TEN Highways & Traffic Ltd — Date: 28 November 2024

AUDIT TEAM MEMBER

Tristan Brooks Bsc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Comp

Traffic & Road Safety Engineer — Signed:

six:TEN Highways & Traffic Ltd — Date: 28 November 2024

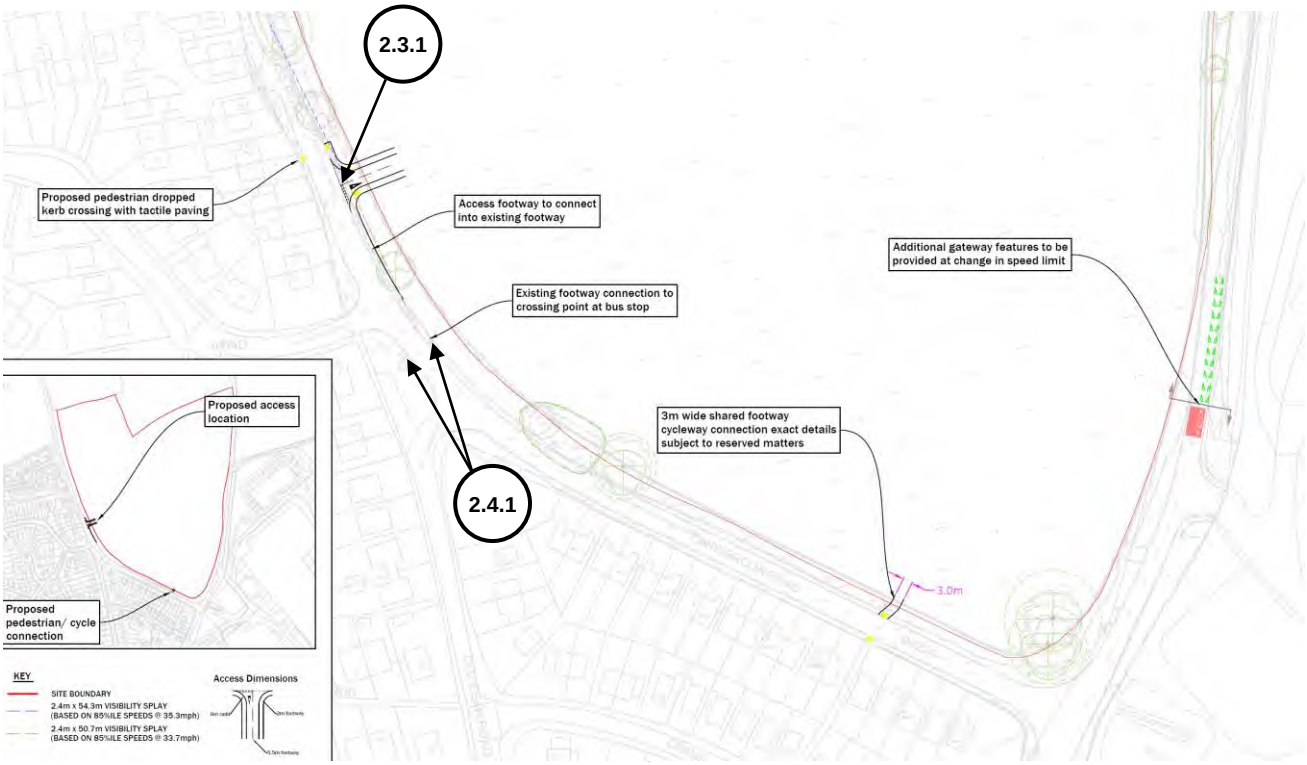
APPENDIX ONE

4.0 LIST OF DRAWINGS AND DOCUMENTS SUPPLIED BY THE DESIGN ORGANISATION

- P24048-101C Proposed Access Arrangement
- P24048-102A Vehicle Swept Path Analysis
- 5-year Personal Injury Collision Data (2018-2022) from Crashmap
- ATC Data

APPENDIX TWO

5.0 PROBLEM LOCATION PLAN



APPENDIX THREE

6.0 PHOTOGRAPHS

6.1 General view looking southeast on Carisbrook Road towards the proposed junction.

6.2 General view looking northwest on Carisbrook Road towards the proposed junction.

APPENDIX FOUR

7.0 ROAD SAFETY AUDIT RISK ASSESSMENT MATRIX

		Frequency of Collision			
		Frequent	Probable	Occasional	Remote
Severity	Fatal	**Very High**	**High**	**High**	**Medium**
	Serious	**High**	**High**	**Medium**	**Medium**
	Slight	**High**	**Medium**	**Medium**	**Low**
	Damage	**Medium**	**Medium**	**Low**	**Low**

APPENDIX H

ATE ROUTE CHECK TOOL KIT

Active Travel England

Route Check

Summary of Scheme

Date of Design Review	5th July 2024
Scheme Reference	P24048
Scheme Name	Mitcheldean
Scheme Summary	Proposed development of up to 180 dwellings
Scheme Information Reviewed	
Authority	Forest of Dean District Council
Transport/ Combined Authority	Not Applicable
Region	South West
Funding Programme	
Design Stage	Other
Funding Conditions	N/A
Inspector Email Address	a.morley@primetp.co.uk
Route Length Assessed in this File (km)	circa 1km
Total Route Length (km)	circa 1km
Notes	This route assessment forms part of a planning application for up to 180 dwellings on allocated land to the north of Carisbrook Road, Mitcheldean

Route Check Type (Street or Path)	What type of route is being reviewed: **Street Check** (e.g. on- or by-carriageway) or **Path Check** (e.g. a traffic-free path featuring minimal interactions with motor traffic)	Street Check

	Latitude	Longitude
Route Start Point	51.869748	2.489291
Route End Point	51.863796	2.49159
Weblink to Map	kwwsv=22z z z 1jrrjdn1frp 2p dsv2g2hg lWp lg@4 |r; i kD< IJ14R 0S6 ; ; tXOrJ<hFT1j {T) xvs@vkdulqj#	

Network Map	**Please add below a map showing the section of route being scored in this spreadsheet.** **If the route is part of a longer route of multiple sections (covered in other spreadsheets) please show this on the map for context too.**

OpenStreetMap

Active Travel England

Route Check

Policy Check

#	Policy Principle	Compliance		Commentary
		Existing	Proposed	
PO01	Are cyclists separated from pedestrians?	No	No	No physical infrastructure to separate cyclists is provided, although the need for this is considered limited given the suitable carriageway widths for the length of the route and observed appropriate vehicle speeds througout Mitcheldean
PO02	Is the route free from barriers, such as chicane barriers, steps or dismount signs?	Yes	Yes	No barriers are present for cycling or pedestrians with a clear route available to access the village centre from the development site
PO03	Does the route feel direct, logical and intuitive to understand for all road users?	Yes	Yes	The route towards the village centre is linear in nature and is intuitive to access through either walking or cycling
PO04	Are surfaces suitable for all users?	Yes	Yes	Both the carriageway and footway surfaces are of good quality and can be easily utilised by both pedestrians and cyclists
PO05	Is appropriate lighting provided?	Yes	Yes	Appropriate lighting is provided throughout the entirety of Mitcheldean contributing towards a conducive walking/cycling environment
PO06	Does the route join together, or join other facilities together, as part of a holistic, connected network?	Yes	Yes	The entirety of Mitcheldean can be accessed from the main route through the village (i.e Bradley Court Road /Townsend/High Street)

Policy Conflict Log

The Policy Check has identified at least one policy conflict, please ensure this is captured in the log below.

Policy Conflict	Stage	Latitude and Longitude	Location Name	Resolved by Design	Commentary & Feedback
1 - Cyclists are not separated from pedestrians	Existing	Entirety of route	Entirety of route	No	No physical infrastructure to separate cyclists is proposed, although the need for this is considered limited given the wide carriageway and observed appropriate vehicle speeds througout Mitcheldean

Active Travel England

Route Check

Safety Check

Metric	Mode	#	Description	Critical Issue	Red	Amber	Green	Existing		Proposed	
				C	0	1	2	Score	Comments / assumptions	Score	Comments / assumptions
SAFETY											
Conflict at Side Roads and Priority Junctions	Walking / Wheeling / Cycling	SA01	Pedestrian and cyclist conflict with motor traffic at side roads/priority junctions	>2,500vpd cut across main walking, wheeling or cycling streams.	<2,500vpd cut across main walking, wheeling or cycling streams, but side roads and priority junctions are untreated.	<2,500vpd cut across main walking, wheeling or cycling streams and side roads and priority junctions have entry treatments.	Side roads/priority junctions have entry treatments that offer greater protection for pedestrian and cycle movements (e.g. exit only, continuous footways, zebra/parallel crossings as appropriate to context).	1	The majority of the side roads/junctions within Mitcheldean have clear lines of visibility to pedestrians on approach to junction mouths, with appropriate lighting similarly provided. Many of the side roads serve a relatively small amount of development and so the daily traffic movements are low	1	
Conflict at Roundabouts and Signal Junctions	Walking / Wheeling / Cycling	SA02	Pedestrian and cyclist conflict with motor traffic at roundabouts and signal-controlled junctions	>2,500vpd cut across main walking, wheeling or cycling streams.	The principal pedestrian and/or cyclist movements are in conflict with motor traffic movements at roundabouts and/or signal controlled junctions.	The principal pedestrian and cyclist movements are separated from motor traffic movements at roundabouts and/or signal controlled junctions.	All pedestrian and cyclist movements are separated from all motor traffic movements at roundabouts and/or signal controlled junctions.	1	Barriers are provided at the Hawker Hill mini roundabout to separate pedestrians, with an accompanying crossing facility also in place on New Road. No specific cycle infrastructure is provided, although the option to dismount is available.	1	
Lane Widths	Cycling	SA03	Effect of lane widths on conflict between cyclists and motor traffic	Cyclists are mixed with traffic in lanes between 3.25m and 3.9m wide. Or, cyclists are in unprotected cycle lanes and the combined width of the cycle lane and adjacent traffic lane is between 3.25m and 3.9m.	Cyclists are mixed with traffic in lanes less than 3.25m wide or over 3.9m wide. Or, cyclists are in unprotected cycle lanes and the combined width of the cycle lane and adjacent traffic lane is under 3.25m or over 3.9m. Or cyclists are mixed with traffic on busy urban streets with no centre line. Or, there are speed cushions present.	Cyclists are in cycle lanes with light protection or stepped cycle tracks under 1.8m wide (single direction). Or, cyclists are in a protected bidirectional cycle facility under 2.5m wide. Or, cyclists are mixed with traffic on quiet urban streets with no centre line.	Cyclists are protected from motor traffic or off-road entirely.	0	No cycle lanes are present. Local carriageways are circa 6.0m wide, with individual lanes being approximately 3.0m. As stated however, traffic is relatively slow and the environment is conducive to cycling	0	
Trip Hazards	Walking / Wheeling	SA04	Risk of pedestrians tripping due to hazards	There are level differences of greater than 13mm with no tactile information and colour contrast to help identify them.	Many trip hazards.	Few trip hazards.	No trip hazards, level clear surface.	2	No clear trip hazhards were observed. Much of the footway network comprises smooth tarmac.	2	
Kerbside Activity	Cycling	SA05	Cyclist conflict with kerbside activity, including risk of 'dooring'	Cycle facility next to parking/loading facility, without a buffer of at least 0.5m. Or, an unprotected cycle lane is next to a frequently-used bus layby.	Frequent kerbside activity for cyclists to contend with. Conflict with cyclists is not well-managed.	Less frequent kerbside activity, and conflict with cyclists is well-managed.	Kerbside activity is well-managed with no or minimal conflict with cyclists.	2	Minimal kerbside activity was noted to occur, with loading or deliveries not observed during the site visit.	2	
Provision of Crossings	Walking / Wheeling	SA06	Ability of pedestrians to cross the street safely on desire lines	On very busy streets (>8,000vpd) controlled crossings (including zebra crossings) are not present or more than 400m apart. On quieter streets (<8,000vpd), desire lines are blocked by parking and loading.	On very busy streets (>8,000vpd), controlled crossings (including zebra crossings) are provided every 200-400m. On quieter streets (<8,000vpd), loading/parking is formalised with gaps for pedestrians to cross.	On very busy streets (>8,000vpd), controlled crossings (including zebra crossings) are provided every 100-200m. On quieter streets (<8,000vpd), loading/parking is formalised with gaps for pedestrians to cross on desire lines.	On very busy streets (>8,000vpd), controlled crossings (including zebra crossings) are provided every 50-100m. On quieter streets (<8,000vpd), there are controlled crossings or only one lane of traffic to cross.	2	On busier roads within Mitcheldean, i.e High Street/Hawker Hill mini roundabout, both a zebra crossing and pelican crossing are provided. Vehicular parking was noted to be concentrated within parking laybys, with no parking noted to occur on street outside of these laybys. As such, visiblity for pedestrians to cross the street is possible.	2	
Standard of Crossings	Walking / Wheeling	SA07	Suitability of pedestrian crossings in context	On very busy streets (>8,000vpd), there are uncontrolled crossings of two or more lanes with no gaps in traffic. At signal junctions there are arms with dropped kerbs and tactile paving but no green pedestrian symbol.	On very busy streets (>8,000vpd), there are uncontrolled crossings or zebra/parallel crossings. On quieter streets (<8,000vpd), crossing points have no implied priority or there are no crossing points.	On very busy streets (>8,000vpd), signal crossings are provided for pedestrians. On quieter streets (<8,000vpd), crossing points have effective implied priority for pedestrians.	On very busy streets (>8,000vpd), signal crossings rest on green for pedestrians or have rapid response. On quieter streets (<8,000vpd), crossing points are controlled crossings.	2	As mentioned, on busier streets within Mitcheldean both a zebra crossing and pelican crossing are provided. Movements in excess of 8000 vehicles is not envisaged.	2	

Motor Traffic Speed	**Walking / Wheeling / Cycling**	**SA08**	85th percentile speed of motor traffic (where cyclists are not protected or pedestrians are crossing uncontrolled)	85th percentile speed is over 30mph.	85th percentile speed is over 25mph.	85th percentile speed is between 20mph and 25mph.	85th percentile speed is under 20mph. Or, cyclists are protected from motor traffic or off-road entirely and controlled crossings are provided for pedestrians wherever needed.	**1**	Wider speed surveys have not been compelted, but 85th percentile speeds were visually observed to be in the region of 20-25mph	**1**	
Motor Traffic Volume	**Walking / Wheeling / Cycling**	**SA09**	Volume of motor traffic at the busiest hour (where cyclists are not protected or pedestrians cross uncontrolled)	>1,000 vehicles in the busiest hour. Or, over 5% of traffic is HGVs where there are over 500 vehicles in the busiest hour.	500-1,000 vehicles in the busiest hour. Or, 2-5% of traffic is HGVs where there are 200-499 vehicles in the busiest hour.	200-499 vehicles in the busiest hour. And, less than 2% of traffic is HGVs.	<200 vehicles in the busiest hour. Or, cyclists are protected from motor traffic or off-road entirely and controlled crossings are provided for pedestrians wherever needed.	**1**	Traffic at the Hawker Hill mini roundabout exceeds the 500 vehicles per hour during peak movements, but other junctions within the network are less than circa 500 vehicles per hour	**1**	
Pedestrian Crossing Speed	**Walking / Wheeling**	**SA10**	Required crossing speed at signal crossings (risk of pedestrians coming into conflict with traffic).	Pedestrians who start crossing at the end of the 'invitation to cross' must cross at a speed of over 1.2m/s to get across the whole crossing in time.	There are no detectors to extend crossing times, but pedestrians who start crossing at the end of the 'invitation to cross' can cross at a speed of 1.2m/s and get across the whole crossing in time.	There are detectors present on the crossing which extend crossing times based on a crossing speed of 1.2m/s.	There are detectors present on the crossing which extend crossing times based on a crossing speed of 1m/s.	**2**	Detectors are present at the puffin crossing	**2**	
Footway Widths	**Walking / Wheeling**	**SA11**	Clear walking and wheeling spaces free of permanent obstructions and furniture, reducing risk of pedestrians walking in the carriageway.	Where the footway is next to the carriageway, there is: • <1m clear footway width on any footway • <1.5m clear footway width for over 6m • 1m-2m clear footway width with a Pedestrian Comfort Level of D-E Or there is no footway.	Where the footway is next to the carriageway, there is: • <2m clear footway width but pedestrian comfort is good (PCL of A-C) • 2m-3m clear footway width and pedestrian comfort is poor (PCL of D-E). Where the footway is **not** next to the carriageway, the clear footway width is <1.5m.	Where the footway is next to the carriageway, there is: • 2m-3m clear footway width and pedestrian comfort is good (PCL of A-C). • >3m clear footway width and pedestrian comfort is poor (PCL of D-E). Where the footway is **not** next to the carriageway, the clear footway width is 1.5m-3m.	>3m clear footway width and pedestrian comfort is good (PCL of A-C).	**1**	Although some sections of footway are narrow (i.e less than 2m in width), the majoirty of the footway network is wide and either achieves or exceeds a 2.0m width	**1**	
Effective Width next to Tram Lines	**Cycling**	**SA12**	Effective width next to tram line on a straight run or a curve	<2.4m from tramline edge to kerb on a straight run. Insufficient clearance on a curve.	2.4m from tramline edge to kerb.	>2.4m from tramline edge to kerb.	Physical protection is provided for cyclists.	**N/A**	No trams are present	**N/A**	
Crossing Angle of Tram/Train Rails	**Cycling**	**SA13**	Crossing angle (between cyclist desire line and tram or train rails).	Crossing angle less than 60 degrees.	Crossing angle between 60 and 80 degrees.	Crossing angle between 80 and 90 degrees (or between 60 and 80 degrees with track filler creating a smooth crossing for cyclists).	Crossing angle between 80 and 90 degrees with track filler creating a smooth crossing for cyclists.	**N/A**	No trams or train rails are present	**N/A**	
Cycling Surface and Maintenance Defects	**Cycling**	**SA14**	Cycling surface and maintenance defects: • sharp gradients (≥12.5%) • non cycle friendly ironworks • raised/sunken covers or gullies • potholes • loose/cracked surfaces • poor drainage or slip risks • overgrown vegetation	Major defects.	Many minor defects.	Few minor defects.	No defects.	**1**	The majority of the carriageway network within Mitcheldean is of good quality with minor defects. From the site, a gradient change is apparent on Bradley Court Road leading into the village centre, although this section is short lived and should be easily cyclable by the majority of people	**1**	
Walking/Wheeling Surface and Maintenance Defects	**Walking / Wheeling**	**SA15**	Walking/wheeling surface and maintenance defects: • steep camber (horizontal gradient >2.5%) • steep longitudinal gradients (≥8% if under 1m, ≥5% if 1m or over) • missing dropped kerbs • non flush tables • misleading tactile information • loose/cracked surfaces • poor drainage or slip risks • overgrown vegetation	Major defects.	Many minor defects.	Few minor defects.	No defects.	**2**	The majority of the carriageway network within Mitcheldean is of good quality with minor defects. From the site, a gradient change is apparent on Bradley Court Road leading into the village centre, although this section is short lived and should be easily cyclable by the majority of people	**2**	
Guard Railing	**Walking / Wheeling / Cycling**	**SA16**	Presence of guard railing	Guard railing used as standard without consideration of inherent safety risks.	Guard railing used to control behaviour in complex environments.	Minimal guard railing, used to address a clear safety issue such as a level difference.	No guard railing anywhere on the route.	**1**	Some guard railing is present in key points to provide protection and create a more conducive environment to walking	**1**	

Critical Issues Log

Critical Issue	Stage	Latitude and Longitude	Location Name	Resolved by Design	Commentary & Feedback

Active Travel England

Route Check

Street Check

Metric	Mode	#	Description	Red	Amber	Green	Existing		Proposed	
				0	1	2	Score	Comments / assumptions	Score	Comments / assumptions
ACCESSIBILITY										
Gradient	Walking / Wheeling / Cycling	ST17	Steepest gradient due to underlying terrain. (For gradients at ramps, dropped kerbs and cambers, see metrics SA14 and SA15).	>5%.	3-5%.	<3%.	1	There is a slight gradient on Bradley Court Road leading away from the site into the village centre. This section is short lived however and should be easily walkable by the majority of people	1	
Tactile Information and Signal Equipment	Walking / Wheeling / Cycling	ST18	Adherence of tactile paving to recommended layouts and colours in 'Guidance on the Use of Tactile Paving Surfaces' and accessibility of signal equipment.	Guidance on tactile paving has not been considered. Or, there is signal equipment which is incorrectly situated, inaccessible or faulty (for example in terms of rotating cones).	Guidance on tactile paving has been considered, but the area is not fully legible.	Guidance on tactile paving has been considered and the area is fully legible.	1	Tactile paving is provided at the newly proposed site layout. Tactile paving is not provided for all jucntions along the main route to the village centre	1	
Barriers	Walking / Wheeling / Cycling	ST19	Presence and accessibility of barriers.	Barriers are not accessible by wheelchair users and/or users on solo upright cycles (as defined in LTN 1/20) and/or mobility scooters.	All barriers are accessible by wheelchair users, mobility scooters, and by users on solo upright cycles (as defined in LTN 1/20), with sufficient space to turn.	All barriers are accessible by the cycle design vehicle referenced in LTN 1/20, with sufficient space to turn. Or, there are no barriers.	2	No barriers are believed to exist which could stop cyclists or pedestrians from accessing the village centre	2	
Bus Stops	Walking / Wheeling / Cycling	ST20	Interactions at bus stops.	At bus stops, cyclists regularly have to wait behind buses or overtake them in general traffic lanes. Or, there are likely to be high-level interactions between pedestrians and cyclists.	At bus stops, cyclists are protected from buses and traffic, but there are likely to be medium-level interactions between pedestrians and cyclists.	At bus stops, cyclists are protected from buses and traffic and interactions between pedestrians and cyclists are likely to be low-level.	1	No physical infrastrucutre is present, although carriageways are suitably wide for cyclists to navigate around stationary buses if necessary.	1	
Wheelchair Access	Wheeling	ST21	Accessibility of pedestrian facilities by wheelchair.	Pedestrian facilities (including any crossings, connections and public transport interchange facilities) are not wheelchair accessible.	All pedestrian facilities (including any crossings, connections and public transport interchange facilities) are step-free and accessible for wheelchair users, but some interaction with cyclists is possible.	All pedestrian facilities (including crossings, connections and public transport interchange facilities) are step-free and accessible for wheelchair users, and there is no potential for interaction with cyclists.	2	No steps or barriers exist between the site and the village centre. As mentioned, a gradient is apparent on Bradley Court Road, although this gradient is for a short section only.	2	
Access to Taxis and Blue Badge Parking	Walking / Wheeling / Cycling	ST22	Distance to accessible pick-up, drop-off or hailing points, or blue badge parking facilities.	Where people meet, wait, or spend time in numbers, it is over 150m to the nearest accessible pick-up, drop-off or hailing points, or blue badge parking facilities.	Where people meet, wait, or spend time in numbers, it is less than 150m to the nearest accessible pick-up, drop-off or hailing points, or blue badge parking facilities.	Where people meet, wait, or spend time in numbers, it is less than 50m to nearest accessible pick-up, drop-off or hailing points, or blue badge parking facilities.	2	Sheltered bus stop provision is provided on Carisbrook Road	2	
Access to Toilets	Walking / Wheeling / Cycling	ST23	Provision of sanitary facilities. E.g. toilets and/or baby change facilities.	Where people meet, wait or spend time in numbers, it is over 150m to the nearest accessible sanitary facilities.	Where people meet, wait or spend time in numbers, it is less than 150m to the nearest accessible sanitary facilities.	Where people meet, wait or spend time in numbers, it is less than 50m to the nearest accessible sanitary facilities.	0	Public toilets are available circa 650m from the site	0	

COMFORT

Cycling Surface Material	**Cycling**	**ST24**	Type of cycling surface material.	Unsurfaced/unbound or unstable blocks/sets.	Hand-laid asphalt or smooth blocks.	Machine-laid asphalt or smooth and firm blocks undisturbed by turning vehicles.	**2**	Laybys are provided along the main roads in Mitcheldean to help keep the carriageway free of stationary vehciles. The road surfaces are of good quality and smooth	**2**	
Walking/Wheeling Surface Material	**Walking / Wheeling**	**ST25**	Type of walking/wheeling surface material.	The surface is low-grip (i.e. PTV of 25 or lower). If paved, the joints are wider than 5mm.	The surface is medium-grip (i.e. PTV of between 25 and 35). If paved, the joints are 5mm or less.	The surface is high-grip (i.e. PTV of 35 or higher). If paved, the joints are mortared.	**2**	The surfacing along footways awas noted to be of a high grip quality	**2**	
Effective Width for Cyclists	**Cycling**	**ST26**	Effective width for cyclists (when not mixed with motor traffic).	At pinch points, cycle facility widths and/or buffers are below the absolute minimums recommended in LTN 1/20.	Recommended desirable minimum widths from LTN 1/20 are maintained for cycle facilities and buffers throughout the whole route, except at pinch points where absolute minimum widths recommended in LTN 1/20 are maintained.	Recommended desirable minimum widths from LTN 1/20 are maintained or exceeded for cycle facilities and buffers throughout whole route.	**N/A**	No facility is currently provided	**N/A**	

DIRECTNESS

Deviation of Cycle Route	**Cycling**	**ST27**	Deviation of cycle route against straight line or shortest alternative.	Deviation factor against straight line or shortest alternative greater than 1.4.	Deviation factor against straight line or shortest alternative 1.2-1.4.	Deviation factor against straight line or shortest alternative less than 1.2.	**2**	A straight line measurement from the site access to the Hawker Hill mini roundabout is circa 870m. Walking measurement of circa 1.04km has also been taken. This produces a deviation factor of 1.19	**2**	
Pedestrian Crossing Locations	**Walking / Wheeling**	**ST28**	Alignment of crossings with desire lines.	No crossings are located on desire lines.	Some crossings are located on desire lines.	All crossings are located on desire lines, and all desire lines are provided for.	**2**	All crossing points within Mitcheldean were noted to be utilised, with a minimal number of pedestrians choosing to deviate from these paths.	**2**	
Cyclist Delay at Junctions	**Cycling**	**ST29**	Delay to cyclists at junctions.	Delay for cyclists at junctions is greater than for motor vehicles.	Delay for cyclists at junctions is similar to delay for motor vehicles.	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (e.g. bypass at signals).	**1**	Cyclists were observed to have some minimal delay at junctions, although the route is not excessively trafficked and no issues were observed	**1**	
Cyclist Delay on Links	**Cycling**	**ST30**	Delay to cyclists on links.	Cyclists have no opportunities to pass slower moving vehicles (including other cyclists).	Cyclists have some opportunities to pass slower moving vehicles (including other cyclists).	Cyclists can always progress without being delayed by other vehicles.	**1**	No physical infrastructure is provided, although the carriageways within Mitcheldean are suitably wide to facilitate passing movements safely	**1**	
Pedestrian Delay at Junctions	**Walking / Wheeling**	**ST31**	Delay to pedestrians at signal controlled junctions.	Maximum waiting time over 60 seconds.	Maximum waiting time 40-60 seconds.	Maximum waiting time up to 40 seconds.	**2**	The crossing facilities on New Road do have a small delay when waiting to cross	**2**	
Pedestrian Delay at Standalone Signal Crossings	**Walking / Wheeling**	**ST32**	Delay to pedestrians at standalone signal crossings.	After pressing the button, pedestrians must wait over 10 seconds for an invitation to cross.	After pressing the button, pedestrians must wait up to 10 seconds for an invitation to cross.	Crossings rest on the green for pedestrians. Or, the time between pressing the button and the invitation to cross has been minimised as much as is safe to do so.	**1**	The crossing facilities on New Road do have a small delay when waiting to cross	**1**	

ATTRACTIVENESS

Wayfinding	**Walking / Wheeling / Cycling**	**ST33**	Effectiveness of signage and road markings on wayfinding.	Route signing is poor with signs missing at key decision points. Pedestrians and cyclists follow signs and road markings intended for motor traffic. Or, signs and road markings are faded or unclear.	Some cycle and pedestrian specific direction signing. There are gaps in signage and road markings which could be improved.	Route is well signed for pedestrians and cyclists with signs and road markings located at all decision points and junctions. Signs and road markings are clear, easily visible and legible.	**1**	Some signage is provided along the main route from the site to the village centre	**1**	
Places to Rest	**Walking / Wheeling**	**ST34**	Distance between resting points.	>150m.	50-150m.	<50m.	**0**	Resting points are in excess of 150m along the route into the village centre, although the route is mainly flat (aside from the elevation change on Bradley Court Road) and should be easily walkable by the majority of people	**0**	
Places to Shelter	**Walking / Wheeling**	**ST35**	Distance between shelter points.	>150m.	50-150m.	<50m.	**0**	As above, the walking distances between shelters are in excess of 150m	**0**	
Lighting	**Walking / Wheeling / Cycling**	**ST36**	Extent of lighting.	Long stretches of darkness. Or, no lighting.	Short stretches of darkness. Or, bat-friendly lighting.	Route lit thoroughly, including any public transport waiting areas.	**2**	The route to any public transport stops are well lit, with the stops themselves observed to be lit as well	**2**	
Cycle Parking	**Cycling**	**ST37**	Ease of access to cycle parking on- and off-street.	Insufficient or inappropriate cycle parking.	Some accessible and overlooked cycle parking provided but not enough to meet present demand.	Accessible and overlooked cycle parking provided, sufficient to meet present and future demand, including provision for a range of cycle vehicles and users.	**2**	Cycle parking is provided within the village centre	**2**	
Impact of Cycling on Walking	**Walking / Wheeling / Cycling**	**ST38**	Presence of shared use cycle tracks and toucan crossings.	On urban streets, cyclists are expected to use shared use cycle tracks and/or toucan crossings, bringing them into potential conflict with pedestrians. In rural areas or motor traffic free environments, shared use cycle tracks fail the width requirements set out in Table 6-3 of LTN 1/20.	In rural areas or motor traffic free environments, shared use cycle tracks pass the width requirements set out in Table 6-3 of LTN 1/20 and are designed in a way that minimises potential conflict between cyclists and pedestrians.	There are no shared use cycle tracks.	**2**	No shared cycle tracks provided within Mitcheldean	**2**	

COHESION

Impact of Motor Traffic on Pedestrians and Cyclists	**Walking / Wheeling / Cycling**	**ST39**	Measures taken to manage motor traffic in a way that benefits active modes.	There are no measures to manage motor traffic that benefit active modes.	There are some measures to manage motor traffic that benefit active modes.	There are measures to manage motor traffic which prioritise active modes. Or, the route is completely separate from motor traffic.	**1**	A vehicular priority chicane is provided within Mitcheldean which helps to slow traffic, parking laybys are provided to keep the main carriageway clear and flowing freely, a zebra crossing is in place within the village centre to help facilitate pedestrian movements and a formal push button crossing is in place on New Road	**1**	
Transitions for Cyclists	**Cycling**	**ST40**	Ability to transition on and off the route safely and easily.	Cyclists cannot transition on or off the route without dismounting.	Cyclists can transition on and off the route with minimal disruption to their journey.	Cyclists have dedicated, legible and understandable transitions on and off the route at all key points. Protected cycle facilities are easy to join and leave.	**1**	No dedicated cycle infrastructure is provided, although the are numerous options and locations were cyclists can join / leave the carriageway	**1**	
Route Continuity	**Walking / Wheeling / Cycling**	**ST41**	Continuity of walking, wheeling and cycling routes.	Provisions for walking, wheeling and cycling along the route are discontinuous.	Provisions for walking, wheeling and cycling along the route are continuous but may be indirect or have sections which are unintuitive to navigate.	Provisions for walking, wheeling and cycling along the route are direct, continuous, intuitive and legible.	**2**	As stated and discussed within the accompanying Transport Assessment , the route towards the village centre is continuous and free flowing for both cyclists and pedestrians	**2**	
Consistency of Route	**Walking / Wheeling / Cycling**	**ST42**	Consistency of provision for pedestrians and cyclists.	Multiple changes of provision on the route.	Some changes of provision on the route.	Provision is consistent throughout the route.	**2**	Provision for cyclists/pedestrians are consistent along the route, with footway available on both sides of the carriageway and the carriageway remaining largely free of stationary vehicles	**2**	

Active Travel England

Route Check

Street Placemaking Assessment

Metric	#	Description	Red	Amber	Green	Existing		Proposed	
			0	1	2	Score	Comments / assumptions	Score	Comments / assumptions
SOCIAL ACTIVITY									
Street Engagement for Children	SP01	Presence of features which children can engage with.	None.	Some access to formal/natural play spaces for children.	Access to formal/natural play spaces for children and street features that can engage children.	1	Access to adjacent playing field is facilitated through the local footway/road network, although no actual street furniture is provided which children can engage with	1	
Social Space	SP02	Proximity to places where people might stop and have a conversation.	>800m.	400-800m.	<400m.	2	The nearest bus stops to the development site on Carisbrook Road are well within a 400m distance, with an outdoor gym/playing fields also within a 400m distance.	2	
Diversity of Activities	SP03	Suitability of the street for different activities, creating conditions for positive interactions.	Single activity street.	Multiple activity street.	Different activities encouraged on the street at different times of day.	2	Varying amenities are accessible towards the village centre, including The Mews, a surgery, café and Co-op food shop. Each of these amenities have their own associated trips/ activities which can contribute towards positive interactions	2	
PERSONAL SECURITY									
Surveillance and Activity	SP04	Natural surveillance from the surrounding environment throughout the day and night.	Few buildings overlook the street. There is little activity from people using or moving through the space.	Surrounding buildings do not completely overlook the street throughout day and night. There are some people using or moving through the space.	Mixed use buildings overlook the street or space throughout day and night. There are many people using or moving through the space.	2	As mentioned above, a mixture of buildings/amenities overlook the footway/carriageway. The route, especially around the vilage centre, was noted to be well walked.	2	
Forward Visibility and Escape Routes	SP05	Effect of topography, vegetation and built environment on perceived and actual risk of crime.	Poor sight lines or potential ambush points due to buildings, walls, vegetation, corners or topography etc. Enclosed spaces; no or few escape routes.	Streetscape is mostly open with few visibility issues. Some escape routes.	Streetscape is open with good visibility and clear sight lines. Frequent escape routes.	2	Numerous side roads adjoin onto the main route through Mitcheldean. These side roads facilitate access to surrounding residential area, The Mews or employment space.	2	
Visibility of Others	SP06	Effect of lighting and street furniture on perceived and actual risk of crime.	No lighting. Street furniture that creates potential ambush points.	Inadequate lighting, or bright lighting that creates high contrast areas with shadows.	Lighting that does not create high contrast areas with shadows. Street furniture does not create hiding or loitering places.	2	Lighting within Mitcheldean as a whole is frequent. The route is well lit and suitable for pedestrians/cyclists	2	

CHARACTER AND LEGIBILITY

Maintenance and Upkeep	**SP07**	Condition of the streetscape.	Poorly maintained streetscape: overgrown vegetation or significant littering. No winter maintenance. The streetscape has been designed in a way that is hard to maintain.	Elements of the streetscape are well maintained.	Well maintained streetscape: vegetation is well-managed and there are no issues with littering. Route is well-maintained throughout winter. The streetscape has been designed in a way that is easy to maintain.	**2**	Any vegetation along the route was noted to be well maintained. No vegetation was noted to be overgrown which could inhibit the walking or cycling environment	**2**	
Street Network Layout	**SP08**	Street network impact on wayfinding.	The street network is complex or there are connectivity issues. Maps or signage are needed to help navigate the area.	The street network helps users find their way in some situations. Users may need to refer to maps or signage at times while moving through the area.	The street network is accessible and its layout helps users navigate the area without the need for maps or signage. Users can see where they are going and know how to get there.	**2**	Mitcheldean is mainly concentrated around a singular main route, i.e Bradley Court Road/Townsend/High Street. Subsidiary side roads join onto this main carriageway, creating an easily accessible/navigable environmental. There is only one main route through to the centre of the village.	**2**	
Place and Movement	**SP09**	Extent to which the form of the street matches its intended place and movement functions.	The form of the street clashes with its intended functions. There are issues with navigation and movement or the street is an unpleasant place to be.	The layout of the street is functional and serves its intended purpose in terms of movement and place.	The form of the street is in full harmony with its intended functions. Users can find their way without a need for maps or signage and the street is a pleasant place to be.	**2**	Mitcheldean is mainly concentrated around a singular main route, i.e Bradley Court Road/Townsend/High Street. Subsidiary side roads join onto this main carriageway, creating an easily accessible/navigable environmental. There is only one main route through to the centre of the village.	**2**	
Impact of Street Design on Behaviour	**SP10**	Extent to which the street layout influences different types of user behaviour.	The street layout encourages aggressive behaviour, which makes the street an unpleasant place to be. E.g. central hatching, guard railing, wide flared side roads and right-turn pockets.	The street layout controls user behaviour throughout.	The highways layout encourages civilised behaviour, negotiation and forgiveness, which makes the street a pleasant place to be. E.g. side road treatments, minimised junction radii and carriageway width.	**2**	Mitcheldean is mainly concentrated around a singular main route, i.e Bradley Court Road/Townsend/High Street. Subsidiary side roads join onto this main carriageway, creating an easily accessible/navigable environmental. No side roads are designed with excessive radii or widths which could encourage fast vehicle speeds. Good visiblity is available on approach to junctions which could encourage drivers to allow pedestrians to cross.	**2**	

Enforcement of Loading and Parking	**SP11**	Impact of on-street loading, servicing and parking provision on place and movement.	No designated provision: risk of abuse, pedestrian or cycling movement impacted.	Reasonable loading, servicing and parking provision in street area where needed.	Good loading and servicing provision, low impact and integrated. Parking enforcement recognised. Or, no loading or parking provision necessary.	**2**	Loading requirements within the village centre are noted to be minimal, with any loading requirements able to be facilitated to the rear of shops. Parking is accomodated within laybys outside of the main carriageway flow, with restrictions in place between 0800 and 1800.	**2**	
Street Clutter	**SP12**	Impact of street clutter on place and movement.	Lots of redundant street furniture, advertising, and temporary signage causing obstructions. Signage clutter contributing to visual overload.	Some redundant street furniture, advertising and temporary advertising. Some signage clutter.	No redundant street furniture, advertising or temporary signage. Footways are clear from obstruction and signage clutter is minimal.	**2**	No obstructions along the footway were noted, with street furniture only provided in locations where they are necessary i.e within the village centre	**2**	
Consistency of Materials and Street Furniture	**SP13**	Consistency and suitability of materials and street furniture in the wider street environment.	Clashes between surface materials, street and the wider street environment, negatively affecting the street's appearance and character.	Consistent surface materials and street furniture which also match the wider street environment.	Surface materials and street furniture complement the wider street environment and enhance the street's appearance and character.	**2**	Any street furniture provided matches the surrounding street and no clashes were noted to occur. A seating area is available within the village centre for example, which compliments the street scene.	**2**	
Visual Interest	**SP14**	Visual distinctiveness of the streetscape.	Uniform, monotonous, boring.	Some variety in the streetscape.	Lots of variety in the streetscape, unique features.	**1**	The route which has been assessed is fairly short, but variety in terms of streetscape is provided, i.e a transition from a residential area, to village centre, to slightly more rural in nature with greenery	**1**	
Cultural Significance	**SP15**	Cultural significance of the street to society.	The street is culturally significant on a regional or national level, but the character of the street does not reflect this.	The street is culturally significant on a local level, but the character of the street does not reflect this.	The character of the street reflects its cultural significance to society.	**2**	The character of the route matches its significance within Mitcheldean, with footway materials changing on its transition to High Street to note the change from residential to village centre.	**2**	
Street Features that Support Walking, Wheeling and Cycling	**SP16**	Street features to encourage and enhance active travel journeys, such as: • Benches or other seating • Water fountains • Public tool stands • Cycle pumps • Cycle counters • Interpretation boards • Tactile maps or interactive pedestrian features	No specific street features to encourage and enhance active travel journeys.	One street feature to encourage and enhance active travel journeys.	Many street features to encourage and enhance active travel journeys.	**1**	Some street features are provided towards the village centre, although priority has been given towards pedestrian movements, as space can be limited in some areas	**1**	

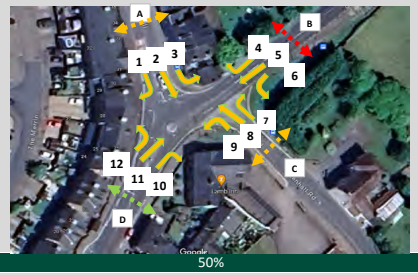
ENVIRONMENT

Drainage and Water	**SP17**	Effect of drainage and water on user experience, biodiversity, and climate resilience.	Basic drainage infrastructure.	Well-integrated sustainable drainage that is capable of dealing with extreme weather events.	Well-integrated sustainable drainage that is capable of dealing with extreme weather events and creates habitats for flora and fauna.	**1**	Drainage along the route is standard and capable of handling weather events	**1**	
Trees	**SP18**	Effect of trees on user experience, biodiversity, and climate resilience.	There are no trees, or only one tree. If assessing a design proposal, there are no trees, or the number of trees has been reduced.	There are multiple trees, with canopies spaced more than 15m apart on average. If assessing a design proposal, most existing trees are to be retained, with the overall number of trees maintained or increased.	There are multiple trees, with canopies spaced less than 15m apart on average. If assessing a design proposal, all existing trees are to be retained, with the overall number of trees maintained or increased.	**1**	There are multiple trees in place along the route towards the village centre creating a pleasant walking environment.	**1**	
Planting	**SP19**	Effect of planting on user experience, biodiversity, and climate resilience.	Little or no planting, providing limited visual interest.	Some planted elements providing visual interest.	A variety of suitable planting that provides habitats for fauna, and wider experiential benefits.	**2**	There are multiple trees in place along the route towards the village centre. These trees vary in size, character and species	**2**	
Ancillary Features to Support Fauna	**SP20**	Effect of ancillary features on user experience, biodiversity and climate resilience. Such as: • Bug hotels • Water features • Wildlife corridors	No features.	One feature.	Multiple features.	**0**	No biodiversity features were noted during the site visit	**0**	
Sustainable Materials	**SP21**	Incorporation of low carbon, sustainable or recycled materials into the design.	No low carbon, sustainable or recycled materials used.	Some low carbon, sustainable or recycled materials used.	Full integration of low carbon, sustainable and/or recycled materials.	**1**	Low carbon material are incorporated in the design were appropriate and necessary	**1**	
Air Pollution - Exposure	**SP22**	Exposure to NO_X concentration.	The NO_2 concentration is greater than 40µg/m^3. If assessing a design proposal, the NO_2 concentration is greater than 40µg/m^3 and there are no proposals to reduce local traffic volume.	The NO_2 concentration is 32-40µg/m^3. Or, the existing NO_2 concentration is greater than 40µg/m^3 but local traffic volume reduction measures are proposed.	The NO_2 concentration is less than 32µg/m^3. Or, the NO_2 concentration is 32-40µg/m^3 but local traffic volume reduction measures are proposed.	**2**	Air quality data is not available at the time of writing, although the centre of the village is not overly busy and as such it is assumed that no air quaility issues exist	**2**	
Air Pollution - Proximity	**SP23**	Proximity to PM10 & NO_x concentration.	No roadside tredges or selective planting. Or, a buffer of less than 0.5m between sources of pollution and pedestrians and cyclists.	0.5-2m buffer between sources of pollution and pedestrians and cyclists. Or, there is a cycle facility at least 2m wide between the footway and carriageway.	Inclusion of roadside tredges or selective planting. Or, a buffer of at least 2m between sources of pollution and pedestrians and cyclists.	**0**	No buffers are provided along the main route towards the village centre. Vehicle speeds are relatively low and the village is not excessively trafficked, so the need for such buffers is not considered a necessity	**0**	
Noise Pollution	**SP24**	Effect of noise pollution from traffic on user experience.	Excessively noisy (>78dB).	Slightly noisy (65-78dB).	Comfortable noise levels (<65dB).	**2**	Vehicle speeds are relatively low and the village is not excessively trafficked, so noise pollution is not considered to be an issue. The development proposed will add a relatively small level of additional traffic which is also not considered to negatively impact noise levels	**2**	
Light Pollution	**SP25**	Effect of excessive lighting on the environment and user experience.	Beams from street lighting are excessively bright, excessively blue-violet and/or not shielded. Or, the street layout means that vehicle headlights dazzle pedestrians and cyclists.	Beams from street lighting are no stronger than necessary but are not sufficiently shielded.	Beams from street lighting are shielded, are no stronger than necessary and are warm-coloured. Street layout mitigates the effect of vehicle headlights dazzling pedestrians and cyclists.	**2**	Street lighting along the route within the village is considered to be appropriate. The route, aside from the elevation change along Bradley Court Road, is mostly flat with minimal instances where headlights could dazzle pedestrians or cyclists.	**2**	
Sunlight	**SP26**	How much sunlight the street receives.	No sunlight penetration.	<2 hours direct sunlight on shortest day of year.	>2 hours direct sunlight on shortest day of year.	**2**	There are no obstacles in place which could limit the amount of daylight which the street recieves.	**2**	

Active Travel England

Route Check

Junction Assessment Tool

Existing: Junction 1		Proposed Design: Junction 1	
JAT Diagram		JAT Diagram	
JAT Score (%)	50%	JAT Score (%)	Not Completed
Junction Name	Hawker Hill mini roundbaout	Junction Name	Hawker Hill mini roundbaout
Commentary / Notes	Consistent traffic movements for most arms. Traffic is noted to queue in the morning peak due to students utilising the crossing point on New Road	Commentary / Notes	

Walking and Wheeling Movements	Crossing	Score	Comments
A	Hawker Hill	1	Dropped kerb crossing provided slightly north of the roundabout
B	Gloucester Road	0	No dropped kerb present, but minimal pedestrian movements due to the presence of crossing facility on New Road
C	Abenhall Road	1	Physical barriers present to aid in protection of pederstrians , but no dropped kerb present
D	New Road	2	formal push button crossing present
E			
F			
G			
H			
I			
J			
	Total Score	50%	

Crossing	Score	Comments
Total Score	Not Completed	

Cycling Movements	Movement	Score	Comments
1	Hawker Hill to New Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
2	Hawker Hill to Abenhall Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
3	Hawker Hill to Gloucester Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
4	Glocuester Road to Hawker Hill	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
5	Gloucester Road to New Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
6	Gloucester Road to Abenhall Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
7	Abenhall Road to Gloucester Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
8	Abenhall Road to Hawker Hill	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
9	Abenhall Road to New Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
10	New Road to Abenhall Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
11	New Road to Gloucester Road	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
12	New Road to Hawker Hill	1	Roundabout operates smoothly, although actual cycle infrastructure is not present
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
	Total Score	50%	

Movement	Score	Comments
Total Score	Not Completed	

Active Travel England

Route Check

Results Summary

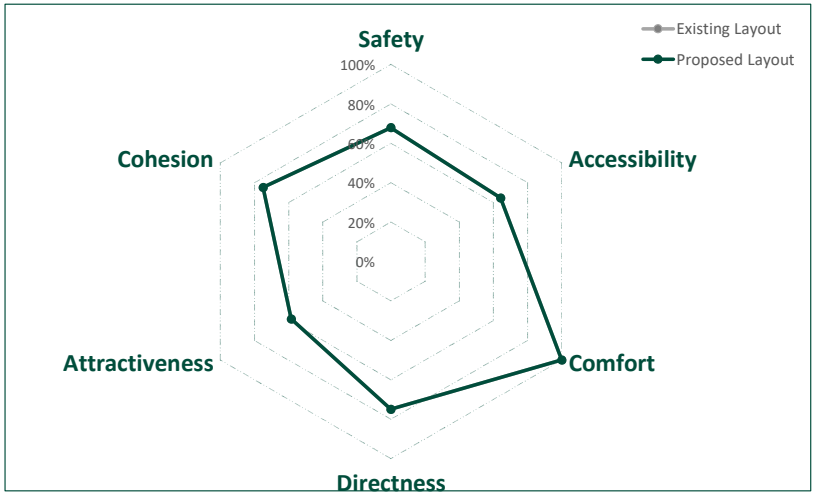
Overview	Complete	Remaining Issues for review	Next steps
Policy Conflicts	Yes	1	View Comments in Policy Check and Policy Conflict Log tabs
Critical Issues	Yes	0	No further action
		Net difference	
Safety Check	Yes	0%	The proposed design will likely reduce safety
Street Check	Yes	0%	The proposed design will likely reduce the route quality
Street Placemaking	Yes	0%	The proposed design will likely reduce the quality of place
Path Check	N/A	N/A	N/A
Path Placemaking	N/A	N/A	N/A
Junction Assessment Tool Check	No	N/A	N/A

Review Statement

Use the space to provide overall feedback for the proposed scheme.

Street Check Level of Service

Categories	Existing Layout	Proposed Layout	Net difference
Safety	68%	68%	0%
Accessibility	64%	64%	0%
Comfort	100%	100%	0%
Directness	75%	75%	0%
Attractiveness	58%	58%	0%
Cohesion	75%	75%	0%
Overall ATE Score	**69%**	**69%**	0%



Active Travel England

Route Check

Results Summary

1. Summary of Scheme

Scheme Name	Mitcheldean
Scheme Reference	P24048
Local Authority	Forest of Dean District Council
Design Stage	Other
Route Length Assessed in this File (km)	circa 1km

Network Map

2. Policy Check Results

Potential Policy Conflicts	Existing Route	Designed Route	Removed	Introduced	Remaining
	1	0	0	0	1

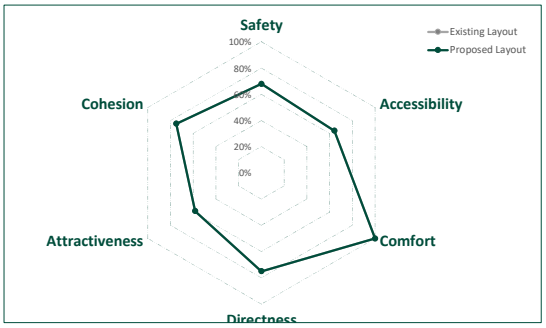
3. Safety Check Results (Critical Issues Only)

Critical Issues	Existing Route	Designed Route	Removed	Introduced	Remaining
	0	0	0	0	0

4. Street Check Results

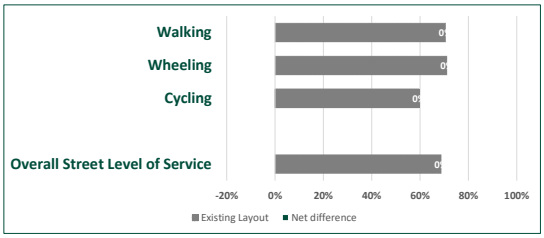
Street Level of Service

Categories	Existing Layout	Proposed Layout	Net difference
Safety	68%	68%	0%
Accessibility	64%	64%	0%
Comfort	100%	100%	0%
Directness	75%	75%	0%
Attractiveness	58%	58%	0%
Cohesion	75%	75%	0%
Overall Street Level of Service	**69%**	**69%**	0%



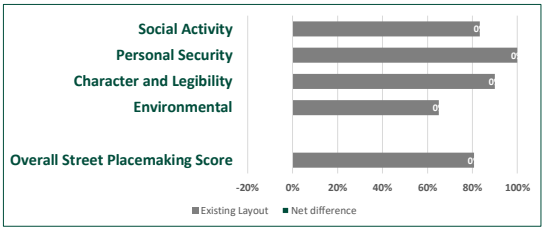
Street Level of Service by Transport Mode

Mode	Existing Layout	Proposed Layout	Net difference
Walking	71%	71%	0%
Wheeling	71%	71%	0%
Cycling	60%	60%	0%
Overall Street Level of Service	**69%**	**69%**	0%



Street Placemaking

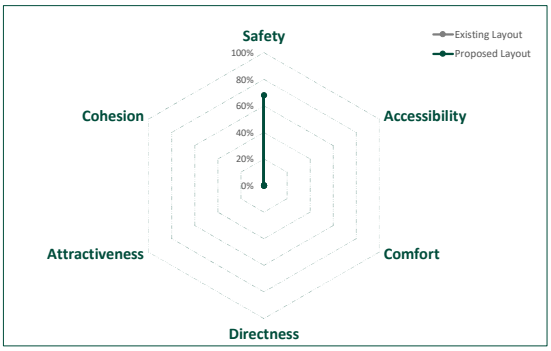
Categories	Existing Layout	Proposed Layout	Net difference
Social Activity	83%	83%	0%
Personal Security	100%	100%	0%
Character and Legibility	90%	90%	0%
Environmental	65%	65%	0%
Overall Street Placemaking Score	**81%**	**81%**	0%



5. Path Check Results

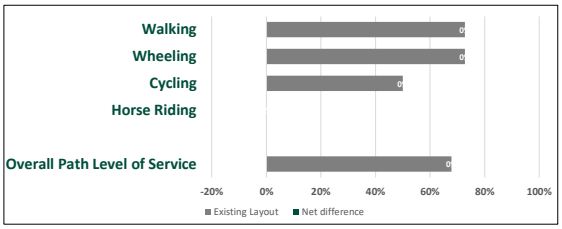
Path Level of Service

Categories	Existing Layout	Proposed Layout	Net difference
Safety	68%	68%	0%
Accessibility			
Comfort			
Directness			
Attractiveness			
Cohesion			
Overall Path Level of Service	68%	68%	0%



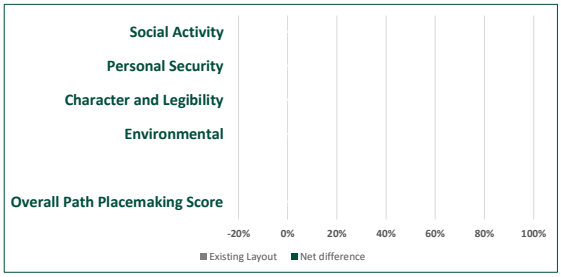
Path Level of Service by Transport Mode

Mode	Existing Layout	Proposed Layout	Net difference
Walking	73%	73%	0%
Wheeling	73%	73%	0%
Cycling	50%	50%	0%
Horse Riding	N/A	N/A	N/A
Overall Path Level of Service	**68%**	**68%**	0%



Path Placemaking

Categories	Existing Layout	Proposed Layout	Net difference
Social Activity			
Personal Security			
Character and Legibility			
Environmental			
Overall Path Placemaking Score			



6. Junction Assessment Tool Check

Junction Level of Service

Junction Name	Modes	Existing Layout	Proposed Layout	Net difference
Not Completed	Walking & Wheeling	50%	Not Completed	
	Cycling	50%	Not Completed	
	All	50%	Not Completed	
	Walking & Wheeling			
	Cycling			
	All			
	Walking & Wheeling			
	Cycling			
	All			
	Walking & Wheeling			
	Cycling			
	All			
	Walking & Wheeling			
	Cycling			
	All			
Overall	**Walking & Wheeling**	**50%**		
	Cycling	**50%**		
	All	**50%**		

Active Travel England

Route Check

Results Summary

1. Summary of Scheme

Scheme Name	Mitcheldean
Scheme Reference	P24048
Local Authority	Forest of Dean District Council
Design Stage	Other
Route Length Assessed in this File (km)	circa 1km

Network Map

Overview	Complete	Remaining Issues for review	Next steps	Review statement
Policy Conflicts	Yes	1	View Comments in Policy Check and Policy Conflict Log tabs	Use the space to provide overall feedback for the proposed scheme.
Critical Issues	Yes	0	No further action	
		Net difference		
Safety Check	Yes	0%	The proposed design will likely reduce safety	
Street Check	Yes	0%	The proposed design will likely reduce the route quality	
Street Placemaking	Yes	0%	The proposed design will likely reduce the quality of place	
Path Check	N/A	N/A	N/A	
Path Placemaking	N/A	N/A	N/A	
Junction Assessment Tool Check	No	N/A	N/A	

Active Travel England

Route Check

Results Summary

2. Policy Check Results (Policy Conflicts Only)

Policy Conflicts	Existing Route	Designed Route	Removed	Introduced	Remaining
	1	0	0	0	1

Remaining Policy Conflicts	Policy Conflict ID	Policy Conflict	Latitude and Longitude	Location Name	Commentary & Feedback
1	P24048_P001_01P	1 - Cyclists are not separated from pedestrians	Entirety of route	Entirety of route	No physical infrastructure to separate cyclists is proposed, although the need for this is considered limited given the wide carriageway and observed appropriate vehicle speeds througout Mitcheldean
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Active Travel England

Route Check

Results Summary

3. Safety Check Results (Critical Issues Only)

Critical Issues	Existing Route	Designed Route	Removed	Introduced	Remaining
	0	0	0	0	0

Remaining Critical Issues	Critical ID	Critical Issue	Latitude and Longitude	Location Name	Commentary & Feedback
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Active Travel England

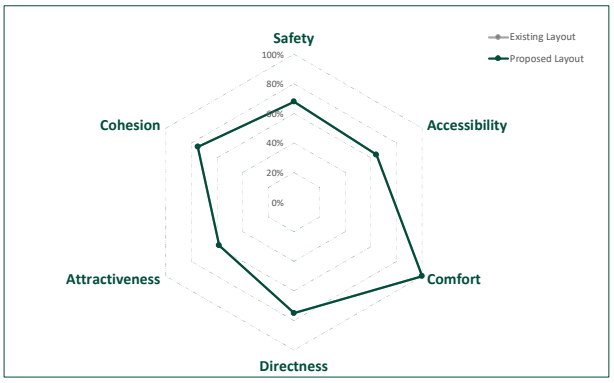
Route Check

Results Summary

4. Street Check Results

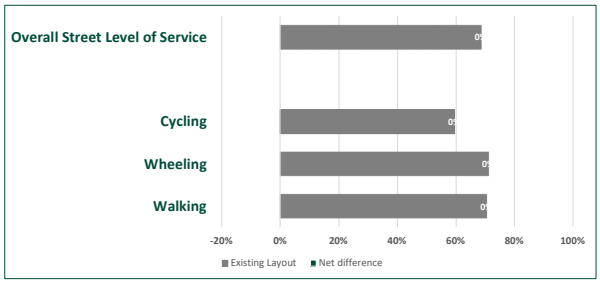
Street Level of Service

Categories	Existing Layout	Proposed Layout	Net difference
Safety	68%	68%	0%
Accessibility	64%	64%	0%
Comfort	100%	100%	0%
Directness	75%	75%	0%
Attractiveness	58%	58%	0%
Cohesion	75%	75%	0%
Overall Street Level of Service	**69%**	**69%**	0%



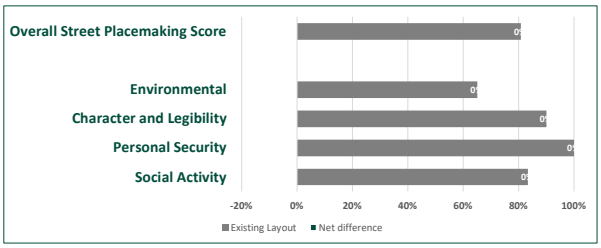
Street Level of Service by Transport Mode

Mode	Existing Layout	Proposed Layout	Net difference
Walking	71%	71%	0%
Wheeling	71%	71%	0%
Cycling	60%	60%	0%
Overall Street Level of Service	**69%**	**69%**	0%



Street Placemaking

Categories	Existing Layout	Proposed Layout	Net difference
Social Activity	83%	83%	0%
Personal Security	100%	100%	0%
Character and Legibility	90%	90%	0%
Environmental	65%	65%	0%
Overall Street Placemaking Scor	**81%**	**81%**	0%



Active Travel England

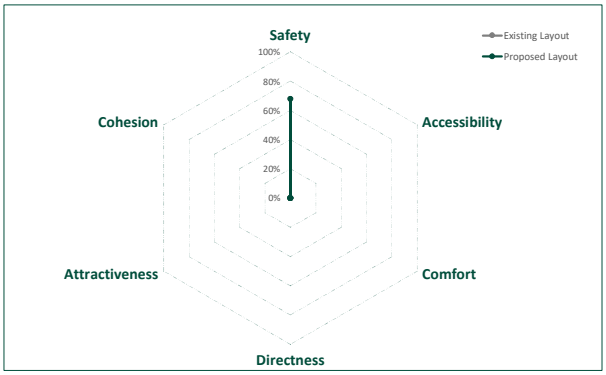
Route Check

Results Summary

5. Path Check Results

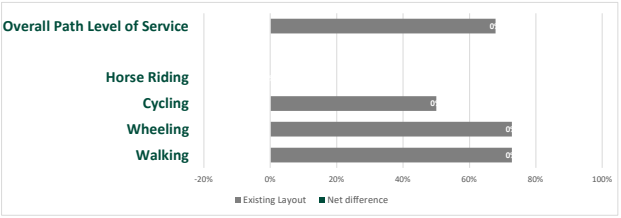
Path Level of Service

Categories	Existing Layout	Proposed Layout	Net difference
Safety	68%	68%	0%
Accessibility			
Comfort			
Directness			
Attractiveness			
Cohesion			
Overall Path Level of Service	68%	68%	0%



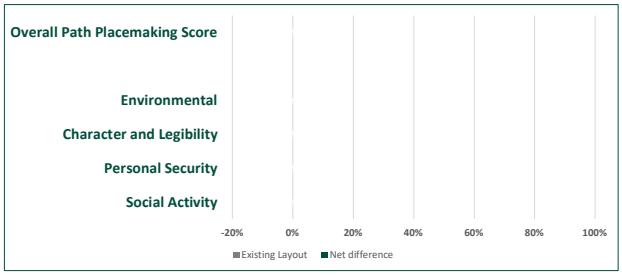
Path Level of Service by Transport Mode

Mode	Existing Layout	Proposed Layout	Net difference
Walking	73%	73%	0%
Wheeling	73%	73%	0%
Cycling	50%	50%	0%
Horse Riding	N/A	N/A	N/A
Overall Path Level of Service	**68%**	**68%**	0%



Path Placemaking

Categories	Existing Layout	Proposed Layout	Net difference
Social Activity			
Personal Security			
Character and Legibility			
Environmental			
Overall Path Placemaking Score			



6. Junction Assessment Tool Check

Junction Level of Service

Junction Name	Modes	Existing Layout	Proposed Layout	Net difference
Not Completed	Walking & Wheeling	50%	Not Completed	
	Cycling	50%	Not Completed	
	All	50%	Not Completed	
	Walking & Wheeling			
	Cycling			
	All			
	Walking & Wheeling			
	Cycling			
	All			
	Walking & Wheeling			
	Cycling			
	All			
	Walking & Wheeling			
	Cycling			
	All			
Overall	**Walking & Wheeling**	**50%**		
	Cycling	**50%**		
	All	**50%**		

APPENDIX I

RTP CALCULATION

Table 2a: Road traffic projections (billion vehicle miles, bvm) from 2015 to 2060

				Traffic - Billion Vehicle miles (bvm)								
Vehicle Type	**Road Type**	**Country**	**Region**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2055**
HGV	A road	England	South West	0.4		0.4	0.4	0.4	0.4	0.4	0.4	0.4

HGV

Year	5 Year Value	5 Year Diff	Linear Diff	Increment	1 Year Value	Check	Factor
2015	**0.3766**	0.0077	0.0008		0.3766		
2016				1	0.3773		
2017				2	0.3781		
2018				3	0.3789		
2019				4	0.3796		
2020	**0.0000**			5	0.3804		
2021				6	0.3812		
2022				7	0.3819		
2023				8	0.3827		
2024				9	0.3835		
2025	**0.3843**	0.0020	0.0004	10	0.3843	0.0000	
2026				1	0.3847		
2027				2	0.3851		24-29
2028				3	0.3855		
2029				4	0.3859		**1.0062**
2030	**0.3863**	0.0029	0.0006	5	0.3863	0.0000	
2031				1	0.3869		
2032				2	0.3874		
2033				3	0.3880		
2034				4	0.3886		
2035	**0.3892**	0.0021	0.0004	5	0.3892	0.0000	
2036				1	0.3896		
2037				2	0.3900		
2038				3	0.3904		
2039				4	0.3908		
2040	**0.3912**	0.0041	0.0008	5	0.3912	0.0000	
2041				1	0.3921		
2042				2	0.3929		
2043				3	0.3937		
2044				4	0.3945		
2045	**0.3953**	0.0009	0.0002	5	0.3953	0.0000	
2046				1	0.3955		
2047				2	0.3957		
2048				3	0.3959		
2049				4	0.3960		
2050	**0.3962**	0.0020	0.0004	5	0.3962	0.0000	

APPENDIX J

LOCAL TRIP RATE GENERATION

Proposed Vehicle Trip Rates

No. dwells = 180

Hollywell Road Dwellings = 127

Hollywell Road Traffic

AM

Departures 30

Arrivals 11

PM

Departures 21

Arrivals 36

LOCAL TRIP RATES

Time	Local trips			Local Trip Rate			180 Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals	Arrivals	Departures	Totals
AM	11	30	41	0.087	0.236	0.323	16	43	58
PM	36	21	57	0.283	0.165	0.449	51	30	81

Mitcheldean, Thursday 6th June 2024

Junction: 2
Approach: Ross Road North

	Ahead to Ross Road (South)					Right to Hollywell Road				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	8	0	0	8	8.0	0	0	0	0	0.0
07:15 - 07:30	17	0	1	18	19.0	0	0	0	0	0.0
07:30 - 07:45	20	0	0	20	20.0	0	0	0	0	0.0
07:45 - 08:00	17	0	0	17	17.0	0	0	0	0	0.0
Hourly Total	**62**	**0**	**1**	**63**	**64.0**	**0**	**0**	**0**	**0**	**0.0**
08:00 - 08:15	32	0	0	32	32.0	0	0	0	0	0.0
08:15 - 08:30	33	0	0	33	33.0	2	0	0	2	2.0
08:30 - 08:45	37	0	0	37	37.0	2	0	0	2	2.0
08:45 - 09:00	26	1	0	27	28.3	1	0	0	1	1.0
Hourly Total	**128**	**1**	**0**	**129**	**130.3**	**5**	**0**	**0**	**5**	**5.0**
09:00 - 09:15	23	0	1	24	25.0	0	0	0	0	0.0
09:15 - 09:30	17	0	0	17	17.0	1	0	0	1	1.0
09:30 - 09:45	8	0	0	8	8.0	0	0	0	0	0.0
09:45 - 10:00	16	0	1	17	18.0	0	0	0	0	0.0
Hourly Total	**64**	**0**	**2**	**66**	**68.0**	**1**	**0**	**0**	**1**	**1.0**
TOTAL	**254**	**1**	**3**	**258**	**262.3**	**6**	**0**	**0**	**6**	**6.0**
15:30 - 15:45	18	0	0	18	18.0	0	0	0	0	0.0
15:45 - 16:00	30	0	0	30	30.0	1	0	0	1	1.0
Hourly Total	**48**	**0**	**0**	**48**	**48.0**	**1**	**0**	**0**	**1**	**1.0**
16:00 - 16:15	27	0	1	28	29.0	1	0	0	1	1.0
16:15 - 16:30	18	0	0	18	18.0	2	0	0	2	2.0
16:30 - 16:45	19	0	0	19	19.0	2	0	0	2	2.0
16:45 - 17:00	33	0	0	33	33.0	2	0	0	2	2.0
Hourly Total	**97**	**0**	**1**	**98**	**99.0**	**7**	**0**	**0**	**7**	**7.0**
17:00 - 17:15	36	0	1	37	38.0	0	0	0	0	0.0
17:15 - 17:30	31	1	1	33	35.3	0	0	0	0	0.0
17:30 - 17:45	27	0	0	27	27.0	2	0	0	2	2.0
17:45 - 18:00	20	0	0	20	20.0	1	0	0	1	1.0
Hourly Total	**114**	**1**	**2**	**117**	**120.3**	**3**	**0**	**0**	**3**	**3.0**
18:00 - 18:15	20	0	1	21	22.0	1	0	0	1	1.0
18:15 - 18:30	23	1	0	24	25.3	2	0	0	2	2.0
Hourly Total	**43**	**1**	**1**	**45**	**47.3**	**3**	**0**	**0**	**3**	**3.0**
TOTAL	**302**	**2**	**4**	**308**	**314.6**	**14**	**0**	**0**	**14**	**14.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Mitcheldean, Thursday 6th June 2024

Junction: 2
Approach: Ross Road South

	Left to Hollywell Road					Ahead to Ross Road (North)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	0	0	0.0	11	0	1	12	13.0
07:15 - 07:30	0	0	0	0	0.0	13	0	0	13	13.0
07:30 - 07:45	2	0	0	2	2.0	21	0	0	21	21.0
07:45 - 08:00	2	0	0	2	2.0	22	0	0	22	22.0
Hourly Total	**4**	**0**	**0**	**4**	**4.0**	**67**	**0**	**1**	**68**	**69.0**
08:00 - 08:15	1	0	0	1	1.0	32	0	1	33	34.0
08:15 - 08:30	2	0	0	2	2.0	26	0	1	27	28.0
08:30 - 08:45	3	0	0	3	3.0	29	0	0	29	29.0
08:45 - 09:00	0	0	0	0	0.0	24	0	0	24	24.0
Hourly Total	**6**	**0**	**0**	**6**	**6.0**	**111**	**0**	**2**	**113**	**115.0**
09:00 - 09:15	2	0	0	2	2.0	19	0	0	19	19.0
09:15 - 09:30	4	0	0	4	4.0	16	0	1	17	18.0
09:30 - 09:45	3	0	0	3	3.0	14	0	0	14	14.0
09:45 - 10:00	4	0	0	4	4.0	10	1	0	11	12.3
Hourly Total	**13**	**0**	**0**	**13**	**13.0**	**59**	**1**	**1**	**61**	**63.3**
TOTAL	**23**	**0**	**0**	**23**	**23.0**	**237**	**1**	**4**	**242**	**247.3**
15:30 - 15:45	8	0	0	8	8.0	20	0	0	20	20.0
15:45 - 16:00	2	0	0	2	2.0	27	0	0	27	27.0
Hourly Total	**10**	**0**	**0**	**10**	**10.0**	**47**	**0**	**0**	**47**	**47.0**
16:00 - 16:15	5	0	0	5	5.0	25	0	0	25	25.0
16:15 - 16:30	5	0	0	5	5.0	27	0	0	27	27.0
16:30 - 16:45	9	0	0	9	9.0	32	0	1	33	34.0
16:45 - 17:00	9	0	0	9	9.0	28	0	0	28	28.0
Hourly Total	**28**	**0**	**0**	**28**	**28.0**	**112**	**0**	**1**	**113**	**114.0**
17:00 - 17:15	7	0	0	7	7.0	31	0	0	31	31.0
17:15 - 17:30	7	0	0	7	7.0	27	0	0	27	27.0
17:30 - 17:45	3	0	0	3	3.0	20	0	0	20	20.0
17:45 - 18:00	3	0	0	3	3.0	20	0	1	21	22.0
Hourly Total	**20**	**0**	**0**	**20**	**20.0**	**98**	**0**	**1**	**99**	**100.0**
18:00 - 18:15	6	0	0	6	6.0	26	0	0	26	26.0
18:15 - 18:30	8	0	0	8	8.0	16	0	0	16	16.0
Hourly Total	**14**	**0**	**0**	**14**	**14.0**	**42**	**0**	**0**	**42**	**42.0**
TOTAL	**72**	**0**	**0**	**72**	**72.0**	**299**	**0**	**2**	**301**	**303.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Mitcheldean, Thursday 6th June 2024

Junction: 2
Approach: Hollywell Road

	Left to Ross Road (North)					Right to Ross Road (South)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	2	0	0	2	2.0	5	0	0	5	5.0
07:15 - 07:30	1	0	0	1	1.0	5	0	0	5	5.0
07:30 - 07:45	3	0	0	3	3.0	4	0	0	4	4.0
07:45 - 08:00	2	0	0	2	2.0	7	0	0	7	7.0
Hourly Total	**8**	**0**	**0**	**8**	**8.0**	**21**	**0**	**0**	**21**	**21.0**
08:00 - 08:15	0	0	0	0	0.0	4	0	0	4	4.0
08:15 - 08:30	3	0	0	3	3.0	8	0	0	8	8.0
08:30 - 08:45	0	0	0	0	0.0	8	0	0	8	8.0
08:45 - 09:00	1	0	0	1	1.0	6	0	0	6	6.0
Hourly Total	**4**	**0**	**0**	**4**	**4.0**	**26**	**0**	**0**	**26**	**26.0**
09:00 - 09:15	1	0	0	1	1.0	1	0	0	1	1.0
09:15 - 09:30	2	0	0	2	2.0	3	0	0	3	3.0
09:30 - 09:45	0	0	0	0	0.0	5	0	0	5	5.0
09:45 - 10:00	2	0	0	2	2.0	4	0	0	4	4.0
Hourly Total	**5**	**0**	**0**	**5**	**5.0**	**13**	**0**	**0**	**13**	**13.0**
TOTAL	**17**	**0**	**0**	**17**	**17.0**	**60**	**0**	**0**	**60**	**60.0**
15:30 - 15:45	3	0	0	3	3.0	2	0	0	2	2.0
15:45 - 16:00	2	0	0	2	2.0	3	0	0	3	3.0
Hourly Total	**5**	**0**	**0**	**5**	**5.0**	**5**	**0**	**0**	**5**	**5.0**
16:00 - 16:15	0	0	0	0	0.0	3	0	0	3	3.0
16:15 - 16:30	2	0	0	2	2.0	7	0	0	7	7.0
16:30 - 16:45	1	0	0	1	1.0	2	0	0	2	2.0
16:45 - 17:00	3	0	0	3	3.0	6	0	0	6	6.0
Hourly Total	**6**	**0**	**0**	**6**	**6.0**	**18**	**0**	**0**	**18**	**18.0**
17:00 - 17:15	1	0	0	1	1.0	3	0	0	3	3.0
17:15 - 17:30	1	0	0	1	1.0	4	0	0	4	4.0
17:30 - 17:45	2	0	0	2	2.0	4	0	0	4	4.0
17:45 - 18:00	1	0	0	1	1.0	1	0	0	1	1.0
Hourly Total	**5**	**0**	**0**	**5**	**5.0**	**12**	**0**	**0**	**12**	**12.0**
18:00 - 18:15	0	0	0	0	0.0	4	0	0	4	4.0
18:15 - 18:30	0	0	0	0	0.0	5	0	0	5	5.0
Hourly Total	**0**	**0**	**0**	**0**	**0.0**	**9**	**0**	**0**	**9**	**9.0**
TOTAL	**16**	**0**	**0**	**16**	**16.0**	**44**	**0**	**0**	**44**	**44.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

APPENDIX K

CAPACITY ASSESSMENT REPORT OUTPUTS

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.1.1.1905

For sales and distribution information, program advice and maintenance, contact TRL Software:
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

Filename: J1-Brad-Caris.j10
Path: N:\Projects 2024\P24048 - Carisbrook Road, Mitcheldean, Gloucestershire (2019-051)\6.Technical\Models
Report generation date: 08/07/2024 16:35:50

»1 Observed 2024, AM
»1 Observed 2024, PM
»2 Without Development 2029, AM
»2 Without Development 2029, PM
»3 With Development 2029, AM
»3 With Development 2029, PM

File summary

File Description

Title	B4224 Bradley Court Road/B4224 Carisbrook Road
Location	Mitcheldean
Site number	1
Date	25/06/2024
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P24048
Enumerator	GHC\b.gaze
Description	Checked by D. Stoddart

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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						0.85	36.00	20.00		

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

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
D1	1 Observed 2024	AM	ONE HOUR	07:45	09:15	15	✓
D2	1 Observed 2024	PM	ONE HOUR	16:15	17:45	15	✓
D3	2 Without Development 2029	AM	ONE HOUR	07:45	09:15	15	✓
D4	2 Without Development 2029	PM	ONE HOUR	16:15	17:45	15	✓
D5	3 With Development 2029	AM	ONE HOUR	07:45	09:15	15	✓
D6	3 With Development 2029	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

1 Observed 2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B4224 Bradley Court Road/B4224 Carisbrook Road	T-Junction	Two-way	Two-way	Two-way		3.99	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.99	A

Arms

Arms

Arm	Name	Description	Arm type
A	B4224 Bradley Court Road (Southern Arm)		Major
B	B4224 Carisbrook Road		Minor
C	B4224 Bradley Court Road (Northern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - B4224 Bradley Court Road (Northern Arm)	7.45			110.0	✓	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 - B4224 Carisbrook Road	One lane	3.50	53	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	545	0.093	0.235	0.148	0.336
B-C	688	0.099	0.250	-	-
C-B	638	0.231	0.231	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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.

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

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
D1	1 Observed 2024	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Bradley Court Road (Southern Arm)		ONE HOUR	✓	235	100.000
B - B4224 Carisbrook Road		ONE HOUR	✓	169	100.000
C - B4224 Bradley Court Road (Northern Arm)		ONE HOUR	✓	99	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	115	120
	B - B4224 Carisbrook Road	162	0	7
	C - B4224 Bradley Court Road (Northern Arm)	97	2	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	3	0
	B - B4224 Carisbrook Road	0	0	0
	C - B4224 Bradley Court Road (Northern Arm)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.38	11.81	0.6	B	155	233
C-AB	0.00	5.61	0.0	A	2	3
C-A					89	133
A-B					106	158
A-C					110	165

1 Observed 2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B4224 Bradley Court Road/B4224 Carisbrook Road	T-Junction	Two-way	Two-way	Two-way		3.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.11	A

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
D2	1 Observed 2024	PM	ONE HOUR	16:15	17:45	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Bradley Court Road (Southern Arm)		ONE HOUR	✓	238	100.000
B - B4224 Carisbrook Road		ONE HOUR	✓	137	100.000
C - B4224 Bradley Court Road (Northern Arm)		ONE HOUR	✓	111	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	157	81
	B - B4224 Carisbrook Road	132	0	5
	C - B4224 Bradley Court Road (Northern Arm)	105	6	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	1	0
	B - B4224 Carisbrook Road	2	0	0
	C - B4224 Bradley Court Road (Northern Arm)	1	0	0

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.31	10.74	0.4	B	126	189
C-AB	0.01	5.60	0.0	A	6	10
C-A					95	143
A-B					144	216
A-C					74	111

2 Without Development 2029, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B4224 Bradley Court Road/B4224 Carisbrook Road	T-Junction	Two-way	Two-way	Two-way		4.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.11	A

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
D3	2 Without Development 2029	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Bradley Court Road (Southern Arm)		ONE HOUR	✓	244	100.000
B - B4224 Carisbrook Road		ONE HOUR	✓	175	100.000
C - B4224 Bradley Court Road (Northern Arm)		ONE HOUR	✓	103	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	119	125
	B - B4224 Carisbrook Road	168	0	7
	C - B4224 Bradley Court Road (Northern Arm)	101	2	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	3	0
	B - B4224 Carisbrook Road	0	0	0
	C - B4224 Bradley Court Road (Northern Arm)	3	0	0

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.39	12.17	0.6	B	161	241
C-AB	0.00	5.61	0.0	A	2	3
C-A					92	139
A-B					109	164
A-C					115	172

2 Without Development 2029, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B4224 Bradley Court Road/B4224 Carisbrook Road	T-Junction	Two-way	Two-way	Two-way		3.17	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.17	A

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
D4	2 Without Development 2029	PM	ONE HOUR	16:15	17:45	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Bradley Court Road (Southern Arm)		ONE HOUR	✓	247	100.000
B - B4224 Carisbrook Road		ONE HOUR	✓	142	100.000
C - B4224 Bradley Court Road (Northern Arm)		ONE HOUR	✓	115	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	163	84
	B - B4224 Carisbrook Road	137	0	5
	C - B4224 Bradley Court Road (Northern Arm)	109	6	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	1	0
	B - B4224 Carisbrook Road	2	0	0
	C - B4224 Bradley Court Road (Northern Arm)	1	0	0

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.32	10.98	0.5	B	130	195
C-AB	0.01	5.60	0.0	A	7	10
C-A					99	148
A-B					150	224
A-C					77	116

3 With Development 2029, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B4224 Bradley Court Road/B4224 Carisbrook Road	T-Junction	Two-way	Two-way	Two-way		5.31	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.31	A

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
D5	3 With Development 2029	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Bradley Court Road (Southern Arm)		ONE HOUR	✓	252	100.000
B - B4224 Carisbrook Road		ONE HOUR	✓	212	100.000
C - B4224 Bradley Court Road (Northern Arm)		ONE HOUR	✓	103	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	127	125
	B - B4224 Carisbrook Road	203	0	9
	C - B4224 Bradley Court Road (Northern Arm)	101	2	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	2	0
	B - B4224 Carisbrook Road	0	0	0
	C - B4224 Bradley Court Road (Northern Arm)	3	0	0

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.48	14.14	0.9	B	195	292
C-AB	0.00	5.62	0.0	A	2	3
C-A					92	139
A-B					117	175
A-C					115	172

3 With Development 2029, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B4224 Bradley Court Road/B4224 Carisbrook Road	T-Junction	Two-way	Two-way	Two-way		3.48	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.48	A

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
D6	3 With Development 2029	PM	ONE HOUR	16:15	17:45	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Bradley Court Road (Southern Arm)		ONE HOUR	✓	291	100.000
B - B4224 Carisbrook Road		ONE HOUR	✓	162	100.000
C - B4224 Bradley Court Road (Northern Arm)		ONE HOUR	✓	116	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	207	84
	B - B4224 Carisbrook Road	157	0	5
	C - B4224 Bradley Court Road (Northern Arm)	109	7	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Bradley Court Road (Southern Arm)	B - B4224 Carisbrook Road	C - B4224 Bradley Court Road (Northern Arm)
From	A - B4224 Bradley Court Road (Southern Arm)	0	0	0
	B - B4224 Carisbrook Road	2	0	0
	C - B4224 Bradley Court Road (Northern Arm)	1	0	0

Generated on 08/07/2024 16:35:53 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.37	11.93	0.6	B	149	223
C-AB	0.01	5.67	0.0	A	8	11
C-A					99	148
A-B					190	285
A-C					77	116

Junctions 10

ARCADY 10 - Roundabout Module
PICADY 10 - Priority Intersection Module

Filename: J2-3-Linked (FLAT).j10
Path: N:\Projects 2024\P24048 - Carisbrook Road, Mitcheldean, Gloucestershire (2019-051)\6.Technical\Models
Report generation date: 08/07/2024 16:38:45

»1 Observed 2024, AM
»1 Observed 2024, PM
»2 Without Development 2029, AM
»2 Without Development 2029, PM
»3 With Development 2029, AM
»3 With Development 2029, PM

File summary

File Description

Title	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road
Location	Mitcheldean
Site number	2
Date	25/06/2024
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P24048
Enumerator	GHC\b.gaze
Description	Checked by D. Stoddart

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

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		

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Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Calculate RFCs	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	Do not calculate	-1	3	1	60	✓			1275452534	472	17.04

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	1 Observed 2024	AM	FLAT	08:00	09:00	60	15	✓
D2	1 Observed 2024	PM	FLAT	16:30	17:30	60	15	✓
D3	2 Without Development 2029	AM	FLAT	08:00	09:00	60	15	✓
D4	2 Without Development 2029	PM	FLAT	16:30	17:30	60	15	✓
D5	3 With Development 2029	AM	FLAT	08:00	09:00	60	15	✓
D6	3 With Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Analysis Set Details

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

1 Observed 2024, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Info	Simulation	A1 - [Lane Simulation]	This run uses Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout					1, 2, 3	19.62	C
2	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way			24.72	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		22.01	C

Arms

Arms

Junction	Arm	Name	Description	Arm type
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1	B4224 Hawker Hill		
	2	A4136 Gloucester Road		
	3	A4136 New Road		
2 - A4136 Gloucester Road/Abenhall Road	A	A4136 Gloucester Road (Eastern Arm)		Major
	B	Abenhall Road		Minor
	C	A4136 Gloucester Road (Western Arm)		Major

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	3.49	3.49	6.15	3.7	8.65	5.03	0.0
	2 - A4136 Gloucester Road	3.14	3.14	4.02	21.5	13.17	12.66	0.0
	3 - A4136 New Road	3.95	3.95	5.39	5.9	13.10	12.18	0.0

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)	Vehicles causing blocking (%)
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	5.70			200.0	✓	0.00	100

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

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Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
2 - A4136 Gloucester Road/Abenhall Road	B - Abenhall Road	One lane	2.50	30	20

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	0.640	1019
	2 - A4136 Gloucester Road	0.633	982
	3 - A4136 New Road	0.552	1192

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

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
2 - A4136 Gloucester Road/Abenhall Road	B-A	472	0.087	0.220	0.139	0.315
	B-C	605	0.094	0.237	-	-
	C-B	690	0.271	0.271	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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.

Lane Simulation: Arm options

Junction	Arm	Lane capacity source	Traffic considering secondary lanes (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	Evenly split	10.00
	2 - A4136 Gloucester Road	Evenly split	10.00
	3 - A4136 New Road	Evenly split	10.00
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		10.00
	B - Abenhall Road		10.00
	C - A4136 Gloucester Road (Western Arm)		10.00

Lanes

Junction	Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	bo
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	Entry	1	1	1, 2, 3		Infinity	
		Exit	1	1			Infinity	
	2 - A4136 Gloucester Road	Entry	1	1	1, 2, 3	✓	1.00	
		Exit	1	1		✓	1.00	
	3 - A4136 New Road	Entry	1	1	1, 2, 3		Infinity	
		Exit	1	1			Infinity	
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	Entry	1	1	B, C		Infinity	
		Exit	1	1			Infinity	
	B - Abenhall Road	Entry	1	1	A, C		Infinity	
		Exit	1	1			Infinity	
	C - A4136 Gloucester Road (Western Arm)	Entry	1	1	A, B	✓	1.00	
		Exit	1	1		✓	1.00	

Entry Lane slope and intercept

Junction	Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	Entry	1	1	0.640	1019
	2 - A4136 Gloucester Road	Entry	1	1	0.633	982
	3 - A4136 New Road	Entry	1	1	0.552	1192

Summary of Entry Lane allowed movements

Junction	Arm	Lane Level	Lane	Destination arm		
				B4224 Hawker Hill	A4136 Gloucester Road	A4136 New Road
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	1	1	✓	✓	✓
	2 - A4136 Gloucester Road	1	1	✓	✓	✓
	3 - A4136 New Road	1	1	✓	✓	✓

Summary of Entry Lane allowed movements

Junction	Arm	Lane Level	Lane	Destination arm		
				A4136 Gloucester Road (Eastern Arm)	Abenhall Road	A4136 Gloucester Road (Western Arm)
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	1	1		✓	✓
	B - Abenhall Road	1	1	✓		✓
	C - A4136 Gloucester Road (Western Arm)	1	1	✓	✓	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	1 Observed 2024	AM	FLAT	08:00	09:00	60	15	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	FI multi (
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	2 - A4136 Gloucester Road	2	C	Simple (vertical queueing)	Normal	0	100
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	1	2	Simple (vertical queueing)	Normal	0	100

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill		FLAT	✓	335	100.000
	2 - A4136 Gloucester Road	✓				
	3 - A4136 New Road		FLAT	✓	657	100.000
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	341	100.000
	B - Abenhall Road		FLAT	✓	282	100.000
	C - A4136 Gloucester Road (Western Arm)	✓				

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Origin-Destination Data

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Demand (PCU/hr)

From \ To	1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
1 - B4224 Hawker Hill	0	203	132
2 - A4136 Gloucester Road	168	0	360
3 - A4136 New Road	149	508	0

2 - A4136 Gloucester Road/Abenhall Road

Demand (PCU/hr)

From \ To	A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
A - A4136 Gloucester Road (Eastern Arm)	0	42	299
B - Abenhall Road	53	0	229
C - A4136 Gloucester Road (Western Arm)	473	238	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction	PCU factor for a cyclist	PCU factor for a cyclist in controlling flow
1	0.20	0.80
2	0.20	0.80

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Heavy Vehicle %

From \ To	1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
1 - B4224 Hawker Hill	0	4	6
2 - A4136 Gloucester Road	3	0	13
3 - A4136 New Road	0	5	0

Cyclist %

From \ To	1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 A41 Ne Roa
1 - B4224 Hawker Hill	0	0	0
2 - A4136 Gloucester Road	0	0	0
3 - A4136 New Road	0	0	0

2 - A4136 Gloucester Road/Abenhall Road

Heavy Vehicle %

From \ To	A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
A - A4136 Gloucester Road (Eastern Arm)	0	11	13
B - Abenhall Road	4	0	5
C - A4136 Gloucester Road (Western Arm)	6	4	0

Cyclist %

From \ To	
A - A4136 Gloucester Road (Ea	
B - Abenhall Road	
C - A4136 Gloucester Road (W	

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	22.87	2.4	C	335	335
	2 - A4136 Gloucester Road	4.40	0.7	A	521	521
	3 - A4136 New Road	30.02	5.9	D	658	658
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	2.08	0.2	A	342	342
	B - Abenhall Road	110.11	9.0	F	279	279
	C - A4136 Gloucester Road (Western Arm)	2.15	0.5	A	711	711

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1 Observed 2024, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Info	Simulation	A1 - [Lane Simulation]	This run uses Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout					1, 2, 3	6.99	A
2	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way			14.34	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10.27	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	1 Observed 2024	PM	FLAT	16:30	17:30	60	15	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	FI multi (
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	2 - A4136 Gloucester Road	2	C	Simple (vertical queueing)	Normal	0	100
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	1	2	Simple (vertical queueing)	Normal	0	100

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill		FLAT	✓	345	100.000
	2 - A4136 Gloucester Road	✓				
	3 - A4136 New Road		FLAT	✓	423	100.000
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	638	100.000
	B - Abenhall Road		FLAT	✓	90	100.000
	C - A4136 Gloucester Road (Western Arm)	✓				

Origin-Destination Data

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	145	200
	2 - A4136 Gloucester Road	193	0	470
	3 - A4136 New Road	144	279	0

2 - A4136 Gloucester Road/Abenhall Road

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	43	595
	B - Abenhall Road	22	0	68
	C - A4136 Gloucester Road (Western Arm)	290	134	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction	PCU factor for a cyclist	PCU factor for a cyclist in controlling flow
1	0.20	0.80
2	0.20	0.80

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	2	3
	2 - A4136 Gloucester Road	2	0	3
	3 - A4136 New Road	1	4	0

Cyclist %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A41 Ne Roa
From	1 - B4224 Hawker Hill	0	0	0
	2 - A4136 Gloucester Road	0	0	0
	3 - A4136 New Road	0	0	0

2 - A4136 Gloucester Road/Abenhall Road

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	0	3
	B - Abenhall Road	5	0	0
	C - A4136 Gloucester Road (Western Arm)	5	0	0

Cyclist %

From	A - A4136 Gloucester Road (Ea	
	B - Abenhall Road	
	C - A4136 Gloucester Road (W	

Generated on 08/07/2024 16:38:55 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	10.19	1.0	B	347	347
	2 - A4136 Gloucester Road	4.33	0.9	A	663	663
	3 - A4136 New Road	8.55	1.1	A	420	420
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	9.26	2.0	A	640	640
	B - Abenhall Road	105.96	2.9	F	91	91
	C - A4136 Gloucester Road (Western Arm)	2.30	0.3	A	421	421

2 Without Development 2029, AM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Simulation	2 - A4136 Gloucester Road/Abenhall Road - B - Abenhall Road	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Major arm width	2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Info	Simulation	A1 - [Lane Simulation]	This run uses Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout					1, 2, 3	23.58	C
2	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way			32.09	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		27.57	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2 Without Development 2029	AM	FLAT	08:00	09:00	60	15	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	FI multi (
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	2 - A4136 Gloucester Road	2	C	Simple (vertical queueing)	Normal	0	100
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	1	2	Simple (vertical queueing)	Normal	0	100

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill		FLAT	✓	347	100.000
	2 - A4136 Gloucester Road	✓				
	3 - A4136 New Road		FLAT	✓	681	100.000
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	351	100.000
	B - Abenhall Road		FLAT	✓	292	100.000
	C - A4136 Gloucester Road (Western Arm)	✓				

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Origin-Destination Data

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	210	137
	2 - A4136 Gloucester Road	174	0	371
	3 - A4136 New Road	155	526	0

2 - A4136 Gloucester Road/Abenhall Road

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	43	308
	B - Abenhall Road	55	0	237
	C - A4136 Gloucester Road (Western Arm)	490	247	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction	PCU factor for a cyclist	PCU factor for a cyclist in controlling flow
1	0.20	0.80
2	0.20	0.80

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	4	5
	2 - A4136 Gloucester Road	3	0	12
	3 - A4136 New Road	0	5	0

Cyclist %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A41 No Roa
From	1 - B4224 Hawker Hill	0	0	0
	2 - A4136 Gloucester Road	0	0	0
	3 - A4136 New Road	0	0	0

2 - A4136 Gloucester Road/Abenhall Road

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	10	12
	B - Abenhall Road	4	0	5
	C - A4136 Gloucester Road (Western Arm)	5	4	0

Cyclist %

From	A - A4136 Gloucester Road (Ea	
	B - Abenhall Road	
	C - A4136 Gloucester Road (W	

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	26.99	2.6	D	347	347
	2 - A4136 Gloucester Road	4.39	0.8	A	540	540
	3 - A4136 New Road	37.08	7.2	E	680	680
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	2.28	0.2	A	354	354
	B - Abenhall Road	144.13	13.4	F	291	291
	C - A4136 Gloucester Road (Western Arm)	2.18	0.5	A	735	735

Generated on 08/07/2024 16:38:55 using Junctions 10 (10.1.1.1905)

2 Without Development 2029, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Info	Simulation	A1 - [Lane Simulation]	This run uses Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout					1, 2, 3	7.44	A
2	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way			18.50	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		12.38	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2 Without Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	FI multi (
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	2 - A4136 Gloucester Road	2	C	Simple (vertical queueing)	Normal	0	100
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	1	2	Simple (vertical queueing)	Normal	0	100

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill		FLAT	✓	359	100.000
	2 - A4136 Gloucester Road	✓				
	3 - A4136 New Road		FLAT	✓	439	100.000
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	662	100.000
	B - Abenhall Road		FLAT	✓	94	100.000
	C - A4136 Gloucester Road (Western Arm)	✓				

Origin-Destination Data

Demand (PCU/hr)

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	151	208
	2 - A4136 Gloucester Road	200	0	488
	3 - A4136 New Road	150	289	0

Demand (PCU/hr)

2 - A4136 Gloucester Road/Abenhall Road

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	45	617
	B - Abenhall Road	23	0	71
	C - A4136 Gloucester Road (Western Arm)	300	139	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction	PCU factor for a cyclist	PCU factor for a cyclist in controlling flow
1	0.20	0.80
2	0.20	0.80

Heavy Vehicle %

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	2	2
	2 - A4136 Gloucester Road	2	0	3
	3 - A4136 New Road	1	4	0

Cyclist %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A41 Ne Roa
From	1 - B4224 Hawker Hill	0	0	0
	2 - A4136 Gloucester Road	0	0	0
	3 - A4136 New Road	0	0	0

Heavy Vehicle %

2 - A4136 Gloucester Road/Abenhall Road

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	0	3
	B - Abenhall Road	5	0	0
	C - A4136 Gloucester Road (Western Arm)	5	0	0

Cyclist %

From	A - A4136 Gloucester Road (Ea	
	B - Abenhall Road	
	C - A4136 Gloucester Road (W	

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Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	10.94	1.2	B	361	361
	2 - A4136 Gloucester Road	4.39	0.9	A	683	683
	3 - A4136 New Road	9.31	1.3	A	436	436
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	10.47	2.0	B	661	661
	B - Abenhall Road	148.83	4.6	F	95	95
	C - A4136 Gloucester Road (Western Arm)	2.35	0.3	A	438	438

3 With Development 2029, AM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Simulation	2 - A4136 Gloucester Road/Abenhall Road - B - Abenhall Road	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Major arm width	2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Info	Simulation	A1 - [Lane Simulation]	This run uses Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout					1, 2, 3	30.17	D
2	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way			33.65	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		31.80	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	3 With Development 2029	AM	FLAT	08:00	09:00	60	15	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	FI multi (
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	2 - A4136 Gloucester Road	2	C	Simple (vertical queueing)	Normal	0	100
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	1	2	Simple (vertical queueing)	Normal	0	100

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill		FLAT	✓	382	100.000
	2 - A4136 Gloucester Road	✓				
	3 - A4136 New Road		FLAT	✓	685	100.000
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	353	100.000
	B - Abenhall Road		FLAT	✓	294	100.000
	C - A4136 Gloucester Road (Western Arm)	✓				

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Origin-Destination Data

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Demand (PCU/hr)

From \ To	1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
1 - B4224 Hawker Hill	0	231	151
2 - A4136 Gloucester Road	178	0	371
3 - A4136 New Road	159	526	0

2 - A4136 Gloucester Road/Abenhall Road

Demand (PCU/hr)

From \ To	A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
A - A4136 Gloucester Road (Eastern Arm)	0	43	310
B - Abenhall Road	55	0	239
C - A4136 Gloucester Road (Western Arm)	504	254	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction	PCU factor for a cyclist	PCU factor for a cyclist in controlling flow
1	0.20	0.80
2	0.20	0.80

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Heavy Vehicle %

From \ To	1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
1 - B4224 Hawker Hill	0	4	5
2 - A4136 Gloucester Road	3	0	12
3 - A4136 New Road	0	5	0

Cyclist %

From \ To	1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 A41 No Roa
1 - B4224 Hawker Hill	0	0	0
2 - A4136 Gloucester Road	0	0	0
3 - A4136 New Road	0	0	0

2 - A4136 Gloucester Road/Abenhall Road

Heavy Vehicle %

From \ To	A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
A - A4136 Gloucester Road (Eastern Arm)	0	10	12
B - Abenhall Road	4	0	5
C - A4136 Gloucester Road (Western Arm)	5	4	0

Cyclist %

From	
A - A4136 Gloucester Road (Ea	
B - Abenhall Road	
C - A4136 Gloucester Road (W	

Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	34.47	3.7	D	384	384
	2 - A4136 Gloucester Road	4.44	0.8	A	539	539
	3 - A4136 New Road	47.91	9.0	E	689	689
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	2.35	0.3	A	350	350
	B - Abenhall Road	153.89	15.0	F	293	293
	C - A4136 Gloucester Road (Western Arm)	2.20	0.5	A	773	773

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3 With Development 2029, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	2 - A4136 Gloucester Road/Abenhall Road - C - A4136 Gloucester Road (Western Arm) - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Info	Simulation	A1 - [Lane Simulation]	This run uses Simulation mode. For detailed information on this mode, please see the User Guide.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout					1, 2, 3	7.99	A
2	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way			27.89	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		16.82	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	3 With Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	FI multi (
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	2 - A4136 Gloucester Road	2	C	Simple (vertical queueing)	Normal	0	100
2 - A4136 Gloucester Road/Abenhall Road	C - A4136 Gloucester Road (Western Arm)	1	2	Simple (vertical queueing)	Normal	0	100

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill		FLAT	✓	380	100.000
	2 - A4136 Gloucester Road	✓				
	3 - A4136 New Road		FLAT	✓	458	100.000
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	684	100.000
	B - Abenhall Road		FLAT	✓	97	100.000
	C - A4136 Gloucester Road (Western Arm)	✓				

Origin-Destination Data

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	160	220
	2 - A4136 Gloucester Road	225	0	488
	3 - A4136 New Road	169	289	0

2 - A4136 Gloucester Road/Abenhall Road

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	45	639
	B - Abenhall Road	23	0	74
	C - A4136 Gloucester Road (Western Arm)	306	142	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Junction	PCU factor for a cyclist	PCU factor for a cyclist in controlling flow
1	0.20	0.80
2	0.20	0.80

1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	2	2
	2 - A4136 Gloucester Road	2	0	3
	3 - A4136 New Road	1	4	0

Cyclist %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 A41 Ne Roa
From	1 - B4224 Hawker Hill	0	0	0
	2 - A4136 Gloucester Road	0	0	0
	3 - A4136 New Road	0	0	0

2 - A4136 Gloucester Road/Abenhall Road

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	0	3
	B - Abenhall Road	5	0	0
	C - A4136 Gloucester Road (Western Arm)	5	0	0

Cyclist %

From	A - A4136 Gloucester Road (Ea	
	B - Abenhall Road	
	C - A4136 Gloucester Road (W	

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Results

Results Summary for whole modelled period

Junction	Arm	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	1 - B4224 Hawker Hill	11.79	1.3	B	382	382
	2 - A4136 Gloucester Road	4.40	0.9	A	707	707
	3 - A4136 New Road	10.36	1.4	B	460	460
2 - A4136 Gloucester Road/Abenhall Road	A - A4136 Gloucester Road (Eastern Arm)	13.62	2.7	B	686	686
	B - Abenhall Road	249.08	7.1	F	96	96
	C - A4136 Gloucester Road (Western Arm)	2.41	0.3	A	453	453

Junctions 10

ARCADY 10 - Roundabout Module

Filename: J2-A4136-B4224 (FLAT).j10
Path: N:\Projects 2024\P24048 - Carisbrook Road, Mitcheldean, Gloucestershire (2019-051)\6.Technical\Models
Report generation date: 08/07/2024 16:37:01

»1 Observed 2024, AM
»1 Observed 2024, PM
»2 Without Development 2029, AM
»2 Without Development 2029, PM
»3 With Development 2029, AM
»3 With Development 2029, PM

File summary

File Description

Title	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road
Location	Mitcheldean
Site number	2
Date	25/06/2024
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P24048
Enumerator	GHC\b.gaze
Description	Checked by D. Stoddart

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

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		

Generated on 08/07/2024 16:37:05 using Junctions 10 (10.1.1.1905)

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	1 Observed 2024	AM	FLAT	08:00	09:00	60	15	✓
D2	1 Observed 2024	PM	FLAT	16:30	17:30	60	15	✓
D3	2 Without Development 2029	AM	FLAT	08:00	09:00	60	15	✓
D4	2 Without Development 2029	PM	FLAT	16:30	17:30	60	15	✓
D5	3 With Development 2029	AM	FLAT	08:00	09:00	60	15	✓
D6	3 With Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Analysis Set Details

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

1 Observed 2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout		1, 2, 3	10.37	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10.37	B

Arms

Arms

Arm	Name	Description
1	B4224 Hawker Hill	
2	A4136 Gloucester Road	
3	A4136 New Road	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - B4224 Hawker Hill	3.49	3.49	6.15	3.7	8.65	5.03	0.0	
2 - A4136 Gloucester Road	3.14	3.14	4.02	21.5	13.17	12.66	0.0	
3 - A4136 New Road	3.95	3.95	5.39	5.9	13.10	12.18	0.0	✓

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
3 - A4136 New Road	2.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - B4224 Hawker Hill	0.640	1019
2 - A4136 Gloucester Road	0.633	982
3 - A4136 New Road	0.552	1192

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 period length (min)	Time segment length (min)	Run automatically
D1	1 Observed 2024	AM	FLAT	08:00	09:00	60	15	✓

Generated on 08/07/2024 16:37:05 using Junctions 10 (10.1.1.1905)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill		FLAT	✓	335	100.000
2 - A4136 Gloucester Road		FLAT	✓	528	100.000
3 - A4136 New Road		FLAT	✓	657	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - B4224 Hawker Hill		
2 - A4136 Gloucester Road		
3 - A4136 New Road	[FLAT]	90.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	203	132
	2 - A4136 Gloucester Road	168	0	360
	3 - A4136 New Road	149	508	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	4	6
	2 - A4136 Gloucester Road	3	0	13
	3 - A4136 New Road	0	5	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 - B4224 Hawker Hill	0.48	10.49	1.0	B	335	335
2 - A4136 Gloucester Road	0.59	10.62	1.5	B	528	528
3 - A4136 New Road	0.65	10.10	1.9	B	657	657

1 Observed 2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout		1, 2, 3	12.41	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		12.41	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	1 Observed 2024	PM	FLAT	16:30	17:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill		FLAT	✓	345	100.000
2 - A4136 Gloucester Road		FLAT	✓	663	100.000
3 - A4136 New Road		FLAT	✓	423	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - B4224 Hawker Hill		
2 - A4136 Gloucester Road		
3 - A4136 New Road	[FLAT]	20.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	145	200
	2 - A4136 Gloucester Road	193	0	470
	3 - A4136 New Road	144	279	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	2	3
	2 - A4136 Gloucester Road	2	0	3
	3 - A4136 New Road	1	4	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 - B4224 Hawker Hill	0.41	7.43	0.7	A	345	345
2 - A4136 Gloucester Road	0.78	19.19	3.5	C	663	663
3 - A4136 New Road	0.40	5.84	0.7	A	423	423

2 Without Development 2029, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	3 - A4136 New Road - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout		1, 2, 3	10.25	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10.25	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2 Without Development 2029	AM	FLAT	08:00	09:00	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill		FLAT	✓	347	100.000
2 - A4136 Gloucester Road		FLAT	✓	545	100.000
3 - A4136 New Road		FLAT	✓	681	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - B4224 Hawker Hill		
2 - A4136 Gloucester Road		
3 - A4136 New Road	[FLAT]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	210	137
	2 - A4136 Gloucester Road	174	0	371
	3 - A4136 New Road	155	526	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Generated on 08/07/2024 16:37:05 using Junctions 10 (10.1.1.1905)

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	4	5
	2 - A4136 Gloucester Road	3	0	12
	3 - A4136 New Road	0	5	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 - B4224 Hawker Hill	0.51	11.20	1.1	B	347	347
2 - A4136 Gloucester Road	0.61	11.20	1.7	B	545	545
3 - A4136 New Road	0.62	9.01	1.7	A	681	681

2 Without Development 2029, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	3 - A4136 New Road - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout		1, 2, 3	14.06	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		14.06	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2 Without Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill		FLAT	✓	359	100.000
2 - A4136 Gloucester Road		FLAT	✓	688	100.000
3 - A4136 New Road		FLAT	✓	439	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - B4224 Hawker Hill		
2 - A4136 Gloucester Road		
3 - A4136 New Road	[FLAT]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	151	208
	2 - A4136 Gloucester Road	200	0	488
	3 - A4136 New Road	150	289	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	2	2
	2 - A4136 Gloucester Road	2	0	3
	3 - A4136 New Road	1	4	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 - B4224 Hawker Hill	0.43	7.74	0.8	A	359	359
2 - A4136 Gloucester Road	0.81	22.64	4.2	C	688	688
3 - A4136 New Road	0.41	5.77	0.7	A	439	439

3 With Development 2029, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	3 - A4136 New Road - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout		1, 2, 3	10.77	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10.77	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	3 With Development 2029	AM	FLAT	08:00	09:00	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill		FLAT	✓	382	100.000
2 - A4136 Gloucester Road		FLAT	✓	549	100.000
3 - A4136 New Road		FLAT	✓	685	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - B4224 Hawker Hill		
2 - A4136 Gloucester Road		
3 - A4136 New Road	[FLAT]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	231	151
	2 - A4136 Gloucester Road	178	0	371
	3 - A4136 New Road	159	526	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	4	5
	2 - A4136 Gloucester Road	3	0	12
	3 - A4136 New Road	0	5	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 - B4224 Hawker Hill	0.56	12.45	1.3	B	382	382
2 - A4136 Gloucester Road	0.62	11.62	1.8	B	549	549
3 - A4136 New Road	0.63	9.15	1.7	A	685	685

3 With Development 2029, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	3 - A4136 New Road - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B4224 Hawker Hill/A4136 Gloucester Road/A4136 New Road	Mini-roundabout		1, 2, 3	16.68	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		16.68	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	3 With Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - B4224 Hawker Hill		FLAT	✓	380	100.000
2 - A4136 Gloucester Road		FLAT	✓	713	100.000
3 - A4136 New Road		FLAT	✓	458	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - B4224 Hawker Hill		
2 - A4136 Gloucester Road		
3 - A4136 New Road	[FLAT]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	160	220
	2 - A4136 Gloucester Road	225	0	488
	3 - A4136 New Road	169	289	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Generated on 08/07/2024 16:37:05 using Junctions 10 (10.1.1.1905)

Heavy Vehicle %

		To		
		1 - B4224 Hawker Hill	2 - A4136 Gloucester Road	3 - A4136 New Road
From	1 - B4224 Hawker Hill	0	2	2
	2 - A4136 Gloucester Road	2	0	3
	3 - A4136 New Road	1	4	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 - B4224 Hawker Hill	0.46	8.09	0.9	A	380	380
2 - A4136 Gloucester Road	0.85	28.07	5.4	D	713	713
3 - A4136 New Road	0.43	6.07	0.8	A	458	458

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.1.1.1905

Filename: J3-Glou-Aben (FLAT).j10
Path: N:\Projects 2024\P24048 - Carisbrook Road, Mitcheldean, Gloucestershire (2019-051)\6.Technical\Models
Report generation date: 08/07/2024 16:37:53

»1 Observed 2024, AM
»1 Observed 2024, PM
»2 Without Development 2029, AM
»2 Without Development 2029, PM
»3 With Development 2029, AM
»3 With Development 2029, PM

File summary

File Description

Title	A4136 Gloucester Road/Abenhall Road
Location	Mitcheldean
Site number	3
Date	25/06/2024
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P24048
Enumerator	GHC\b.gaze
Description	Checked by D. Stoddart

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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						0.85	36.00	20.00		

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	1 Observed 2024	AM	FLAT	07:45	08:45	60	15	✓
D2	1 Observed 2024	PM	FLAT	16:30	17:30	60	15	✓
D3	2 Without Development 2029	AM	FLAT	07:45	08:45	60	15	✓
D4	2 Without Development 2029	PM	FLAT	16:30	17:30	60	15	✓
D5	3 With Development 2029	AM	FLAT	07:45	08:45	60	15	✓
D6	3 With Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Analysis Set Details

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

1 Observed 2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way		6.57	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.57	A

Arms

Arms

Arm	Name	Description	Arm type
A	A4136 Gloucester Road (Eastern Arm)		Major
B	Abenhall Road		Minor
C	A4136 Gloucester Road (Western Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - A4136 Gloucester Road (Western Arm)	7.50			150.0	✓	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 - Abenhall Road	One lane	3.64	39	109

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	579	0.099	0.249	0.157	0.356
B-C	737	0.106	0.267	-	-
C-B	661	0.239	0.239	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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.

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	1 Observed 2024	AM	FLAT	07:45	08:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	341	100.000
B - Abenhall Road		FLAT	✓	282	100.000
C - A4136 Gloucester Road (Western Arm)		FLAT	✓	711	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	42	299
	B - Abenhall Road	53	0	229
	C - A4136 Gloucester Road (Western Arm)	473	238	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	11	13
	B - Abenhall Road	4	0	5
	C - A4136 Gloucester Road (Western Arm)	6	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.51	13.76	1.1	B	282	282
C-AB	0.56	9.65	2.0	A	505	505
C-A					206	206
A-B					42	42
A-C					299	299

1 Observed 2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way		2.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.19	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	1 Observed 2024	PM	FLAT	16:30	17:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	638	100.000
B - Abenhall Road		FLAT	✓	90	100.000
C - A4136 Gloucester Road (Western Arm)		FLAT	✓	424	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	43	595
	B - Abenhall Road	22	0	68
	C - A4136 Gloucester Road (Western Arm)	290	134	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	0	3
	B - Abenhall Road	5	0	0
	C - A4136 Gloucester Road (Western Arm)	5	0	0

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	9.16	0.2	A	90	90
C-AB	0.32	7.52	0.7	A	226	226
C-A					198	198
A-B					43	43
A-C					595	595

2 Without Development 2029, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way		7.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.11	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2 Without Development 2029	AM	FLAT	07:45	08:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	351	100.000
B - Abenhall Road		FLAT	✓	292	100.000
C - A4136 Gloucester Road (Western Arm)		FLAT	✓	737	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	43	308
	B - Abenhall Road	55	0	237
	C - A4136 Gloucester Road (Western Arm)	490	247	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	10	12
	B - Abenhall Road	4	0	5
	C - A4136 Gloucester Road (Western Arm)	5	4	0

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.53	14.58	1.2	B	292	292
C-AB	0.59	10.30	2.3	B	540	540
C-A					197	197
A-B					43	43
A-C					308	308

2 Without Development 2029, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way		2.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.29	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2 Without Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	662	100.000
B - Abenhall Road		FLAT	✓	94	100.000
C - A4136 Gloucester Road (Western Arm)		FLAT	✓	439	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	45	617
	B - Abenhall Road	23	0	71
	C - A4136 Gloucester Road (Western Arm)	300	139	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	0	3
	B - Abenhall Road	5	0	0
	C - A4136 Gloucester Road (Western Arm)	5	0	0

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	9.45	0.2	A	94	94
C-AB	0.33	7.70	0.8	A	240	240
C-A					199	199
A-B					45	45
A-C					617	617

3 With Development 2029, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way		7.49	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.49	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	3 With Development 2029	AM	FLAT	07:45	08:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	353	100.000
B - Abenhall Road		FLAT	✓	294	100.000
C - A4136 Gloucester Road (Western Arm)		FLAT	✓	758	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	43	310
	B - Abenhall Road	55	0	239
	C - A4136 Gloucester Road (Western Arm)	504	254	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	10	12
	B - Abenhall Road	4	0	5
	C - A4136 Gloucester Road (Western Arm)	5	4	0

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.54	14.84	1.2	B	294	294
C-AB	0.62	10.85	2.6	B	568	568
C-A					190	190
A-B					43	43
A-C					310	310

3 With Development 2029, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	A4136 Gloucester Road/Abenhall Road	T-Junction	Two-way	Two-way	Two-way		2.35	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.35	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	3 With Development 2029	PM	FLAT	16:30	17:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A4136 Gloucester Road (Eastern Arm)		FLAT	✓	684	100.000
B - Abenhall Road		FLAT	✓	97	100.000
C - A4136 Gloucester Road (Western Arm)		FLAT	✓	448	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	45	639
	B - Abenhall Road	23	0	74
	C - A4136 Gloucester Road (Western Arm)	306	142	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - A4136 Gloucester Road (Eastern Arm)	B - Abenhall Road	C - A4136 Gloucester Road (Western Arm)
From	A - A4136 Gloucester Road (Eastern Arm)	0	0	3
	B - Abenhall Road	5	0	0
	C - A4136 Gloucester Road (Western Arm)	5	0	0

Generated on 08/07/2024 16:37:57 using Junctions 10 (10.1.1.1905)

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	9.64	0.3	A	97	97
C-AB	0.35	7.84	0.8	A	248	248
C-A					200	200
A-B					45	45
A-C					639	639

Junctions 10

PICADY 10 - Priority Intersection Module

Filename: J5-SA-Ross Road.j10
Path: C:\Users\b.gaze\Prime Transport Planning\PrimeSharepoint - Documents\Projects 2024\P24048 - Carisbrook Road, Mitcheldean, Gloucestershire (2019-051)\6.Technical\Models
Report generation date: 08/11/2024 14:16:07

»1 With Development 2029, AM
»1 With Development 2029, PM

File summary

File Description

Title	Proposed Site Access/B4224 Ross Road
Location	Mitcheldean
Site number	5
Date	25/06/2024
Version	
Status	Final
Identifier	
Client	Gladman
Jobnumber	P24048
Enumerator	GHC\b.gaze
Description	Checked by D. Stoddart

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	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
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
D1	1 With Development 2029	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 With Development 2029	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

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

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1 With Development 2029, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access/B4224 Ross Road	T-Junction	Two-way	Two-way	Two-way		1.13	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.13	A

Arms

Arms

Arm	Name	Description	Arm type
A	B4224 Ross Road (Western Arm)		Major
B	Proposed Site Access		Minor
C	B4224 Ross Road (Eastern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - B4224 Ross Road (Eastern Arm)	7.00			80.0	✓	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 - Proposed Site Access	One lane	2.75	20	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	482	0.084	0.212	0.133	0.303
B-C	621	0.091	0.230	-	-
C-B	620	0.230	0.230	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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)	Run automatically
D1	1 With Development 2029	AM	ONE HOUR	07:30	09:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Ross Road (Western Arm)		ONE HOUR	✓	147	100.000
B - Proposed Site Access		ONE HOUR	✓	43	100.000
C - B4224 Ross Road (Eastern Arm)		ONE HOUR	✓	133	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Ross Road (Western Arm)	B - Proposed Site Access	C - B4224 Ross Road (Eastern Arm)
From	A - B4224 Ross Road (Western Arm)	0	7	140
	B - Proposed Site Access	6	0	37
	C - B4224 Ross Road (Eastern Arm)	124	9	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Ross Road (Western Arm)	B - Proposed Site Access	C - B4224 Ross Road (Eastern Arm)
From	A - B4224 Ross Road (Western Arm)	0	0	1
	B - Proposed Site Access	0	0	0
	C - B4224 Ross Road (Eastern Arm)	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	7.08	0.1	A	39	59
C-AB	0.02	5.56	0.0	A	10	15
C-A					112	168
A-B					6	10
A-C					128	193

Generated on 08/11/2024 14:16:13 using Junctions 10 (10.1.1.1905)

1 With Development 2029, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access/B4224 Ross Road	T-Junction	Two-way	Two-way	Two-way		1.57	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.57	A

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
D2	1 With Development 2029	PM	ONE HOUR	16:15	17:45	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B4224 Ross Road (Western Arm)		ONE HOUR	✓	140	100.000
B - Proposed Site Access		ONE HOUR	✓	30	100.000
C - B4224 Ross Road (Eastern Arm)		ONE HOUR	✓	176	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - B4224 Ross Road (Western Arm)	B - Proposed Site Access	C - B4224 Ross Road (Eastern Arm)
From	A - B4224 Ross Road (Western Arm)	0	6	134
	B - Proposed Site Access	9	0	21
	C - B4224 Ross Road (Eastern Arm)	131	45	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A - B4224 Ross Road (Western Arm)	B - Proposed Site Access	C - B4224 Ross Road (Eastern Arm)
From	A - B4224 Ross Road (Western Arm)	0	0	2
	B - Proposed Site Access	0	0	0
	C - B4224 Ross Road (Eastern Arm)	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.06	7.37	0.1	A	28	41
C-AB	0.09	5.82	0.1	A	51	76
C-A					111	166
A-B					6	8
A-C					123	184