COTSWOLD TRANSPORT PLANNING

William Morrison (Cheltenham) Limited

Land Adjacent to Oakhurst Rise, Cheltenham

Transport Assessment

April 2020

DOCUMENT REGISTER

CLIENT:	**WILLIAM MORRISON (CHELTENHAM) LTD**
PROJECT:	**LAND OFF OAKHURST RISE, CHARLTON KINGS, CHELTENHAM**
PROJECT CODE:	**CTP-16-332**

REPORT TITLE:	**TRANSPORT ASSESSMENT**		
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REPORT STATUS:	**ISSUE 04**

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1 Introduction

1.1 Cotswold Transport Planning Ltd has been commissioned by William Morrison (Cheltenham) Ltd to produce a Transport Assessment (TA) in connection with a proposed residential development on land off Oakhurst Rise, Charlton Kings, Cheltenham.

1.2 Planning permission is sought for 43 residential dwellings, which will be accessed via an extension of Oakhurst Rise, as follows:

"Outline application for residential development of 43 dwellings – access, layout and scale not reserved for subsequent approval."

Site Planning History

1.3 A planning application for 90 residential dwellings at the site (Cheltenham Borough Council (CBC) Planning Reference 17/00710/OUT), was refused planning permission in July 2018.

1.4 Although it is noted that CBC refused the planning application, Gloucestershire County Council (GCC), the respective Highway Authority, did not object to the application which they deemed to be in-keeping with both regional and national (NPPF) planning policy. The following recommendation was included in their consultation response back to CBC:

*"The National Planning Policy Framework (NPPF) states at paragraph 32 that "development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe". **The Highway Authority considers that this development will not have a severe impact on the local highway network**. The NPPF also states that "safe and suitable access to the site can be achieved for all people", and that "opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure." It is considered that the development proposals will meet these criteria. **The Highway Authority recommends that no highway objection be raised** subject to the following conditions being attached to any permission granted."*

1.5 A subsequent planning application was made for 69 residential dwellings (CBC Planning Reference 18/02171/OUT, however this was also refused planning permission in September 2019, at appeal by method of Public Inquiry.

1.6 Again, it is noted that GCC maintained their position of not objecting to the planning application, considering the proposed level of development was below that of the previous application and therefore there were no grounds to consider the development could be anything less than improvement over the initial scheme they supported.

1.7 A copy of the relevant correspondence from GCC is provided at **Appendix A**.

Forthcoming Application

1.8 On the basis that the revised planning application is for only 43 dwellings, and therefore 25 dwellings less than sought originally, it is considered reasonable to conclude that the supportive recommendation of GCC will remain unchanged in connection with this new application. This assumption would be on the basis that revised internal layout, which differs from the original application, would still meet the expectations of GCC with regards to providing safe and suitable access, and connectivity, and that the former planning conditions requested by GCC as part of their former consultation, would still be valid and accepted by the application as part of any future decision to grant this development planning permission.

1.9 With regards to further technical assessments within this report, it is not deemed necessary to revisit the off-site junction modelling assessments, on the basis of the low anticipated traffic generation that will arise out of the amended, reduced scheme.

1.10 However, as set out below, the trip generation information set out later in this report will be updated to take account of the revised accommodation schedule.

Pre-application Scoping

1.11 This TA has been prepared in accordance with the detailed scope of assessment issued to highway officers at Gloucestershire County Council (GCC), prior to the submission of earlier planning applications. The key issues that need to be addressed/reviewed within this TA with reference to the size and location of the development proposal are as follows:

i) Assessment of site location and local highway network;
ii) Review of relevant planning policy;
iii) Site accessibility and opportunities for sustainable travel;
iv) The provision of safe and appropriate access to the local highway network;
v) Forecast trip generation and predicted impact upon the operation of the local highway network arising from the development proposal; and
vi) Review of local highway safety.

1.12 A Residential Travel Plan has also been prepared which includes measures and initiatives to promote travel by sustainable modes of transport and hence to reduce the reliance of future residents and visitors on the private car. The Residential Travel Plan is prepared under separate cover to support the planning application.

1.13 A Non-Motorised User (NMU) Context Report has also been prepared which reviews the suitability of the walking and cycling routes between the application site and the nearest facilities and amenities. The NMU Context Report is prepared under separate cover to support the planning application.

2 The Site and Adjacent Highway Network

Site Location and Composition

2.1 The development will comprise the erection of up to 43 dwellings, together with new vehicular access, car parking, landscaping and open space on land located to the east of Oakhurst Rise, Charlton Kings, Cheltenham.

2.2 Vehicular access to the site will be provided from Oakhurst Rise, via a continuation of the existing cul-de-sac.

2.3 The site is located to the northwest of Charlton Kings, as shown highlighted on the proposed site plan provided at **Appendix B**. The site is bound to the north, east and west by existing residential development and to the south by St. Edward's Preparatory School.

2.4 There are no public footpaths crossing the site.

Local Highway Network

2.5 The local highway network in relation to the application site is illustrated in **Appendix C**.

Oakhurst Rise

2.6 Oakhurst Rise is a cul-de-sac serving residential dwellings. It connects to Ewens Road and Beaufort Road at its southern extent in the form of a simple priority junction. Oakhurst Rise is illuminated and subject to a 20mph speed limit with a carriageway width of approximately 5.5m. On-street parking occurs sporadically on both sides of the carriageway and in the vicinity of the junction of Oakhurst Rise and Beaufort Road.

2.7 A Manual Turning Count (MTC) survey has been undertaken by 360TSL, an independent traffic surveyor, at the Oakhurst Rise / Ewens Road priority junction on Thursday 8th December 2016 between 0730 – 0930 and 16.30 – 18.30. This survey demonstrated that during the AM peak 0800 – 0900 there are a total of 177 vehicle movements through this junction and during the PM peak 1700 – 1800 there are 172 vehicle movements through this junction. The full survey data is provided at **Appendix D.**

Ewens Road

2.8 Ewens Road connects to Oakhurst Rise via a simple priority junction, Ewens Road then becomes Beaufort Road to the south of the junction with Oakhurst Rise. To the west, Ewens Road connects to Churchill Drive via a bifurcated junction.

2.9 Vehicular access to Churchill Drive from Ewens Road is restricted by no entry signage, however, cycle contra-flow lanes are present on both arms of the junction. At its western extent Ewens Road connects to Hayward's Road via a simple priority junction. Ewens Road is approximately 5.5m wide, with 1.8m footways, street lighting, traffic calming and subject to a 20mph speed limit. Sporadic on street parking occurs along Ewens Road.

Beaufort Road

2.10 Beaufort Road is a residential street, which connects to Charlton Court Road to the south and Ewens Road to the north. Vehicular access from Charlton Court Road to Beaufort Road is currently restricted in the form of a no entry priority junction, the junction does however benefit from a cycle contra-flow lane from Charlton Court Road to Beaufort Road. Beaufort Road is approximately 5.5m wide, with 1.8m footways, street lighting, traffic calming and is subject to a 20mph speed limit. On street parking occurs predominately along the eastern side of Beaufort Road.

Oak Avenue

2.11 Oak Avenue at its eastern extent connects to Beaufort Road and Charlton Court Road. Vehicular access from Oak Avenue to Beaufort Road to the east is restricted in the form of a no entry priority junction. At the western extent, Oak Avenue connects to Churchill Drive to the north and Churchill Gardens to the west via a bifurcated junction. Vehicular access from Churchill Gardens to Oak Avenue is restricted by no entry signage, although a cycle contra-flow lane is present. Vehicular access from Churchill Drive to Oak Avenue is also restricted by no entry signage, although a cycle contra-flow lane is also present. Oak Avenue is approximately 6.2m wide, with 1.8m footways, street lighting, traffic calming and subject to a 20mph speed limit. On street parking occurs along the northern and southern sides of Oak Avenue, and across the footway.

Churchill Drive

2.12 Churchill Drive to the north provides two egress only points via a bifurcated junction with Ewens Road for westbound and eastbound movements. At the southern extent, Churchill Drive provides a two-way movement (no left turn out) junction with Churchill Gardens and Oak Avenue. Cycle contra-flow lanes are in place where vehicular access is prohibited.

2.13 Churchill Drive at its western extent forms a simple priority junction with Hayward's Road. Churchill Drive is approximately 6.0m wide, with 1.8m footways, street lighting, traffic calming and subject to a 20mph speed limit. On street parking occurs along the eastern and western sides of Churchill Drive.

2.14 A Manual Turning Count (MTC) survey has been undertaken by 360TSL, an independent traffic surveyor, at the Churchill Drive / Ewens Road priority junction on Thursday 8th December 2016 between 0730 – 0930 and 16.30 – 18.30. This survey demonstrated that during the AM peak 0800 – 0900 there are a total of 328 vehicle movements through this junction and during the PM peak 1700 – 1800 there are 304 vehicle movements through this junction. The full survey data is provided at **Appendix D.**

Charlton Court Road

2.15 Charlton Court Road is a residential road connecting to the A40 London Road to the south and Oak Avenue and Beaufort Road to the northwest and north. Access from Charlton Court Road to Beaufort Road is currently restricted by no entry signage. Cycle contra-flow lanes are in place at the junction of Charlton Court Road and Beaufort Road. Charlton Court Road is approximately 6.5m wide, with 1.8m footways, street lighting, traffic calming and is subject to a 20mph speed limit. A raised table and tactile paving is present on Charlton Court Road at its junction with the A40 London Road.

2.16 An Automatic Traffic Count (ATC) survey was carried out between Wednesday 7th and Tuesday 13th December 2016 on Charlton Court Road by 360TSL, an independent traffic surveyor. This demonstrated that the 85th percentile northbound speeds are 21mph, with 85th percentile southbound speeds of 20mph. The average two – way vehicle flow in the AM peak 0800 – 0900 is 15.4 trips. The average two – way vehicle flow in the PM peak 1700 – 1800 is 16.8 trips. The full survey data is provided at **Appendix E.**

2.17 A Manual Turning Count (MTC) survey has been undertaken by 360TSL, an independent traffic surveyor, at the Charlton Court Road / A40 priority junction on Thursday 8th December 2016 between 0730 – 0930 and 16.30 – 18.30. This survey demonstrated that during the AM peak 0800 – 0900 there are a total of 1,251 vehicle movements through this junction and during the PM peak 1700 – 1800 there are 1,245 vehicle movements through this junction. The full survey data is provided at **Appendix D.**

Hayward's Road

2.18 Hayward's Road is a residential road connecting to the A40 London Road to the south in the form of a signalised junction. Hayward's Road can be accessed from the development site from Ewens Road via Churchill Drive north or Churchill Drive south via Churchill Gardens at the northern and southern extents of Hayward's Road respectively, in the form of simple priority junctions. Hayward's Road is approximately 7.0m wide, with 1.8m footways, street lighting, traffic calming and subject to a 20mph speed limit. On-street parking occurs sporadically on both sides of the carriageway.

A40 London Road

2.19 The A40 London Road is an arterial route which is illuminated and subject to a 30mph speed limit. The carriageway width is typically around 9.4 metres. To the southwest of the site, it forms part of the signalised junction with A435 Cirencester Road and Hayward's Road. To the east, it provides a route towards Oxford.

2.20 On-street parking sporadically occurs on both side of the carriageway along the A40 to the east of the A40/Charlton Court Road junction. The on-street car parking provides a simple form of traffic calming which helps to control vehicle speeds on the A40 London Road, without prohibiting vehicle flow. Parking restrictions are in operation further east at Sixways, where there are a number of retail and convenience uses.

2.21 A Manual Turning Count (MTC) survey has been undertaken by 360TSL, an independent traffic surveyor, at the A435 / A40 / Haywards Road signal controlled junction on Thursday 8th December 2016 between 0730 – 0930 and 16.30 – 18.30. This survey demonstrated that during the AM peak 0800 – 0900 there are a total of 1,946 vehicle movements through this junction and during the PM peak 1700 – 1800 there are 1,906 vehicle movements through this junction. The full survey data is provided at **Appendix D.**

A435 Cirencester Road

2.22 The A435 Cirencester Road is an arterial route providing access to the A40 London Road to the northwest and Cirencester to the south. It forms part of the signalised junction with the A40 London Road and Hayward's Road. It is illuminated and subject to a 30mph speed limit with a carriageway width between approximately 5.5m and 7.0m. On-street parking is permitted, this however does not regularly occur.

Local Highway Safety

2.23 Gloucestershire County Council (GCC) has provided updated (since the previous application) Personal Injury Collision (PIC) data for the local highways and connecting junctions in the vicinity of the site for the most recent five-year period available (up to 14th April 2020). A full copy of the PIC data is included in **Appendix F** and a summary of the data is provided as follows.

2.24 The records show that over the last two years, there have been a total of three recorded personal injury collisions in the study area, two of which resulted in slight injury and one resulting in serious injury.

2.25 The serious incident occurred in the vicinity of the London Road / Cirencester Road traffic signal junction on the 7th March 2019, during daylight conditions. The PIC report appears to indicate that a pedestrian attempted to cross the road in front of a manoeuvring car and was struck causing injury to the pedestrian's foot. The accident is attributed to temporary error / misjudgement.

2.26 A review of the slight-injury PICs indicates that all these incidents were also a result of human error / temporary misjudgement, and not attributable to any particular highways deficiency or concern.

Highway Safety Conclusions

2.27 The recorded PICs within the review period within the study area are considered to be random with no common trends and are considered to have occurred as a result of human error rather than being attributable to any deficiency in the local highway network.

2.28 Therefore, it can be concluded that there are no overriding or unexpected highway safety patterns or concerns within the study period within the vicinity of the site which need to be considered as part of this assessment.

3 Site Accessibility

3.1 When considering the overall sustainability of a site, with regards to highways it is important that a site can be demonstrated to be accessible for all potential residents without resulting in a heavy reliance on travel by car, particularly single occupancy journeys. Within the local context of the site, this can be assessed against the proximity to local services and amenities, which residents and/or visitors may require access to on a day-to-day basis. Equally, it can be assessed based on the access to sustainable (non-car) transport modes, which provide alternative options for travelling to any services or amenities located further afield from the site.

Proximity to Local Services and Amenities

3.2 As part of the review of the availability of local services, a local facilities plan has been created which indicates the services and facilities which will be available to residents and their visitors which may typically be required on a day-to-day basis. The routes to these services is considered in detail in the accompanying **NMU Context Report**. The local facilities plan is included as **Appendix G**. In summary, the following local services and facilities are present within approximately 800m of the application site:

i. Petrol Filling Station (PFS) which includes a Spar convenience store;
ii. The Co-Operative food convenience store;
iii. Badham Pharmacy;
iv. Sixways Medical Clinic:
v. Norville Opticians;
vi. Retail outlets;
vii. Hairdressers;
viii. Estate Agents;
ix. Pubs, Restaurants, Cafes and Takeaway;
x. Bus stops;
xi. St Edwards Preparatory School; and
xii. Holy Apostles C of E Aided Primary School.

3.3 The Institution of Highways and Transportation (IHT) publication (in 2000), 'Guidelines for Providing Journeys on Foot', suggest the following acceptable walking distances to services and amenities (for pedestrians without mobility impairment), as shown in **Table 3.1**.

	Town Centres	Commuting/School	Other Destinations
Desirable	200m	500m	400m
Acceptable	400m	1000m	800m
Preferred Maximum	800m	2000m	1200m

Table 3.1 – Suggested Walking Distances

3.4 The time it takes to walk to a service or amenity is based on guidance contained within the IHT guidelines which states that an average walking speed is approximately 1.4m/s. Also contained within **Table 3.2** is the cycle times to each of the destinations, which is based on the lower limit of 4m/s, as set out in Local Transport Note 2/08: Cycle Infrastructure Design.

IHT Desirable/Maximum Walk Distance	Destination	Approximate Distance (m)	Travel Time Walking (min:sec)	Travel Time Cycling (min:sec)
Other Destinations 400m/1200m	PFS including Spar	810	9:35	3:20
Other Destinations 400m/1200m	Co-Op	790	9:25	3:20
Other Destinations 400m/1200m	Badham Pharmacy	720	8:35	3:00
Other Destinations 400m/1200m	Sixways Medical Clinic	740	8:50	3:05
Other Destinations 400m/1200m	Norville Opticians	725	8:35	3:00
Commuting/School 500m/2000m	St Edwards Prep School	680	8:05	2:50
Commuting/School 500m/2000m	Holy Apostles CE Primary School	760	9:00	3:10
Other Destinations 400m/1200m	Ewens Road/Oak Avenue Bus Stops	200/400	2:20/4.40	0:50/1.40
Other Destinations 400m/1200m	A40 Road Bus Stops	Up to 590	7:00	2:25

Table 3.2 – Local Services and Amenities Distances

3.5 **Table 3.2** confirms that a range of services and amenities fall within suggested the IHT walking distances from the development site and are therefore considered highly and easily accessible by walking (and cycling).

3.6 It should be noted that the IHT guidelines are suggested distances, and not an upper limit of walking distances to facilities and amenities, as explored in greater detail within this section.

3.7 In addition to these local services and amenities, Cheltenham town centre is an approximate 2km distance (approximately 24 minutes walking and 8 minutes cycling) from the site (also accessible by public transport). Additional regional and national centres such as Gloucester, Bristol, Cardiff and Birmingham are accessible via Cheltenham Spa railway station, less than 3.5km from the development site (approximately 48 minutes walking and 16 minutes cycling).

3.8 These destinations provide access to a range of additional facilities and amenities including further education, employment, retail and leisure offerings.

Walking and Cycling

3.9 Paragraph 4.4.1 of Manual for Streets (MfS) states that walkable neighbourhood are typically characterised as having a range of facilities within 10 minutes walking distance (around 800 metres). However, it states that this is not an upper limit and that walking offers the greatest potential to replace short car trips, particularly those under 2km.

3.10 The Institute of Highways and Transport (IHT) guidance document 'Providing for Journeys on Foot' (published 2000) suggests an acceptable walking distance of 1000m and a preferred maximum walking distance of 2000m for commuting and educational purposes.

3.11 All of the facilities set out in **paragraph 3.2** fall comfortably within these thresholds, and furthermore many fall within the desirable walking catchment of 800m (equivalent to a ten-minute walk).

3.12 There are a high number of employment and leisure facilities within 5km, which is considered an acceptable distance for residents living at the application site to cycle to and from work, as set out in the DMRB and LTN 2-08.

Infrastructure

3.13 Oakhurst Rise is a cul-de-sac benefiting from a footway with an average width of approximately 1.8 metres wide on both sides of the carriageway to the junction with Ewens Road and Beaufort Road.

3.14 Ewens Road benefits from footways adjacent to both sides of the carriageway measuring approximately 1.8m wide, with the exception of approximately 15m to the junction with Pine Close from the east where there is no footway adjacent to the north of the carriageway. This continues to the junction with Haywards Road where there is a dropped kerb crossing across Ewens Road.

3.15 Beaufort Road is no entry at its southern extent, although it does benefit from a cycle contra-flow lane at its junction with Charlton Court Road. Beaufort Road benefits from footways on both sides of the carriageway with an average width of approximately 1.8m wide, to the junction with Oak Avenue and Charlton Court Road.

3.16 Charlton Court Road benefits from footways on both sides of the carriageway with an average width of approximately 1.8m wide to the junction with the A40 London Road. There are two adjoining cul-de-sacs with Charlton Court Road (Charlton Court Road and Brook Vale).

3.17 Haywards Road benefits from footways on both sides of the carriageway with an average width of approximately 1.8m wide to the signalised junction to the south with A40 London Road and A435 Cirencester Road, and continuing to King Alfred Way to the north. At the northern extent of Haywards Road is Cheltenham Footpath 60 which provides a route north to Battledown Approach. Adjacent to the egress to Battledown Approach is a dropped kerb crossing with tactile paving providing access to Holy Apostles C of E Aided Primary School.

3.18 The A40 London Road is an arterial route, benefiting from footways on both sides of the carriageway with a minimum width of approximately 2.0m wide.

3.19 Approximately 160.0m east of Charlton Court Road on the A40 London Road there is a parade of shops providing access to the majority of the facilities listed in **paragraph 3.2**. There is a signalised pedestrian crossing providing a crossing point between the footways adjacent to the north and south of London Road.

3.20 To the west of Haywards Road on the A40 London Road the footway is approximately 2.0m wide and provides pedestrian access towards Cheltenham town centre.

Cycling

3.21 At the surrounding junctions within ‘Ewens Farm’ where there is restricted vehicle access, there are dedicated lanes for cyclists travelling in either direction, providing direct and convenient routes for cyclists.

3.22 Although there are no further cycling facilities on the surrounding roads, the Cheltenham Cycling Map designates all of the surrounding local streets as quiet roads and therefore suitable for all cyclists. These streets provide a route west towards the town centre.

Public Transport Accessibility

Local Bus Services

3.23 The nearest bus stops in relation to the development site are located approximately 200m and 400m to the southwest of the application site on Ewens Road and Oak Avenue respectively. The stops comprise a bus flag with timetable information.

3.24 The routes to the bus stops are considered in more detail in the accompanying **NMU Context Report**. There are footways available from the development site to access the bus stops on Ewens Road and Oak Avenue, with adjacent dropped kerb vehicular accesses, available for users to utilise if required.

3.25 Bus stops are also present on the A40 London Road, approximately 500m south of the application site. The westbound bus stop comprises a flag with a bus shelter including a bench and lighting, timetable information (opposed to Real Time Passenger Information) and a raised platform. The eastbound bus stop comprises a flag with timetable information. Both bus stops are in good condition.

3.26 There are footways available from the development site southwest to the A40 London Road. To access the eastbound bus stop users must cross the Charlton Court Road junction with the A40 London Road which benefits from a raised carriageway crossing with associated tactile paving, the bus stop is then approximately 60m west.

3.27 To access the westbound bus stop users must cross to the southern side of the A40 London Road and travel approximately 20m east. There is no dedicated pedestrian crossing in the immediate vicinity of the westbound bus stop across the A40 London Road which may cause issues for users particularly more vulnerable users.

3.28 A summary of the bus services and frequencies from the Ewens Road bus stops are provided in **Table 3.3**. Full Timetables are provided at **Appendix G**.

Service No.	Operator	Route/Destinations Served	Operates	Daily Frequency
P	Pulham Coaches	Cheltenham - Little Cleevmount - Ewens Farm – Charlton Kings - Cheltenham	Monday – Saturday	Every Two Hours
Q	Pulham Coaches	Cheltenham - Charlton Kings - Ewens Farm - Little Cleevemount - Cheltenham	Monday – Saturday	Every Two Hours

Table 3.3: Bus Services and Frequencies – Ewens Road and Oak Avenue

3.29 A summary of the Bus Services and Frequencies from the Charlton Court Road bus stops on the A40 London Road is provided in **Table 3.4**. Full Timetables are provided at **Appendix G**.

Service No.	Operator	Route/Destinations Served	Operates	Daily Frequency
B	Stagecoach	Charlton Kings – Cheltenham – Wyman's Brook – Swindon Village – Sprigbank – Kingsditch	Monday – Sunday	Every 30 Minutes
801	Pulham Coaches	Moreton-in-Marsh – Stow-on-the-Wold – Bourton-on-the-Water – Andoversford - Cheltenham	Monday – Saturday	Approximately Every Hour and 30 Minutes
			Sunday	Every Four Hours
P	Pulham Coaches	Cheltenham - Little Cleevmount - Ewens Farm – Charlton Kings - Cheltenham	Monday – Saturday	Every Two Hours

Table 3.4: Bus Services and Frequencies – A40 London Road

3.30 **Table 3.3** and **Table 3.4** indicate that the application site is served by local buses throughout the week and on weekends. It is therefore considered that future residents will be able to utilise public transport throughout the day to access local services and amenities within Cheltenham. During peak hour site visits, it is considered that the principle bus services have spare capacity in order to accommodate the public transport users generated by the development.

3.31 The site is also located in close proximity to Cheltenham town centre bus station, 2km to the west of the development site. Cheltenham bus station provides a wide-ranging weekday and weekend service throughout Gloucestershire including Gloucester, Cheltenham and Stroud as well as national services to London, Birmingham and Bristol.

Rail Service

3.32 Cheltenham Spa rail station is located approximately 4km to the west of the development site.

3.33 Cheltenham railway station provides direct services regionally and nationally to Gloucester (every 15 – 30 minutes), Bristol (Parkway and Temple Meads), Cardiff Central, Swindon, Birmingham, Plymouth, London Paddington and Edinburgh.

Summary

3.34 Cotswold Transport Planning considers the site to be sustainably located with safe and convenient access to a wide range of services and amenities, supported by suitable pedestrian and cycle linkages between the application site and these facilities and local bus stops, providing bus travel to local and regional destinations.

3.35 The development proposed is therefore in accordance with emerging local policy HD4, which is currently awaiting adoption.

4 Relevant Transportation Planning Guidance

4.1 The relevant transportation policies are set out in the following National and Local documents:

i) National Planning Policy Framework (Revised 2018);
ii) Planning Practice Guidance Travel Plans, Transport Assessment and Statements in Decision Taking (2014);
iii) Technical Specification for New Streets (TSfNS) (2nd Edition);
iv) Gloucestershire Local Transport Plan 3 2015 – 2031 (2016);
v) Emerging Cheltenham Plan;
vi) Cheltenham Borough Local Plan Second Review 1944 – 2011 (2006); and
vii) Gloucester, Cheltenham, Tewkesbury, Joint Core Strategy to 2031 (Adopted 2017).

4.2 The main thrust of recent national and local policy guidance is to:

i) make effective and efficient reuse of land;
ii) reduce car dependency;
iii) make walking and cycling trips easier; and
iv) encourage public transport trips.

National Planning Policy Framework (NPPF) (Revised 2018)

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

National Planning Practice Guidance (March 2014)

4.4 The National Planning Practice Guidance (NPPG) provides the link between the National Planning Policy Framework (NPPF) and relevant planning practice guidance, as well as between different categories of guidance.

4.5 In respect of transport, the NPPG provides advice on what Transport Assessments, Transport Statements and Travel Plans are, when they are required, and the information that should be included when preparing the document. The key overarching principles included in the NPPG for Travel Plans, Transport Assessments and Transport Statements state that documents should be:

i. Proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible;

ii. Established at the earliest practicable possible stage of a development proposal;

iii. Tailored to particular local circumstances (other locally-determined factors and information beyond those which are set out in this guidance may need to be considered in these studies provided there is robust evidence for doing so locally); and

iv. Brought forward through collaborative ongoing working between the Local Planning Authority/Transport Authority, transport operators, Rail Network operators, Highways England where there may be implications for the strategic road network and other relevant bodies. Engaging communities and local businesses in Travel Plans, Transport Assessments and Statements can be beneficial in supporting higher levels of walking and cycling (which in turn can encourage greater social inclusion, community cohesion and healthier communities).

Manual for Streets (2007)

4.6 Manual for Streets (MfS) is a Department for Transport (DfT) publication which provides guidance for planning and designing new streets. It aims to increase the quality of life through good design, which creates more people-orientated streets. The guidance contains principles in the design of suitable pedestrian and cyclist facilities to encourage and facilitate travel via these modes. Making the local environment convenient and attractive to walk in can help prioritise walking and cycling and reduce reliance on motor transport.

Manual for Streets 2 (2010)

4.7 Manual for Streets 2 (MfS2) takes the principles set out in MfS and demonstrates through guidance and case studies how they can be extended beyond residential streets to encompass both urban and rural situations. MfS2 does not supersede MfS, rather it explains how the principles of MfS can be applied more widely, exploring in greater detail how and where its key principles can be applied to busier streets and roads.

Technical Specification for New Streets (2nd Edition)

4.8 Technical Specification for New Streets (TSfNS) sets out the principles that Gloucestershire County Council will apply to the design and construction of transport infrastructure associated with new development. TSfNS is not intended to duplicate

national guidance documents such as Manual for Streets and Manual for Streets 2 but where appropriate, reference is made to these, and other, guidance documents.

Gloucestershire Local Transport Plan (2015-2031)

4.9 The main aim of the LTP is to promote policies and measures to achieve improved opportunities for travel choices by non-car modes. This provides the context for specific local measures to be considered, promoted and introduced.

Gloucester, Cheltenham, Tewkesbury, Joint Core Strategy (JCS) to 2031 (Adopted 2017)

4.10 Policy Inf1 of the JCS (Transport Network) sets out the guiding principles for sustainable development where development proposals should be situated in locations that will maximise the opportunity and propensity for sustainable travel. Furthermore, Policy Inf1 stipulates, mirroring national policy, that access must be predicated by a safe and suitable access arrangement, which this Transport Assessment demonstrates is achievable from Oakhurst Rise.

4.11 Finally, Policy Inf 1 stipulates that [in highway terms] planning permission will be granted only where the impact of development is not considered to be severe.

The Suitability of the Development Proposals

4.12 The application site is located within Charlton Kings. Existing residential areas, education, employment, leisure, retail and social opportunities are located in close proximity to the application site, which present the opportunity for residents to walk, cycle or use public transport from their home to all amenities and local services that are required on a daily basis.

4.13 It is concluded that the development of the site is consistent with the policies of local and national government, as journeys to local services and facilities can reasonably be made by modes other than the private car.

5 Development Proposals

5.1 Planning permission is sought for the development of up to 43 dwellings, together with new vehicular access, car parking, landscaping and open space on land located to the east of Oakhurst Rise, Charlton Kings, Cheltenham.

5.2 The description of the planning application as set out in the overall submission is as follows:

"Outline application for residential development of 43 dwellings – access, layout and scale not reserved for subsequent approval."

5.3 The Architect's proposed site plan is provided in **Appendix B**.

Site Access

5.4 Vehicular access into the site will be provided via a continuation of the existing Oakhurst Rise cul-de sac into the site. The access will provide a 5.5m wide carriageway, with a 2.0m wide footway on either side. There will be no other vehicle or pedestrian access to the site from the existing public highway.

Internal Arrangement

5.5 The planning application will be outline, although access and layout will not be matters which will be reserved for future consideration and are therefore considered at the outline planning stage. The site will be subject to traditional design with footways on both sides of the carriageway, although some shared surface streets and private drives will be provided.

5.6 The main estate roads will have a carriageway width of 5.5m, with 2.0m footways. Carriageway widening on bends has been provided to accommodate the swept path analysis.

5.7 The design speed of the estate is 20mph, with the design speed of the shared surface being 15mph. Junction visibility splays of 2.4m x 22m can be achieved at all major junctions and all private road junctions. A review has been undertaken of the access arrangement for each plot and suitable visibility is available for each plot. In the majority of locations the estate road is straight with a 2.0m footway, therefore suitable junction visibility can be achieved.

5.8 Forward visibility of 25m commensurate with the design speed of 20mph has been provided around bends throughout the layout. In some locations these forward visibility

splays cross over amenity space. It is therefore recommended that a planning condition is attached to ensure that all planting and/or boundary features within the forward visibility splays are no greater than 600mm.

5.9 A planning condition of this sort has been used previously by GCC in order to ensure that planning layouts are not dominated by highway requirements by having large swathes of 'dead space'. Therefore, providing visibility splays over amenity space is considered reasonable, given the planning merits of this and the fact that a planning condition of this nature meets the relevant tests.

5.10 Swept path analysis has been undertaken and demonstrates that two large estate cars can pass each other at all points throughout the layout. The swept path analysis also demonstrates that a large estate car and large refuse vehicle can pass each other on all straight sections of the estate roads. A large estate car and large refuse vehicle cannot pass on the bends, however suitable inter-visibility is available to allow a car and refuse vehicle to see each other and wait in a safe location prior to committing to the turning manoeuvre. Widening the bends to allow a car and a refuse vehicle to pass would be contrary to the advice contained in Manual for Streets, by allowing layouts to be dominated by highway requirements.

5.11 The relevant geometric layout plans and swept paths analysis is provided at **Appendix H.**

Parking

5.12 Gloucestershire County Council's 'Manual for Gloucestershire Streets guidance document advises that residential car parking should be provided in accordance to forecast local demand as derived from census data. This is generally in accordance with guidance provided in the National Planning Policy Framework, paragraph 105.

5.13 As such, CTP have interrogated the 2011 car ownership census data for the Battledown ward, the ward in which the site is located.

5.14 The average 2011 car ownership per dwelling with growth factors applied to a future year of 2021 has been calculated. The current average car ownership per dwelling for privately owned properties is 1.54 cars per dwelling, as set out within the 2011 Census. The average car ownership per dwelling for a privately-owned house will be 1.78 cars per dwelling in 2021.

5.15 This assessment is considered to be extremely robust as it only considers houses which are privately owned and does not take into account houses which are subject to shared ownership, rented or affordable, and does not take into account flats or apartments, both of which are proposed as part of the development.

5.16 The 2011, 2021 census car ownership calculations together with the TEMPRO growth factors are included as **Appendix I.**

5.17 A total of 86 car parking spaces are proposed for the 43 dwellings comprising of 10 garage spaces and with 76 driveway/off-street car parking spaces. A further 7 visitor parking spaces are also proposed, as shown on the Architect's layout. This equates to a provision of two parking spaces per dwelling, which was broadly accepted by GCC as part of the earlier planning application concerning 17/00710/OUT, and is therefore concluded to acceptable for use on this forthcoming application.

5.18 All single garages will have internal dimensions of 3m x 6m, with double garage dimensions of 6m x 6m. These dimensions are suitable to accommodate a car and a bicycle in a single garage.

5.19 Cycle storage provision will be provided in line with GCC guidance, with at least one cycle space provided within the curtilage of each dwelling.

6 Forecast Trip Generation and Impact on the Local Highway Network

6.1 When considering a residential development, it is generally accepted that the critical periods in terms of traffic impact on the adjacent highway network are the weekday morning and evening peak hours, when traffic flows associated with the development combined with the traffic flows on the adjacent highway network are at their greatest.

6.2 It follows that should the impact of development traffic on the local road network be considered acceptable during these periods then it would also be acceptable during other, less busy, periods of the week.

Forecast Trip Generation

6.3 The forecast vehicular trips associated with the proposed residential use of the site have been derived from a local donor site.

6.4 It was agreed with GCC to undertake a survey on Charlton Court Road, as this was considered to provide a typical trip rate for the area which could be used to forecast vehicular trips at the proposed site. An Automatic Traffic Count (ATC) survey was carried out between Wednesday 7th and Tuesday 13th December 2016 on Charlton Court Road. The full survey data is provided at **Appendix E.**

6.5 This trip assessment has been carried out for the weekday AM and PM network peak hours (0800-0900 and 1700-1800, as derived from the turning count data) given the site is being developed for residential development and this is the period during which residential development typically generates the greatest number of trips, together with the highway network being at its busiest at these times and as such the compounded impact of these trips is at its greatest.

6.6 In order to calculate the trip rates from the local donor site, the ATC data was interrogated to determine an average of the AM inbound/outbound and PM inbound/outbound trips across the five surveyed weekdays calculated.

6.7 The average number of trips for each movement was then divided by the total number of dwellings accessed via Charlton Court Road, this being 35, to provide a trip rate for both arrivals and departures. This trip rate was then multiplied by the number of dwellings proposed, up to 43, to provide the trip generation for both arrivals and departures.

6.8 For example, the total number of AM inbound trips across the five surveyed weekdays was 19, with the total number of AM outbound trips being 58. These two figures were then divided by five, which provided an average of the daily AM inbound and outbound trips, 3.8 and 11.6 respectively. These average figures were divided by 35 (number of dwellings in Charlton Court Road) to provide an inbound AM trip rate of 0.11 trips per dwelling and an AM outbound trip rate of 0.33 trips per dwelling. This process was repeated for the PM peak hour.

6.9 A summary of the resulting average trip rates for the donor site, Charlton Court Road, is shown in **Table 6.1**. These trip rates were then applied to proposed development of up to 43 dwellings to provide a forecast vehicle trip generation for the application site and this is shown in **Table 6.2.**

6.10 A copy of the full ATC data is provided in **Appendix E**.

Time Period	Charlton Court Road – 35 Dwellings		
	Trip Rates (per dwelling)		
	Arrivals	Departures	Two-way Flow
AM Peak 0800-0900	0.11	0.33	0.44
PM Peak 1700-1800	0.31	0.17	0.48

Table 6.1 – Average Vehicular Trip Rates and Trip Generation – Local Donor Site

Time Period	Forecast Traffic Generation – 43 Dwellings					
	Trip Rates (per dwelling)			Vehicular Trips (based on 43 dwellings)		
	Arrivals	Departures	Two-way Flow	Arrivals	Departures	Two-way Flow
AM Peak 0800-0900	0.11	0.33	0.44	5	14	19
PM Peak 1700-1800	0.31	0.17	0.48	13	7	21

Table 6.2 – Forecast Trip Rates and Vehicular Trips – Proposed Development

6.11 **Table 6.2** indicates that the proposed development is expected to create an additional 19 and 21 vehicle trips during the AM and PM network peak periods respectively on the local highway network. This equates to approximately one new vehicle trip every minutes during the AM and PM peak hours.

6.12 The forecast traffic flows contained within **Table 6.2** are the unrestrained forecast vehicular trips, prior to the influence of the comprehensive Residential Travel Plan which has been prepared.

6.13 The traffic impact assessment carried out within this TA is based on the unrestrained vehicular trips, in order to provide a robust assessment.

6.14 It should be noted that the use of the local donor site is considered to be robust for the purposes of estimating the trip generation from the proposed development. The daily trip generation from the local donor site is approximately 25% higher than the daily trip generation presented in the scoping report, which was derived from the TRICS database.

Trip Distribution

6.15 For the purpose of assessing the off-site impact of the proposed development the forecast vehicular trips have been distributed to the local highway network based on the 2011 Census Journey to Work Travel data. The DataShine Census (http://datashine.org.uk/#table=QS411EW&col=QS411EW0007&ramp=YlOrRd&layers=BTTT&zoom=12&lon=-0.1500&lat=51.5200) which maps the 2011 Census data has been interrogated. The car driver method of travel to work from the DataShine Travel to Work Flows interactive map have been used to distribute traffic across the local highway network.

6.16 The proposed development site is situated within the super output area of Cheltenham 012. The interactive flow maps on DataShine Commute demonstrate the employment locations of people that live within Cheltenham 012. Within this data, the exact number of those residing within Cheltenham 012 and travelling to other locations for employment purposes are set out. For example, 421 people who live in Cheltenham 012 (Charlton Kings) work in Cheltenham 009 (Cheltenham Town Centre) and travel by car.

6.17 An employment location which attracts more than ten vehicle trips from Cheltenham 012 has been considered, which provides distribution data for 42 super output employment locations, and is an extremely robust assessment.

6.18 **Appendix J** includes the interactive flow map which demonstrates the locations that residents within Cheltenham 012 travel to for work by car, the total number of residents travelling to each location by car and a location map of all 42 super output employment locations.

Trip Assignment

6.19 In order to assign the development trips to the location highway network, the quickest route from Cheltenham 012 to all 42 super output areas has been reviewed. The development trips have therefore been assigned based on the quickest route to their employment destination from the development site, which sits within Cheltenham 012.

6.20 It is noted that the A40/A435/Haywards Road signal-controlled junction can suffer from congestion during the peak hours, it is therefore likely that future residents will choose to travel along residential streets in order to avoid this junction. However, it is considered necessary to present a scenario where additional traffic passes through the A40/A435/Haywards Road signal-controlled junction, in order to test the likely impact on that junction, as requested by GCC.

6.21 GCC's preference throughout the traffic modelling of the Joint Core Strategy strategic developments assessment is to ensure that traffic uses the principal routes, rather than residential routes. Therefore, and to ensure consistency when testing the impact of developments, this approach has been followed by assigning traffic to the quickest, principal routes, rather than to residential streets. This approach has been approved by GCC during scoping discussions.

6.22 It should be noted that the Census data sets out that 326 residents of Cheltenham 012 have no fixed place of work, these are likely to be contractors, those who are self-employed and temporary staff. It has therefore been decided to equally proportion these trips between the four route choices.

Route Choice

6.23 The assessment of the quickest routes from Cheltenham 012 to the 42 super output employment areas demonstrated that there are four main routes which traffic will use to travel to the employment locations within the study area.

6.24 There are a number of banned movements and restricted routes which impact on the assignment of development traffic. The right turn movement from the A435 to the A40 east is prohibited, however vehicles can travel from the A435 to Haywards Road.

6.25 In addition, there are a number of routes in the vicinity of the site where access is restricted. On this basis, the industry standard method of 'reversing' the distribution and assignment of trips between the AM and PM peak hours cannot be applied. Development

trips have been distributed and assigned based on the quickest route, considering the influence of prohibited movements.

6.26 It should be noted that although the left turn movement from the A40 to the A435 is not banned, the turning count data indicates that vehicles do not currently undertake this movement, this is more than likely due to the acuteness of the turn (although vehicles have been observed to undertake this manoeuvre during site visits). However, to provide a consistent approach, considering that this is the quickest route to a number of employment destinations, development traffic has been assigned to this route in the AM peak hour. Site visits have indicated that vehicles currently do undertake this movement.

6.27 **Table 6.5** sets out the quickest route from Cheltenham 012 to each employment super output area within the study area, these have been grouped into four main routes within the study area. For the purposes of **Table 6.5**, the four routes have been summarised below. The below routes are the appropriate for the AM outbound trips. For the reasons given in **paragraph 6.23**, development traffic in the PM peaks has been assigned slightly differently due to the prohibited movements.

- Route 1 – Turn left out of Oakhurst Rise onto Beaufort Road and Charlton Court Road, travel west along the A40 towards Cheltenham;
- Route 2 - Turn right out of Oakhurst Rise, travel west along Ewens Road towards the B4075 Hales Road;
- Route 3 – Turn left out of Oakhurst Rise onto Beaufort Road and Charlton Court Road, travel west along the A40 towards Cheltenham and turn left onto the A435; and
- Route 4 – Turn left out of Oakhurst Rise onto Beaufort Road and Charlton Court Road, travel east along the A40 towards Charlton Kings.

From	To	No. of Trips	% of Trips	Route
Cheltenham 012	Cheltenham 009	421	15.5	1
Cheltenham 012	No Fixed Place	326	12	1, 2, 3, 4 (25% each)
Cheltenham 012	Cheltenham 012	144	6.2	4
Cheltenham 012	Cheltenham 010	164	6	1
Cheltenham 012	Cheltenham 001	93	3.4	2

Cheltenham 012	Cheltenham 011	44	3.4	1
Cheltenham 012	Gloucester 004	87	3.2	1
Cheltenham 012	Tewkesbury 001	84	3.1	2
Cheltenham 012	Cheltenham 007	84	3.1	1
Cheltenham 012	Tewkesbury 005	78	2.9	2
Cheltenham 012	Cheltenham 014	71	2.6	3
Cheltenham 012	Gloucester 007	70	2.6	3
Cheltenham 012	Cheltenham 004	67	2.5	2
Cheltenham 012	Tewkesbury 008	64	2.4	1
Cheltenham 012	Cotswold 004	61	2.3	4
Cheltenham 012	Tewkesbury 007	61	2.3	1
Cheltenham 012	Cheltenham 008	59	2.2	1
Cheltenham 012	Tewkesbury 009	58	2.1	1
Cheltenham 012	Cheltenham 015	55	2	1
Cheltenham 012	Gloucester 002	51	1.9	1
Cheltenham 012	Cotswold 007	49	1.8	3
Cheltenham 012	Tewkesbury 004	43	1.6	2
Cheltenham 012	Gloucester 015	39	1.6	1
Cheltenham 012	Cheltenham 002	38	1.4	2
Cheltenham 012	Cheltenham 006	35	1.3	2
Cheltenham 012	Tewkesbury 003	28	1	2
Cheltenham 012	Stroud 005	25	0.9	1
Cheltenham 012	Cheltenham 005	23	0.8	2
Cheltenham 012	Cotswold 003	21	0.8	4
Cheltenham 012	Cheltenham 013	21	0.8	1
Cheltenham 012	Tewkesbury 002	20	0.7	2
Cheltenham 012	Stroud 006	20	0.7	3
Cheltenham 012	Gloucester 009	18	0.6	1
Cheltenham 012	Swindon 022	18	0.6	3

Cheltenham 012	Cotswold 005	17	0.6	4
Cheltenham 012	Cotswold 002	14	0.5	4
Cheltenham 012	Gloucester 005	13	0.5	1
Cheltenham 012	Bristol 032	12	0.4	1
Cheltenham 012	Gloucester 006	11	0.4	3
Cheltenham 012	Cheltenham 003	10	0.4	2
Cheltenham 012	Stroud 001	10	0.4	1
Cheltenham 012	Cotswold 001	10	0.4	4
		Total: 2,709	**Total: 99.9%***	

Table 6.5 – Route Choice to Employment Destination *subject to rounding

Predicted Development Traffic Flows

6.28 Based on the forecast trip generation, trip distribution and trip assignment, the Traffic Flow Diagrams (TFDs) representing weekday AM and PM traffic generation arising from the application site are included as **Appendix K**.

Traffic Impact Assessment

6.29 Examination of the generated and distributed traffic confirms that the overall level of traffic arising from this development will be low in real terms, and once distributed across the highway network, will have a negligible impact on the safe operation on all routes where traffic is expected to travel, including the A40.

6.30 CTP's conclusion is that the development will not result in a significant or severe impact on the safe operation of the local highway network, and therefore there are no reasons related to traffic impact that should result in a refusal of this planning application.

7 Summary & Conclusions

7.1 Cotswold Transport Planning Ltd has been commissioned by William Morrison (Cheltenham) Ltd to produce a Transport Assessment in connection with a proposed development of up to 43 dwellings on land off Oakhurst Rise, Charlton Kings, Cheltenham.

7.2 This TA has been provided subsequent to previous Transport Assessments prepared to support larger planning applications at this site for residential scheme of 90 and 69 respectively, which GCC did not object to each of the previous planning applications were considered. On the basis that this revised application seeks permission for a smaller level of housing and thus a reduced anticipated traffic impact, it is anticipated that GCC will not seek to object to this planning application on grounds of traffic impact.

7.3 With relevance to the new planning application, this TA has demonstrated the following:

i. A review of the local highway network and collision data in the vicinity of the site indicates that there are no apparent problems in relation to the current operation or safety of the local highways;

ii. The site is well located for convenient access to a range of services and amenities in addition to public transport linkages to additional facilities further afield;

iii. The site is fully compliant with local and national planning policy guidance;

iv. The site access arrangements are safe and appropriate and have been designed to Manual for Streets and Manual for Gloucestershire Streets requirements;

v. Proposed parking provision on-site will be suitable to negate any adverse impact upon the local highway network; and

vi. The proposed development will not have a severe impact on the operation of the local highway network and the surrounding off-site junctions.

7.4 To summarise, it can be concluded that the proposed development will not have any material impact upon the safety or operation of the surrounding local highway network.

7.5 Consequently, it is considered that there are no significant highways and transportation matters that would preclude the Local Planning Authority from approving this planning application.

APPENDIX A: Correspondence from Gloucestershire County Council

Gloucestershire
COUNTY COUNCIL

Highways Development Management
Shire Hall
Gloucester
GL1 2TH

Michelle Payne
Cheltenham Borough Council
P.O. Box 12
Municipal Offices
Promenade
Cheltenham Glos
GL50 1PP

email: lucas.arinze@gloucestershire.gov.uk

Please ask for: Lucas Arinze

Our Ref: B/2018/041670 Your Ref: 18/02171/OUT Date: 13 December 2018

Dear Michelle Payne,

TOWN AND COUNTRY PLANNING ACT 1990
HIGHWAY RECOMMENDATION

LOCATION: Land Adjacent To Oakhurst Rise Cheltenham Gloucestershire
PROPOSED: Outline application for residential development of up to 69 dwellings including access, layout and scale, with all other matters reserved for future consideration (revised scheme following refusal of application ref. 17/00710/OUT)

I refer to the above planning outline planning application with access and layout to be considered received on the 5th November 2018 2018, submitted with application form, Design & Access Statement, Transport Assessment, Technical Note, Travel Plan, NMU Context Report, Stage 1 RSA report & Mobility Audit, Designers Response and Auditors Letter and drawing refs. PL005 Rev A, SP03 Revision: C, SP04 Revision: C, SP05, SP06 Revision: A, SK20 Revision: E, SK21 Revision: C, SK22 Revision: C, SK23, SK24 and SK25 Revision: A.

History

A recent planning application for 90 residential dwellings at the same site (ref. 17/00710/OUT) was refused planning permission in July 2018; however the Highway Authority recommended that no highway objection be raised subject to conditions.

Local Transport Network

The site is located to the east of Cheltenham town centre within Charlton Kings. The site is bound to the north, east and west by existing residential development and to the south by St. Edward's Preparatory

School. The proposed development site will be accessed directly from Oakhurst Rise. Oakhurst Rise is a publicly maintainable historic cul-de-sac that has safely served some 30+ residential dwellings for a number of years, connecting to Ewens Road and Beaufort Road at its southern extent in the form of a simple priority junction. Oakhurst Rise and all of the other roads in the locality have pedestrian footways to both sides of the highway and feature street lighting.

Existing & Proposed Land Uses

The site is currently 4.29 hectares of pasture. The proposed land use will change to occupy 69 residential dwellings comprising of:

- 6 1 bedroomed apartments;
- 14 2 bedroomed apartments;
- 4 3 bedroomed apartments;
- 4 2 bedroomed houses;
- 10 3 bedroomed houses;
- 24 4 bedroomed houses;
- 6 5 bedroomed houses; and
- 1 6 bedroomed house.

Accessibility – Public Transport, Walking & Cycling

The site is sustainably located and is deemed to be within acceptable walking distance of local amenities. In addition the site is also accessible to high quality public transport facilities located nearby with the nearest bus stops located on Beaufort Road to the south-west and slightly further afield on the A40 to the south. The bus serving the stop on the A40 London Road operates regularly at peak hours with services connecting to centre of Cheltenham Town.

Access

Vehicular access to the site will be provided from Oakhurst Rise, via a continuation of the existing cul-de-sac. Oakhurst Rise is a class 4 highway with a carriageway width of approximately 5.5m and is subject to the sign posted 20mph speed limit. The continuation of carriageway into the site will remain at a width of 5.5m with 2m wide footways on both sides of the carriageway.

Layout

The proposed internal layout will primarily be 5.5m wide carriageways with 2m footways on either side throughout the layout which is sufficient width to accommodate the passing of two private estate vehicles and ensures that conflict with vulnerable users is minimised in accordance with Paragraph 110 of the NPPF. The remaining areas within the site will be shared surface and vary in width between 6.8m

- 7.5m; full height kerbed footways are tapered transitioning pedestrians into these shared areas with transitional rumble strips / ramps indicating drivers that they are entering a change in highway.

As two private estate cars can pass one another simultaneously throughout the site forward visibility is only required for larger vehicles (such as a refuse vehicle) and a car where they cannot safely pass simultaneously. As drivers of larger vehicles typically sit further forward than in a car due to the bonnet length being reduced this provides them with enhanced forward visibility. Therefore with the aforementioned and the infrequency of two such vehicles meeting it is deemed that speeds and the required visibility in this location will be low.

Refuse vehicle tracking as shown on drawing refs. SK23, SP03 Revision: C and SP06 Revision: A demonstrates that an 11.2m 3-axle refuse vehicle can enter, manoeuvre through and egress the site in forward gear without conflict. The tracking has demonstrated that where a car is unable to pass a refuse vehicle adequate levels of driver to driver inter-visibility can be achieved to allow one another to give way. The refuse vehicle can also get within 25m of all refuse storage points and would have not come any closer than 500mm from any vertical kerb-line structure, tree or formal car parking space.

Forward visibility of 25m commensurate with the design speed of 20mph has been provided (drawing ref. SK22 Revision: C) around all bends throughout the main estate layout. In some locations these forward visibility splays cross over/ are within very close proximity to amenity space ant it is therefore recommended that a planning condition is attached to ensure that all planting and/or boundary features within the forward visibility splays are no greater than 600mm.

As the site has a gradient, when a planning application is submitted the developer will have to bear in mind how they propose to construct the carriageways to an acceptable gradient. There are many ways that the required gradients can be achieved through various earthwork techniques. However at planning stage technical details such as carriageway gradients are not assessed as this will take place once planning permission has been established through the technical approval process.

Gloucestershire County Council's Manual for Gloucestershire Streets guidance provides guidelines for adoptable gradients and geometries and these must be achieved if the roads are to be adopted. Even if the developer does not want the carriageways and footways within the site to be adopted they must still be constructed to an adoptable standard.

Parking

As there are currently no local car parking standards in Gloucestershire, the suitability of the parking provision will instead be assessed against the methodology set out in the NPPF. A further Ministerial statement published in March 2015 stated that Local Planning Authorities should only impose local parking standards for residential and non-residential development where there is a clear and compelling justification that it is necessary to manage their local road network.

Parking provision should be compliant with Paragraph 105 of the NPPF, a part of that methodology looks at local car ownership levels based upon the 2011 census data, with further consideration given to documents such as the DCLG Residential Car Parking Research Document. I have undertaken a study of the local car ownership levels for the area surrounding the proposed development site.

In total the proposed development will provide a total of 159 parking spaces for the 69 dwellings with a mix of garages, driveway car parking spaces and 17 visitor car parking spaces. This equates to an average of 2.3 parking spaces per dwelling, which is in excess of the local car ownership Census data levels. The 2011 local car ownership Census data identified an average car ownership within area E01022104:Cheltenham 012B of approximately 1.20 cars per dwelling.

Car / Van	Number	%
All categories: Car or van availability	**721**	**100.0**
No cars or vans in household	**122**	**16.9**
1 car or van in household	**349**	**48.4**
2 cars or vans in household	**200**	**27.7**
3 cars or vans in household	**37**	**5.1**
4 or more cars or vans in household	**13**	**1.8**

The DCLG's Residential Car Parking Research Document (RCPR) states that allocated spaces can generate additional parking demand. The additional parking demand can be calculated using the census data and the following equation;

(1x 0.28) + (2x 0.05) + (3 x 0.02) = 0.44 additional demand, creating an overall parking demand of 1.64 spaces per dwelling. The RCPR also states that those living in affordable housing often own on average 0.5 fewer vehicles than those living in similar owner occupied dwellings.

In addition to the above 0.2 parking spaces per dwelling required by Manual for Gloucestershire Streets (MfGS) for visitor parking, a total of 17 visitor spaces for the development would also be required. When combining the expected car ownership levels and GCC's visitor space requirement (based on MfGS), the proposed site would be expected to provide at least 130 car parking spaces. Therefore based upon the local car ownership levels, the proposed parking provision being higher than the recorded average car ownership figures in the 2011 census data and the findings of the RCPR, the proposed provision would be regarded as acceptable in accordance with Paragraph 105 of the NPPF and will reduce the likelihood of parking displacement on the surrounding highway network.

Each parking space complies with the recommended design guidance of 9.13 and 9.14 Manual for Gloucestershire Streets with each space measuring 2.4m x 4.8m in length with 6.0m of drivable surface

in front of them for ease of access. The private garages also comply with the recommended design guidance of 9.22 Manual for Gloucestershire Streets with each single garage measuring a minimum of 6m x 3m, with minimum door width of 2.4m and each double garage measuring 6m x 6m, with minimum door width of 2.4m.

In addition the site will provide a minimum of 1 secure cycle storage space per dwelling. Cycle storage provision will encourage an active lifestyle and can act as a suitable substitute to the private car over short distances. A 3 mile utility cycle is a convenient distance for cyclists of all abilities whilst longer journeys of 5 miles or more according to LTN 2/08 allows experience cyclists to commute to work as well as provide scope to combine with alternative modes of sustainable transport to create longer environmentally friendly journeys. Cycling does have the ability to create a modal shift away from the private motor car.

Cycle storage for the dwelling houses can be accommodated within a rear garden shed, the shed should have a stand secured to the foundations and fixed lockable door. They should be positioned as such to allow for overlooking from a habitable room, this will allow for passive surveillance and help to reduce potential crime. The cycle storage serving the apartments can be provided by way of an appropriately positioned external store located close to pedestrian entrances and accesses. The store must be safe, secure and covered. Cycle storage facilities will be secured by way of planning condition.

Road Safety Audit

A stage 1 Road Safety Audit (RSA) was undertaken for the site layout in accordance with HD19/15. All issues raised within the audit have been agreed to within the designer's response and demonstrated on drawing refs. SK22 Revision: C, SK23 and SK24 which have addressed the road safety issues raised and have been approved by the auditor.

Non-Motorised Users

A non-motorised user's assessment was undertaken with an aim to identify any shortfalls in pedestrian facilities and whether it would be reasonable to secure off site mitigation of the routes identified within the report. The report identifies deficiencies in the surrounding walking/cycling network and routes to destinations which should be improved for non-motorised user's accessibility, safety, comfort and convenience.

Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and Planning Policy Statement 13 Transportation and Land Use document states that walking offers the greatest potential to replace short car trips, particularly those under 2km. Manual for Streets encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents.

The overall outcome identified that the existing routes were of a good standard with only a small number of pedestrian crossing improvements required. These have been secured by way of suitably worded planning condition.

Vehicle Trip Generation

During scoping discussions, the Highway Authority stated that the TRICS trip rate and trip generation data presented by the applicants transport consultant (Cotswold Transport Planning) was not comparable to the proposed development site. The Highway Authority requested a local validation survey should be undertaken to determine the forecast trip generation. It was agreed that an Automatic Traffic Count (ATC) survey could be undertaken on Charlton Court Road, as this was considered to provide a typical trip rate for the area which could be used to forecast vehicular trips at the proposed site. As Charlton Court Road is of a similar geometry it is considered to be robust for the purposes of estimating the trip generation from the proposed development.

The use of the donor site (Charlton Court Road) is considered to be robust for the purposes of estimating the trip generation from the proposed development. The daily trip generation from the local donor site is approximately 25% higher than the daily trip generation presented in the scoping report presented by the applicants transport consultant, derived from the Trip Rate Information Computer System (TRICS) database.

The donor site recorded a two-way AM peak hour trip generation of 0.44 trips per dwelling consisting of 0.11 arrivals and 0.33 departures and a two-way PM peak hour trip generation 0.48 trips consisting of 0.31 arrivals and 0.17 departures per dwelling (based on 35 dwellings). For a 69 dwelling development, based on the donor site figures, the development would generate 30 AM peak hour trips consisting of 7 arrivals and 23 departures and 33 PM peak hour trips consisting of 21 arrivals and 12 departures.

Distribution & Traffic Impact

Based on census journey to work data (2011), the proposed vehicle distribution can be determined. 51.8% of development traffic will be distributed left out of Oakhurst Rise onto Beaufort Road and Charlton Court Road, travel west along the A40 towards Cheltenham, 22.1% will be distributed right out of Oakhurst Rise, travel west along Ewens Road towards the B4075 Hales Road, 11.7% will turn left out of Oakhurst Rise onto Beaufort Road and Charlton Court Road, travel west along the A40 towards Cheltenham and turn left onto the A435 and the remainder will turn left out of Oakhurst Rise onto Beaufort Road and Charlton Court Road, travel east along the A40 towards Charlton Kings, based on the 2011 Census Journey to Work Travel data.

Four broad route choices have been identified as use of a “quickest” route choice for traffic travelling to/from the development site and each Middle Layer Super Output Area (MSOA), noting the small variations between AM and PM routes to account for one-way and banned turning movements in Cheltenham.

1. A40 W (London Road) and A40 S (Old Bath Road / Sandford Mill Road) – to access MSOA locations to the south and west of the site including Cheltenham town centre;
2. Ewens Road and residential streets surrounding the site – to access MSOA locations to the north;
3. A435 S (Cirencester Road) – to access MSOAs to the south and east of the site; and
4. A40 E (London Road) – to access MSOAs to the east of the site.

Due the development traffic passing through sensitive junctions it was requested by the Highway Authority that capacity assessments be undertaken where there will be a material impact on local keys junctions. This may be relatively low where congestion occurs on the local highway network. It was identified through the assignment and distribution of the development traffic that the following junctions required capacity assessments:

- Charlton Court Road/London Road A40;
- Sixways;
- London Road A40/Cirencester Road A435; and
- Hales Road B4075/ London Road A40/ High Street A435

On the basis that the this planning application is for 69 dwellings, and therefore 21 dwellings less than sought previously, it was not deemed necessary to revisit the off-site junction modelling assessments, which have previously been accepted by the Highway Authority (albeit subject to mitigation that is still required to make this development acceptable), which in reality would show improvements in future scenarios due to the reduction in dwelling numbers and associated traffic generation.

The LPA have confirmed that there is no committed development that would need to be taken into account when assessing the junctions in question. Committed development is considered to be anything 10 houses and above. Developments include allocated or permitted sites that are likely to come forward within the next 3 years and/or developments that might affect the traffic within the site study area.

Charlton Court Road/London Road A40

Scenario	**Modeller Comments**
2017 Base AM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu.
2017 Base PM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu.
2022 Base AM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu.
2022 Base PM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu.
2017 Base + Development AM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu. The impact from the development does worsen junction performance; however this is not considered to be a significant impact and therefore is acceptable at this stage.
2017 Base + Development PM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu. The impact from the development does worsen junction performance; however this is not considered to be a significant impact and therefore is acceptable at this stage.
2022 Base + Development AM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu. The impact from the development does worsen junction performance; however this is not considered to be a significant impact and therefore is acceptable at this

	stage.
2022 Base + Development PM	Results for current assessment show junction operating below practical capacity levels, with queues less than 1pcu. The impact from the development does worsen junction performance; however this is not considered to be a significant impact and therefore is acceptable at this stage.

Summary

The results of the Charlton Court Road/London Road A40 junction assessment shows that the junction operates well below practical capacity levels in current and future year scenarios (2022) with and without development traffic.

All of the other junctions above were subject to a LINSIG assessments, these outcomes are as follows:

Sixways

Results: File 1 (MOVA Set-up)	**Modeller Comments**
2017 Base	In the AM scenario, the A40 WB is operating well over absolute capacity levels with a MMQ length of 173.4pcus. All other lane are shown to exceed absolute capacity levels (DoS = ~101%) with the expectation of the A40 EB which is shown to be just over practical capacity (DoS = 90%). In the PM scenario, both A40 arms are shown to operate well in excess of practical capacity and all other arms are below or at practical capacity levels. Therefore, the junction is shown to operate over absolute capacity in the AM scenario and over practical capacity levels in the PM scenario.
2022 Base	In the AM scenario, all arms are shown to be operating with DoS values in excess of 100%, with the A40 WB shown to have an MMQ length of 245pcus. In the PM scenario, both A40 arms are again shown to be operating in excess of 100% DoS, as is Greenway Lane. All other arms are below practical capacity. Therefore, this model shows that the junction is operating

	over absolute capacity limits in both AM and PM scenarios.
2017 Base + Development	In the AM scenario, the junction continues to operate well over capacity. The increases in DoS and MMQ length from the introduction of development traffic are minimal, with the A40 EB increasing by 0.9% DoS and the A40 WB increasing by 0.6% DoS and 1.3 PCU MMQ length. There is a similarly minor worsening of performance in the PM, with the A40 EB shown to increase by 0.4% DoS and the A40 WB increasing by 0.1% DoS. Greenway Lane, Ryeworth Road and Copt Elm Road do not deteriorate in performance in either the AM or PM scenario. Therefore whilst junction performance is shown to be poor, the introduction of development traffic does not cause a significant deterioration in performance from the 2017 Baseline.
2022 Base + Development	In the AM scenario, the junction continues to operate well over capacity. The increases in DoS and MMQ from the introduction of development traffic are shown to be minimal, with the A40 EB increasing by 0.9% DoS and 2.6pcu MMQ length and the A40 WB increasing by 0.4% Dos and 1.3 PCU MMQ length. There is a similar minor worsening of performance in the PM, with the A40 EB shown to increase by 0.4% DoS and the A40 WB increasing by 0.9% DoS. Greenway Lane, Ryeworth Road and Copt Elm Road do not deteriorate in performance in either the AM or PM scenario. Therefore whilst junction performance is shown to be poor the introduction of

	development traffic does not cause a significant deterioration in performance from the 2022 Baseline.
Other comments	The File 1 model is reported within the accompanying Technical Note not to be validated particularly well compared to the supplied queue length data. The TN states that this is likely to be due to local variation in traffic conditions between the survey and modeller observation dates. The Highway Authority agrees with this conclusion in principle, and accepts that the use of MOVA data provides a suitably validated base model.
Results: File 2 (as per File 1, with optimised signal times)	**Modeller Comments**
2017 Base	The results of the 2017 Base scenario (with the optimisation of signal timings) show an improvement of A40 capacity, but a worsening of capacity on the minor arms compared to File 1. In the AM scenario, the A40 EB improves by 8.8% DoS and 9pcus MMQ length and the A40 WB improves by 23.4% DoS and 55pcu MMQ length compared to the File 1 2017 Base. However Greenway Lane increases in DoS (MMQ length) by 17.2% (11.1pcus), Ryeworth Road by 10.2% (1.2pcus) and Copt Elm Rd by 18.4% (16.7pcus). There are similar changes in the PM scenario. Having said this, PRC values in the AM and PM scenarios indicate overall improvement in junction performance. The junction is considered to operate over absolute capacity with the optimisation of signal timings, but agree that an overall benefit to junction

	performance can be achieved though revalidation of signal set up.
2022 Base	As per the 2017 Base scenarios, the 2022 Base scenarios in File 2 result in improvement in capacity on the A40 arms, but a deterioration in performance on the minor arms. In the AM scenario, the A40 EB improves by 10.1% Dos (18.2pcu MMQ length) and the A40 WB improved by 29.9% Dos (58.9pcu MMQ length) from the 2022 Base, whereas the Greenway Lane deteriorates by 19.8% DoS (14.1pcus), Ryeworth Rd by 11.9% (4.0pcus) and Colt Elm Rd by 21.2% (20.0pcus). There are similar changes in the PM scenario. PRC values indicate overall improvement in junction performance, although the junction is still considered to operate over absolute capacity with the optimisation of signal timings. The Highway Authority agree that an overall benefit to junction performance can be achieved through revalidation of signal set up.
2017 Base + Development	In both the AM and PM scenarios, there are minor increases in DoS and MMQ length values across all arms with the introduction of development traffic. For example, at the worst performing arm in the AM (A40 WB), there is an increase in DoS by 0.3% DoS and in MMQ length by 1.3pcus. For the worst performing arm in the PM (A40 EB) there is an increase by 0.3% Dos and in MMQ length by 1.1pcus. This is considered to be a minor worsening in junction performance from the 2017 Base scenarios, and therefore

	the development impact is not considered to be severe at this location. The Highway Authority agree that an overall benefit to junction performance can be achieved through revalidation of signal set up
2022 Base + Development	In both the AM and PM scenarios, there are minor increases in DoS and MMQ length values across all arms. For example for the worst performing arm in the AM (A40 WB), there is an increase in DoS by 0.3% DoS and in MMQ length by 1.2pcus. For the worst performing arm in the PM (A40 EB), there is an increase by 0.3% Dos and in MMQ length by 1.2pcus. This is considered to be a minor worsening in junction performance from the 2022 Base scenarios, and therefore the development impact is not considered to be severe at this location. Again, the Highway Authority agree that an overall benefit to junction performance can be achieved through revalidation of signal set up.

Summary

The results of this junction assessment show that the junction is operating well over absolute capacity levels in all scenarios, however the introduction of development traffic does not result in an unacceptable or severe impact.

London Road A40/Cirencester Road A435

Results File 1 (unconstrained saturation flow)	**Modeller Comments**
2016 Base	In the AM and PM scenarios, the junction operates just under practical capacity levels on all arms (DoS < 90%), with MMQ lengths not exceeding 14.5pcus in the AM Peak (MMQ length on the A40 E) and 17.9pcus in the PM peak (MMQ length on A40 W). The junction is therefore shown to be

	operating below practical capacity levels in this scenario, without consideration for exit blocking.
2017 Base	In both the AM and PM scenarios, the junction continues to operate just under practical capacity levels on all arms (DoS < 90%), with MMQ lengths not exceeding 15.3pcus across the AM or PM peak period. The junction is therefore shown to be operating below practical capacity levels, without consideration for exit blocking.
2022 Base	In the AM scenario, the junction operates just over practical capacity levels on Haywards Road, A40 E and A40 W; although with DoS values of around 95% they are still considered to operate below absolute capacity levels. Cirencester Road operates at a DoS value of 77% in the AM peak. In the PM scenario performance is slightly worse across all arms with the worst performing arm (A40 WB) operating at 97.0% DoS and 28.3pcu MMQ length. The junction is therefore shown to be operating below absolute capacity levels in both scenarios, although without consideration for exit blocking.
2022 + Development	In both the AM and PM scenarios, the junction continues to operate below absolute capacity levels, with Haywards Road, A40 E and A40 W having DoS values in excess of 94% and 11pcu MMQ lengths. PRC values are less than 0% in both scenarios indicating that the junction is very nearly at absolute capacity. Comparing these results with the 2022 Base however shows that in the AM peak, Haywards Road worsens in performance with DoS increasing by 1.4% (and MMQ length increases by less than 1pcu), for A40 E increases by 3.1% (2.9pcus), for A40 W by 0.3% (0.4pcus). There is a nominal increase in values for Cirencester Road. In the PM, there is a similar deterioration in performance. Therefore, whilst junction performance is considered to be approaching absolute capacity limits, the impact of the development is not considered severe.

File 2	Modeller Comments
2016 Base	In the AM scenario, all arms of the junction operate with DoS in excess of 90%, maximum 94%, and MMQ lengths between 10 and 19pcus. In the PM, there only the A40 is operating with DoS in excess of 90% with Haywards Road operating with 22.7%. The junction is shown to be operating below capacity limits, but with some performance issues.
2017 Base	The results for the AM and PM scenarios appear to be exactly the same. Furthermore the pattern of capacity constraints in the PM scenario is significantly different to the pattern shown in the 2016 and 2022 Base scenarios.
2022 Base	In the AM scenario, all arms of the junction operate with DoS in excess of 90%, with the A40 arms operating in excess of absolute capacity limits. MMQ lengths are between 13 and 36pcus. In the PM, there only the A40 is operating with DoS in excess of 90% with 104% DoS for the A40 E and 103% DoS for the A40 W. Haywards Road operating with a DoS of 24.6%. This junction is shown to be operating over absolute capacity on the A40 arms.
2022 + Development	In the AM scenario, all arms are operating just below or just over absolute capacity limits with the A40 W operating at 102% DoS with 36pcu MMQ lengths. In the PM scenario the A40 continues to be the main capacity constraint (with similar DoS and MMQ values) with excess capacity available on Cirencester Road and Haywards Road. Compared to the 2022 Base Scenarios, there are minor increases in DoS and MMQ. For example the AM peak period, A40 E is shown to be the most constrained increasing by 3.2% DoS and 6.3pcus MMQ length and in the PM peak period, the A40 W is shown to be the most constrained increasing by 2.7% DoS and 11.7pcu MMQ lengths. Whilst junction performance is considered to be poor in this scenario, the introduction of development traffic does not cause a significant worsening of conditions.

Scenario	Modeller Comments
2016 Base	The junction is shown to perform below practical capacity limits in both the AM and PM scenarios. In the AM, DoS does not exceed 84.3% and MMQ lengths are no greater than 14pcus. In the PM, DoS values do not exceed 85.9% or MMQ lengths of 15pcus.
2017 Base	The junction is shown to perform below practical capacity limits in both the AM and PM scenarios. In the AM, DoS does not exceed 87.1% and MMQ lengths are no greater than 15pcus. In the PM, DoS values do not exceed 85.9% or MMQ lengths of 15.8pcus.
2022 Base	In both the AM and PM scenarios, both A40 Arms are shown to have DoS Values in excess of 90% and MMQ lengths of around 17pcus (AM) and 20pcus (PM). The junction is still shown to operate below absolute capacity limits in these scenarios.
2022 Base	In both the AM and PM scenarios, both A40 Arms are shown to have DoS Values in excess of 90% and MMQ lengths of around 17pcus (AM) and 20pcus (PM). The junction is still shown to operate below absolute capacity limits in these scenarios.
2022 + Development	In the AM scenario, the junction exceeds practical capacity limits, but continues to perform under absolute capacity, with the A40 arms showing DoS values in excess of 90% (around 92-93%) and MMQ lengths of around 10-17pcus. Compared to the 2022 Base scenario, Haywards Road experiences an increase of 7.6% DoS (and increase in MMQ lengths of 1.3pcus); A40 W experiences an increase of 0.4 DoS (0.2pcus). Cirencester Road experiences a very minor increase, and the A40 E shows a decrease in DoS by 0.5%. In the PM scenario, the junction also performs under absolute capacity, with the A40 W arms showing a DoS of 94.1% (24.0 MMQ). Compared to the 2022 Base scenario, Haywards Road experiences an increase of 1.2% DoS (and no MMQ length increase), A40 W increases by 2.6% (3.1pcus) and Cirencester Road increases by 1.8%

	(0.4pcus). A40 E, as per the AM scenario, shows a decrease in DoS. These results show that the proposed development will not have a significant impact on junction performance compared to the 2022 Base.

Summary

In this assessment, the operation of the junction is shown to deteriote to above absolute capacity levels, the actual impact of the proposed development is shown to be minor, and therefore the results of the assessment are agreed. It has been illustrated that benefits to this junction can be achieved through downstream improvements at the A40 / Hales Road junction, which have been proposed as part of the off-site highway mitigation for the proposed development.

Hales Road B4075/ London Road A40/ High Street A435

File 1 (informal 2 lane arrangement with reduced sat flow)	**Modeller Comments**
2017 Base	The AM and PM periods shows the London Road SE, Hales Rd and Old Bath Rd ahead and left lanes operating in excess of absolute capacity limits with DoS values over 100%. The maximum DoS value is 104.7 in the AM and 102.0% in the PM which occur on London Road SE. MMQ lengths range from 30-52pcus in the AM and around 30pcus in the PM. Old Bath Road right turns operate under capacity in the AM period, with greater than 90% DoS in the PM. The junction model therefore shows that when modelled with an informal narrow two lane approach to the junction on London Rd SE, performance is over absolute capacity limits in the AM period and at absolute capacity in the PM.
2022 Base	In the AM and PM periods Hales Road, London Road SE and Old Bath Road lanes operate in excess of 100%

	DoS, with London Rd SE reaching 120.7% DoS and 110.5pcu MMQ length in the AM and 116.9% (87.2pcus) in the PM. London Road NW ahead movements are in excess of 90% DoS in the PM period and is approaching absolute capacity limits. The junction model therefore shows that when modelled with an informal narrow two lane approach to the junction on London Rd SE, performance is considerably over absolute capacity limits in the AM and PM.
2017 + Development	In both the AM and PM scenarios, development traffic is not shown to have a meaningful impact. In the AM scenario, the junction is shown to be operating just over absolute capacity levels, with maximum DoS occurring on Hales Road (106.9%) and maximum queuing occurring on London Rd SE (56.2pcus). In the PM scenario, the junction is shown to be operating significantly over absolute capacity levels with all lanes (with the expectation of London Road NW) operating in excess of 100% DoS. Compared to the 2017 Base assessment, there are minor worsening and improvements to both DoS and MMQ across the junction in both the AM and PM period, resulting in maximum increases in DoS of 3% and MMQ increases of around 4pcus. London Road SE experiences a 1% increase in DoS and 3.9pcu increase in MMQ length in the AM and experiences a minor

	improvement in the PM period (0.3% and 0.2pcus). The junction model therefore shows that when modelled with an informal narrow two lane approach to the junction on London Rd SE, performance is considerably over absolute capacity limits in the AM and PM periods, but is not significantly worsened by the introduction of development traffic.
2022 + Development	In both the AM and PM period, the junction continues to operate in excess of absolute capacity limits on all lanes with the expectation of London Road NW (in the AM period). Comparing the results to the 2022 Base, there is a minimal worsening of junction performance. In the AM period, Hales Road experiences an increase of 3% DoS and 7pcus MMQ length. In the PM period, the impact is slightly more severe, with increases in DoS of around 10.2% and MMQ increases of 18.48pcus. The PM scenarios are therefore considered to be a material impact, especially on Hales Road. The development is therefore considered to negatively impact the operation of this junction when modelled with an informal narrow two lane approach to the junction on London Rd SE.
File 2 (single lane arrangement, with non-blocking storage)	**Modeller Comments**
2017 Base	The AM scenario shows Hales Road and London Road SE operating in excess of absolute capacity limits and Old Bath Road operating just

	above practical capacity limits, with MMQ lengths up to 60pcus and around 30pcus on average. The PM scenario shows that the junction is operating at around absolute capacity. London Road SE shows a DoS value of 108.8% and MMQ length of 63.8 in the AM and 98.0% DoS and 33.3pcu MMQ length in the PM. The junction model therefore shows that when modelled as a single carriageway approach to the junction on London Rd SE, performance is over absolute capacity limits in the AM and just under absolute capacity in the PM period.
2022 Base	The AM scenario shows that this junction is operating well over absolute capacity level in both the AM and PM periods. DoS values are as high as 126.9% in the AM period with maximum MMQ lengths at 130pcus. The junction model therefore shows that when modelled as a single carriageway approach to the junction on London Rd SE, performance is over absolute capacity limits in the AM and PM periods.
2017 + Development	Comparing the results of this scenario to the 2017 Base Scenario shows a minor increase in impact as a result of the development. The main increase in the AM period is experienced on Old Bath Road with a DoS increase of around 4%. The main increase in the PM period occurs on London Road SE with DoS increase of around 2%. The operation of the junction during the AM

	period is considered to be well in excess of absolute capacity limits, with the actual increase as a result of the proposed development considered to be minor. The operation of the junction during the PM period is considered to remain at capacity levels, with the development making very little difference to the operation of the junction. The junction model therefore shows that when modelled as a single carriageway approach to the junction on London Rd SE, performance is over absolute capacity limits in the AM and PM periods, with the impact from the proposed development expected to be minor.
2022 + Development	The introduction of development traffic to the 2022 Base scenario does not result in significant impact during the AM peak period, with small increases in DoS values and the maximum increase in queue length occurring on London Road SE. During the PM period however, there is a greater increase in DoS and MMQ values across most lanes at the junction. The average increase in DoS is 5.46% (max. 7.2%) and MMQ length is 15.12 (maximum 31.7pcus). The junction model therefore shows that when modelled as a single carriageway approach to the junction on London Rd SE, performance is over absolute capacity limits in the AM and PM periods, with the impact from the proposed development expected to be

	material in the PM.
Scenario	**Modeller Comments**
2017 Base	In the AM peak period, the junction is shown to be operating above practical capacity levels but below absolute levels on Hales Road, London Rd SE and Old Bath Road. DoS is at 95.4% on the London Road SE, and MMQ lengths reach up to 32.0pcus. In the PM peak period, the junction continues to operate below absolute capacity. The London Rd SE is shown to be operating at 87.2% DoS with an MMQ length of around 24pcus. Therefore, with the introduction of a formal two lane approach to the junction on the London Rd SE the junction is shown to be operating below absolute capacity limits.
2022 Base	In the 2022 Base scenario, the junction operates above absolute capacity limits, but with DoS values reaching around 110% (10% less than File 1 and File 2) in the AM peak, and around 100% in the PM peak. In the AM peak, London Road SE is shown to be operating with a DoS value of 111.8% and MMQ length of 92.6pcus. In the PM peak, London Road SE is shown to be operating with DoS values of 103.3% and MMQ lengths of 41.6pcus. Therefore, the introduction of a formal two lane approach to the junction on London Road SE does improve performance, but the junction continues to operate over absolute capacity levels in the AM

	peak and at absolute capacity levels during the PM peak.
2017 + Development	The introduction of development traffic to the 2017 baseline shows a minor impact from the proposed development. In the AM peak, the maximum increase in DoS is 2.5% and the maximum increase in MMQ length is 1.7pcus which both occur on Hales Road. London Road SE experiences a 0.6% increase in DoS and a 1.4pcu increase in MMQ length. In the PM peak, the maximum increase in DoS is 2.7% and the maximum increase in MMQ length is 2.8pcus which both occur on London Road NW. London Road SE experiences a 1.3% increase in DoS and a 0.7pcu increase in MMQ length. Whilst the junction continues to operate above practical capacity levels, the introduction of development traffic (with the introduction of a formal two lane approach on London Road SE) does not constitute a severe impact.
2022 + Development	In this scenario, the junction is shown to be operating in excess of absolute capacity limits in the AM and PM hours, with all arms operating in excess of 100% DoS (maximum 114.6% in AM, 116.8 in PM) with MMQ lengths up to 94.7pcus in the AM, 102.pcus in the PM with the exception of London Road NW left turn movements. Compared to the File 1 2022 Base scenario (i.e. no development traffic or improvements), there is a benefit to the capacity

		operation of the junction in both the AM and PM periods. In the AM peak the average benefit is 2.63% DoS (maximum 8.8% on London Road SE) and 3.3pcus less MMQ length (maximum reduction of 15.8pcus). In the PM peak the average benefit is 1.6% DoS (maximum reduction of 11.2% DoS on London Road SE) and average 10pcus less MMQ length (maximum reduction 26.8pcus MMQ). In both the AM and PM peak however, there are arms which worsen with the introduction of development traffic and mitigation. This is a similar case when compared to File 2; however the benefit is considered to be much greater as the File 2 assessment is more robust in terms of capacity assessment. This scenario (File 3 2022 + Development), when compared to the File 1 2022 + Devlopment scenario again shows that the introduction of highway mitigation has benefits to the junction. In the AM period, all arms with the exception of the London Road NW experience a decrease in DoS and MMQ lengths as a result of the improvements. The average decrease is 3.1% DoS and 5.7pcus MMQ length, with the maximum benefits shown to be on London Road SE. This is the same in the PM, again all arms experiencing a decrease in DoS and MMQ lengths as a result of the improvements. This is also the case when compared to

	File 2, which experiences benefits in the AM and PM periods, an average of -15.8% DoS and 28.3pcus MMQ length in the AM and -5.8% DoS and -7.6pcus MMQ lengths in the PM. London Road SE gains the most benefit. In summary, the junction continues to operate above absolute capacity levels with the introduction of development traffic and highway improvements; however meaningful improvements in capacity are shown to be achievable.

Summary

On-site observations indicated that vehicles queue abreast in the single lane around half the time. Therefore modelling the London Road south east approach as a single lane with the potential for non-blocking storage is considered to be an acceptable approach. Using current traffic flows and this approach shows that the development is unlikely to have a significant impact in the AM peak hour, but this will be more meaningful in the PM peak hour. The assessment of a formal designation of two approach lanes shows that whilst the junction will continue to operate in excess of absolute capacity limits, there is the opportunity for a significant improvement in junction operation from the non-mitigation scenarios.

Mitigation

As the existing A40 highway network suffers from intermittent congestion investigations have taken place to identify whether any improvements could be implemented at the A40 / Hales Road signal controlled junction, which is deemed to be most critical in terms of local traffic congestion, primarily due to the exit blocking it causes to other signal junctions on the network (e.g. A40 / Cirencester Road traffic signals).

Upon assessing the investigations the Highway Authority has deemed the following improvements acceptable in terms of mitigating the impact generated by the development:

1. Engineering intervention to increase approach lane widths on the westbound A40 arm, and minor adjustments to the kerb radius on the southbound Hales Road entrance link.

2. Signal controller intervention - adding a UG405 / Mova unit to the existing ST900 controller and upgrading the connection to ADSL.

Whilst observations at the A40/Hales Road junction show that traffic queues side by side on the London Road south east arm approximately half the time, depending on multiple factors. It is considered that

there would be a capacity benefit in the proposal to widen the carriageway to formalise this occurrence every cycle. This capacity benefit would be sufficient to mitigate the impact of the proposed development at the A40 / Hales Road junction, and improve capacity issues at the A40 / Haywards Road junction, so that the residual cumulative impact is not severe.

Personal Injury Collisions

Personal injury collision statistics have been presented for a study area which covers the A40 London Road to the east, A435 to the south and Old Bath Road to the west.

Six collisions were recorded within the study area over the 5 year period with one recorded as serious. These collisions are considered to have occurred as a result of driver, pedestrian or cyclist error rather than being attributable to the geometry of the local highway network.

There has been no personal injury collisions recorded on Oakhurst Rise and therefore nothing to suggest that this highway is unsafe nor anything to suggest that the traffic generated by additional dwellings would make this section of highway unsafe. Overall it is reasonable to conclude that there is not an excessive amount of personal injury collisions on the wider network and those collisions that do occur are spread. Therefore it is reasonable to conclude that the additional traffic generated by the development will not have a material impact on general road safety in the area.

Construction Traffic

Concerns have been raised regarding the construction phase of the development, should planning permission be granted, construction traffic and the impacts of this are an inevitable consequence of engineering works and can not be avoided, however a condition ensuring that all construction vehicles and materials can be contained within the site during the construction phase, together with any potential planning conditions which the LPA may deem necessary in terms of works restrictions will mitigate the impact. Largely, the planning system does not consider the impact of the construction phase of a development, except for to ensure that authorities look to mitigate the impact as far as possible.

Residential Travel Plan

The NPPF Paragraph 111 states that developments that will generate significant amounts of movement should be required to provide a Travel Plan. The Travel Plan should be formulated in accordance with the GCC Travel Plan Guidance for developers.

The Department for Transport (DfT) defines a travel plan as “a long term management strategy that seeks to deliver sustainable transport objectives through positive action”. Such plans could include; car sharing schemes, commitment to improving cycle facilities, dedicated bus services or restricted parking allocations. A successful Travel Plan should offer users whether they are employees, residents or visitors a choice of travel modes from sites or premises.

The submitted Travel Plan for this application aims to reduce the dependence upon single occupancy private car travel when accessing the site and in order to do so the Travel Plan aspires to;

- Reduce the percentage of residents travelling by single occupancy private car to and from the site.

- Generate increase in the percentage of residents utilising active modes (walking/cycling), public transport and car sharing.

In order for the Travel Plan to achieve these aims a number of actions and measures will need to be implemented. The applicant will appoint a Travel Plan Coordinator, whose duty it is to oversee the implementation and monitoring of the Travel Plan. The Coordinator will be appointed prior to the dwellings being occupied.

The Travel Plan will obtain the base survey data once 30% of the dwellings have been occupied, with initial targets set at a 10% reduction in single occupancy car journeys based on Census travel to work data in the interim. Targets can then be updated once the baseline travel survey has been undertaken. Once base survey data has been obtained at 30% occupancy the Travel Plan Coordinator will review the Travel Plan annually associated targets and measures adjusted accordingly. The Travel Plan aims to reduce single occupancy private car use year on year. A 5 year period is acceptable for this type and size of development. The Travel Plan can be secured by way of planning condition.

Recommendation

The National Planning Policy Framework (NPPF) states at paragraph 109 that "development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe". The Highway Authority considers that this development will not have a severe impact on the local highway network. The NPPF also states that "safe and suitable access to the site can be achieved for all users", "appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location", and that "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". It is considered that the development proposals will meet these criteria. The Highway Authority recommends that no highway objection be raised subject to the following conditions being attached to any permission granted:

Condition #1 Vehicle Access Location

Means of vehicular access to the development hereby permitted shall be from Oakhurst Rise only.

Reason: - To minimise hazards and inconvenience for users of the development by ensuring that there is a safe, suitable and secure means of access for all people that minimises the scope for conflict between traffic and cyclists and pedestrians in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #2 Junction Completion

The development hereby permitted shall not be occupied until the first 20m of the proposed access road, including the junction with the existing public road and associated visibility splays, shall be completed to at least binder course level.

Reason: - To minimise hazards and inconvenience for users of the development by ensuring that there is a safe, suitable and secure means of access for all people that minimises the scope for conflict between traffic and cyclists and pedestrians in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #3 Parking & Turning

The development hereby permitted shall not be occupied until the car parking associated with each building within the development (including garages and car ports where proposed) has been provided in accordance with the submitted drawing ref. PL005 Rev A, and shall be maintained available for that purpose thereafter.

Reason: - To ensure that a safe, suitable and secure means of access for all people that minimises the scope for conflict between traffic and cyclists and pedestrians is provided in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #4 Electric Charging Points

Notwithstanding the submitted details, the construction of the car parking associated with each building within the development (including garages and car ports where proposed) shall be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

Reason: - To ensure that the development incorporates facilitates for charging plug-in and other ultra-low emission vehicles in accordance with paragraph 110 of the National Planning Policy Framework.

Condition #5 Pedestrian Segregation

Notwithstanding the submitted details, the development hereby permitted shall not be occupied until a delineated at grade pedestrian corridor with a minimum width of 1.2m from parking bays 16-19 and 60-69 linking to the associated dwelling entrances have been made available for use for the duration of the development.

Reason: - To ensure safe and suitable access to the site can be achieved for all users; to give priority to pedestrians and to address the needs of people with disabilities in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #6 Cycle Storage

The development hereby permitted shall not be occupied until a minimum of 1 no. cycle storage facility per dwelling has been provided and those facilities shall be maintained for the duration of the development.

Reason: - To give priority to cycle movements by ensuring that adequate cycle parking is provided, to promote cycle use and to ensure that the appropriate opportunities for sustainable transport modes have been taken up in accordance with paragraph 108 of the National Planning Policy Framework.

Condition #7 Forward Visibility

The forward visibility splays as demonstrated on drawing ref. SK22 Revision: B shall include no vertical features over 600mm. These areas shall be kept clear of vertical features over 600mm for the duration of the development.

Reason: - To avoid an unacceptable impact on highway safety by ensuring that adequate visibility is provided and maintained and to ensure that a safe, secure and attractive layout – which minimises the scope for conflicts between pedestrians, cyclists and vehicles, is provided in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #8 Estate Roads

The development hereby permitted shall not be occupied until the carriageway(s) (including surface water drainage/disposal, vehicular turning head(s) and street lighting) providing access from the nearest public highway to that dwelling have been completed to at least binder course level and the footway(s) to surface course level.

Reason: - To avoid an unacceptable impact on highway safety by ensuring that adequate visibility is provided and maintained and to ensure that a safe, secure and attractive layout – which minimises the scope for conflicts between pedestrians, cyclists and vehicles, is provided in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #9 Estate Road Maintenance

The development hereby permitted shall not be occupied until details of the proposed arrangements for future management and maintenance of the proposed streets within the development shall be submitted to and approved in writing by the local planning authority. The streets shall thereafter be maintained in accordance with the approved management and maintenance details until such time as either a dedication agreement has been entered into or a private management and maintenance company has been established.

Reason: - To ensure that safe, suitable and secure access is achieved and maintained for all people that minimises the scope for conflict between traffic and cyclists and pedestrians in accordance with paragraph 108 and 110 the National Planning Policy Framework and to establish and maintain a strong sense of place to create attractive and comfortable places to live, work and visit as required by paragraph 127 of the Framework.

Condition #10 Fire Hydrants

No above ground works shall commence on site until a scheme has been submitted to, and agreed in writing by the Council, for the provision of fire hydrants (served by mains water supply) and no dwelling shall be occupied until the hydrant serving that property has been provided to the satisfaction of the Council.

Reason: - To ensure adequate water infrastructure provision is made on site for the local fire service to access and tackle any property fire in accordance with paragraph 110 of the National Planning Policy Framework.

Condition #11 Non-Motorised User Improvements

Notwithstanding the submitted details, the development hereby permitted shall not be occupied until pedestrian improvements consisting of the installation of a connecting section of footway (2m wide) with tactile dropped crossing between Beaufort Road and Ewens Road (north side) and an extension to the footway (2m wide) and dropped kerb tactile crossing point across the Charlton Court Road cul-de-sac have been constructed and made available for public use.

Reason: - To ensure that safe and suitable access to the site can be achieved for all users and that the priority is first given 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, in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #12 Pedestrian Crossing

The development hereby permitted shall not be occupied until a pedestrian dropped tactile crossing to the west of plots 1 & 69 has been constructed in accordance with drawing ref. PL005 Rev A and made available for public use.

Reason: - To ensure that safe and suitable access to the site can be achieved for all users and that the priority is first given 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, in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #13 Highway Alterations

Notwithstanding the submitted details, the development hereby permitted shall not be occupied until signing and lining has been provided adjacent to 19 Oakhurst Rise creating a T-junction ensuring that is clear for drivers where the major flow is to/from.

Reason: - To avoid an unacceptable impact on highway safety by ensuring that it is clear for drivers where the major flow is to/from minimising the scope for conflicts between pedestrians, cyclists and vehicles in accordance with paragraphs 108 and 110 of the National Planning Policy Framework.

Condition #14 Highway Improvements

The development hereby permitted shall not be occupied until the widening of the approach lane widths on the westbound A40 arm, adjustments to the kerb radius on the southbound Hales Road entrance link and the signal controller intervention (adding a UG405 / Mova unit to the existing ST900 controller and upgrading the connection to ADSL) has been constructed in accordance with the approved plans.

Reason: - To ensure that cost effective improvements are undertaken to the transport network that mitigate the significant impacts of the development in accordance with paragraph 108 of the National Planning Policy Framework.

Condition #15 Public Transport Facility Improvements

Notwithstanding the submitted details, the development hereby permitted shall not be occupied until a bus shelter has been provided for Bus Stop ID: glodtwmt located on Beaufort Road and has been made available for public use.

Reason: - To ensure that appropriate opportunities to promote sustainable transport modes can be taken up in accordance with paragraph 108 of the National Planning Policy Framework.

Condition #16 Construction Method Statement

Throughout the construction period of the development hereby permitted provision shall be within the site that is sufficient to accommodate the likely demand generated for the following:

i. parking of vehicles of site operatives and visitors;

ii. loading and unloading of plant and materials;

iii. storage of plant and materials used in constructing the development; and

iv. provide for wheel washing facilities

Reason: - To reduce the potential impact on the public highway and accommodate the efficient delivery of goods in accordance with paragraph 110 of the National Planning Policy Framework.

Condition #17 Travel Plan

The approved Travel Plan shall be implemented in accordance with the details and timetable therein, and shall be continued thereafter, unless otherwise agreed in writing by the Local Planning Authority.

Reason: - The development will generate a significant amount of movement and to ensure that the appropriate opportunities to promote sustainable transport modes are taken up in accordance with paragraphs 108 and 111 of the National Planning Policy Framework.

Informatives:

Note I*: The proposed development will require the provision of a footway/verge crossing and the Applicant/Developer is required to obtain the permission of the County Council before commencing any works on the highway.*

Note II*: The proposed development will involve works to be carried out on the public highway and the applicant/developer is required to enter into a legally binding highway works agreement (including appropriate bond) with the County Council before commencing those works.*

Note III*: You are advised to contact Amey Gloucestershire 08000 514 514 to discuss whether your development will require traffic management measures on the public highway.*

Note IV*: The developer will be expected to meet the full costs of supplying and installing the associated infrastructure.*

Note V*: The applicant is advised that to discharge condition #9 that the local planning authority requires*

a copy of a completed dedication agreement between the applicant and the local highway authority or the constitution and details of a private managements and maintenance company confirming funding, management and maintenance regimes.

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,

Lucas Arinze

Development Co-ordinator

APPENDIX B: Proposed Site Plan

Land off Oakhurst Rise, Charlton Kings, Cheltenham

Accommodation Schedule

Ref	Type	Bedrooms	Bedspaces	No. Off	G.I.A sq/m	Total G.I.A sq/m
Pa	2.0	2	4	6	89.9	534.00
Fa	Flat	1	2	4	52.0	208.00
Hi	2.5	4	6	23	107.5	2472.50
Dy	2.0	3	5	3	108.5	325.5
Te	2.0	3	5	5	117.5	587.5
An	2.0	4	8	2	150.4	300.8
				43		4428.30

To be read in conjunction with site layout drawing

coombes : everitt architects limited
Unit No.1, The Old Dairy
Rushley Lane
Winchcombe
Gloucestershire
GL54 5JE

t: 01242 807727 f: 0845 5575833
e: info@ce-architects.co.uk
www.ce-architects.co.uk

- [ ] Preliminary
- [ ] Feasibility
- [ ] Planning
- [ ] Building Regulations
- [ ] Tender
- [ ] Construction issue
- [ ] As Built

RIBA Chartered Practice

Drawing title: Site Plan

Client: William Morrison (Cheltenham) Ltd & The Trustees of the Carmelite Charitable Trust

Drawn by: AH Checked: JE

Project No: 16.20.034

Project: Land off Oakhurst Rise, Charlton Kings, Cheltenham

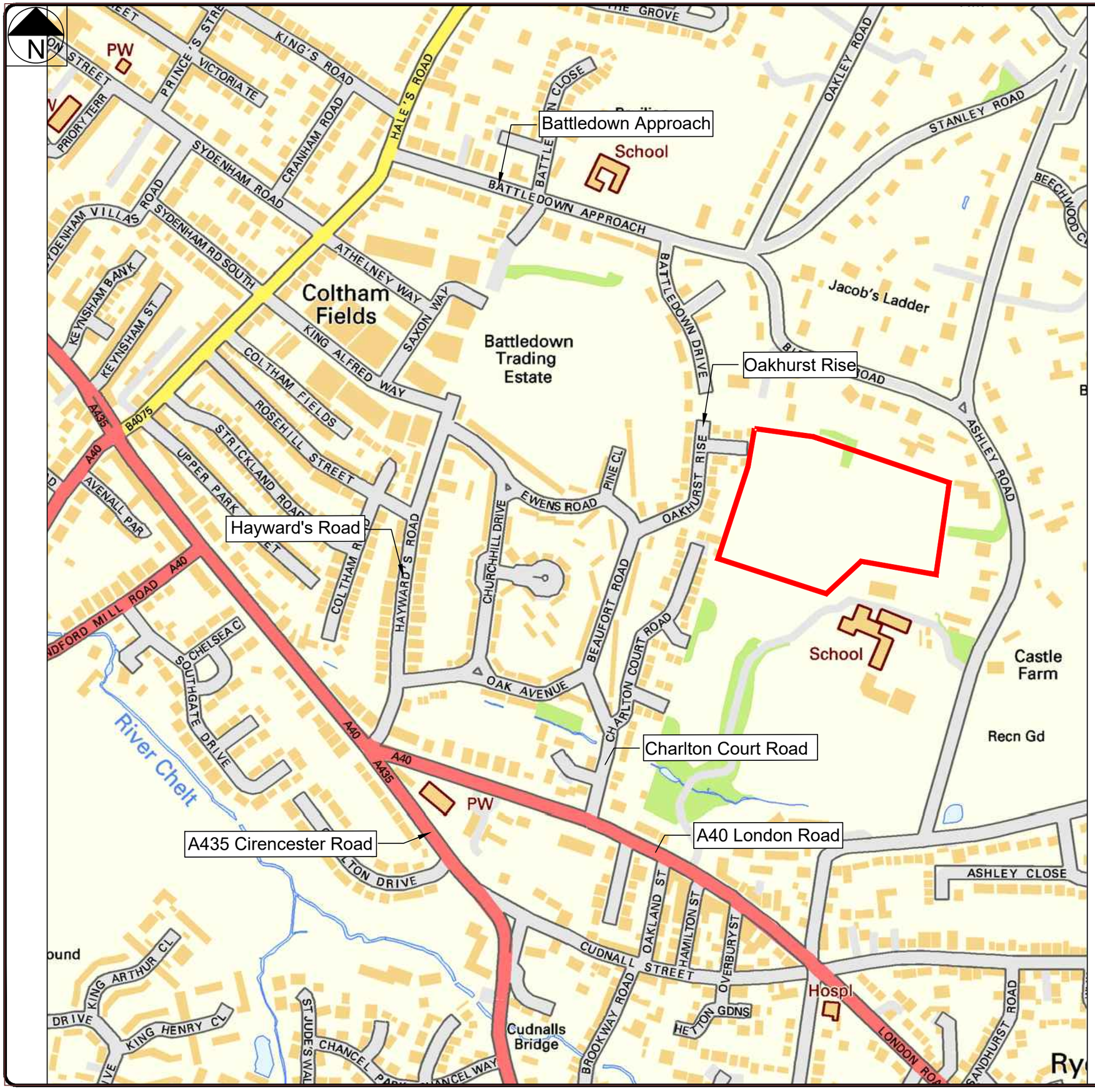
Scale: 1:500 @ A1

Date: April 2020

Project / Drawing No: PL005

coombes : everitt architects

APPENDIX C: Local Highway Network Plan



Notes:

Indicative Site Boundary

COTSWOLD TRANSPORT PLANNING

Cotswold Transport Planning Ltd
121 Promenade
Cheltenham
Gloucestershire
GL50 1NW
Tel: 01242 370283
cheltenham@cotswoldtp.co.uk
www.cotswoldtp.co.uk

Drawing Title:
Local Highway Network Plan

Client:
William Morrison

Project:
Land off Oakhurst Rise, Charlton Kings

Drawing No:	Revision:
SK_08	
Date Drawn: 20.01.17	Issue Date: 20.01.17
Drawn by: MW	Checked by: MG
Project Code: CTP-15-332	Scale at A3: Not to Scale

Drawing Status:
INFORMATION

APPENDIX D: MTC Data

Cheltenham - Thursday 8th December 2016

Junction: A435/A40/Haywards Road

Approach: A435

	Left Turn				Northbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	89	2	0	**91**	1	0	0	**1**	0	0	0	**0**
0745 - 0800	92	2	1	**95**	0	0	0	**0**	0	0	0	**0**
Hourly Total	**181**	**4**	**1**	**186**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
0800 - 0815	106	3	0	**109**	0	0	0	**0**	0	0	0	**0**
0815 - 0830	111	2	0	**113**	0	0	0	**0**	0	0	0	**0**
0830 - 0845	102	4	1	**107**	1	0	0	**1**	0	0	0	**0**
0845 - 0900	97	2	1	**100**	0	0	0	**0**	0	0	0	**0**
Hourly Total	**416**	**11**	**2**	**429**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
0900 - 0915	87	2	1	**90**	0	0	0	**0**	0	0	0	**0**
0915 - 0930	81	2	0	**83**	0	0	0	**0**	0	0	0	**0**
Hourly Total	**168**	**4**	**1**	**173**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**765**	**19**	**4**	**788**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

	Left Turn				Northbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	71	1	1	**73**	24	0	0	**24**	0	0	0	**0**
1645 - 1700	68	2	0	**70**	28	0	0	**28**	0	0	0	**0**
Hourly Total	**139**	**3**	**1**	**143**	**52**	**0**	**0**	**52**	**0**	**0**	**0**	**0**
1700 - 1715	90	2	0	**92**	29	0	0	**29**	0	0	0	**0**
1715 - 1730	78	1	1	**80**	31	0	0	**31**	0	0	0	**0**
1730 - 1745	91	2	0	**93**	30	0	0	**30**	0	0	0	**0**
1745 - 1800	84	1	0	**85**	23	0	0	**23**	0	0	0	**0**
Hourly Total	**343**	**6**	**1**	**350**	**113**	**0**	**0**	**113**	**0**	**0**	**0**	**0**
1800 - 1815	72	1	0	**73**	20	0	0	**20**	0	0	0	**0**
1815 - 1830	61	0	0	**61**	18	0	0	**18**	0	0	0	**0**
Hourly Total	**133**	**1**	**0**	**134**	**38**	**0**	**0**	**38**	**0**	**0**	**0**	**0**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**615**	**10**	**2**	**627**	**203**	**0**	**0**	**203**	**0**	**0**	**0**	**0**

Cheltenham - Thursday 8th December 2016

Junction: A435/A40/Haywards Road

Approach: A40 EB

	Left Turn				Eastbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	1	0	0	**1**	97	2	3	**102**	98	3	1	**102**
0745 - 0800	0	0	0	**0**	102	2	1	**105**	97	3	0	**100**
Hourly Total	**1**	**0**	**0**	**1**	**199**	**4**	**4**	**207**	**195**	**6**	**1**	**202**
0800 - 0815	1	0	0	**1**	86	2	2	**90**	97	4	1	**102**
0815 - 0830	2	0	0	**2**	96	2	2	**100**	91	3	0	**94**
0830 - 0845	2	0	0	**2**	103	4	1	**108**	77	3	0	**80**
0845 - 0900	1	0	0	**1**	97	3	2	**102**	69	2	1	**72**
Hourly Total	**6**	**0**	**0**	**6**	**382**	**11**	**7**	**400**	**334**	**12**	**2**	**348**
0900 - 0915	1	0	0	**1**	87	2	1	**90**	58	2	1	**61**
0915 - 0930	2	0	0	**2**	80	3	1	**84**	54	2	0	**56**
Hourly Total	**3**	**0**	**0**	**3**	**167**	**5**	**2**	**174**	**112**	**4**	**1**	**117**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**10**	**0**	**0**	**10**	**748**	**20**	**13**	**781**	**641**	**22**	**4**	**667**

	Left Turn				Eastbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	12	0	0	**12**	106	3	1	**110**	91	2	1	**94**
1645 - 1700	15	0	0	**15**	99	1	1	**101**	87	3	0	**90**
Hourly Total	**27**	**0**	**0**	**27**	**205**	**4**	**2**	**211**	**178**	**5**	**1**	**184**
1700 - 1715	20	0	0	**20**	106	1	1	**108**	109	1	1	**111**
1715 - 1730	14	0	0	**14**	111	2	2	**115**	93	1	1	**95**
1730 - 1745	18	0	0	**18**	103	1	1	**105**	111	2	0	**113**
1745 - 1800	16	0	0	**16**	118	1	2	**121**	94	1	0	**95**
Hourly Total	**68**	**0**	**0**	**68**	**438**	**5**	**6**	**449**	**407**	**5**	**2**	**414**
1800 - 1815	8	0	0	**8**	93	1	1	**95**	80	1	0	**81**
1815 - 1830	6	0	0	**6**	81	0	0	**81**	71	0	0	**71**
Hourly Total	**14**	**0**	**0**	**14**	**174**	**1**	**1**	**176**	**151**	**1**	**0**	**152**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**109**	**0**	**0**	**109**	**817**	**10**	**9**	**836**	**736**	**11**	**3**	**750**

Cheltenham - Thursday 8th December 2016

Junction: A435/A40/Haywards Road

Approach: Haywards Road

	Left Turn				Southbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	4	0	0	**4**	14	0	0	**14**	9	0	0	**9**
0745 - 0800	7	0	0	**7**	29	0	0	**29**	16	0	0	**16**
Hourly Total	**11**	**0**	**0**	**11**	**43**	**0**	**0**	**43**	**25**	**0**	**0**	**25**
0800 - 0815	9	0	0	**9**	46	0	0	**46**	22	0	0	**22**
0815 - 0830	7	0	0	**7**	40	0	0	**40**	16	0	0	**16**
0830 - 0845	5	0	0	**5**	34	0	0	**34**	12	0	0	**12**
0845 - 0900	4	0	0	**4**	32	0	0	**32**	12	0	0	**12**
Hourly Total	**25**	**0**	**0**	**25**	**152**	**0**	**0**	**152**	**62**	**0**	**0**	**62**
0900 - 0915	3	0	0	**3**	26	1	0	**27**	9	0	0	**9**
0915 - 0930	3	0	0	**3**	18	0	0	**18**	7	0	0	**7**
Hourly Total	**6**	**0**	**0**	**6**	**44**	**1**	**0**	**45**	**16**	**0**	**0**	**16**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**42**	**0**	**0**	**42**	**239**	**1**	**0**	**240**	**103**	**0**	**0**	**103**

	Left Turn				Southbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	1	0	0	**1**	3	0	0	**3**	2	0	0	**2**
1645 - 1700	3	0	0	**3**	1	0	0	**1**	0	0	0	**0**
Hourly Total	**4**	**0**	**0**	**4**	**4**	**0**	**0**	**4**	**2**	**0**	**0**	**2**
1700 - 1715	3	0	0	**3**	1	0	0	**1**	2	0	0	**2**
1715 - 1730	6	0	0	**6**	2	0	0	**2**	6	0	0	**6**
1730 - 1745	3	0	0	**3**	2	0	0	**2**	3	0	0	**3**
1745 - 1800	4	0	0	**4**	1	0	0	**1**	4	0	0	**4**
Hourly Total	**16**	**0**	**0**	**16**	**6**	**0**	**0**	**6**	**15**	**0**	**0**	**15**
1800 - 1815	2	0	0	**2**	1	0	0	**1**	3	0	0	**3**
1815 - 1830	2	0	0	**2**	0	0	0	**0**	1	0	0	**1**
Hourly Total	**4**	**0**	**0**	**4**	**1**	**0**	**0**	**1**	**4**	**0**	**0**	**4**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**24**	**0**	**0**	**24**	**11**	**0**	**0**	**11**	**21**	**0**	**0**	**21**

Cheltenham - Thursday 8th December 2016

Junction: A435/A40/Haywards Road

Approach: A40 WB

	Left Turn				Eastbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	87	2	2	**91**	1	0	0	**1**
0745 - 0800	0	0	0	**0**	92	1	0	**93**	1	0	0	**1**
Hourly Total	**0**	**0**	**0**	**0**	**179**	**3**	**2**	**184**	**2**	**0**	**0**	**2**
0800 - 0815	0	0	0	**0**	111	2	1	**114**	2	0	0	**2**
0815 - 0830	0	0	0	**0**	102	4	1	**107**	1	0	0	**1**
0830 - 0845	0	0	0	**0**	117	2	2	**121**	3	0	0	**3**
0845 - 0900	0	0	0	**0**	106	3	2	**111**	2	0	0	**2**
Hourly Total	**0**	**0**	**0**	**0**	**436**	**11**	**6**	**453**	**8**	**0**	**0**	**8**
0900 - 0915	0	0	0	**0**	90	2	1	**93**	1	0	0	**1**
0915 - 0930	0	0	0	**0**	86	2	0	**88**	1	0	0	**1**
Hourly Total	**0**	**0**	**0**	**0**	**176**	**4**	**1**	**181**	**2**	**0**	**0**	**2**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**0**	**0**	**0**	**0**	**791**	**18**	**9**	**818**	**12**	**0**	**0**	**12**

	Left Turn				Eastbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	0	0	0	**0**	106	2	1	**109**	6	0	0	**6**
1645 - 1700	0	0	0	**0**	91	2	2	**95**	3	0	0	**3**
Hourly Total	**0**	**0**	**0**	**0**	**197**	**4**	**3**	**204**	**9**	**0**	**0**	**9**
1700 - 1715	0	0	0	**0**	107	3	0	**110**	7	0	0	**7**
1715 - 1730	0	0	0	**0**	93	1	2	**96**	9	0	0	**9**
1730 - 1745	0	0	0	**0**	93	0	2	**95**	4	0	0	**4**
1745 - 1800	0	0	0	**0**	110	2	0	**112**	7	0	0	**7**
Hourly Total	**0**	**0**	**0**	**0**	**403**	**6**	**4**	**413**	**27**	**0**	**0**	**27**
1800 - 1815	0	0	0	**0**	97	1	0	**98**	8	0	0	**8**
1815 - 1830	0	0	0	**0**	90	0	0	**90**	2	0	0	**2**
Hourly Total	**0**	**0**	**0**	**0**	**187**	**1**	**0**	**188**	**10**	**0**	**0**	**10**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**0**	**0**	**0**	**0**	**787**	**11**	**7**	**805**	**46**	**0**	**0**	**46**

Cheltenham - Thursday 8th December 2016

Junction: A435/A40/Haywards Road

TIME	Queue Lengths (Vehicles)			
	A435	A40 EB	Haywards Rd	A40 WB
	Stationary	Stationary	Stationary	Stationary
730	6	4	3	6
735	8	6	5	6
740	8	6	4	8
745	10	6	6	10
750	10	8	7	15
755	12	7	8	12
800	15	12	12	15
805	15	15	9	20
810	20	15	7	20
815	25	25	8	30
820	25	20	6	30
825	25	15	4	25
830	30+	20	5	20
835	30+	15	5	15
840	30+	10	5	20
845	25	8	3	15
850	20	6	4	25
855	20	7	3	15
900	15	7	4	10
905	15	7	4	12
910	15	6	4	10
915	9	8	4	12
920	7	6	3	8
925	6	7	3	6
930	7	5	2	7

TIME	Queue Lengths (Vehicles)			
	A435	A40 EB	Haywards Rd	A40 WB
	Stationary	Stationary	Stationary	Stationary
1630	20	15	2	12
1635	12	12	3	15
1640	15	15	2	12
1645	15	25	2	10
1650	20	15	2	15
1655	20	20	2	20
1700	20	15	2	20
1705	15	15	3	30
1710	20	20	4	20
1715	20	15	3	25
1720	15	25	2	25
1725	20	15	3	25
1730	20	20	2	30
1735	20	25	3	25
1740	15	20	2	25
1745	20	20	3	30
1750	15	15	2	25
1755	15	20	2	20
1800	12	15	2	15
1805	12	20	0	20
1810	12	15	2	15
1815	8	15	2	10
1820	10	10	2	6
1825	8	8	0	8
1830	7	8	0	7

Cheltenham - Thursday 8th December 2016

Junction: Churchill Drive/Ewens Road

Approach: Churchill Drive

	Left Turn				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	16	0	0	**16**	1	0	0	**1**
0745 - 0800	26	0	0	**26**	1	0	0	**1**
Hourly Total	**42**	**0**	**0**	**42**	**2**	**0**	**0**	**2**
0800 - 0815	36	0	0	**36**	2	0	0	**2**
0815 - 0830	34	0	0	**34**	4	0	0	**4**
0830 - 0845	35	0	0	**35**	1	0	0	**1**
0845 - 0900	31	0	0	**31**	2	0	0	**2**
Hourly Total	**136**	**0**	**0**	**136**	**9**	**0**	**0**	**9**
0900 - 0915	21	0	0	**21**	1	0	0	**1**
0915 - 0930	16	0	0	**16**	2	0	0	**2**
Hourly Total	**37**	**0**	**0**	**37**	**3**	**0**	**0**	**3**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**215**	**0**	**0**	**215**	**14**	**0**	**0**	**14**

	Left Turn				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	21	0	0	**21**	4	0	0	**4**
1645 - 1700	24	0	0	**24**	1	0	0	**1**
Hourly Total	**45**	**0**	**0**	**45**	**5**	**0**	**0**	**5**
1700 - 1715	33	0	0	**33**	3	0	0	**3**
1715 - 1730	27	0	0	**27**	5	0	0	**5**
1730 - 1745	34	0	0	**34**	2	0	0	**2**
1745 - 1800	30	0	0	**30**	3	0	0	**3**
Hourly Total	**124**	**0**	**0**	**124**	**13**	**0**	**0**	**13**
1800 - 1815	22	0	0	**22**	3	0	0	**3**
1815 - 1830	17	0	0	**17**	3	0	0	**3**
Hourly Total	**39**	**0**	**0**	**39**	**6**	**0**	**0**	**6**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**208**	**0**	**0**	**208**	**24**	**0**	**0**	**24**

Cheltenham - Thursday 8th December 2016

Junction: Churchill Drive/Ewens Road

Approach: Ewens Road EB

	Eastbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	21	0	0	**21**	0	0	0	**0**
0745 - 0800	28	0	0	**28**	0	0	0	**0**
Hourly Total	**49**	**0**	**0**	**49**	**0**	**0**	**0**	**0**
0800 - 0815	37	0	0	**37**	0	0	0	**0**
0815 - 0830	39	0	0	**39**	0	0	0	**0**
0830 - 0845	41	0	0	**41**	0	0	0	**0**
0845 - 0900	36	0	0	**36**	0	0	0	**0**
Hourly Total	**153**	**0**	**0**	**153**	**0**	**0**	**0**	**0**
0900 - 0915	30	0	0	**30**	0	0	0	**0**
0915 - 0930	23	0	0	**23**	0	0	0	**0**
Hourly Total	**53**	**0**	**0**	**53**	**0**	**0**	**0**	**0**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**255**	**0**	**0**	**255**	**0**	**0**	**0**	**0**

	Eastbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	33	0	0	**33**	0	0	0	**0**
1645 - 1700	29	0	0	**29**	0	0	0	**0**
Hourly Total	**62**	**0**	**0**	**62**	**0**	**0**	**0**	**0**
1700 - 1715	33	0	0	**33**	0	0	0	**0**
1715 - 1730	41	0	0	**41**	0	0	0	**0**
1730 - 1745	36	0	0	**36**	0	0	0	**0**
1745 - 1800	40	0	0	**40**	0	0	0	**0**
Hourly Total	**150**	**0**	**0**	**150**	**0**	**0**	**0**	**0**
1800 - 1815	31	0	0	**31**	0	0	0	**0**
1815 - 1830	25	0	0	**25**	0	0	0	**0**
Hourly Total	**56**	**0**	**0**	**56**	**0**	**0**	**0**	**0**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**268**	**0**	**0**	**268**	**0**	**0**	**0**	**0**

Cheltenham - Thursday 8th December 2016

Junction: Churchill Drive/Ewens Road

Approach: Ewens Road WB

	Left Turn				Westbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	5	0	0	**5**
0745 - 0800	0	0	0	**0**	4	0	0	**4**
Hourly Total	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**9**
0800 - 0815	0	0	0	**0**	6	0	0	**6**
0815 - 0830	0	0	0	**0**	11	0	0	**11**
0830 - 0845	0	0	0	**0**	7	0	0	**7**
0845 - 0900	0	0	0	**0**	6	0	0	**6**
Hourly Total	**0**	**0**	**0**	**0**	**30**	**0**	**0**	**30**
0900 - 0915	0	0	0	**0**	5	0	0	**5**
0915 - 0930	0	0	0	**0**	2	0	0	**2**
Hourly Total	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**7**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**0**	**0**	**0**	**0**	**46**	**0**	**0**	**46**

	Left Turn				Westbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	0	0	0	**0**	3	0	0	**3**
1645 - 1700	0	0	0	**0**	4	0	0	**4**
Hourly Total	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**7**
1700 - 1715	0	0	0	**0**	2	0	0	**2**
1715 - 1730	0	0	0	**0**	7	0	0	**7**
1730 - 1745	0	0	0	**0**	3	0	0	**3**
1745 - 1800	0	0	0	**0**	5	0	0	**5**
Hourly Total	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**17**
1800 - 1815	0	0	0	**0**	2	0	0	**2**
1815 - 1830	0	0	0	**0**	2	0	0	**2**
Hourly Total	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**4**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**0**	**0**	**0**	**0**	**28**	**0**	**0**	**28**

Cheltenham - Thursday 8th December 2016

Junction: Churchill Drive/Ewens Road

TIME	Queue Lengths (Vehicles)		
	Churchill Dr	Ewens Rd EB	Ewens Rd WB
	Stationary	Stationary	Stationary
730	0	0	0
735	0	0	0
740	0	0	0
745	0	0	0
750	0	0	0
755	0	0	0
800	0	0	0
805	0	0	0
810	0	0	0
815	0	0	0
820	0	0	0
825	0	0	0
830	0	0	0
835	0	0	0
840	0	0	0
845	0	0	0
850	0	0	0
855	0	0	0
900	0	0	0
905	0	0	0
910	0	0	0
915	0	0	0
920	0	0	0
925	0	0	0
930	0	0	0

TIME	Queue Lengths (Vehicles)		
	Churchill Dr	Ewens Rd EB	Ewens Rd WB
	Stationary	Stationary	Stationary
1630	0	0	0
1635	0	0	0
1640	0	0	0
1645	0	0	0
1650	0	0	0
1655	0	0	0
1700	0	0	0
1705	0	0	0
1710	0	0	0
1715	0	0	0
1720	0	0	0
1725	0	0	0
1730	0	0	0
1735	0	0	0
1740	0	0	0
1745	0	0	0
1750	0	0	0
1755	0	0	0
1800	0	0	0
1805	0	0	0
1810	0	0	0
1815	0	0	0
1820	0	0	0
1825	0	0	0
1830	0	0	0

Cheltenham - Thursday 8th December 2016

Junction: Oakhurst Rise/Ewens Road

Approach: Oakhurst Rise

	Left Turn				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	0	0	0	**0**
0745 - 0800	1	0	0	**1**	1	0	0	**1**
Hourly Total	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**1**
0800 - 0815	0	0	0	**0**	1	0	0	**1**
0815 - 0830	1	0	0	**1**	0	0	0	**0**
0830 - 0845	3	0	0	**3**	1	0	0	**1**
0845 - 0900	2	0	0	**2**	1	0	0	**1**
Hourly Total	**6**	**0**	**0**	**6**	**3**	**0**	**0**	**3**
0900 - 0915	1	0	0	**1**	0	0	0	**0**
0915 - 0930	0	0	0	**0**	0	0	0	**0**
Hourly Total	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**8**	**0**	**0**	**8**	**4**	**0**	**0**	**4**

	Left Turn				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	2	0	0	**2**	1	0	0	**1**
1645 - 1700	0	0	0	**0**	0	0	0	**0**
Hourly Total	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**1**
1700 - 1715	0	0	0	**0**	0	0	0	**0**
1715 - 1730	1	0	0	**1**	1	0	0	**1**
1730 - 1745	1	0	0	**1**	0	0	0	**0**
1745 - 1800	0	0	0	**0**	0	0	0	**0**
Hourly Total	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**1**
1800 - 1815	1	0	0	**1**	0	0	0	**0**
1815 - 1830	0	0	0	**0**	0	0	0	**0**
Hourly Total	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**5**	**0**	**0**	**5**	**2**	**0**	**0**	**2**

Cheltenham - Thursday 8th December 2016

Junction: Oakhurst Rise/Ewens Road

Approach: Ewens Road EB

	Left Turn				Eastbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	23	0	0	**23**
0745 - 0800	0	0	0	**0**	26	0	0	**26**
Hourly Total	**0**	**0**	**0**	**0**	**49**	**0**	**0**	**49**
0800 - 0815	1	0	0	**1**	39	0	0	**39**
0815 - 0830	0	0	0	**0**	40	0	0	**40**
0830 - 0845	1	0	0	**1**	43	0	0	**43**
0845 - 0900	0	0	0	**0**	38	0	0	**38**
Hourly Total	**2**	**0**	**0**	**2**	**160**	**0**	**0**	**160**
0900 - 0915	1	0	0	**1**	30	0	0	**30**
0915 - 0930	0	0	0	**0**	24	0	0	**24**
Hourly Total	**1**	**0**	**0**	**1**	**54**	**0**	**0**	**54**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**3**	**0**	**0**	**3**	**263**	**0**	**0**	**263**

	Left Turn				Eastbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	1	0	0	**1**	35	0	0	**35**
1645 - 1700	2	0	0	**2**	38	0	0	**38**
Hourly Total	**3**	**0**	**0**	**3**	**73**	**0**	**0**	**73**
1700 - 1715	2	0	0	**2**	39	0	0	**39**
1715 - 1730	2	0	0	**2**	42	0	0	**42**
1730 - 1745	0	0	0	**0**	37	0	0	**37**
1745 - 1800	2	0	0	**2**	41	0	0	**41**
Hourly Total	**6**	**0**	**0**	**6**	**159**	**0**	**0**	**159**
1800 - 1815	1	0	0	**1**	34	0	0	**34**
1815 - 1830	0	0	0	**0**	29	0	0	**29**
Hourly Total	**1**	**0**	**0**	**1**	**63**	**0**	**0**	**63**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**10**	**0**	**0**	**10**	**295**	**0**	**0**	**295**

Cheltenham - Thursday 8th December 2016

Junction: Oakhurst Rise/Ewens Road

Approach: Ewens Road WB

	Right Turn				Westbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	1	0	0	**1**
0745 - 0800	0	0	0	**0**	1	0	0	**1**
Hourly Total	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**
0800 - 0815	0	0	0	**0**	1	0	0	**1**
0815 - 0830	0	0	0	**0**	2	0	0	**2**
0830 - 0845	0	0	0	**0**	2	0	0	**2**
0845 - 0900	0	0	0	**0**	1	0	0	**1**
Hourly Total	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**6**
0900 - 0915	0	0	0	**0**	1	0	0	**1**
0915 - 0930	0	0	0	**0**	0	0	0	**0**
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**9**

	Right Turn				Westbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	0	0	0	**0**	1	0	0	**1**
1645 - 1700	0	0	0	**0**	1	0	0	**1**
Hourly Total	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**
1700 - 1715	0	0	0	**0**	1	0	0	**1**
1715 - 1730	0	0	0	**0**	1	0	0	**1**
1730 - 1745	1	0	0	**1**	1	0	0	**1**
1745 - 1800	0	0	0	**0**	0	0	0	**0**
Hourly Total	**1**	**0**	**0**	**1**	**3**	**0**	**0**	**3**
1800 - 1815	0	0	0	**0**	1	0	0	**1**
1815 - 1830	0	0	0	**0**	0	0	0	**0**
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**1**	**0**	**0**	**1**	**6**	**0**	**0**	**6**

Cheltenham - Thursday 8th December 2016

Junction: Oakhurst Rise/Ewens Road

TIME	Queue Lengths (Vehicles)		
	Oakhurst Rise	Ewens Rd EB	Ewens Rd WB
	Stationary	Stationary	Stationary
730	0	0	0
735	0	0	0
740	0	0	0
745	0	0	0
750	0	0	0
755	0	0	0
800	0	0	0
805	0	0	0
810	0	0	0
815	0	0	0
820	0	0	0
825	0	0	0
830	0	0	0
835	0	0	0
840	0	0	0
845	0	0	0
850	0	0	0
855	0	0	0
900	0	0	0
905	0	0	0
910	0	0	0
915	0	0	0
920	0	0	0
925	0	0	0
930	0	0	0

TIME	Queue Lengths (Vehicles)		
	Oakhurst Rise	Ewens Rd EB	Ewens Rd WB
	Stationary	Stationary	Stationary
1630	0	0	0
1635	0	0	0
1640	0	0	0
1645	0	0	0
1650	0	0	0
1655	0	0	0
1700	0	0	0
1705	0	0	0
1710	0	0	0
1715	0	0	0
1720	0	0	0
1725	0	0	0
1730	0	0	0
1735	0	0	0
1740	0	0	0
1745	0	0	0
1750	0	0	0
1755	0	0	0
1800	0	0	0
1805	0	0	0
1810	0	0	0
1815	0	0	0
1820	0	0	0
1825	0	0	0
1830	0	0	0

Cheltenham - Thursday 8th December 2016

Junction: Charlton Court Rd/A40

Approach: Charlton Court Rd

	Left Turn				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	26	0	0	**26**	1	0	0	**1**
0745 - 0800	31	0	0	**31**	1	0	0	**1**
Hourly Total	**57**	**0**	**0**	**57**	**2**	**0**	**0**	**2**
0800 - 0815	40	0	0	**40**	1	0	0	**1**
0815 - 0830	42	0	0	**42**	2	0	0	**2**
0830 - 0845	42	0	0	**42**	1	0	0	**1**
0845 - 0900	41	0	0	**41**	1	0	0	**1**
Hourly Total	**165**	**0**	**0**	**165**	**5**	**0**	**0**	**5**
0900 - 0915	34	0	0	**34**	1	0	0	**1**
0915 - 0930	31	0	0	**31**	0	0	0	**0**
Hourly Total	**65**	**0**	**0**	**65**	**1**	**0**	**0**	**1**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**287**	**0**	**0**	**287**	**8**	**0**	**0**	**8**

	Left Turn				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	31	0	0	**31**	1	0	0	**1**
1645 - 1700	36	0	0	**36**	0	0	0	**0**
Hourly Total	**67**	**0**	**0**	**67**	**1**	**0**	**0**	**1**
1700 - 1715	43	0	0	**43**	2	0	0	**2**
1715 - 1730	41	0	0	**41**	0	0	0	**0**
1730 - 1745	40	0	0	**40**	2	0	0	**2**
1745 - 1800	35	0	0	**35**	0	0	0	**0**
Hourly Total	**159**	**0**	**0**	**159**	**4**	**0**	**0**	**4**
1800 - 1815	30	0	0	**30**	1	0	0	**1**
1815 - 1830	27	0	0	**27**	0	0	0	**0**
Hourly Total	**57**	**0**	**0**	**57**	**1**	**0**	**0**	**1**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**283**	**0**	**0**	**283**	**6**	**0**	**0**	**6**

Cheltenham - Thursday 8th December 2016

Junction: Charlton Court Rd/A40

Approach: A40 EB

	Left Turn				Eastbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	102	2	3	**107**
0745 - 0800	1	0	0	**1**	107	2	1	**110**
Hourly Total	**1**	**0**	**0**	**1**	**209**	**4**	**4**	**217**
0800 - 0815	0	0	0	**0**	96	2	2	**100**
0815 - 0830	1	0	0	**1**	108	2	2	**112**
0830 - 0845	1	0	0	**1**	104	4	1	**109**
0845 - 0900	1	0	0	**1**	102	3	2	**107**
Hourly Total	**3**	**0**	**0**	**3**	**410**	**11**	**7**	**428**
0900 - 0915	0	0	0	**0**	89	2	1	**92**
0915 - 0930	1	0	0	**1**	83	3	1	**87**
Hourly Total	**1**	**0**	**0**	**1**	**172**	**5**	**2**	**179**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**5**	**0**	**0**	**5**	**791**	**20**	**13**	**824**

	Left Turn				Eastbound			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	3	0	0	**3**	105	3	1	**109**
1645 - 1700	1	0	0	**1**	105	1	1	**107**
Hourly Total	**4**	**0**	**0**	**4**	**210**	**4**	**2**	**216**
1700 - 1715	1	0	0	**1**	110	1	1	**112**
1715 - 1730	3	0	0	**3**	114	2	2	**118**
1730 - 1745	2	0	0	**2**	109	1	1	**111**
1745 - 1800	0	0	0	**0**	119	1	2	**122**
Hourly Total	**6**	**0**	**0**	**6**	**452**	**5**	**6**	**463**
1800 - 1815	2	0	0	**2**	97	1	1	**99**
1815 - 1830	0	0	0	**0**	84	0	0	**84**
Hourly Total	**2**	**0**	**0**	**2**	**181**	**1**	**1**	**183**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**12**	**0**	**0**	**12**	**843**	**10**	**9**	**862**

Cheltenham - Thursday 8th December 2016

Junction: Charlton Court Rd/A40

Approach: A40 WB

	Westbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
0730 - 0745	88	2	2	**92**	18	0	0	**18**
0745 - 0800	92	1	0	**93**	24	0	0	**24**
Hourly Total	**180**	**3**	**2**	**185**	**42**	**0**	**0**	**42**
0800 - 0815	112	2	1	**115**	43	0	0	**43**
0815 - 0830	106	4	1	**111**	36	0	0	**36**
0830 - 0845	118	2	2	**122**	37	0	0	**37**
0845 - 0900	113	3	2	**118**	33	0	0	**33**
Hourly Total	**449**	**11**	**6**	**466**	**149**	**0**	**0**	**149**
0900 - 0915	92	2	1	**95**	17	0	0	**17**
0915 - 0930	89	2	0	**91**	20	0	0	**20**
Hourly Total	**181**	**4**	**1**	**186**	**37**	**0**	**0**	**37**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**810**	**18**	**9**	**837**	**228**	**0**	**0**	**228**

	Westbound				Right Turn			
TIME	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
1630 - 1645	109	2	1	**112**	26	0	0	**26**
1645 - 1700	97	2	2	**101**	33	0	0	**33**
Hourly Total	**206**	**4**	**3**	**213**	**59**	**0**	**0**	**59**
1700 - 1715	112	3	0	**115**	37	0	0	**37**
1715 - 1730	101	1	2	**104**	40	0	0	**40**
1730 - 1745	102	0	2	**104**	39	0	0	**39**
1745 - 1800	114	2	0	**116**	37	0	0	**37**
Hourly Total	**429**	**6**	**4**	**439**	**153**	**0**	**0**	**153**
1800 - 1815	102	1	0	**103**	27	0	0	**27**
1815 - 1830	95	0	0	**95**	22	0	0	**22**
Hourly Total	**197**	**1**	**0**	**198**	**49**	**0**	**0**	**49**
	Light	HGV	Bus/Coach	**TOTAL**	Light	HGV	Bus/Coach	**TOTAL**
TOTAL	**832**	**11**	**7**	**850**	**261**	**0**	**0**	**261**

Cheltenham - Thursday 8th December 2016

Junction: Charlton Court Rd/A40

TIME	Queue Lengths (Vehicles)		
	Charlton Ct Rd	A40 EB	A40 WB
	Stationary	Stationary	Stationary
730	2	0	0
735	2	0	0
740	2	0	0
745	2	0	0
750	3	0	0
755	4	0	0
800	3	0	0
805	4	0	0
810	4	0	0
815	4	0	0
820	3	0	0
825	4	0	0
830	3	0	0
835	3	0	0
840	3	0	0
845	3	0	0
850	2	0	0
855	3	0	0
900	2	0	0
905	2	0	0
910	0	0	0
915	2	0	0
920	0	0	0
925	2	0	0
930	0	0	0

See J1

TIME	Queue Lengths (Vehicles)		
	Charlton Ct Rd	A40 EB	A40 WB
	Stationary	Stationary	Stationary
1630	3	0	0
1635	2	0	0
1640	2	0	0
1645	2	0	0
1650	3	0	0
1655	4	0	0
1700	3	0	0
1705	3	0	0
1710	3	0	0
1715	3	0	0
1720	4	0	0
1725	2	0	0
1730	3	0	0
1735	2	0	0
1740	3	0	0
1745	3	0	0
1750	2	0	0
1755	2	0	0
1800	0	0	0
1805	2	0	0
1810	0	0	0
1815	2	0	0
1820	2	0	0
1825	0	0	0
1830	2	0	0

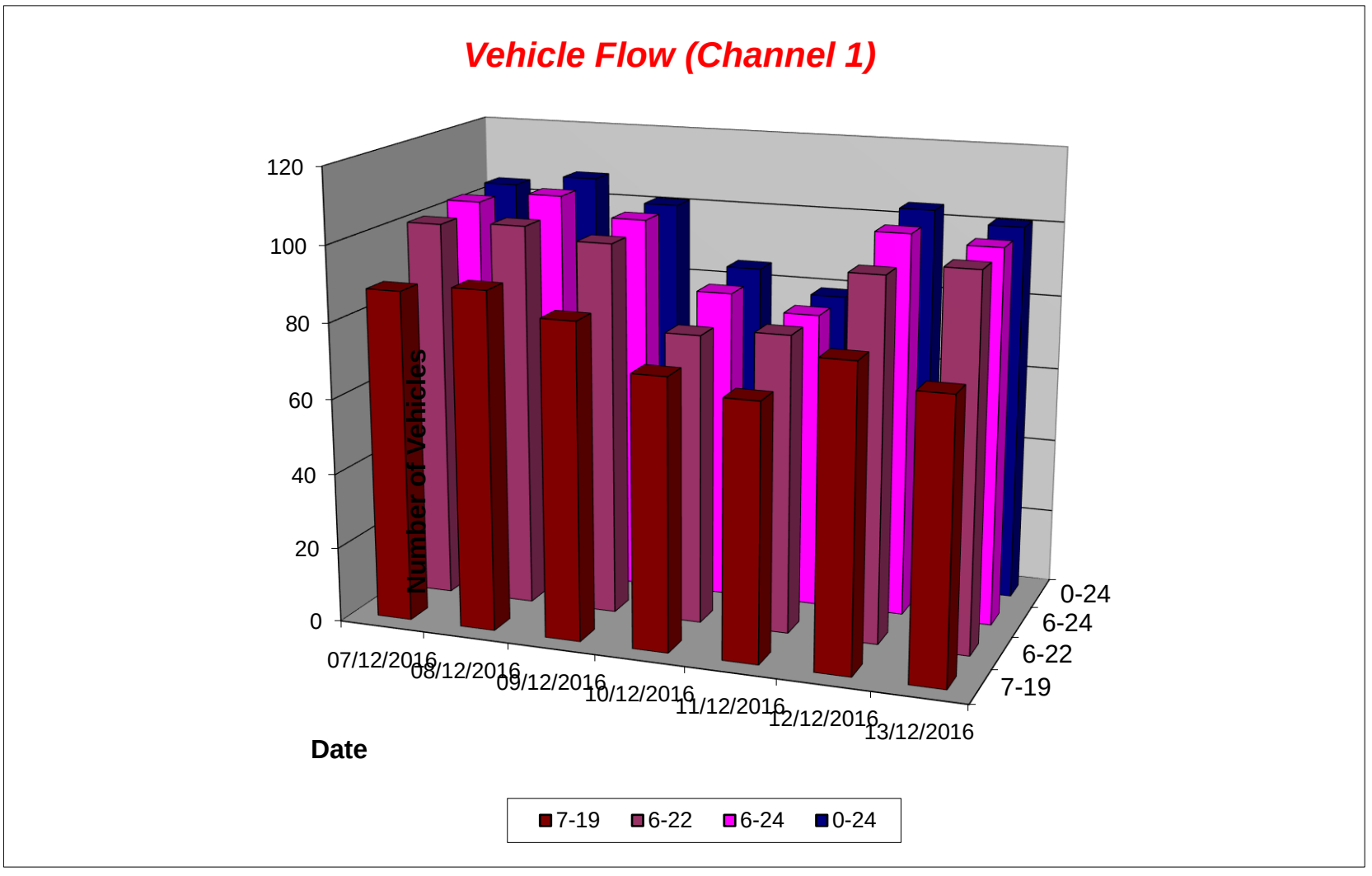
See J1

APPENDIX E: ATC Data – Charlton Court Road

Cheltenham ATC, Charlton Court Road

Channel 1 - Northbound **Vehicle Flow** **Week 1**

Hr Ending	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday	5 Day Ave	7 Day Ave
1	0	0	0	0	0	2	1	1	0
2	1	0	0	0	0	0	0	0	0
3	0	1	0	2	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	1	0	0	0	0
8	1	2	3	0	0	4	2	2	2
9	4	6	4	2	3	4	1	4	3
10	9	9	5	5	4	1	2	5	5
11	5	7	7	7	2	9	14	8	7
12	7	9	4	8	8	10	3	7	7
13	1	7	7	10	7	5	13	7	7
14	5	8	12	4	4	9	9	9	7
15	5	9	9	7	11	3	3	6	7
16	10	5	13	7	7	8	7	9	8
17	7	7	3	6	8	9	4	6	6
18	18	10	10	6	8	11	6	11	10
19	16	11	7	10	6	7	10	10	10
20	5	6	9	4	4	8	9	7	6
21	7	5	4	0	6	4	10	6	5
22	1	1	2	1	0	4	6	3	2
23	1	3	1	2	0	1	0	1	1
24	1	1	1	4	0	5	1	2	2
7-19	88	90	84	72	68	80	74	83	79
6-22	101	102	99	77	79	96	99	99	93
6-24	103	106	101	83	79	102	100	102	96
0-24	104	107	101	85	79	104	101	103	97



Cheltenham ATC, Charlton Court Road

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

Hr Ending	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday
1	-	-	-	-	-	17.0	24.0
2	24.0	-	-	-	-	-	-
3	-	17.0	-	18.5	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	20.0	-	-
8	18.0	15.0	14.7	-	-	18.0	17.0
9	15.0	16.8	12.0	14.5	14.7	17.0	16.0
10	17.6	15.2	18.6	18.4	17.0	17.0	15.0
11	12.6	16.6	16.3	15.6	14.5	18.2	15.1
12	18.3	16.9	20.8	14.8	15.8	18.7	16.7
13	15.0	13.9	14.3	15.5	16.7	18.0	16.1
14	16.8	15.5	18.8	19.0	12.8	18.3	16.2
15	19.8	15.9	18.4	18.9	18.0	19.0	25.3
16	16.6	13.4	15.8	16.0	20.1	16.0	15.6
17	17.1	15.9	15.3	16.7	18.0	16.2	15.3
18	16.2	18.7	14.9	15.7	17.6	16.2	15.8
19	17.6	19.4	20.6	17.7	20.3	14.4	17.3
20	19.0	15.2	16.1	13.5	20.8	16.9	15.4
21	15.1	16.4	15.0	-	15.7	16.5	17.2
22	5.0	19.0	19.0	18.0	-	16.5	15.7
23	13.0	19.0	13.0	13.5	-	16.0	-
24	11.0	16.0	18.0	18.3	-	17.6	20.0
10-12	15.9	16.8	17.9	15.1	15.5	18.5	15.4
14-16	17.7	15.0	16.9	17.4	18.8	16.8	18.5
0-24	16.7	16.4	16.8	16.5	17.4	17.1	16.4

Average	16.8

Channel 1 - Northbound **85th Percentile**

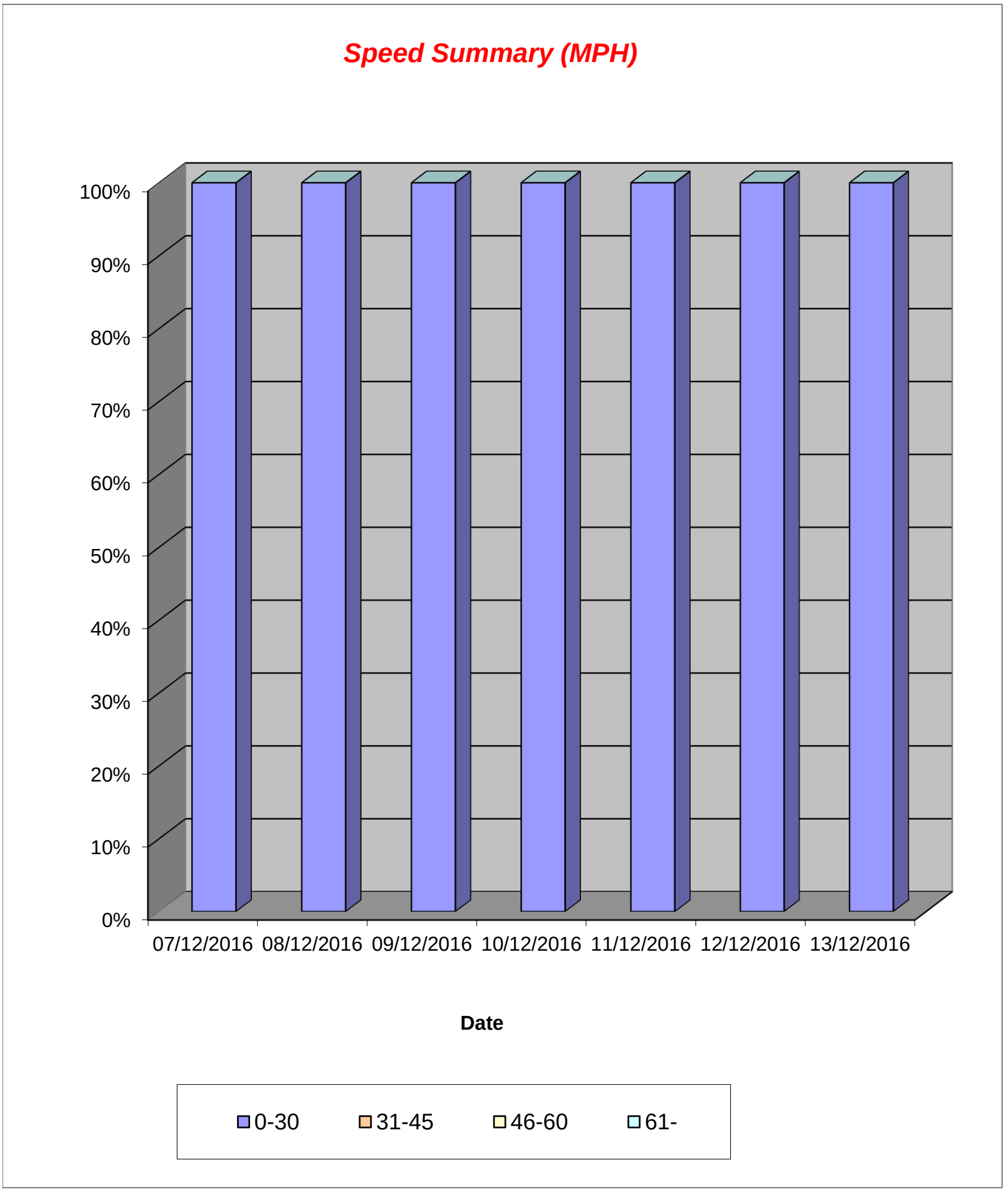
Hr Ending	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday
1	-	-	-	-	-	17.0	-
2	-	-	-	-	-	-	-
3	-	-	-	23.8	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-
8	-	17.1	15.4	-	-	20.2	17.7
9	17.8	20.5	14.6	15.6	17.5	19.6	-
10	20.0	18.8	27.4	22.0	19.6	-	15.0
11	16.0	25.2	19.2	19.1	17.0	23.2	19.1
12	20.7	19.8	26.3	19.8	19.9	22.0	18.1
13	-	19.3	18.2	19.7	20.9	20.4	20.0
14	19.0	19.0	28.0	22.0	14.6	25.2	19.8
15	24.8	18.8	25.8	24.3	25.0	24.3	30.0
16	19.7	14.4	18.2	20.0	24.2	19.0	18.1
17	20.6	19.1	16.4	20.8	23.8	21.6	17.0
18	20.0	22.6	20.6	18.8	26.6	20.0	19.3
19	22.8	25.5	24.6	22.6	27.8	17.5	22.0
20	21.6	17.8	20.6	15.8	24.8	24.7	18.6
21	18.4	19.4	16.8	-	19.0	19.9	21.7
22	-	-	21.8	-	-	19.0	17.0
23	-	22.2	-	13.9	-	-	-
24	-	-	-	23.3	-	22.2	-
10-12	16.0	25.2	19.2	19.1	17.0	23.2	19.1
14-16	20.9	18.1	24.1	20.2	24.9	21.0	26.2
0-24	20.0	20.0	23.0	20.0	24.0	22.0	20.0

85th %ile	21.0

Cheltenham ATC, Charlton Court Road

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

Speed (MPH)	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday
0-30	104	107	101	85	79	104	101
31-45	0	0	0	0	0	0	0
46-60	0	0	0	0	0	0	0
61-	0	0	0	0	0	0	0
TOTAL	**104**	**107**	**101**	**85**	**79**	**104**	**101**

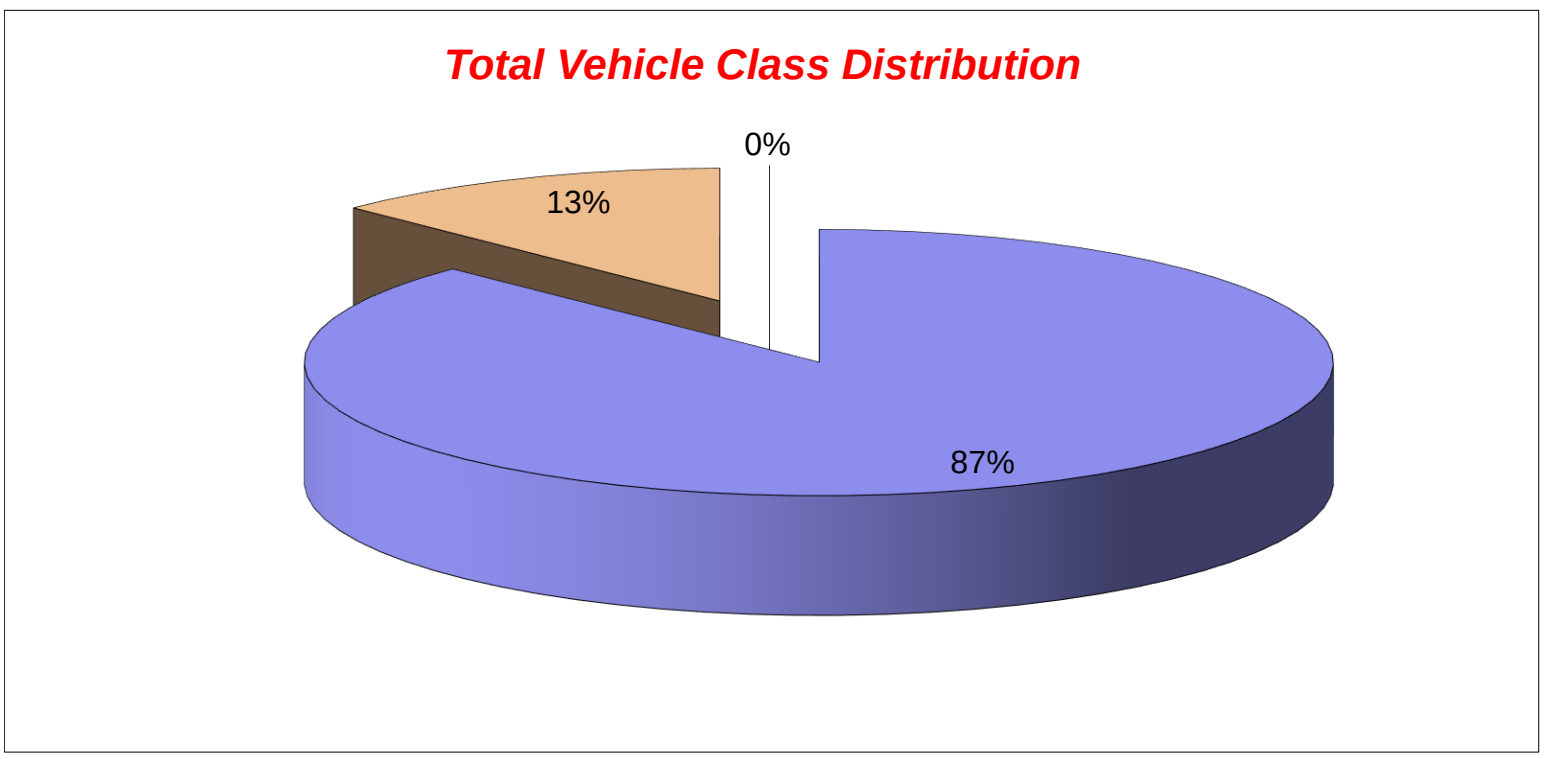


Cheltenham ATC, Charlton Court Road

Channel 1 - Northbound **Vehicle Class** **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
07/12/2016				
7-19	73	15	0	**88**
6-22	86	15	0	**101**
6-24	88	15	0	**103**
0-24	89	15	0	**104**
08/12/2016				
7-19	75	15	0	**90**
6-22	86	16	0	**102**
6-24	90	16	0	**106**
0-24	91	16	0	**107**
09/12/2016				
7-19	67	17	0	**84**
6-22	82	17	0	**99**
6-24	84	17	0	**101**
0-24	84	17	0	**101**
10/12/2016				
7-19	66	6	0	**72**
6-22	71	6	0	**77**
6-24	77	6	0	**83**
0-24	79	6	0	**85**
11/12/2016				
7-19	63	5	0	**68**
6-22	74	5	0	**79**
6-24	74	5	0	**79**
0-24	74	5	0	**79**
12/12/2016				
7-19	65	15	0	**80**
6-22	81	15	0	**96**
6-24	87	15	0	**102**
0-24	89	15	0	**104**
13/12/2016				
7-19	62	12	0	**74**
6-22	87	12	0	**99**
6-24	88	12	0	**100**
0-24	89	12	0	**101**

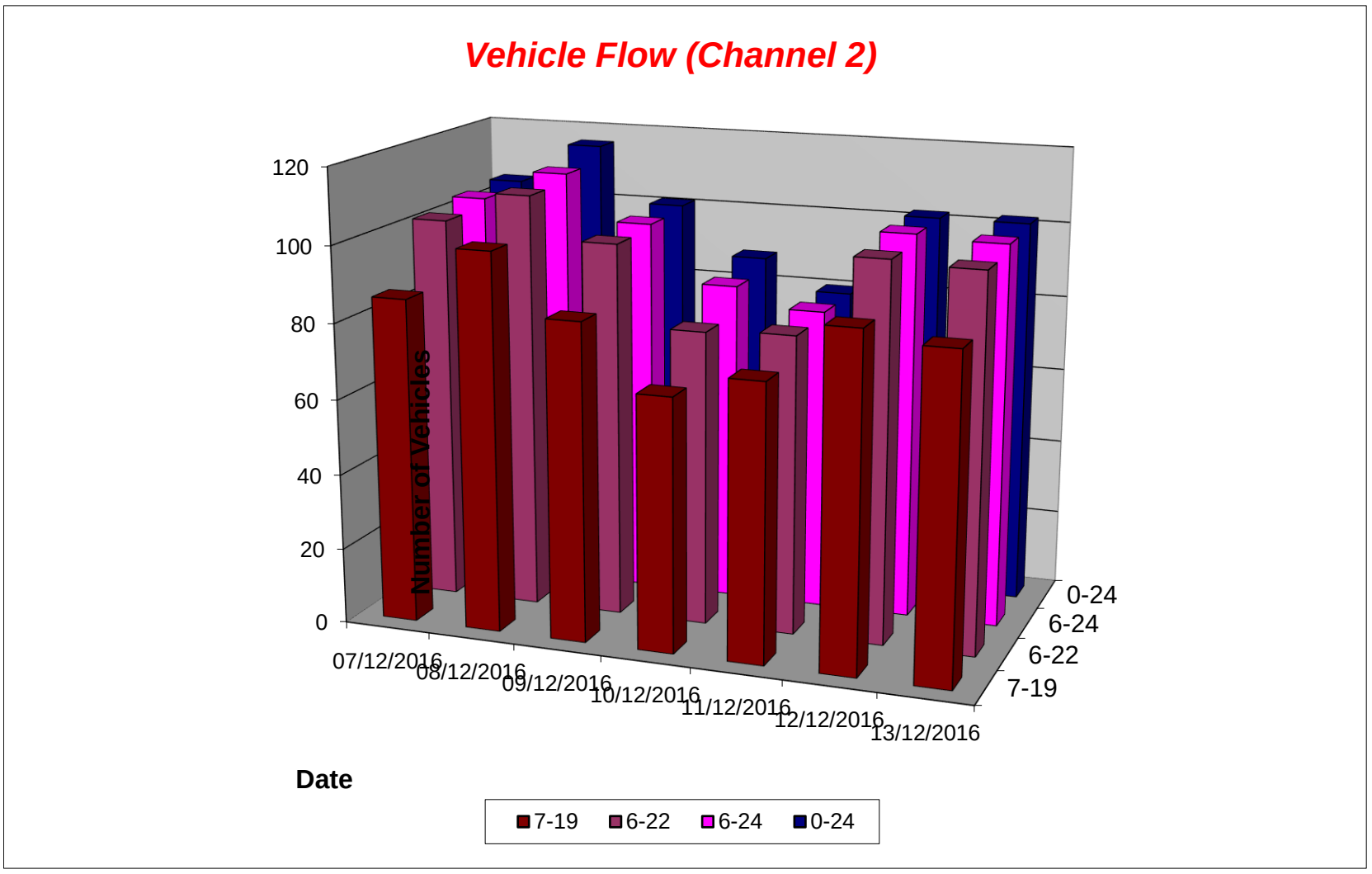
Average				
7-19	67	12	0	**79**
6-22	81	12	0	**93**
6-24	84	12	0	**96**
0-24	85	12	0	**97**



Cheltenham ATC, Charlton Court Road

Channel 2 - Southbound **Vehicle Flow** **Week 1**

Hr Ending	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday	5 Day Ave	7 Day Ave
1	1	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	0	0	0
3	0	1	0	2	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	1	1	1	0	0	1	1	1
7	4	1	5	2	0	1	1	2	2
8	11	11	7	2	2	11	12	10	8
9	13	15	10	6	3	11	9	12	10
10	8	9	8	7	6	9	7	8	8
11	4	9	8	7	9	5	4	6	7
12	4	6	6	4	7	7	8	6	6
13	7	5	5	7	8	8	8	7	7
14	7	13	7	9	5	8	11	9	9
15	7	9	13	4	7	6	2	7	7
16	3	1	5	5	7	5	12	5	5
17	4	8	5	5	8	5	4	5	6
18	5	6	6	7	6	6	6	6	6
19	13	8	4	4	5	7	2	7	6
20	6	6	6	7	3	6	4	6	5
21	4	1	3	1	3	2	3	3	2
22	2	2	1	1	0	3	6	3	2
23	2	1	0	2	1	1	0	1	1
24	0	1	1	5	0	1	2	1	1
7-19	86	100	84	67	73	88	85	89	83
6-22	102	110	99	78	79	100	99	102	95
6-24	104	112	100	85	80	102	101	104	98
0-24	105	116	101	88	80	102	102	105	99



Cheltenham ATC, Charlton Court Road

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

Hr Ending	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday
1	15.0	-	-	-	-	-	-
2	-	12.0	-	-	-	-	-
3	-	18.0	-	21.0	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	5.0	9.0	18.0	-	-	8.0
7	16.5	23.0	17.2	21.0	-	16.0	20.0
8	16.3	15.3	14.6	25.0	16.5	12.1	16.0
9	17.8	14.1	16.7	19.0	17.0	15.0	16.9
10	19.4	17.4	17.3	14.1	14.5	14.8	16.3
11	13.0	15.1	12.9	16.0	16.8	14.6	17.8
12	13.8	19.0	18.5	19.3	16.3	15.3	16.1
13	16.7	16.4	19.0	15.6	17.4	20.8	17.6
14	15.3	15.9	18.0	17.7	15.6	16.9	14.5
15	15.6	16.1	16.1	19.0	14.1	20.3	12.0
16	16.3	16.0	16.2	12.8	15.9	16.2	15.3
17	20.8	16.4	18.2	15.6	15.4	15.6	11.8
18	15.0	15.3	12.3	15.3	13.2	14.2	17.2
19	15.9	14.8	16.8	14.3	19.6	16.0	9.5
20	15.7	15.2	16.7	18.4	8.0	15.2	15.5
21	20.8	19.0	18.3	12.0	14.0	5.5	15.3
22	13.0	16.5	20.0	15.0	-	14.7	16.2
23	13.5	19.0	-	9.5	16.0	8.0	-
24	-	21.0	17.0	16.4	-	9.0	10.0
10-12	13.4	16.7	15.3	17.2	16.6	15.0	16.7
14-16	15.8	16.1	16.1	15.6	15.0	18.5	14.9
0-24	16.5	15.8	16.3	16.6	15.6	15.4	15.6

Average	16.0

Channel 2 - Southbound **85th Percentile**

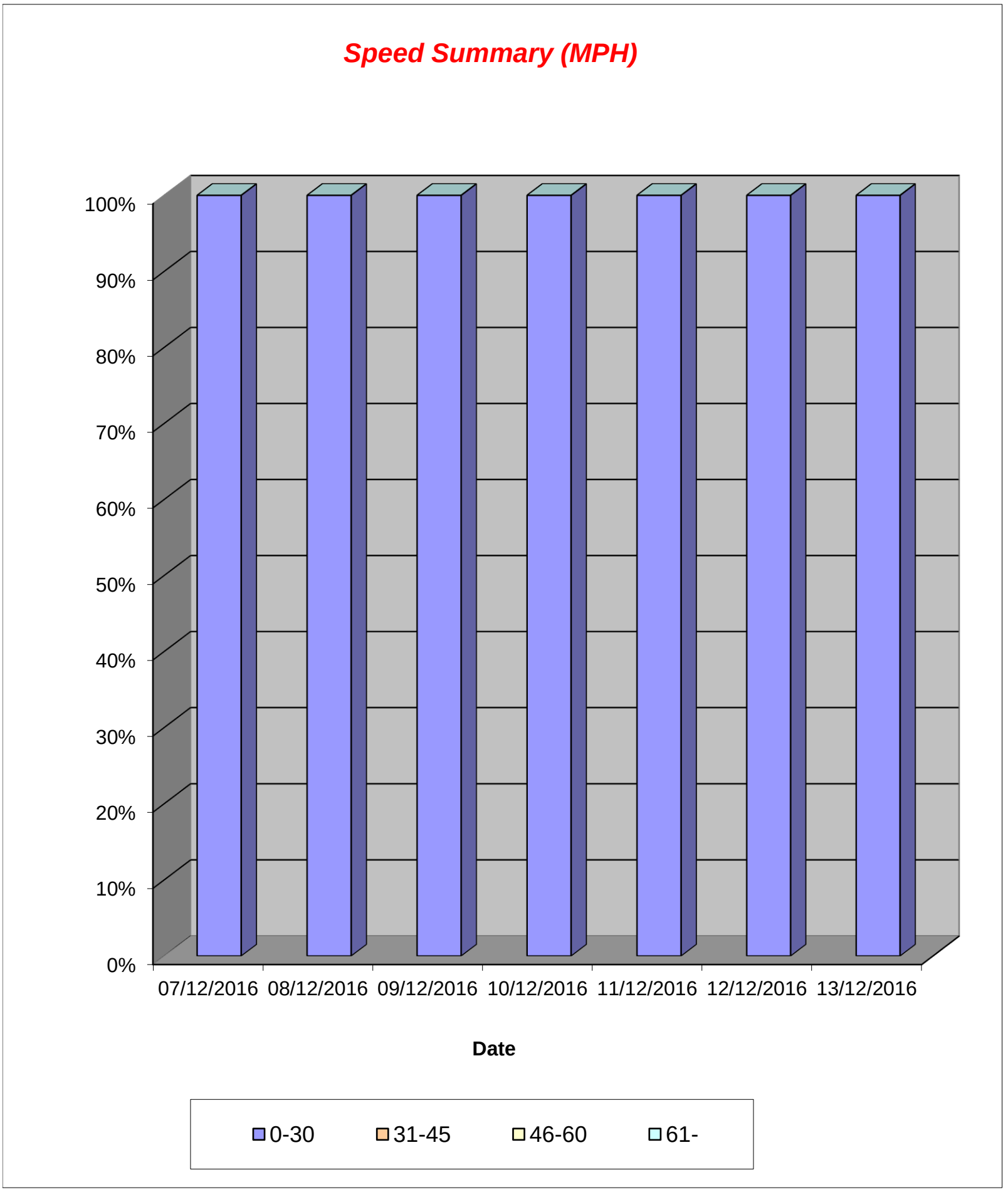
Hr Ending	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday
1	-	-	-	-	-	-	-
2	-	14.1	-	-	-	-	-
3	-	-	-	22.4	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	19.2	-	21.2	22.4	-	-	-
8	21.5	19.0	19.1	28.5	18.3	17.5	19.4
9	21.4	21.8	20.0	21.3	19.4	18.5	20.8
10	23.0	21.6	18.0	17.3	17.8	22.8	20.5
11	15.2	17.8	18.9	20.5	21.6	19.0	21.8
12	17.6	21.5	24.0	25.0	18.1	19.3	19.9
13	20.7	20.2	21.8	20.0	19.0	24.0	21.0
14	18.4	20.0	21.1	20.8	20.4	27.9	17.5
15	18.5	18.8	21.2	19.6	17.0	21.5	14.1
16	19.1	-	18.4	16.4	20.2	17.8	20.0
17	23.4	18.0	21.6	18.6	20.0	17.4	15.9
18	17.8	19.3	19.3	20.0	19.5	17.3	19.3
19	20.0	20.0	21.1	18.0	24.0	19.9	11.3
20	20.5	19.0	20.5	25.1	10.1	19.8	20.1
21	22.0	-	21.1	-	15.1	5.9	16.0
22	15.8	18.3	-	-	-	18.7	21.5
23	17.4	-	-	10.6	-	-	-
24	-	-	-	20.0	-	-	11.4
10-12	15.2	17.8	18.9	20.5	21.6	19.0	21.8
14-16	19.3	18.7	20.5	19.0	20.0	20.5	20.0
0-24	20.4	20.0	21.0	21.0	20.0	20.0	20.0

85th %ile	20.0

Cheltenham ATC, Charlton Court Road

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

Speed (MPH)	07/12/2016 Wednesday	08/12/2016 Thursday	09/12/2016 Friday	10/12/2016 Saturday	11/12/2016 Sunday	12/12/2016 Monday	13/12/2016 Tuesday
0-30	105	116	101	88	80	102	102
31-45	0	0	0	0	0	0	0
46-60	0	0	0	0	0	0	0
61-	0	0	0	0	0	0	0
TOTAL	**105**	**116**	**101**	**88**	**80**	**102**	**102**

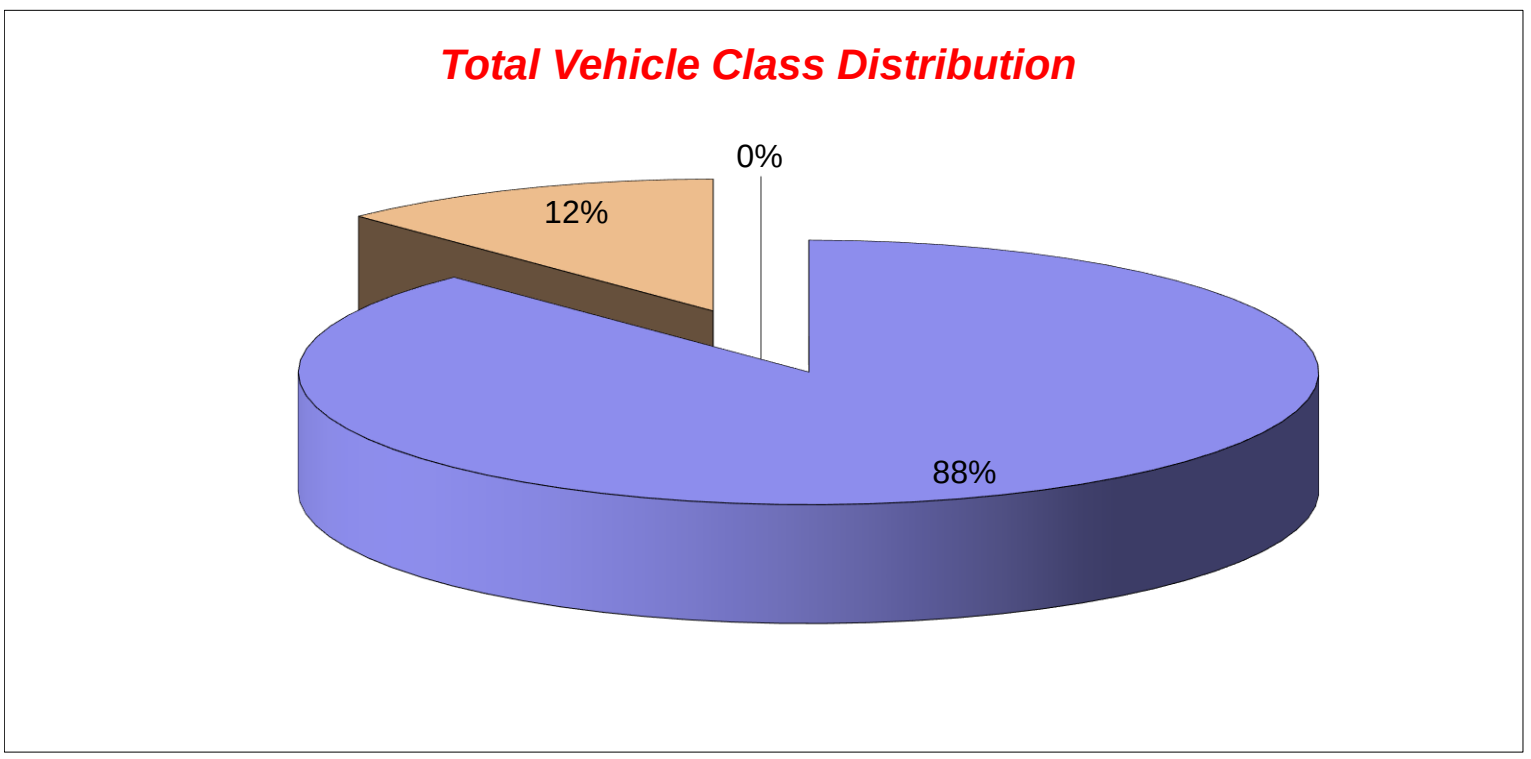


Cheltenham ATC, Charlton Court Road

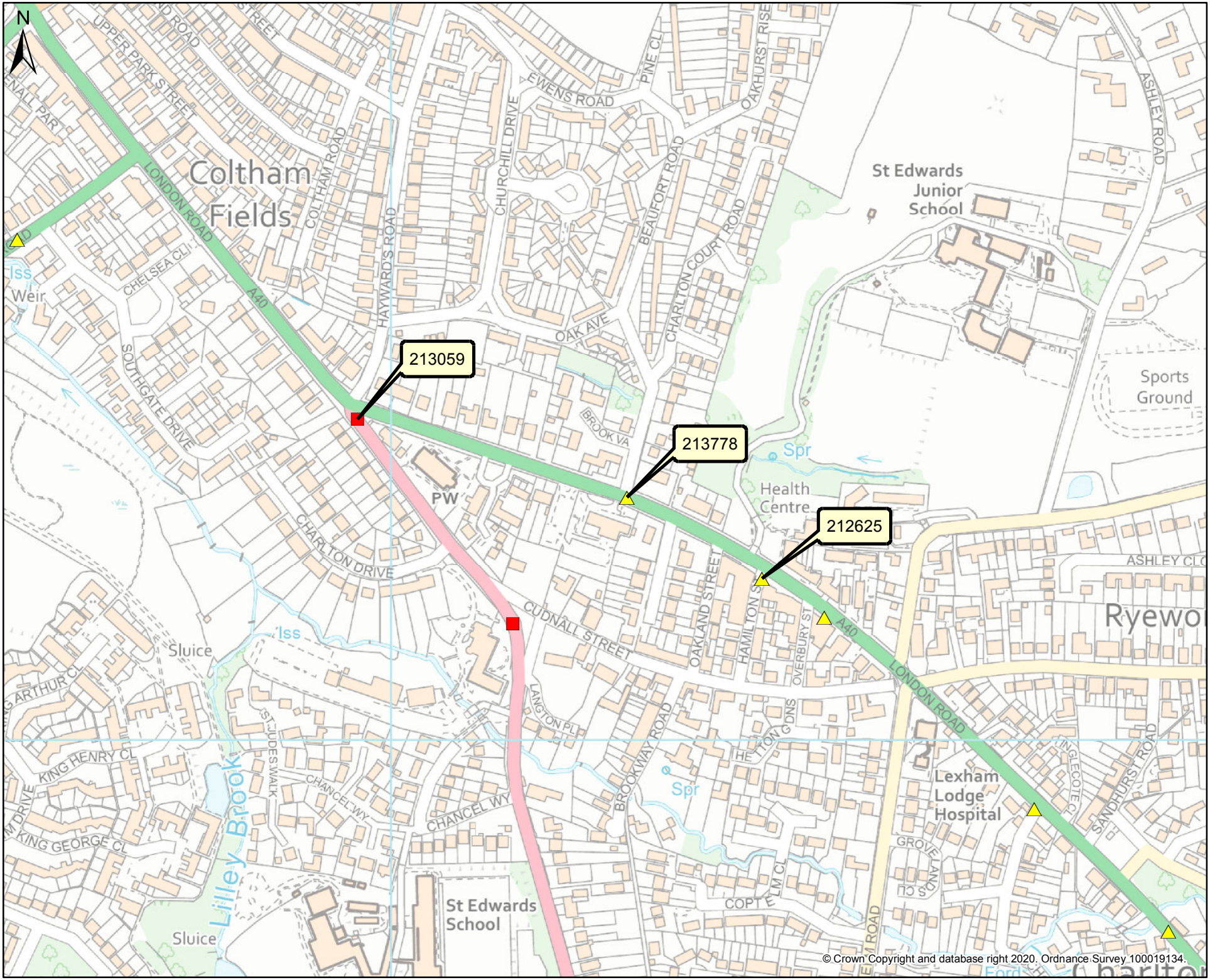
Channel 2 - Southbound **Vehicle Class** **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
07/12/2016				
7-19	75	11	0	**86**
6-22	88	14	0	**102**
6-24	90	14	0	**104**
0-24	91	14	0	**105**
08/12/2016				
7-19	86	14	0	**100**
6-22	94	16	0	**110**
6-24	96	16	0	**112**
0-24	100	16	0	**116**
09/12/2016				
7-19	67	17	0	**84**
6-22	82	17	0	**99**
6-24	83	17	0	**100**
0-24	84	17	0	**101**
10/12/2016				
7-19	61	6	0	**67**
6-22	71	7	0	**78**
6-24	78	7	0	**85**
0-24	81	7	0	**88**
11/12/2016				
7-19	68	5	0	**73**
6-22	74	5	0	**79**
6-24	75	5	0	**80**
0-24	75	5	0	**80**
12/12/2016				
7-19	73	15	0	**88**
6-22	85	15	0	**100**
6-24	87	15	0	**102**
0-24	87	15	0	**102**
13/12/2016				
7-19	74	11	0	**85**
6-22	88	11	0	**99**
6-24	90	11	0	**101**
0-24	91	11	0	**102**

Average				
7-19	72	11	0	**83**
6-22	83	12	0	**95**
6-24	86	12	0	**98**
0-24	87	12	0	**99**



APPENDIX F: PIC Data



Collision Plan Site:

Oakhurst Drive - Charlton Kings

Data Range:
July 2018 - April 2020

Date Produced:
14th April 2020

Collision Plan Key

ACC_SEVERITY

- Fatal
- Serious
- Slight

Drawn by: G.Simpson
Team: Road Safety & Transport Data
Scale: 1:4,500

www.gloucestershire.gov.uk/roads-parking-and-rights-of-way/road-safety/

Gloucestershire COUNTY COUNCIL

RTA2480 Detailed Collision Report

Compiled from an original report by Gloucestershire County Council

Accident Investigation and Prevention Section

Database as at 15-APR-20

Collisions within GLOUCESTERSHIRE

For period 01JULY-2018 TO 14-APR-2020

DETAILED COLLISION REPORT

Ref	212625	Severity	SLIGHT		
Day	SUNDAY	Date	02 SEP 2018	Time	1303
Light	DAYLIGHT	Weather	FINE	Surface	DRY
Grid ref	396351 221154	Major rd	4 90153	Minor rd	A 40
Control	G WAY/UNCONTROLLED	Junction	T/STAG/Y JUNC	Speed lim	30
Lighting	LIGHTS	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	342980	Type	ZM	Hazard	NONE

LOCATION

A40 LONDON ROAD AT JUNCTION WITH HAMILTON ROAD, CHELTENHAM

DESCRIPTION

V1 TURNED RIGHT INTO HAMILTON ROAD FROM A40 LONDON ROAD. V1 THEN COMMENCES A REVERSING MOVEMENT BACK OUT TOWARDS LONDON ROAD BUT FAILED TO SEE V2 (MOTORCYCLE) IS NOW DIRECTLY BEHIND HIM. LOW SPEED COLLISION.

VEHICLE DETAILS

No	Type	Manoeuvre	From-to		Driver Age
1	Car	REVERSING	S	N	76
2	M'cycle over 50cc up to 125cc	STOPPING	N	S	64

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SLIGHT	64	2	DRIVER

DETAILED COLLISION REPORT

Ref	213059	Severity	SERIOUS		
Day	THURSDAY	Date	07 MAR 2019	Time	0840
Light	DAYLIGHT	Weather	FINE	Surface	DRY
Grid ref	395968 221305	Major rd	A 435	Minor rd	A 40
Control	AUTO SIGNALS	Junction	T/STAG/Y JUNC	Speed lim	30
Lighting	LIGHTS	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	822984	Type	P	Hazard	NONE

LOCATION

CIRENCESTER ROAD (A435) NEAR JUNCTION WITH LONDON ROAD (A40), CHELTENHAM

DESCRIPTION

V1 BEING DRIVEN ALONG LONDON ROAD, AT TRAFFIC LIGHTS DRIVER TURNED RIGHT ONTO CIRENCESTER ROAD JUST AS PEDESTRIAN STARTED TO RUN ACROSS ROAD. THE DRIVER BROKE BUT STILL HIT PED, INJURING HIS LEFT FOOT.

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Car	TURNING RIGHT	W SE	39

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SERIOUS	51	1	PEDESTRIAN

DETAILED COLLISION REPORT

Ref	213778	Severity	SLIGHT		
Day	THURSDAY	Date	02 JAN 2020	Time	1715
Light	DARKNESS	Weather	FINE	Surface	DRY
Grid ref	396223 221231	Major rd	A 40	Minor rd	4 90134
Control	G WAY/UNCONTROLLED	Junction	T/STAG/Y JUNC	Speed lim	30
Lighting	LIGHTS LIT	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	916483	Type	CG	Hazard	NONE

LOCATION

LONDON ROAD (A40) AT JUNCTION WITH CHARLTON COURT ROAD, CHARLTON KINGS, CHELTENHAM

DESCRIPTION

ACCORDING TO CASUALTY. V2 TRAV ON LONDON RD FROM TOWN WITH FRONT AND REAR BRIGHT LED LIGHTS FLASHING. V1 FAILED TO GIVE WAY & PULLED OUT OF CHARLTON COURT RD HITTING V2, CAUSING THEM TO FALL INTO ROAD.

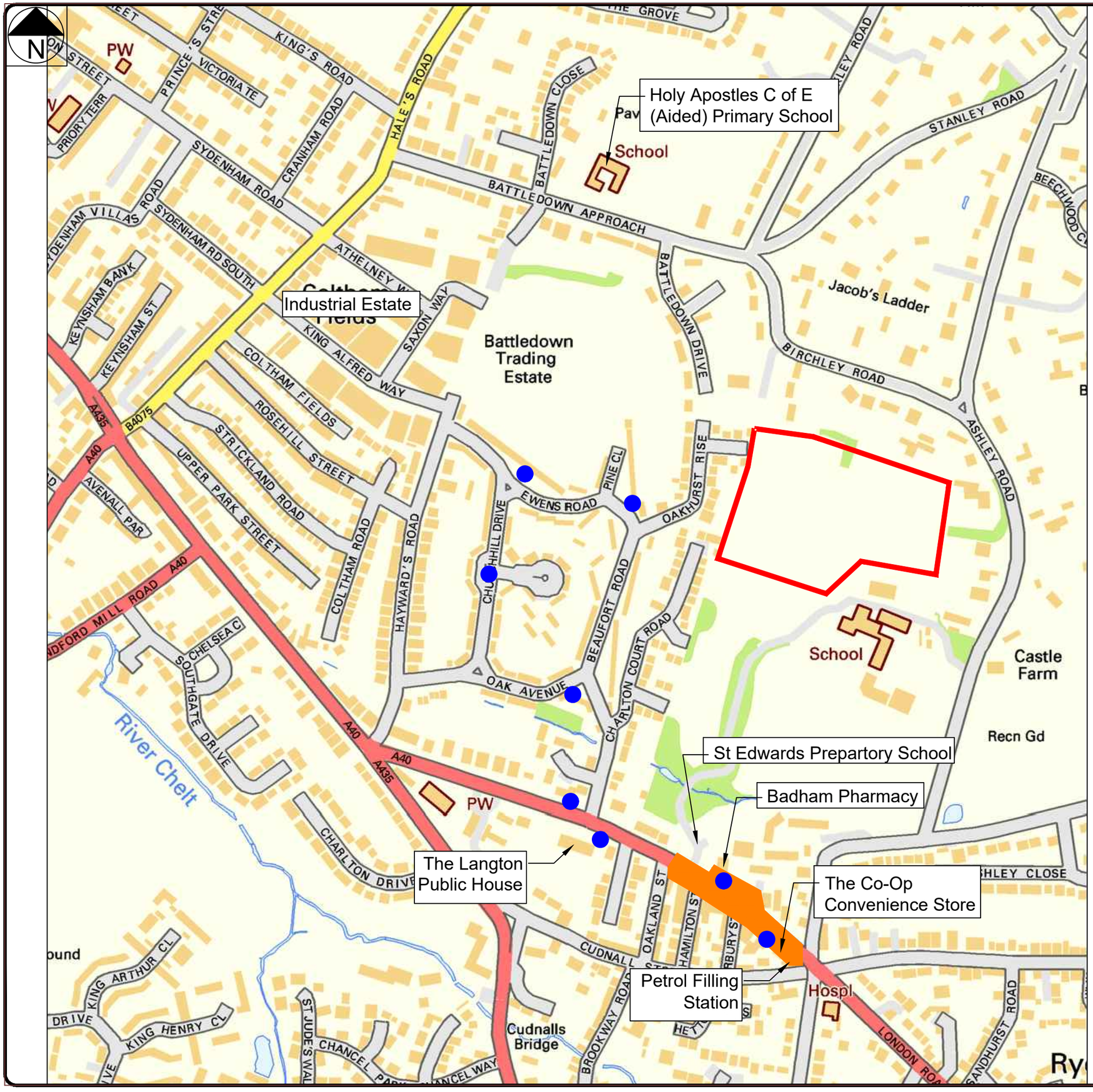
VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Car	GO AHEAD OTHER	N S	84
2	Pedal Cycle	GO AHEAD OTHER	W E	36

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SLIGHT	36	2	DRIVER

APPENDIX G: Local Facilities Plan and Timetables



Notes:

- Oakhurst Rise
- Route A
- Route B
- Bus Stops
- Sixways Shops and Facilities
- Indicative Site Boundary

COTSWOLD TRANSPORT PLANNING

Cotswold Transport Planning Ltd
121 Promenade
Cheltenham
Gloucestershire
GL50 1NW
Tel: 01242 370283
cheltenham@cotswoldtp.co.uk
www.cotswoldtp.co.uk

Drawing Title:
Services and Facilities

Client:
William Morrison

Project:
Land off Oakhurst Rise, Charlton Kings

Drawing No:	Revision:
SK_07	
Date Drawn: 09.01.17	Issue Date: 09.01.17
Drawn by: MW	Checked by: MG
Project Code: CTP-15-332	Scale at A3: Not to Scale

Drawing Status:
INFORMATION