



Reading Link Retail Park Drive Thru
Reading

Transport Statement

for

Sorbon Estates

Document Control Sheet

Transport Statement

Reading Link Retail Park Drive-Thru, Reading

Sorbon Estates

This document has been issued and amended as follows:

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1.0 Introduction

- 1.1 This Transport Statement has been prepared on behalf of Sorbon Estates to accompany a planning application for a new 190m² Drive-Thru coffee shop with associated changes to the car park layout at Reading Link Retail Park, Reading..
- 1.2 The site currently consists of six retail units with a 308 space car park and is bound by Rose Kiln Lane to the west, an access road to the south, undeveloped land to west, and the Holy Brook to the north. The site is located circa 1 kilometre to the south of Reading Town Centre, within the administrative boundary of Reading Borough Council.
- 1.3 The site currently benefits from the ability to gain vehicular access to the local highway network via the A33 Rose Kiln Lane Gyratory.
- 1.4 The site is accessible by sustainable transport modes of travelling including, foot, cycle and public transport. Existing footways and cycleway link the site to nearby bus stops and Reading Town Centre. It is therefore considered that the proposed development is well located to encourage people to travel by modes of transport other than the private car.
- 1.5 The application proposes the provision a new Drive-Thru coffee shop to the eastern edge of the site, within the existing car park. It is proposed that an additional site access will be provided along Rose Kiln Lane, approximately 120 metres to the north of the A33 Rose Kiln Lane signalised gyratory.
- 1.6 This report, which has been prepared in accordance with current best practice guidance, demonstrates that:
 - ▶ The site accords with national, regional and local policies relevant to transport;
 - ▶ The site is accessible by public transport, walking and cycling;
 - ▶ The highway network is not subject to any defects that lead to an abnormally high accident rate;
 - ▶ Suitable and appropriate access to the site can be achieved from the existing site access and a new site access on to Rose Kiln Lane that accord with current and best practice guidelines; and,
 - ▶ The residual impact of the proposed development will not be severe.
- 1.7 Following this introduction, this Transport Statement is split into five sections as follows:
 - ▶ Section 2 outlines the transport planning policies that are considered to be pertinent to this application.
 - ▶ Section 3 considers the existing use of the site including a review of the parking demands, reviews the accessibility of the site by all modes of the transport and assesses local road safety records.
 - ▶ Section 4 provides an overview of the proposed development together with the details related to the access, parking and servicing strategies that will be adopted.
 - ▶ Section 5 Assess the trip generating potential of the proposal by all travel modes.
 - ▶ Section 6 summarises the key findings and conclusion of the report.

2.0 Transport Planning Policy

Overview

2.1 There are a number of documents that contain planning policies relevant to transport. Those that set the context for the development proposals are as follows:

- ▶ National Planning Policy Framework – March 2012;
- ▶ Planning Policy Guidance – March 2014;
- ▶ Reading Borough Local Development Framework, Core Strategy – January 2008; and
- ▶ Reading Borough Council Sites and Detailed Policies Document Policy Document – 2012.

National Planning Policy Guidance

2.1 The National Planning Policy Framework (NPPF) was published in March 2012 and sets out a presumption in favour of sustainable development that recognises the importance of transport policies in facilitating sustainable development, and that planning decisions should have regard to local circumstances. In this regard, paragraph 29 of the NPPF states:

"The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas."

2.2 Similarly, paragraph 30 states that:

"In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport."

2.3 Moreover, paragraph 34 notes:

"Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised. However, this needs to take account of policies set out elsewhere in this Framework, particularly in rural areas."

2.4 Paragraph 35 therefore requires developments (where practical to do so) to be located and designed to:

"...give priority to pedestrian and cycle movements, and have access to high quality public transport facilities..."

2.5 Ultimately, the NPPF requires local planning authorities to:

"...consider whether:

- *The 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;*
- *Safe and suitable access to the site can be achieved for all people; and,*
- *Improvements can be undertaken within the transport network that cost effectively limit the impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe" (NPPF, paragraph 32)*

Planning Practice Guidance

- 2.6 The Planning Practice Guidance (PPG), which is available on the Department for Communities and Local Government (DCLG) website, supports the overarching aims of the NPPF. Highways and transportation matters are dealt with at Section ID42 of the NPPG under the heading of “*Travel plans, transport assessments and statements in decision taking*”.
- 2.7 Paragraph 11 of ID42 recommends that Travel Plans submitted in support of a planning application should, where possible to do so, include:
- *benchmark travel data including trip generation databases;*
 - *Information concerning the nature of the proposed development and the forecast level of trips by all modes of transport likely to be associated with the development;*
 - *relevant information about existing travel habits in the surrounding area;*
 - *proposals to reduce the need for travel to and from the site via all modes of transport; and*
 - *provision of improved public transport services.*
- 2.8 With respect to Transport Assessments and Transport Statements paragraph 15 of ID42 notes a planning application should typically consider the following:
- *information about the proposed development, site layout, (particularly proposed transport access and layout across all modes of transport);*
 - *information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;*
 - *data about existing public transport provision, including provision/ frequency of services and proposed public transport changes;*
 - *a qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of transport that would result from the development and in the vicinity of the site;*
 - *an assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next three years);*
 - *data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highways network;*
 - *an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area;*
 - *an assessment of the likely associated environmental impacts of transport related to the development, particularly in relation to proximity to environmentally sensitive areas (such as air quality management areas or noise sensitive areas);*
 - *measures to improve the accessibility of the location (such as provision/ enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;*
 - *a description of parking facilities in the area and the parking strategy of the development;*
 - *ways of encouraging environmental sustainability by reducing the need to travel; and*
 - *measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads.*

Reading Borough Local Development Framework

- 2.9 Planning applications within Reading Borough are assessed against the planning policies contained within the Core Strategy adopted in January 2008 and The Sites and Detailed Policies Document adopted in October 2012.
- 2.10 A summary of the policies which are relevant to the proposals are as follows:
- ▶ Core Strategy Policy CS22 - Transport Assessments: Developments should ensure an adequate level of accessibility.
 - ▶ Core Strategy Policy CS24 - Car/Cycle Parking: Car parking standards and cycle parking requirements will be applied in relation to the accessibility of locations to sustainable transport facilities.
 - ▶ Sites and Detailed Policies Document Policy DM12: Access and servicing arrangements to developments should be safe and comply with the Highway Authorities standards.
- 2.11 RBCs parking standards are contained within their document titled 'Revised Parking Standards and Design – 2011', whilst there are no parking standards relevant to the proposed development, it is identified as being within the 'Primary Core Area' and well served by public transport.

3.0 Baseline Conditions

Overview

- 3.1 So that the context of the site can be established, a review of the local highway network in the vicinity of the site has been undertaken. The following text summarises this review and makes reference to the location of the site and baseline traffic conditions. It also sets out an overview of the accessibility of the site by a variety of modes of transport and includes a review of road safety records.

Site Details

- 3.2 The application site is located to the west of Rose Kiln Lane and is bound to the south by the existing access road, undeveloped land to west, and the Holy Brook to the north. The site is located circa 1 kilometre to the south of Reading Town Centre, within the administrative boundary of Reading Borough Council. A plan showing the location of the site in relation to the local highway network is shown below.

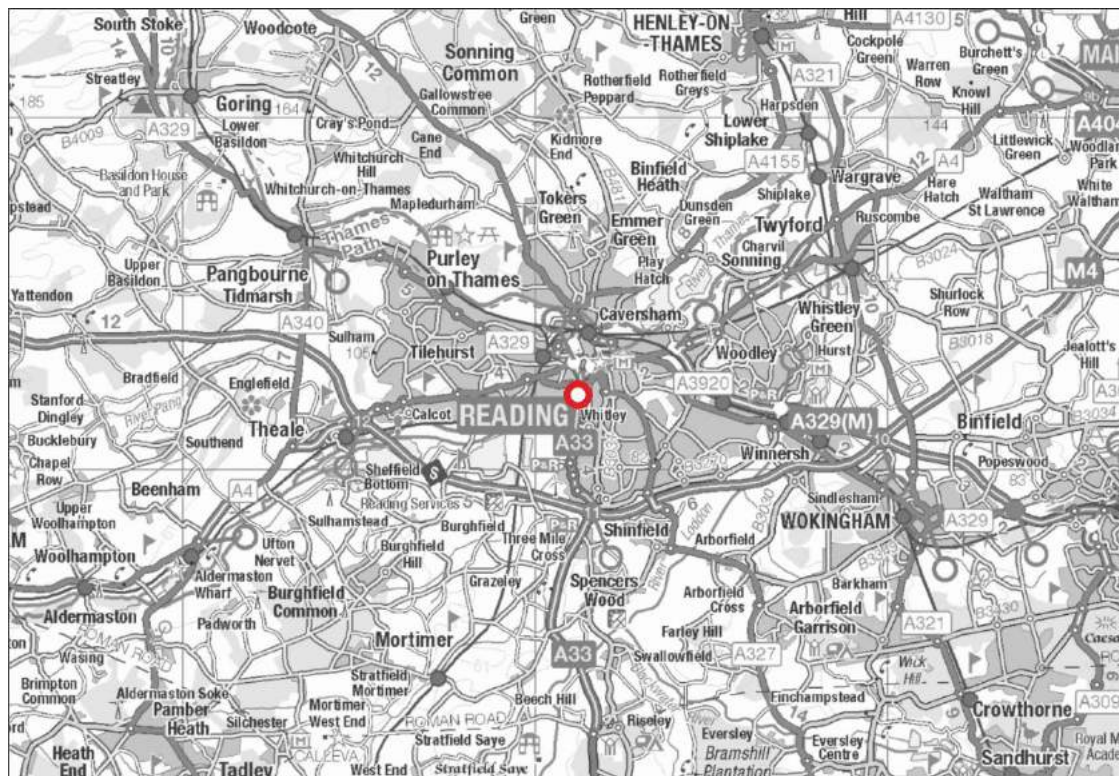


Site Location

- 3.3 At present the site consists of an area of car park that serves six occupied retail units comprising approximately 7,014m² retail floor space provided with a 308 space car park that includes 11 disabled spaces. The site is currently accessed via a single access off the A33 Rose Kiln Lane signalised gyratory junction, a copy of the existing layout is contained within **Appendix A**.

Highway Network

- 3.4 Rose Kiln Lane is a two way single carriageway road that is subject to a 40 mile per hour speed limit. The carriageway is approximately 7.3 metres wide. The road has footways on both sides of the carriageway which are approximately 2.0 metres wide.
- 3.5 The site access road is a two-way single carriageway road that is subject to a 30 mile per hour speed limit. The carriageway is circa 7.5 metres wide, and provides access to the site's car parking, servicing area and a neighbouring petrol station.
- 3.6 The location of the site in the context of the wider highway network can be seen below.



Local Highway Network

Sustainable Transport Accessibility

- 3.7 It is generally accepted that walking and cycling provide important alternatives to the private car and should also be encouraged to form part of longer journeys via public transport. Indeed, it is noteworthy that the Institute of Highways and Transportation (IHT) has prepared several guidance documents that provide advice with respect to the provision of sustainable travel in conjunction with new developments. Within these documents it is suggested that:
- ▶ Most people will walk to a destination that is less than one mile (Planning for Walking, 2015);
 - ▶ The bicycle is a potential mode of transport for all journeys under five miles (Planning for Cycling, 2015);
 - ▶ Walking distances to bus stops should not generally exceed 400 metres, and it is recognised that people are prepared to walk twice as far to rail stations (Planning for Walking, 2015); and,
 - ▶ However, walking distances of 500 metres can be applied to bus stops served by two or more high frequency routes (Buses in Urban Developments, 2018).
- 3.8 Notwithstanding the above, it should be noted that the NPPF recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural locations. Moreover, Manual for Streets (MfS) identifies 'walkable neighbourhoods' as being "characterised by having a range of facilities within 10 minutes (up to about 800 m) walking distance of residential area which residents may access comfortably on foot".
- 3.9 However, it is important to recognise that MfS does not consider 800 metres to be a maximum walking distance. Indeed, MfS and TD91/05 of the Design Manual for Roads and Bridges contend that walking can be used to access a variety of destinations within a range of up to 2 kilometres and 2 miles respectively. Finally, it is also important to recognise that 81% of all trips that cover a maximum distance of 1 mile are completed on foot (National Travel Survey, 2017)

Accessibility by Foot

- 3.10 Rose Kiln Lane benefits from street lighting and wide footways that link the site to the town centre and The Oracle shopping and leisure centre, 1 kilometre to the north. The town centre has extensive network of pedestrianised streets which provide direct access to the railway station and main bus interchange.

Accessibility by Cycle

- 3.11 Reading has an extensive network of cycle routes and these are shown within **Appendix B**. The A33 Reading Relief is a designated cycle route linking the site to the station and town centre where access to various Reading cycle routes providing access to all areas of the town and suburbs can be obtained.

Accessibility by Bus

- 3.12 The nearest bus stops from the site are located approximately 320 metres to the north on St. Saviours Road. These stops can be accessed via a pedestrian bridge over Holy Brook, that provides connection into Admirals Court, and through a connecting footpath to St. Saviours Road. These stops are served by the Route 11 (Bronze) service, which operates a 24-hour service with an average hour frequency of one bus every 20 minutes.
- 3.13 This route provides connection between Reading Station, Reading Town Centre and the residential area of Coley. A copy of the bus route is contained within **Appendix C**.

Accessibility by Rail

- 3.14 Reading Railway Station is located 1.4 kilometres to the north of the site and is easily accessible by foot. Reading Railway Station is the second busiest interchange station outside London after Birmingham New Street and is located at the point of the Great Western Mainline and north south cross-country lines. Destination including Newbury, Bournemouth, Birmingham, Manchester Piccadilly, London Paddington, Oxford, Penzance, London Waterloo, Cardiff Central, Newcastle, Bristol Temple Meads and Gatwick Airport can be accessed from Reading Railway Station.

Road Safety Records

- 3.15 The NPPF recommends that a Transport Statement should include:

"...an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five year period if the proposals has been identified as within a high accident area"

- 3.16 Whilst there is nothing to suggest that the local highway network is subject to an abnormally high accident rate, Personal Injury Collision (PIC) data recorded within the immediate vicinity of the proposed site access has been obtained from Crashmap for the last available five year period covering 2013 to 2017. This information indicated that only one slight collision has occurred within the last five years and comprised of a rear end shunt between two cars. To this end it is concluded that there is not a particular highway safety problem on the local highway network. A copy of the study area, and associated collision details are contained within **Appendix D**.

Summary of Baseline Conditions

- 3.17 The above review demonstrates the site is readily accessible by a variety of modes of transport that have the potential to reduce reliance upon the private car. In addition to this it has been established that the site is well located to a range of key local amenities. It is therefore considered that the location accords with the guiding principles of the National Planning Policy Framework.

4.0 Proposed Development

- 4.1 The proposals seek to erect a Drive-Thru coffee shop, with a gross floor area of approximately 190 sqm, in the north-east corner of the site. A copy of the proposed masterplan layout is contained within **Appendix E**.

Proposed Parking Provision

- 4.2 The proposal will incorporate 11 new parking spaces, consisting of 1 standard parking space and 10 additional parking spaces. The Transport Development Control Manager confirmed with regards the earlier planning application for the site, application reference 181169 that the provision of 11 additional parking spaces was acceptable
- 4.3 The Drive-Thru coffee shop also makes provision for six additional cycle parking spaces adjacent to the proposed building.
- 4.4 The latest emerging Reading Borough Council Local Plan requires 10% of new spaces to be electric charging points. Therefore, two electric charging points, in accordance with the emerging Local Plan standards will be provided adjacent to the flank wall of the retail unit to the west of the site.
- 4.5 This parking provision is adequate and will accommodate the demand, especially as there will be a high proportion of linked trips between the retail park and coffee shop.

Proposed Access Strategy

- 4.6 It is proposed that a new access be created to serve the proposals, this is to take the form of a simple priority junction with Rose Kiln Lane just south of the bridge over Holy Brook. This access will also serve as a secondary access for the rest of the site, re-assigning some of the existing right turning traffic from the Rose Kiln Lane gyratory, which is known to suffer from queues and delays during peak hours.
- 4.7 To ensure appropriate visibility can be achieved from the access onto Rose Kiln Lane, an Automatic Traffic Counter was installed in the vicinity of the proposed junction. The 85th percentile speed of vehicles has been calculated in accordance with Department for Transport document TA 22/81 Vehicle Speed Measurement on All Purpose Roads, which states that the preferred times for taking readings are 10.00-12.00 and 14.00-16.00 hours and that readings should not be taken during:
- ▶ morning and evening peaks if these cause congestion
 - ▶ local events, e.g. market days, local holidays, fetes, race meetings, etc.
 - ▶ bank holidays
 - ▶ weekends
 - ▶ bad weather
 - ▶ high heavy goods vehicle flows
- 4.8 The full results of the ATC's for time periods within TA 22/81 are provided at **Appendix F**. The 85th percentile speed of vehicles travelling northbound and southbound towards the junction were 28 and 32 miles per hour respectively. Therefore, the visibility splays required based on the wet weather vehicular speeds, recorded along the Rose Kiln Lane in accordance with TA 22/81 are 2.4 metres x 34.23 metres to the south (leading direction) and 2.4 metres x 41.90 metres to the north (trailing direction). The use of wet weather speeds is justified as no rainfall occurred during the survey period as detailed on the Metrological Office records within **Appendix G**.
- 4.9 The visibility splays have been calculated using guidance as set out in Manual for Streets (MfS) and Manual for Streets (MfS2), with the full calculations provided within **Appendix H** and drawing 1804032-01A enclosed within **Appendix I** shows that these splays are achievable within land under the control of the applicant or highway authority

- 4.10 However, visibility splays of 64.3 metres to the north and 51.7 metres to the south in accordance with the requirements of the Design Manual for Roads and Bridges (DMRB) are also achievable and these are also shown on Drawing 1804032-01A, **Appendix I** with the calculations within **Appendix H**. It is noteworthy that both these splays avoid the Armco barrier situated on the bridge, while the maintenance of the splay can be covered by a planning condition.
- 4.11 The access will have a gradient of 1:26 as shown on the drawing 1804032/02 within **Appendix J** in accordance with MfS2 and RBC requirements. The access will be 6.5 metres wide with radii of 2.5 metres which complies with the requirements of MfS2. The Highway Officer at RBC previously stated that the radii of 2.5 metres while complying with MfS2 did not comply with RBC's "Geometric Design Guide (GDC)", given the speed limit of the road is 40 miles per hour. However, it is noteworthy, that the GDC makes no allowance for the observed speed of vehicles along the road, a requirement of the DMRB and MfS2 and therefore it is contended the proposed junction fully complies with national requirements for a simple "t" junction within an urban area.
- 4.12 The access will also be provided with a footpath which will link to the existing footbridge over the Holy Brook to the north of the site again as detailed on drawing 1804032/02 within **Appendix J**.

Proposed Delivery and Servicing Strategy

- 4.13 It is proposed that deliveries to the Drive-Thru coffee shop will be undertaken via a 7.5 tonne vehicle, accessing and egressing the site via the new site access as shown on Drawing 1804032-TK01, **Appendix K**. It is proposed that the delivery vehicle will dwell within the car park for a short period of time whilst goods are transferred to the store. Deliveries will be timed such that the car park will be empty save for a small number of staff.
- 4.14 A private refuse collection contract will be taken out and a suitable vehicle, able to access the site, will be used in line with the other retail units within the park.
- 4.15 A Delivery and Management Plan will be prepared and become operational before occupation of the unit, which can be covered by a condition, ensuring the plan is in place and enforced. The plan will detail times of various deliveries to the unit and the size of vehicles to be used ensuring vehicles no greater than 7.5 tonnes gain access from Rose Kiln Lane. The plan will ensure that in the unlikely event of a larger vehicle undertaking deliveries these are undertaken outside peak hours of operation of the retail park and use the existing deliver area.
- 4.16 There are several precedents of this approach occurring within Reading including at the Tesco Express located at 217 Oxford Road, which was granted planning consent at appeal, following a public inquiry, planning application reference 11/00767/FUL. Within paragraph 20 of the decision notice, the Inspector notes that a condition can be attached which "*specifies the length of delivery vehicle and a schedule of delivery times in accordance with a Management plan.*" Consequently, the Inspector imposed condition 17 on the permission which states:
- "The use hereby permitted shall not commence until a Servicing Management Plan for the retail premises hereby permitted has been submitted to and approved in writing by the local planning authority. The Plan shall include details of the times when deliveries shall take place; the operation and management of the service bay, including maximum vehicle sizes; and storage of cages used. The plan shall apply to all deliveries to the site and management of the site will be in accordance with the approved details."*
- 4.17 Therefore, the new access to the drive thru coffee shop can be conditioned to ensure that no vehicles greater than 7.5 tonnes can use the access.

5.0 Development Impact

Overview

- 5.1 The following text evaluates the likely impact of the proposed development, making reference to similar applications in the local area in order to estimate the trip generating potential of the development.

Trip Generation

- 5.2 In order to assess the trip generating potential of the proposals, reference has been made to the recently approved planning application at Worton Grange (Ref: 15/1944). This application, for a large mixed use scheme, included proposals for a Drive-Thru coffee shop with a floor area of 185m². The trip rates approved with RBC for the weekday peak hours and Saturday afternoon peak hour are contained in Table 5.1, below.

Land Use	Trip Rate (100m ²)			Trips (190m ²)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Weekday AM Peak (08:00 – 09:00)	7.535	6.427	13.962	14	12	27
Weekday PM Peak (08:00 – 09:00)	8.947	8.947	17.894	17	17	34
Saturday Peak (13:00 – 14:00)	16.611	16.111	32.722	32	31	62

Table 5.1 – Worton Grange Drive-Thru Approved Trip Rates

- 5.3 It is generally accepted that retail development attracts a mixture of the following:
- ▶ New Trips – These trips are new to the network and would not take place without the proposed development being in place;
 - ▶ Transferred Trips – Trips diverted from a similar destination, generally nearby, some of these trips will already be present on the local highway network however other will not;
 - ▶ Pass-by Trips – These trips represent traffic that is already passing the site, these trips simply divert in and re-join the network afterwards;
 - ▶ Diverted Trips – These trips represent traffic passing nearby that diverts into the site, this traffic is already present on the network but the route it takes will vary; and,
 - ▶ Linked Trips – These trips represent traffic that already enters the site for some other purpose and simply includes a trip to the new development as part of this. These trips have no impact on the study network.
- 5.4 In the case of both the Worton Grange application and an application for a Drive-Thru restaurant at the Forbury Retail Park (Ref: 15/0085), RBC accepted that Drive-Thru facilities generally attract different trip types in the following ratios:
- ▶ New Trips – 20%
 - ▶ Pass-by Trips – 40%
 - ▶ Linked Trips – 40%
- 5.5 Based on the above, Table 5.2 sets out the proposed increase in new trips to the site as a result of the development proposals using these ratios.

Land Use	New Trips (20%)		
	Arrivals	Departures	Two-Way
Weekday AM Peak (08:00 – 09:00)	3	2	5
Weekday PM Peak (08:00 – 09:00)	3	3	7
Saturday Peak (13:00 – 14:00)	6	6	12

Table 5.2 – Proposed New Primary Trips

- 5.6 On the basis of the above, it is anticipated that the proposed development will attract approximately 25 linked trips, 25 pass-by trips and 12 new trips in the Saturday afternoon peak period. This level of trip generation represents a negligible increase on the local highway network and equates to approximately 1 additional vehicle every 5 minutes.
- 5.7 In addition, the proposal for an additional site access will provide added benefit to the local highway network through the re-assignment of traffic that currently accesses the retail park from Rose Kiln Lane away from the A33 Rose Kiln Lane gyratory.
- 5.8 In relation to the assessment of highway impact, it is typically accepted that proposals resulting in an increase of more than 30 vehicle movements in any hour should be subject to more detailed assessment. The preceding paragraphs of this report identified that the redevelopment proposals will lead to an increase in vehicle movements associated with the site during the identified morning and evening peak hours, compared to the established use. However, the net increase during these times based on the analysis shows an increase of circa 7 vehicle movements in the peak hours. As such, there is no requirement for further detailed junction assessment.
- 5.9 However, RBC have risen concerns that the new access will result in some of the existing trips to the retail park diverting to the new access and have therefore requested that junction capacity assessments to be undertaken during peak hours. To determine the existing flows into the car park a manual count of vehicle movements was undertaken between 8am and 9am and 5pm and 6pm on Tuesday 2nd October 2018 and included within **Appendix L**. The survey also detailed the proportion of traffic which exited onto Rose Kiln Lane and that which exited on to the A33. This showed that 36% of am trips and 39% of pm trips were via Rose Kiln Lane. These figures are similar to distribution figures using census data, as detailed within **Appendix M**, which indicated 33% of vehicle trips would be via Rose Kiln Lane.
- 5.10 So that the effects of the proposed development can be considered, the existing vehicle flows on Rose Kiln Lane, **Figure 5.1**, have been amended to show the implications of the new access on vehicle trips to the existing retail park which use Rose Kiln Lane, **Figure 5.2**. These diverted trips then have been combined with the new primary trips **Figure 5.3** to determine the predicted peak hour flows through the junction **Figure 5.4**.

Highway Impact

- 5.11 In order to evaluate whether or not the anticipated increases in traffic is likely to have a severe impact upon the junctions that make up the study area, reference has been made to the industry standard computer modelling software Junctions 9, which includes the current versions of ARCADY and PICADY. The results of these analyses are summarised in the following paragraphs.
- 5.12 Both ARCADY and PICADY, which are produced by the Transport Research Laboratory (TRL), express the relationship between traffic flow and capacity of roundabouts and priority controlled junctions as a ratio, referred to as the Ratio of Flow to Capacity (RFC). Based upon these results it also predicts the anticipated queue lengths (Q) and delays that are likely to occur at the junction. Junctions 9 also provides a further performance measurement, which correlates the length of the delay experienced by arriving vehicles to a scale that is referred to as the 'Level of Service' (LoS).
- 5.13 The LoS is determined having regard to the banding system set out in the Highway Capacity Manual approach to traffic capacity. The following summarises the definitions that are provided within Highway Traffic Analysis and Design (Salter & Hounsell, 1996) for the various bandings that are predicted in Junctions 9:

- ▶ LoS A: Free Flow - Primarily free-flow operation with vehicles having almost complete freedom to manoeuvre;
- ▶ LoS B: Reasonably Free Flow - Reasonable free-flow conditions with vehicles having slightly restricted freedom to manoeuvre;
- ▶ LoS C: Stable Flow - Stable operation but freedom to manoeuvre is restricted;
- ▶ LoS D: Approaching Unstable Flow - Borders on unstable flow with freedom to manoeuvre severely limited;
- ▶ LoS E: Unstable Flow - Traffic flow is very unstable and approaching capacity; and,
- ▶ LoS F: Forced or Breakdown Flow - The point at which demand exceeds capacity.

5.14 Copies of the output reports generated by Junctions 9 are provided at **Appendix N**, with a summary of the results provided at Table 5.3.

Arm	Morning Peak			Evening Peak		
	RFC	Max Delay (Seconds)	LOS	RFC	Max Delay (Seconds)	LOS
Stream – Site Access to Rose Kiln Lane (North)	0.01	7.49	A	0.11	7.49	A
Stream – Site Access to Rose Kiln Lane (South)	0.0	15.27	C	0.0	15.37	C
Stream – Rose Kiln Lane (North) to site access	0.04	5.42	A	0.15	4.67	A

Table 5.3 – Junction 9 Outputs

- 5.15 When considering the above results, it should be noted that the IHT indicates that RFC values of 0.85 to 0.90 have historically been considered to reflect uncongested design thresholds, whilst an RFC of 1 indicates that a junction is operating at capacity.
- 5.16 The results presented in Tables 5.3 indicate that the highest RFC is 0.15. As this is significantly below the theoretical capacity thresholds identified by the IHT, it is considered that the assessment junction will not be subject to any capacity constraints that lead to prolonged periods of congestion, above that which already occurs on the adjacent highway.
- 5.17 In addition, the proposed redevelopment will not result in any adverse disruption to the free flow of traffic on the local highway network. In this regard, it is considered the proposals are consistent with national and local transportation policies with respect to traffic impact. To this end, it is concluded that the proposals would not result in a material impact from a highway and transportation perspective, let alone the severe impact that is referred to within the National Planning Policy Framework.

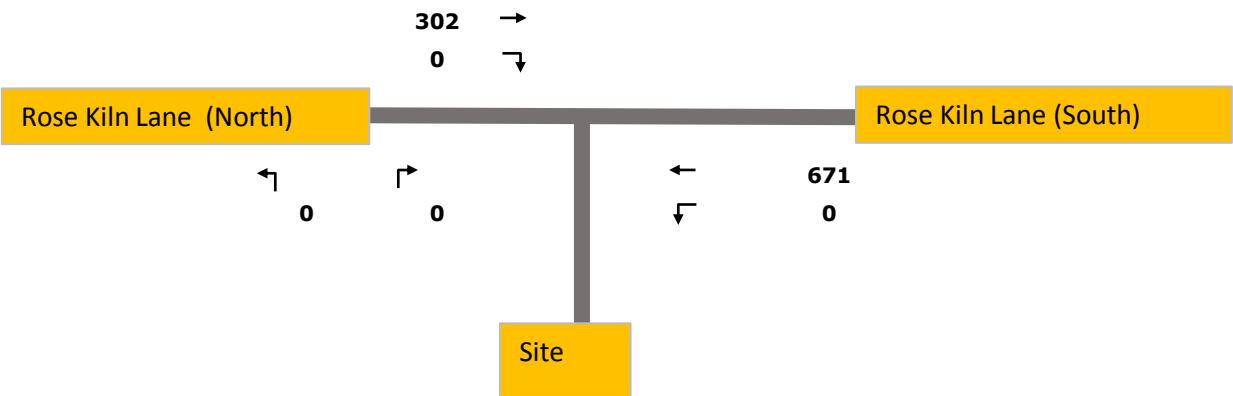
6.0 Summary and Conclusions

- 6.1 Motion has been appointed to prepare a Transport Statement (TS) in support of a planning application for a new Drive-Thru coffee shop and at Reading Link Retail Park, Reading on behalf of Sorbon Estates.
- 6.2 The proposals seek to provide a Drive-Thru coffee shop, with a gross floor area of approximately 190 sqm, in the north-east corner of the site. In addition, it is proposed that a new site access will be provided along Rose Kiln Lane.
- 6.3 In summary, the key findings of this statement are as follows:
- ▶ The proposal accords with national and local policies relevant to transport;
 - ▶ There are no significant safety problems within the surrounding area that are caused by the design of the local highway network.
 - ▶ The proposal benefits from good pedestrian and cycle connections to local public transport services, and the town centre.
 - ▶ The development proposals retain the existing level of car parking at the retail park, whilst also providing additional cycle parking facilities at the Drive-Thru.
 - ▶ The proposed development will result in an increase of 5 and 7 two-way vehicle movements in the weekday AM and PM peak hours, and an additional 12 movements within the Saturday afternoon peak.
 - ▶ The proposed junction will be within capacity and will not result in a severe impact on the highway occurring.
- 6.4 Considering the above, it is concluded that the proposals accord with land-use and transport policy and that the proposals can be accommodated without detriment to the operation of the local highway network. As such, it is considered that there is no reason why the proposals should be resisted on traffic or transportation grounds.

Figure 5.1

Base Flows

Figure 5.1
2018 Base Flows (08.00-09.00)



2018 Base Flows (17.00-18.00)

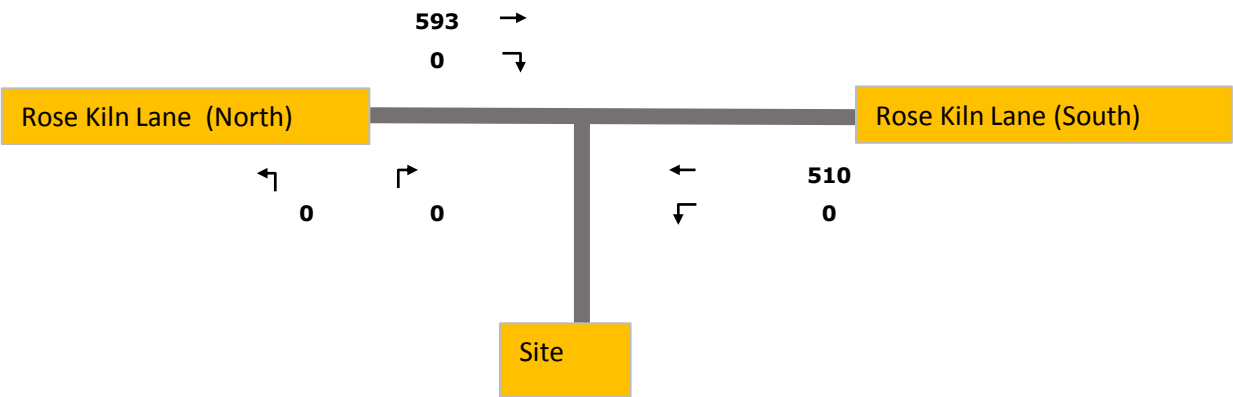
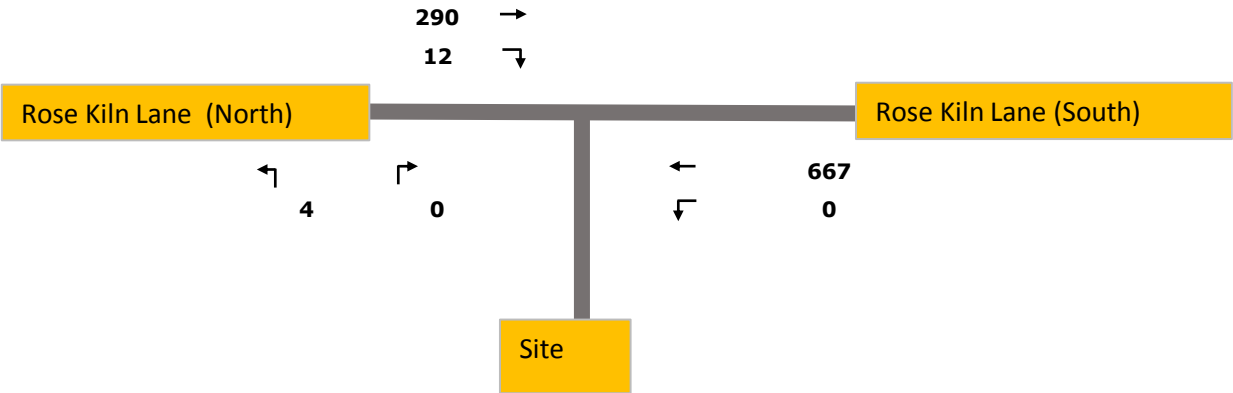


Figure 5.2

Diverted Trips

Figure 5.2
Diverted Trips from Existing Access using New Access

2018 Diverted Trips (08.00-09.00)



2018 Diverted Trips (17.00-18.00)

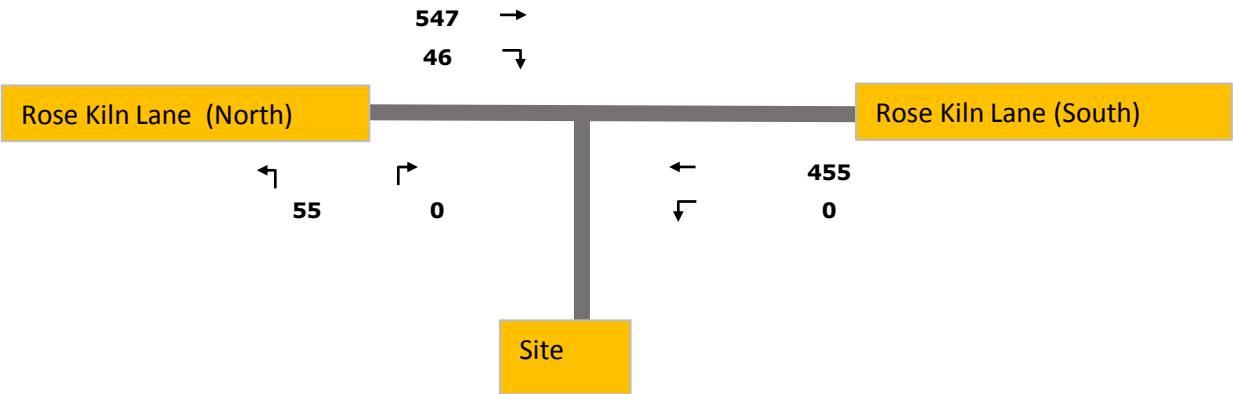
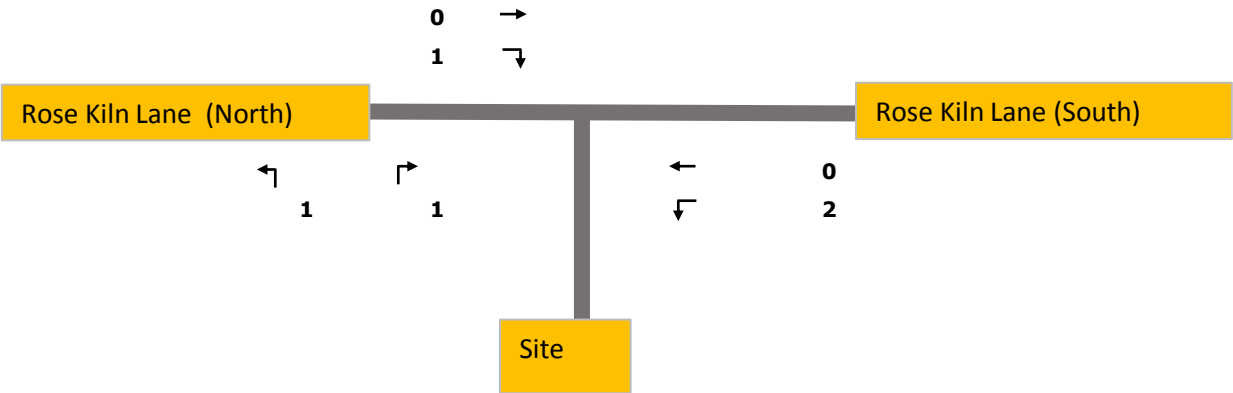


Figure 5.3

Primary New Trips

Figure 5.3
New Primary Trips

2018 New Primary Trips (08.00-09.00)



2018 New Primary Trips (17.00-18.00)

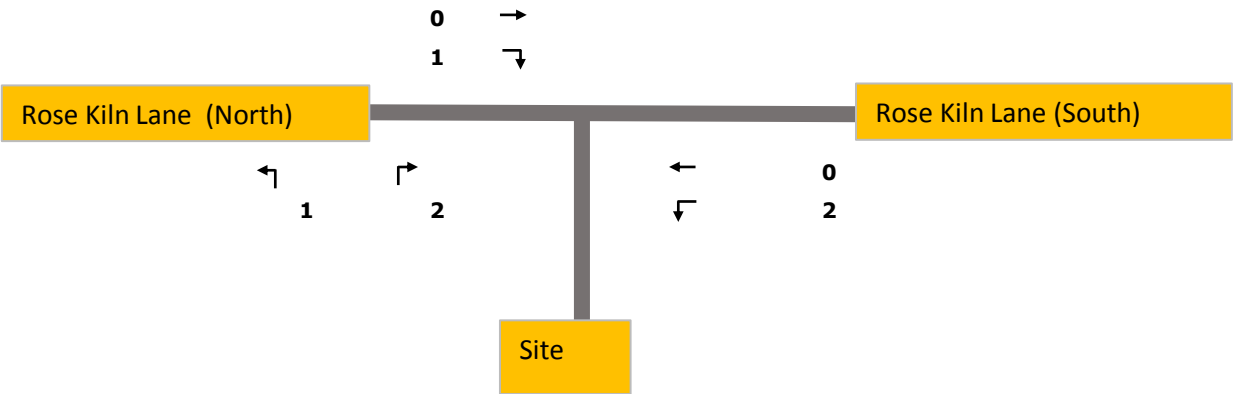
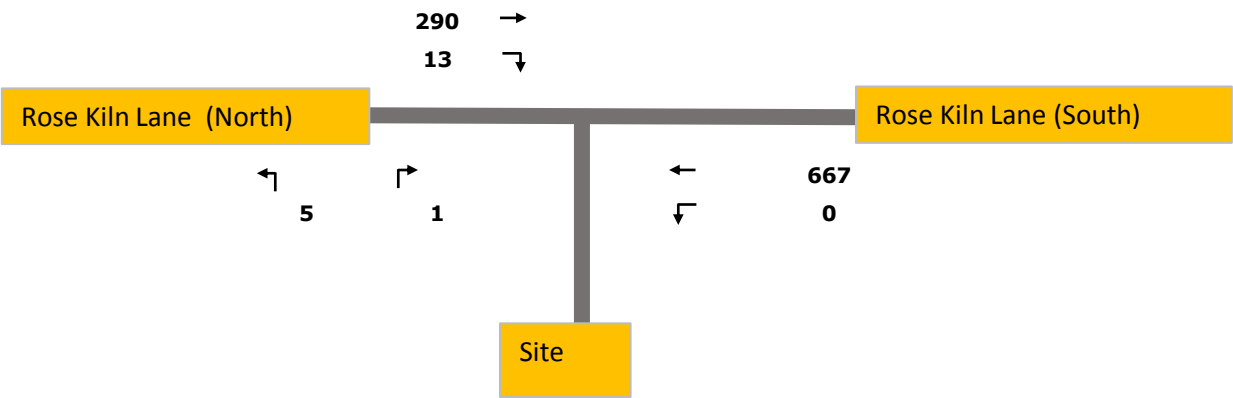


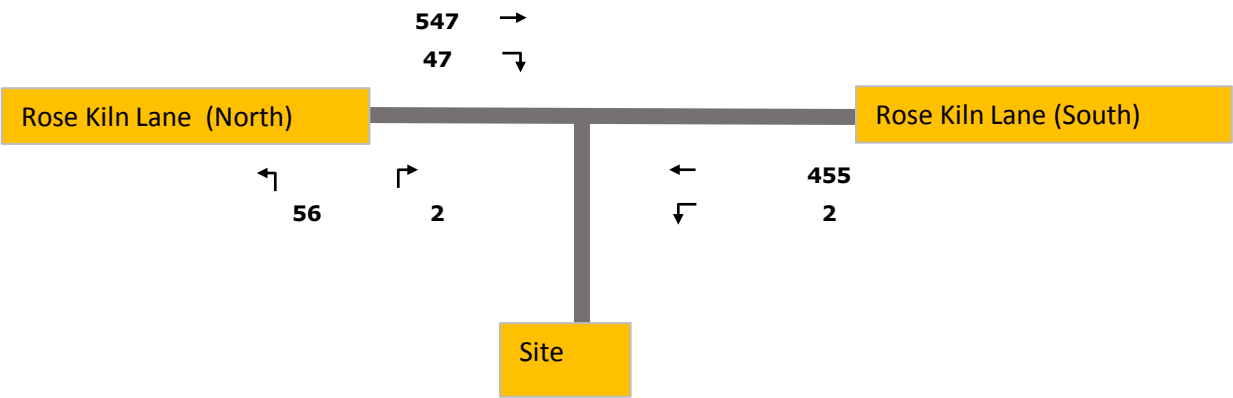
Figure 5.4

Predicted Trips

Figure 5.4
2018 Predicted Junction Movements (08.00-09.00)

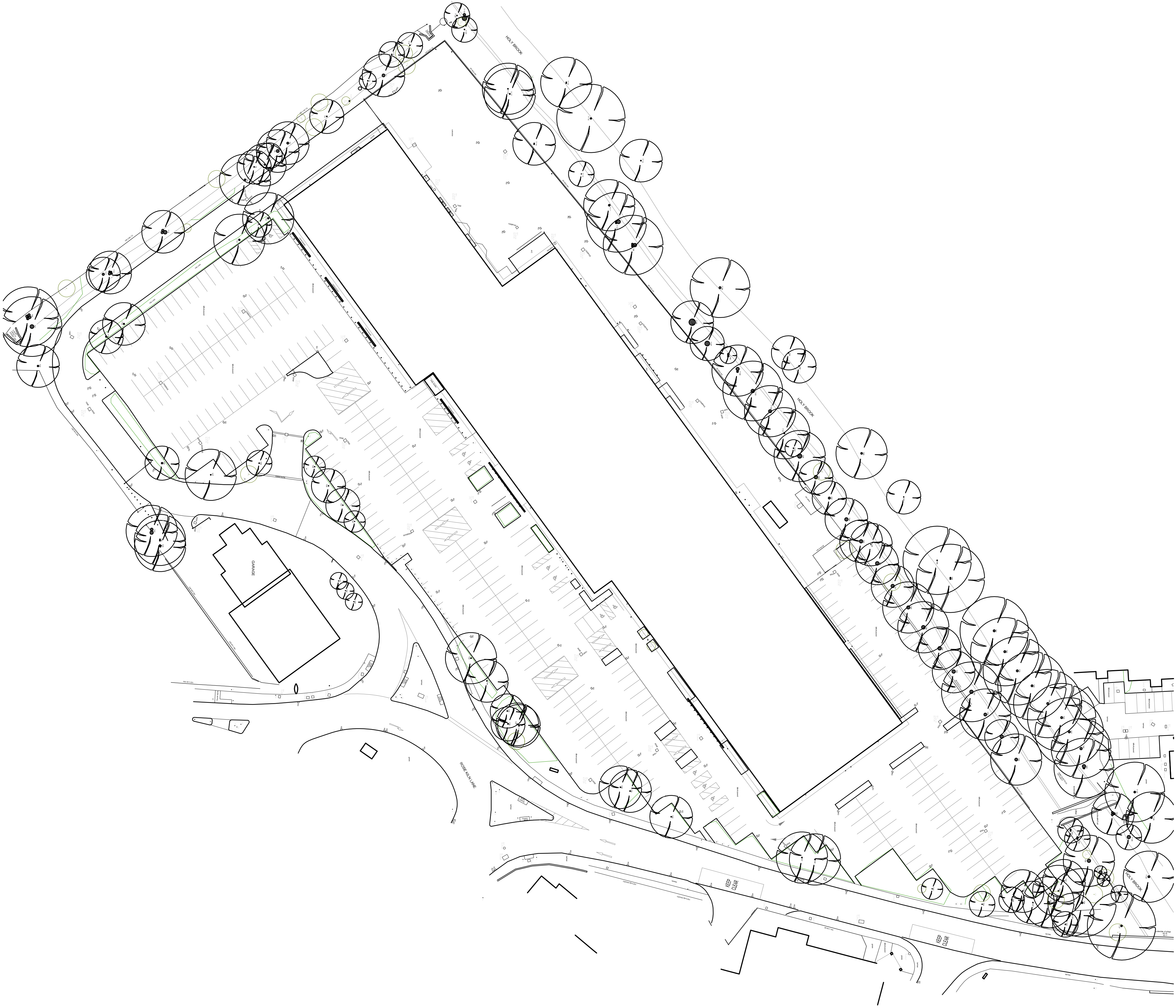


2018 Predicted junction movements (17.00-18.00)



Appendix A

Existing Site Layout



Consultant

SURVEYED BY
groundsurveys ltd

land & engineering surveys
The Old Forge
Unit 1, Padlocks Yard
Pearson Road
Sonning on Thames
Berkshire
RG4 6JH
t. 01628 485300
e. office@groundsurveys.com
www.groundsurveys.com

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All dimensions and levels must be checked on site and verified
prior to construction

Notes

Rev	Description	Date

Project

READING LINK RETAIL PARK

Drawing Title

EXISTING TOPO

SORBON
ESTATES

Sorbon, Aylesbury End, Beaconsfield,
Buckinghamshire, HP9 1LW
Tel: 01494 671331
Fax: 01494 676417
DX 34507 Beaconsfield

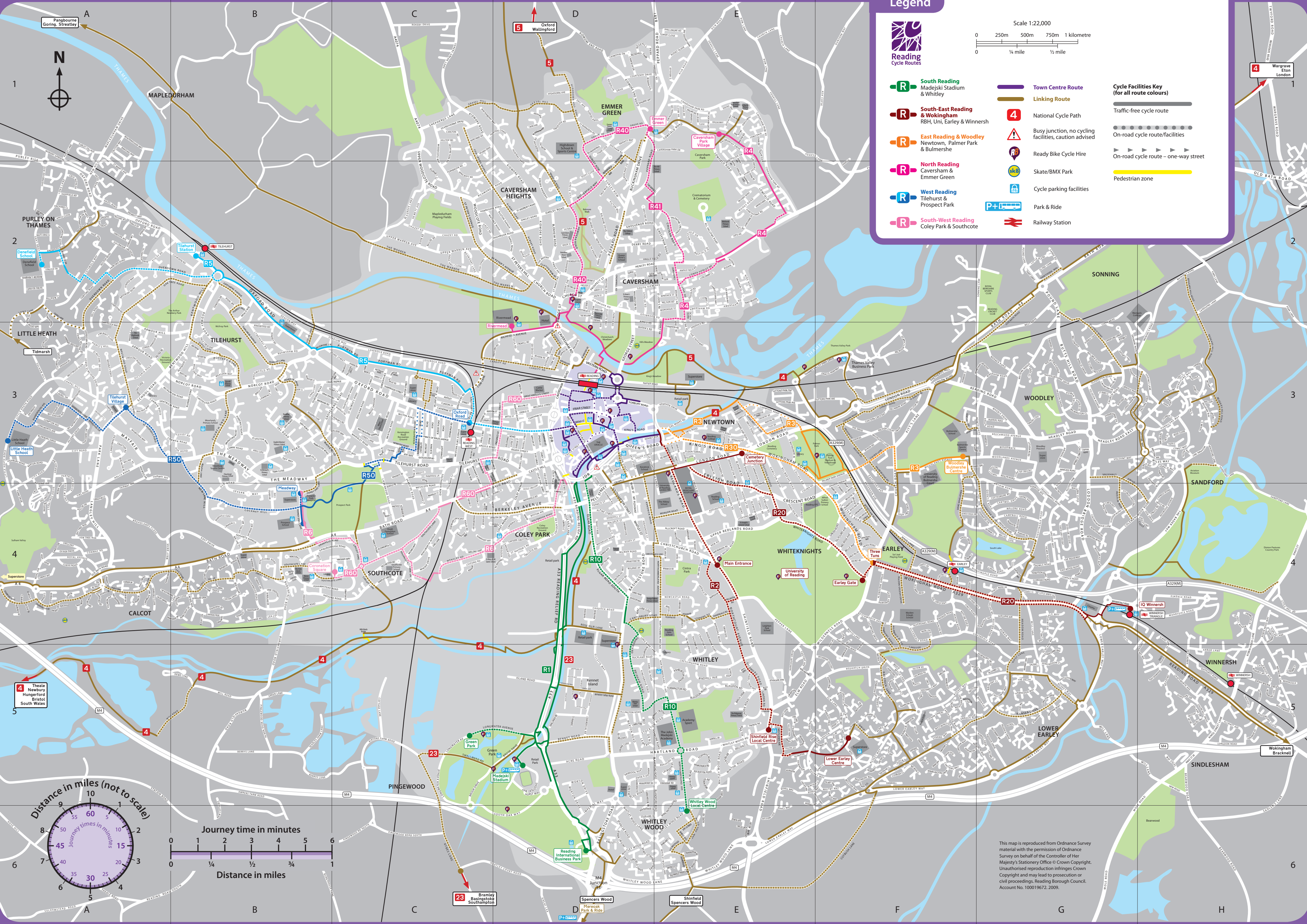
Drawn By: Date: 02.07.2018

Scale: 1/500 A1

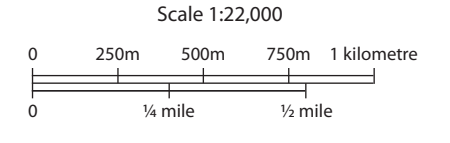
Drawing No. RLRPR_TOPO_001 Revision

Appendix B

Reading Cycle Network



Legend

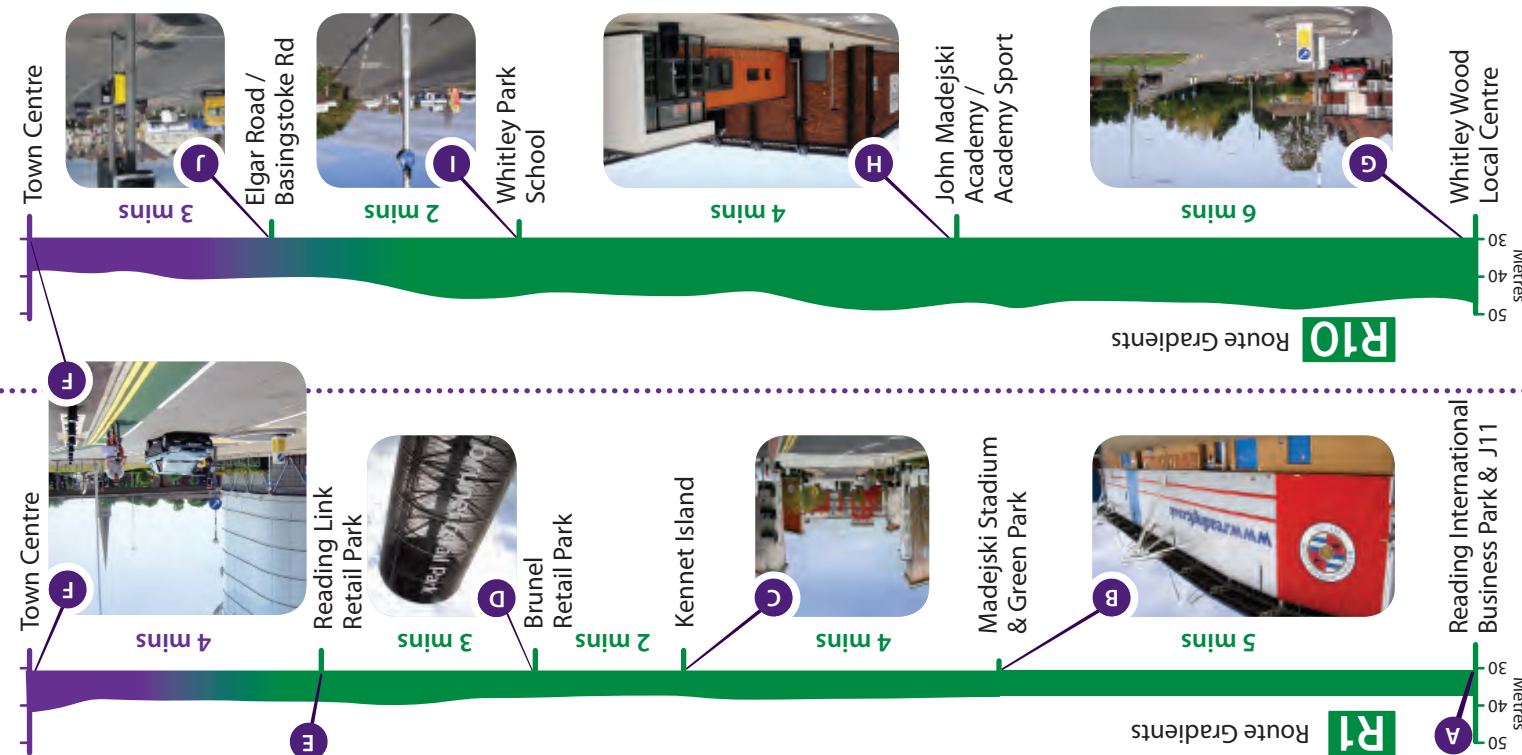


- R** South Reading
Madejski Stadium & Whitley
- R** South-East Reading & Wokingham
RBH, Uni, Earley & Winnersh
- R** East Reading & Woodley
Newtown, Palmer Park & Bulmershe
- R** North Reading
Caversham & Emmer Green
- R** West Reading
Tilehurst & Prospect Park
- R** South-West Reading
Coley Park & Southcote

- Town Centre Route**
- Linking Route**
- 4** National Cycle Path
- Busy junction, no cycling facilities, caution advised
- Ready Bike Cycle Hire
- Skate/BMX Park
- Cycle parking facilities
- Park & Ride
- Railway Station

- Cycle Facilities Key (for all route colours)**
- Traffic-free cycle route
 - On-road cycle route/facilities
 - On-road cycle route – one-way street
 - Pedestrian zone

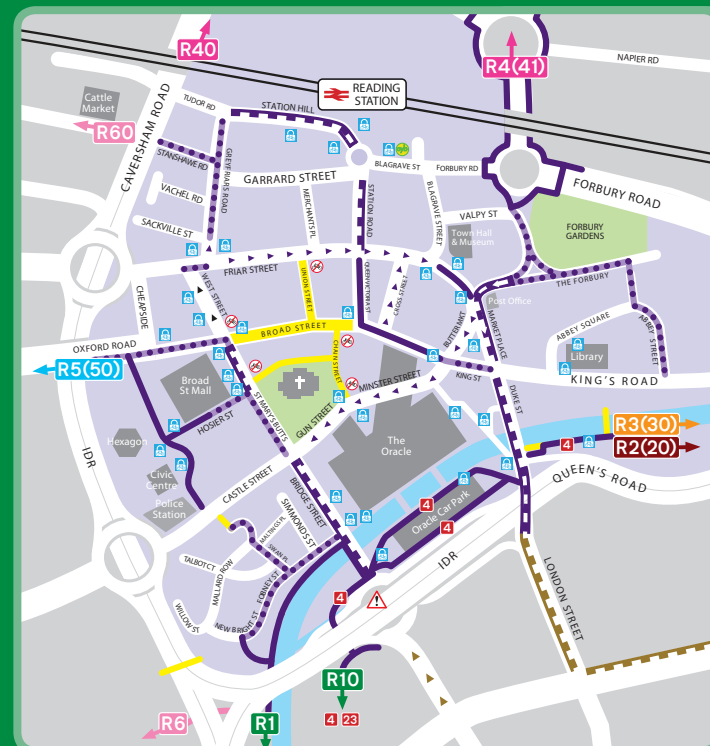
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Reading Borough Council. Account No. 100019672. 2009.



R1 Cycle to Green Park and Junction 11
of Reading's most direct and continuous cycle routes, either on the gravel towpath by the River Kennet or the surfaced cycle/footway along the A33. Please note that the path under Rose Kiln Lane is subject to flooding.

R10 Quiet roads with plenty of room for cyclists link many of the schools and shopping centres in South Reading. Use the cycle lanes and toucan crossings to navigate Basingstoke Road and take a central position to cross Northumberland Avenue's roundabouts.

Full details of these routes can be found at www.reading-travelinfo.co.uk



Legend



Reading Cycle Route

Town Centre Route

Linking Route



National Cycle Path



Busy junction, no cycling facilities, caution advised



Cycle parking facilities



Cycling prohibited



Railway Station



Pedestrian Light Controlled Crossing



Toucan (Cycle) Light Controlled Crossing



Underpass /Subway

Cycle Facilities Key (for all route colours)

Off-road cycle route (tarmac or path)

Off-road cycle route (gravel or rough surface)

On-road cycle route - traffic-calmed or quiet residential road

On-road cycle route - one-way street

On-road cycle way / shared bus lane (one direction)

On-road cycle way / shared bus lane (both directions)

On-road route without dedicated facilities

Pedestrians only, cyclists dismount



MORE CYCLE MAPS



Reading & Wokingham RBH, Uni & Winnersh



South-West Reading Coley Park & Southcote



West Reading Oxford Road & Tilehurst



West Reading Tilehurst & Prospect Park



East Reading & Woodley Newtown, & Bulmershe

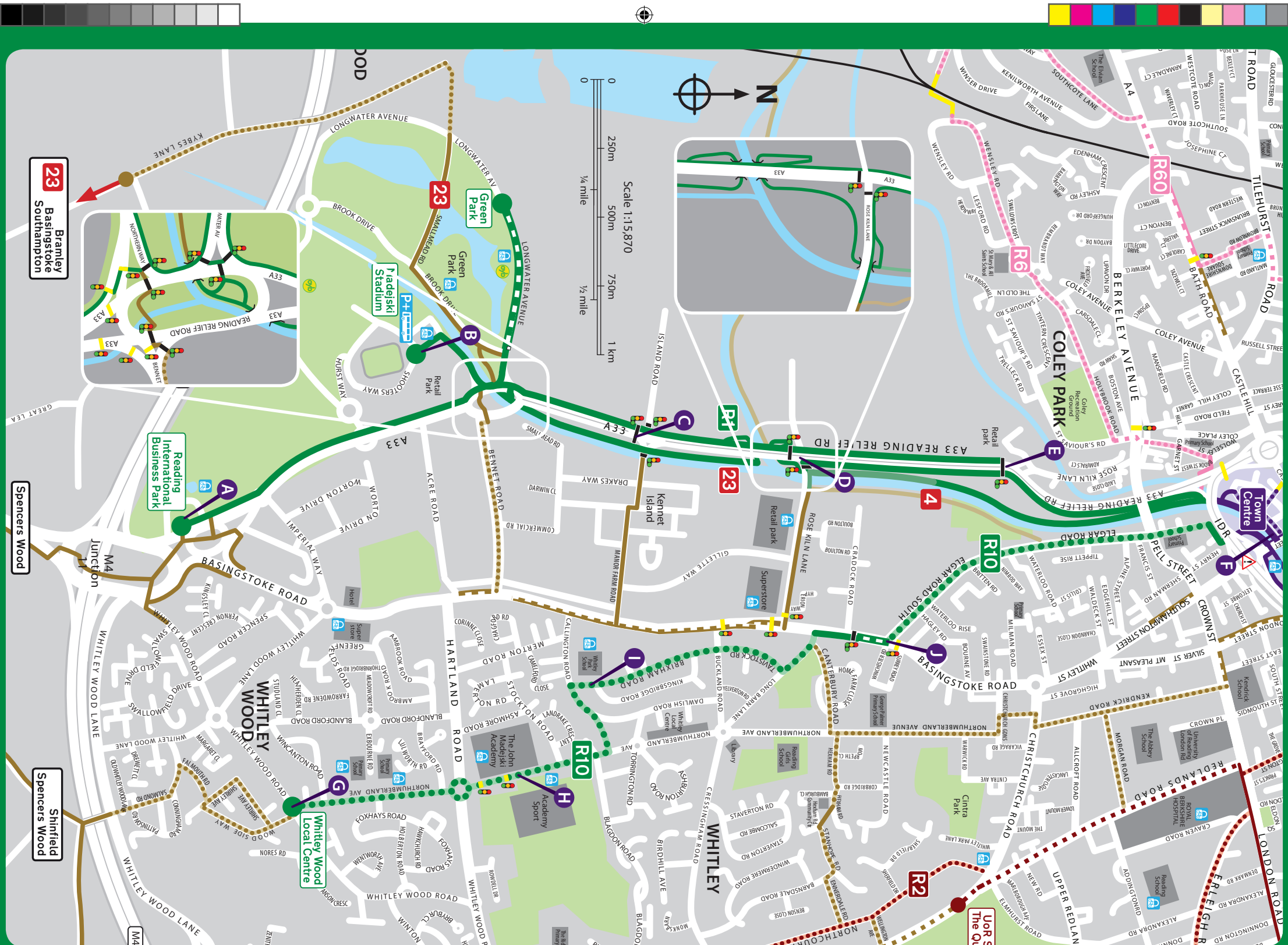
Reading BOROUGH COUNCIL

www.reading.gov.uk

Autumn/Winter 2010

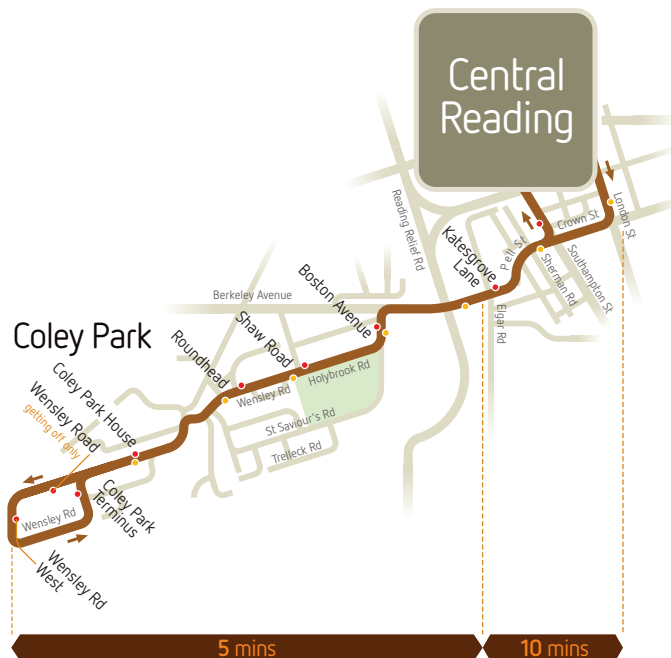


Reading Cycle Routes



Appendix C

Reading Buses Route 11



Central Reading bus stops

- towards Coley Park
- towards Central Reading

handy connections

RBH change to leopard 3/3b/10, route 9, orange 12 or red 22 at Station Road **SA**

Reading College change to purple 17 at Friar Street **FN**

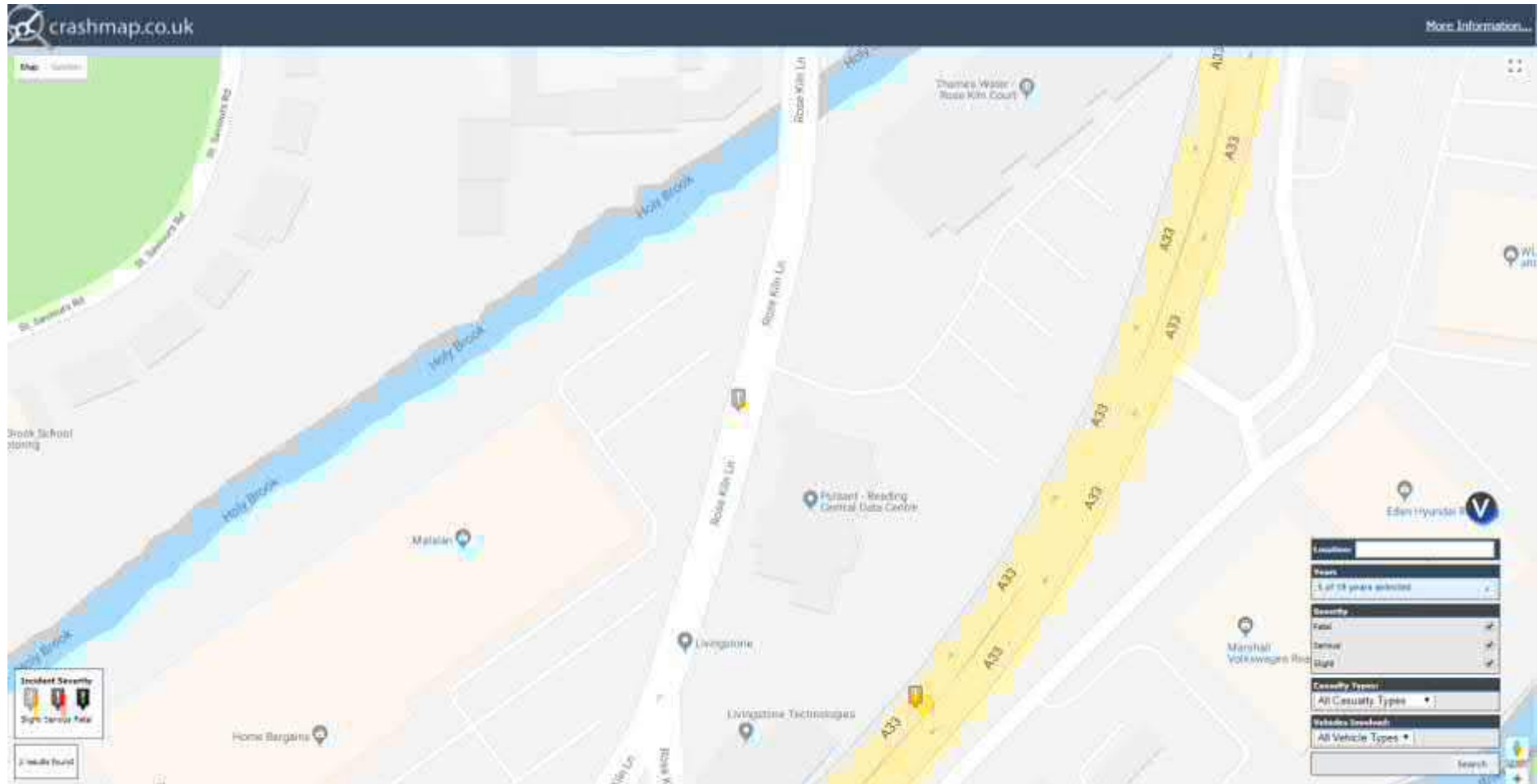
University change to claret 21 at Blagrove Street **EK**

Appendix D

Personal Injury Collision Data

Reading Link Retail Park, Reading

Crashmap Screenshot





Crash Date: Thursday, June 11, 2015 **Time of Crash:** 12:41:00 PM **Crash Reference:** 201543W087065

Highest Injury Severity: Slight
Highway Authority: Reading
Local Authority: Reading
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 40
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: U0

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 471251 172287



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



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	12	Male	Over 75	Vehicle is slowing down or stopping	Front	Other	None	None
2	Car (excluding private hire)	10	Male	Over 75	Vehicle is slowing down or stopping	Back	Other	None	None

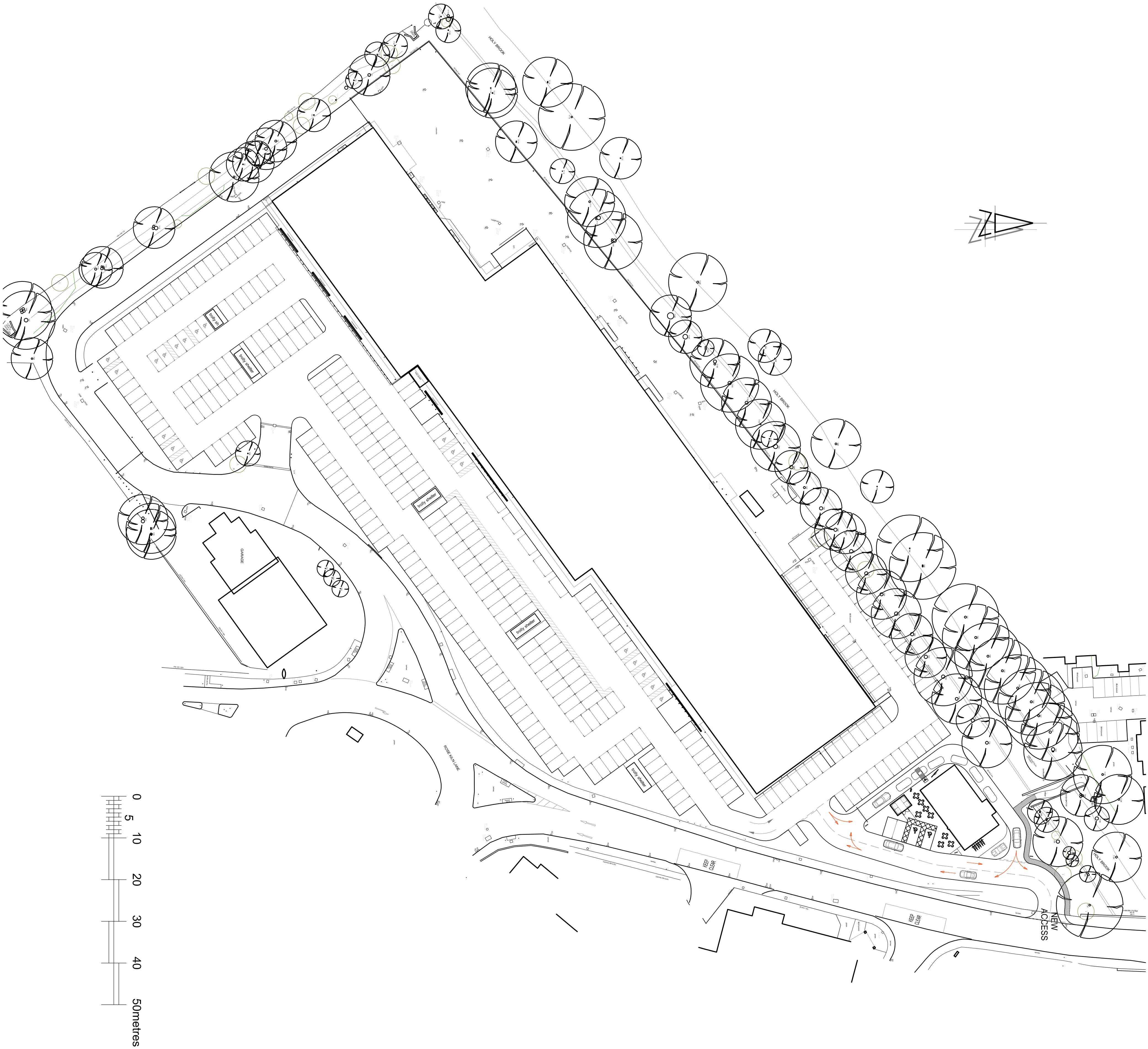
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	Over 75	Unknown or other	Unknown or other

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

Appendix E

Proposed Masterplan Layout



Consultant

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All dimensions and levels must be checked on site and verified
prior to construction

Notes

E	Binstore re-positioned/adjustments	18.10.18
D	Adjustments	19.09.18
C	Scale Bar added.	11.07.18
Rev	Description	Date

Project

Proposed Development
at
Reading Link Retail Park
Rose Kiln Lane
Reading

Drawing Title

PROPOSED BLOCK PLAN
296 car spaces
21 disabled spaces
317 Total spaces

SORBON
ESTATES

Sorbon, Aylesbury End, Beaconsfield,
Buckinghamshire, HP9 1LW
Tel: 01494 671331
Fax: 01494 676417
DX 34507 Beaconsfield

Drawn By: **jd** Date: **24.04.2018**

Scale: **1/500** A1

Drawing No. **RLRPRL_PLN_002** Revision **E**

Appendix F

ATC Survey Results, Rose Kiln Lane

Intelligent Data Collection Limited

Rose Kiln Lane, Reading

Client:	Motion	
Project Number:	ID03991	
Site Number:	Site 1	
Week Commencing:	18/06/2018	
Road Name:	Rose Kiln Lane	
Survey Type:	ATC	
Direction AB	Flow from A33 (S)	to Laud Close (N)
Direction BA	Flow from Laud Close (N)	to A33 (S)

Quality Assurance and Issue Record

Quality Assurance

Revision	Rev A			
Date	26.06.2018			
Prepared by	Richard Collins			
Signature				
Checked by	David Collinge			
Signature				
Project Director	Paul O'Neill			
Signature				
Project Number	ID03991			
File Ref	ID03991 Rose Kiln Lane, Reading - ATC Site 1			

Issue Sheet

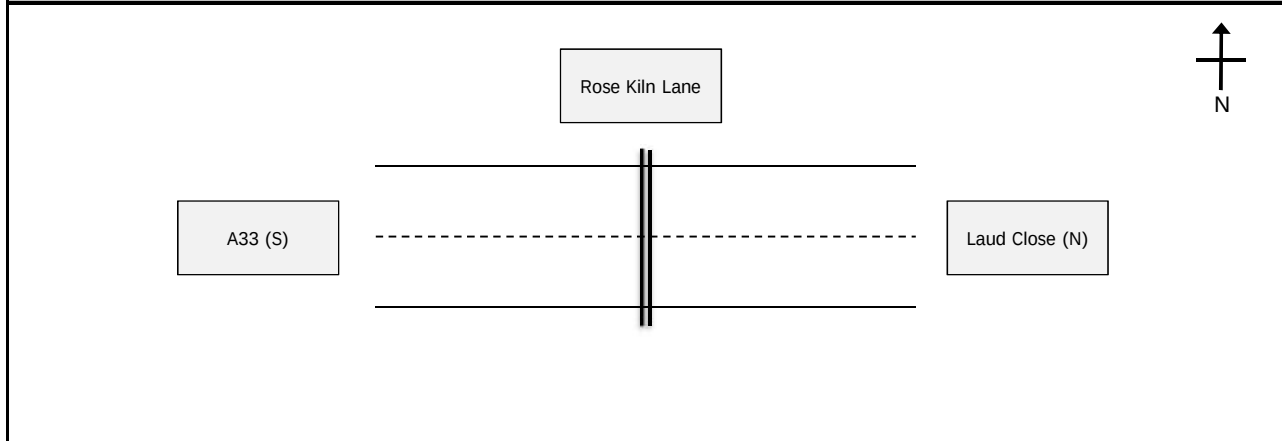
[illegible]

Intelligent Data - Automatic Traffic Count Output



Road Name	Rose Kiln Lane		
Direction AB	A33 (S)	to:	Laud Close (N)
Direction BA	Laud Close (N)	to:	A33 (S)
Site Co-Ordinates	ATC Start Date	ATC Finish Date	PSL
51.445561,-0.975926	19/06/2018	26/06/2018	40
Link to location on Google Maps			
Click Here			

Location Plan



Photograph Record



Comments

Prepared by	Richard Collins	Checked by	David Collinge	Project Director	Paul O'Neill
-------------	-----------------	------------	----------------	------------------	--------------

Motion
Rose Kiln Lane, Reading

Flow Reporting

Table 1 - Two Way Flow Analysis

Time Interval	Average Car/LGV Tue-Thur (Dir AB)	Average Car/LGV Tue-Thur (Dir BA)	Average OGVs Tue-Thur (Dir AB)	Average OGVs Tue-Thur (Dir BA)	Profile all
00:00	19	17	1	0	37
00:15	12	12	0	0	24
00:30	8	8	0	0	16
00:45	9	9	1	0	16
01:00	7	8	0	0	15
01:15	8	8	0	1	16
01:30	7	7	0	0	14
01:45	4	4	0	1	9
02:00	6	8	0	0	15
02:15	5	4	1	0	10
02:30	7	4	0	0	11
02:45	5	4	1	0	9
03:00	7	7	0	0	14
03:15	3	3	1	0	5
03:30	7	4	0	0	11
03:45	8	2	0	1	10
04:00	9	6	0	0	15
04:15	11	1	1	0	12
04:30	13	4	1	2	19
04:45	21	6	0	0	27
05:00	17	7	1	1	25
05:15	38	9	2	0	49
05:30	70	9	3	1	81
05:45	81	14	5	2	101
06:00	74	25	5	1	105
06:15	119	19	4	1	143
06:30	137	26	5	1	172
06:45	198	39	8	2	246
07:00	185	45	8	2	239
07:15	196	57	7	3	263
07:30	176	61	6	2	243
07:45	154	57	3	5	218
08:00	181	70	5	5	259
08:15	142	78	2	3	224
08:30	150	82	6	4	252
08:45	162	60	3	2	227
09:00	155	60	1	3	218
09:15	166	59	10	4	238
09:30	149	78	6	3	235
09:45	167	71	7	6	250
10:00	165	73	6	4	247
10:15	150	98	4	4	256
10:30	140	92	6	3	240
10:45	131	86	7	3	227
11:00	130	81	5	4	219
11:15	137	99	5	4	246
11:30	148	93	4	4	249
11:45	132	105	2	3	242
12:00	139	102	3	3	248
12:15	126	100	8	3	237
12:30	124	106	5	4	239
12:45	119	94	5	4	221
13:00	130	104	3	3	241
13:15	141	93	4	2	240
13:30	138	100	6	2	246
13:45	137	106	5	1	249
14:00	129	117	3	3	252
14:15	138	107	5	3	253
14:30	135	121	6	2	265
14:45	161	111	6	4	282
15:00	140	120	3	2	264
15:15	168	100	7	2	277
15:30	153	100	8	3	263
15:45	138	117	6	2	262
16:00	128	132	4	3	266
16:15	144	107	3	1	255
16:30	138	128	3	1	269
16:45	118	142	4	4	268
17:00	119	153	2	3	278
17:15	124	146	2	2	274
17:30	123	149	3	3	278
17:45	133	139	3	1	275
18:00	127	159	2	2	291
18:15	130	136	1	2	270
18:30	114	147	2	4	267
18:45	126	141	3	2	271
19:00	117	119	4	3	242
19:15	115	113	1	3	232
19:30	116	114	1	1	232
19:45	93	103	2	1	199
20:00	63	108	1	2	194
20:15	78	78	1	1	158
20:30	74	74	1	1	150
20:45	63	64	1	1	128
21:00	76	64	3	1	144
21:15	82	63	0	1	146
21:30	70	59	1	1	130
21:45	65	57	1	2	125
22:00	47	73	2	1	123
22:15	47	58	1	1	107
22:30	37	46	0	1	85
22:45	30	33	1	1	64
23:00	36	38	1	1	76
23:15	25	27	1	1	54
23:30	22	22	1	0	46
23:45	21	17	0	0	38

Fig 1 - Average Two Way Flows Tue-Thur

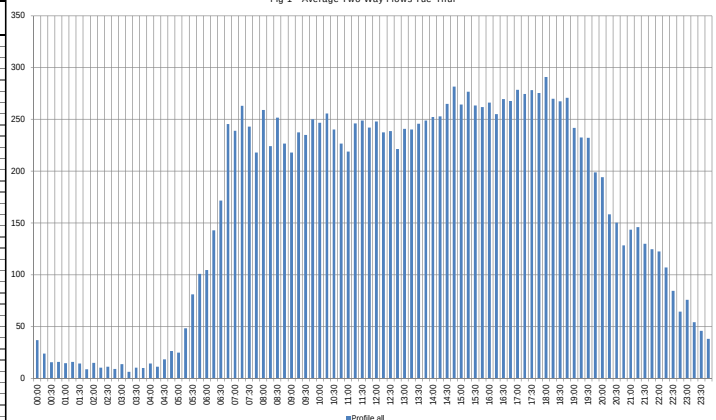
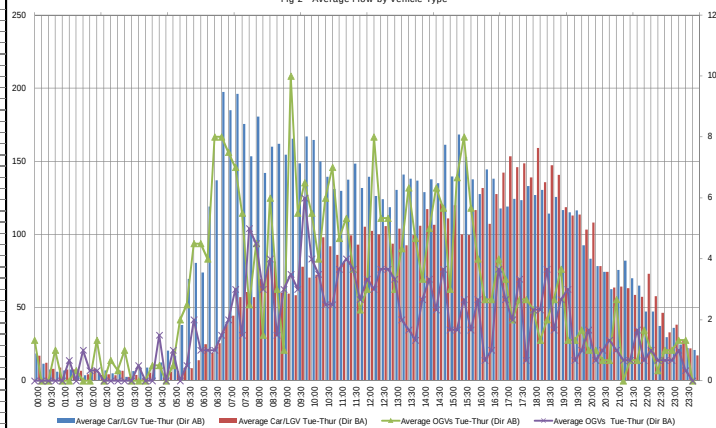


Fig 2 - Average Flow by Vehicle Type



Peak Interval Analysis - Tue-Thurs

Table 2 - Peak Interval Analysis

Peak	Time From	Time To	Two Way Flow
AM Peak	07:15:00	07:30:00	263
Inter-Peak	14:45:00	15:00:00	282
PM Peak	18:00:00	18:15:00	291

Table 3 - Average HGV Content (Excluding PSV, M/C, P/C)

Category	%HGV - (AB)	%HGV - (BA)	%HGV - (All)
All	3.0%	2.5%	2.8%

Fig 3 - Peak Interval Analysis

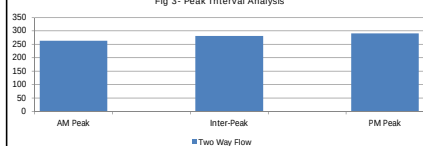
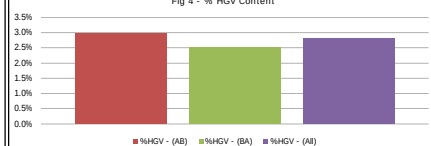


Fig 4 - % HGV Content



Variation Analysis - Week on Week (By Direction)

Intelligent Data Collection Limited

Client: Motion
Project Number: ID03991
Junction Number: Site 1
Flow from: A33 (S) to: Laud Close (N)



Date

Tuesday 19/06/2018

Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)
10:00	*	*	*	*	*	*	*	*	*	*	*	*	-	-
10:15	*	*	*	*	*	*	*	*	*	*	*	*	-	-
10:30	*	*	*	*	*	*	*	*	*	*	*	*	-	-
10:45	*	*	*	*	*	*	*	*	*	*	*	*	-	-
11:00	120	0	0	66	50	2	0	0	0	0	1	1	22.2	28
11:15	147	1	1	84	53	6	0	1	1	0	0	0	24.5	29.6
11:30	143	0	1	92	43	4	0	1	1	0	1	0	21.6	27.8
11:45	148	0	2	80	62	1	0	0	1	0	1	1	22.4	28.6
14:00	139	0	1	74	59	3	1	0	0	0	0	1	23.4	29.2
14:15	130	0	1	83	43	1	0	0	1	0	1	0	25.2	30
14:30	152	0	1	89	55	6	0	0	1	0	0	0	16.6	24.6
14:45	180	0	0	118	55	2	0	1	3	0	0	1	19.4	26.2
15:00	151	0	0	94	51	2	0	0	2	0	1	1	23.6	29.9
15:15	174	0	1	113	53	4	2	0	1	0	0	0	21.4	29.5
15:30	153	0	1	84	60	8	0	0	0	0	0	0	18.8	26.9
15:45	141	0	1	85	51	2	1	1	0	0	0	0	24.3	29.8

Date

Wednesday 20/06/2018

Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)
10:00	178	0	1	106	64	6	0	0	0	0	0	1	22	27.6
10:15	149	0	1	84	59	4	0	0	1	0	0	0	24	27.1
10:30	139	0	1	75	56	3	1	0	1	0	1	1	24.4	29
10:45	151	0	0	91	51	8	0	0	0	0	1	0	20.9	26.6
11:00	145	0	0	90	48	2	1	0	2	0	1	1	21.8	29.2
11:15	137	0	0	72	61	2	2	0	0	0	0	0	21.2	27.6
11:30	146	0	1	77	64	2	1	0	0	0	0	1	24.2	29.3
11:45	127	0	2	78	44	1	0	0	1	0	0	1	24	28.4
14:00	124	0	1	78	44	1	0	0	0	0	0	0	25.4	28.4
14:15	154	0	0	98	52	3	0	0	0	0	0	1	15.5	25.1
14:30	138	0	1	83	46	5	0	0	2	0	1	0	22.6	28.4
14:45	170	0	0	110	53	4	1	1	0	0	0	1	19.6	26.8
15:00	157	0	0	98	57	2	0	0	0	0	0	0	21.3	29.1
15:15	175	1	1	103	65	4	0	0	1	0	0	0	21.3	27.8
15:30	183	0	2	108	61	8	0	0	2	0	0	2	17.3	23.3
15:45	162	0	1	90	64	5	1	1	0	0	0	0	22	28.1

Date

Thursday 21/06/2018

Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)
10:00	168	1	2	101	58	2	0	1	1	0	1	1	16.3	23.5
10:15	161	0	1	97	60	0	1	0	2	0	0	0	21.1	27.4
10:30	156	1	0	98	50	5	0	0	1	0	0	1	23	29.1
10:45	128	1	0	81	39	4	1	0	0	0	0	2	21.6	27.6
11:00	141	0	1	85	50	4	0	0	1	0	0	0	23	30.1
11:15	146	0	0	91	51	3	1	0	0	0	0	0	22.7	29.2
11:30	172	0	1	109	60	1	0	0	0	0	0	1	23	28.6
11:45	137	0	3	78	53	2	0	0	0	0	0	1	23.1	29.6
14:00	137	0	0	86	46	4	0	0	1	0	0	0	23.4	28.9
14:15	147	0	1	85	52	5	0	1	3	0	0	0	20.4	26.7
14:30	137	0	0	94	38	2	0	0	2	0	0	1	20.4	27.5
14:45	155	0	1	92	56	4	0	0	1	0	0	1	19.5	28.3
15:00	124	0	1	72	47	1	0	0	1	0	0	2	17.2	26.2
15:15	179	0	0	104	67	6	0	0	2	0	0	0	23.2	29.5
15:30	152	0	0	104	42	2	0	0	4	0	0	0	24.3	29.9
15:45	130	0	0	57	66	4	1	0	1	0	0	1	23.2	29.3

Date Friday 22/06/2018

Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)
10:00	154	0	3	94	47	7	2	0	0	0	0	1	23.5	31.3
10:15	135	0	2	71	56	5	0	0	1	0	0	0	23.9	30.1
10:30	140	0	0	86	50	3	0	0	0	0	1	0	22.3	27.8
10:45	144	0	1	79	55	3	1	0	2	0	0	3	24.8	30.4
11:00	154	0	0	85	61	3	2	0	1	0	1	1	15.8	23.1
11:15	150	0	0	95	49	0	0	1	1	0	2	2	12.9	18.6
11:30	182	0	0	112	66	3	0	0	1	0	0	0	14.8	20.7
11:45	177	0	1	123	48	3	1	0	1	0	0	0	13.9	20.3
14:00	145	0	1	88	53	2	0	0	0	0	0	1	23.3	31.1
14:15	128	0	1	76	49	1	0	0	1	0	0	0	19.7	28.4
14:30	151	1	0	97	46	5	0	0	1	0	1	0	16.2	22
14:45	159	0	1	92	62	2	0	0	1	0	0	1	20.2	27.2
15:00	144	0	1	88	51	3	0	1	0	0	0	0	21.9	29.4
15:15	181	0	1	98	78	2	0	0	2	0	0	0	20.1	27.2
15:30	167	0	0	106	50	4	0	0	5	0	0	2	17	23.8
15:45	179	0	1	100	71	6	0	0	1	0	0	0	24.2	29.5

Date

Monday 25/06/2018

Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)
10:00	147	0	0	84	58	4	0	0	1	0	0	0	23.6	29.5
10:15	167	0	0	99	62	6	0	0	0	0	0	0	23.8	30.5
10:30	146	2	1	69	66	7	1	0	0	0	0	0	19.2	28
10:45	130	0	0	75	51	3	0	0	0	0	0	1	24.3	29
11:00	130	0	0	81	44	4	0	0	0	0	0	1	25.4	30.2
11:15	144	0	0	84	57	2	1	0	0	0	0	0	26.1	31.1
11:30	137	0	4	76	51	3	0	0	1	0	1	1	24.6	29.6
11:45	143	0	0	79	58	5	0	0	0	0	0	1	23.4	27.7
14:00	141	0	3	82	49	3	0	0	2	0	0	2	22.8	29.6
14:15	129	0	0	75	49	3	0	0	2	0	0	0	24.9	30.7
14:30	141	0	0	85	50	2	0	0	2	0	1	1	17.7	23.2
14:45	144	0	0	91	48	4	0	0	1	0	0	0	16.8	26.4
15:00	134	0	2	78	48	4	0	0	1	0	0	1	23.3	29.4
15:15	142	0	0	78	61	2	0	0	1	0	0	0	23.8	29.2
15:30	165	0	1	92	67	4	0	0	0	0	0	1	20.2	27.1
15:45	163	0	1	94	59	8	0	0	0	0	0	1	20.1	28

Intelligent Data Collection Limited

Client: Motion
Project Number: ID03991
Junction Number: Site 1
Flow from: Laud Close (N) to: A33 (S)



Tuesday 19/06/2018

[illegible]

Wednesday 20/06/2018

[illegible]

Date

Thursday 21/06/2018

Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)
10:00	75	0	2	37	32	4	0	0	0	0	0	0	28	31.5
10:15	81	0	0	44	35	1	0	0	0	0	1	0	29.3	32.4
10:30	94	0	2	51	36	2	2	0	0	0	0	1	27.3	30.9
10:45	103	0	0	57	41	4	0	1	0	0	0	0	29.8	33.2
11:00	100	0	0	53	43	4	0	0	0	0	0	0	28.7	32.8
11:15	94	0	1	53	37	3	0	0	0	0	0	0	29.5	33.1
11:30	94	0	0	52	38	4	0	0	0	0	0	0	28.4	32.9
11:45	107	0	0	65	40	1	1	0	0	0	0	0	27.8	31.1
14:00	120	2	0	64	51	3	0	0	0	0	0	0	28.3	31.6
14:15	95	0	1	53	36	3	1	1	0	0	0	0	27.6	33.1
14:30	95	1	0	59	35	0	0	0	0	0	0	0	28.2	32.1
14:45	126	0	0	76	46	2	1	0	0	0	1	0	26.7	31.5
15:00	137	1	1	80	54	1	0	0	0	0	0	0	27	30.2
15:15	95	0	0	54	39	2	0	0	0	0	0	0	29.2	32.9
15:30	116	0	2	64	45	2	1	1	0	0	0	1	27.9	32.3
15:45	116	0	2	66	45	2	1	0	0	0	0	0	28.6	33.5

Monday 25/06/2018

Date	Wednesday 29/06/2016																	
Time	Total	Cycle	Motor Cycle	Car	LGV	2 Axled Rigid	3 Axled Rigid	4 Axled Rigid	3 Axled Artic	4 Axled Artic	5+ Axled Artic	Bus	Mean Speed (Mph)	85%ile Speed (Mph)				
10:00	85	0	0	36	44	2	0	0	1	0	0	2	29.9	33.6				
10:15	63	0	0	37	25	1	0	0	0	0	0	0	30.6	34.9				
10:30	71	0	0	32	35	2	1	0	1	0	0	0	28	32.7				
10:45	118	0	0	59	55	4	0	0	0	0	0	0	27.8	32.4				
11:00	92	0	0	53	37	2	0	0	2	0	0	0	29.0	33.2				
11:15	104	0	0	47	56	0	0	0	1	0	0	0	28.7	32				
11:30	114	0	0	65	46	3	0	0	0	0	0	0	28.1	31.5				
11:45	104	0	0	51	48	4	0	0	0	0	0	1	27.6	32.8				
14:00	118	0	1	66	50	1	0	0	0	0	0	0	28.4	33				
14:15	132	3	1	60	63	4	0	1	0	0	0	0	27.5	31.6				
14:30	103	0	1	52	44	3	1	0	1	0	0	1	27	32.1				
14:45	118	0	1	63	45	0	0	0	0	0	0	0	27.8	30.9				
15:00	129	0	1	82	45	1	0	0	0	0	0	0	28.7	32.8				
15:15	126	0	0	76	48	2	0	0	0	0	0	0	29.4	34				
15:30	123	0	1	62	56	2	2	0	0	0	0	0	29	32.7				
15:45	132	0	2	65	64	1	0	0	0	0	0	0	27.2	30				

Intelligent Data - Automatic Traffic Count Output



Period Commencing: 18/06/2018

Road Name: Rose Kiln Lane

Flow from : A33 (S)

Vehicle Classification: All Vehicles

to: Laud Close (N)

Prepared by: Richard Collins

Checked by: David Collinge

Hour Ending	Monday 18/06/2018	Tuesday 19/06/2018	Wednesday 20/06/2018	Thursday 21/06/2018	Friday 22/06/2018	Saturday 23/06/2018	Sunday 24/06/2018	Monday 25/06/2018	Tuesday 26/06/2018	Wednesday 27/06/2018	Thursday 28/06/2018	Friday 29/06/2018	Saturday 30/06/2018	Sunday 01/07/2018
01:00	*	*	48	49	55	105	102	49	45	*	*	*	*	*
02:00	*	*	17	36	31	44	50	23	26	*	*	*	*	*
03:00	*	*	32	24	29	38	42	23	20	*	*	*	*	*
04:00	*	*	20	35	25	41	36	33	*	*	*	*	*	*
05:00	*	*	56	53	65	50	49	74	*	*	*	*	*	*
06:00	*	*	226	222	207	121	62	183	*	*	*	*	*	*
07:00	*	*	576	541	513	208	157	511	*	*	*	*	*	*
08:00	*	*	703	781	702	337	218	714	*	*	*	*	*	*
09:00	*	*	714	617	700	519	281	653	*	*	*	*	*	*
10:00	*	*	641	684	623	590	423	647	*	*	*	*	*	*
11:00	*	*	617	613	573	614	626	590	*	*	*	*	*	*
12:00	*	558	555	596	663	636	647	554	*	*	*	*	*	*
13:00	*	480	556	564	640	467	642	586	*	*	*	*	*	*
14:00	*	571	557	582	596	577	542	593	*	*	*	*	*	*
15:00	*	601	586	576	583	478	475	555	*	*	*	*	*	*
16:00	*	619	677	585	671	634	554	604	*	*	*	*	*	*
17:00	*	543	556	544	585	590	404	545	*	*	*	*	*	*
18:00	*	513	509	526	466	518	396	539	*	*	*	*	*	*
19:00	*	489	511	530	567	508	439	529	*	*	*	*	*	*
20:00	*	419	495	449	491	403	306	411	*	*	*	*	*	*
21:00	*	259	331	326	331	261	314	317	*	*	*	*	*	*
22:00	*	260	318	322	299	303	271	283	*	*	*	*	*	*
23:00	*	156	172	174	220	200	159	167	*	*	*	*	*	*
00:00	*	89	131	109	167	191	91	81	*	*	*	*	*	*
Summary Data														
0700-1900	0	4374	7182	7198	7369	6468	5647	7109	0	0	0	0	0	0
0600-2200	0	5312	8902	8836	9003	7643	6695	8631	0	0	0	0	0	0
0600-0000	0	5557	9205	9119	9390	8034	6945	8879	0	0	0	0	0	0
0000-0000	0	5557	9604	9538	9802	8433	7286	9264	91	0	0	0	0	0
0700-1000	0	0	2058	2082	2025	1446	922	2014	0	0	0	0	0	0
1600-1900	0	1545	1576	1600	1618	1616	1239	1613	0	0	0	0	0	0
Peak Hour Analysis														
07:00-10:00	0	0	714	781	702	590	423	714	0	0	0	0	0	0
10:00-16:00	0	619	677	613	671	636	647	604	0	0	0	0	0	0
16:00-19:00	0	543	556	544	585	590	439	545	0	0	0	0	0	0

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed

Intelligent Data - Automatic Traffic Count Output



Period Commencing: 18/06/2018

Road Name: Rose Kiln Lane

Flow from : Laud Close (N)

Vehicle Classification: All Vehicles

to: A33 (S)

Prepared by: Richard Collins

Checked by: David Collinge

Hour Ending	Monday 18/06/2018	Tuesday 19/06/2018	Wednesday 20/06/2018	Thursday 21/06/2018	Friday 22/06/2018	Saturday 23/06/2018	Sunday 24/06/2018	Monday 25/06/2018	Tuesday 26/06/2018	Wednesday 27/06/2018	Thursday 28/06/2018	Friday 29/06/2018	Saturday 30/06/2018	Sunday 01/07/2018
01:00	*	*	58	45	43	80	127	47	40	*	*	*	*	*
02:00	*	*	26	32	28	50	59	22	26	*	*	*	*	*
03:00	*	*	22	26	18	31	29	21	19	*	*	*	*	*
04:00	*	*	12	23	15	28	28	18	*	*	*	*	*	*
05:00	*	*	17	20	21	32	30	23	*	*	*	*	*	*
06:00	*	*	45	40	50	34	28	32	*	*	*	*	*	*
07:00	*	*	117	115	112	94	63	118	*	*	*	*	*	*
08:00	*	*	232	240	229	174	67	245	*	*	*	*	*	*
09:00	*	*	312	298	300	246	104	297	*	*	*	*	*	*
10:00	*	*	267	300	259	326	225	291	*	*	*	*	*	*
11:00	*	*	379	353	403	356	396	337	*	*	*	*	*	*
12:00	*	395	396	395	354	441	393	414	*	*	*	*	*	*
13:00	*	386	462	416	399	486	474	413	*	*	*	*	*	*
14:00	*	437	415	388	405	430	420	442	*	*	*	*	*	*
15:00	*	496	487	436	466	450	376	471	*	*	*	*	*	*
16:00	*	430	453	464	451	485	406	510	*	*	*	*	*	*
17:00	*	503	580	493	520	479	393	526	*	*	*	*	*	*
18:00	*	592	629	588	536	477	333	619	*	*	*	*	*	*
19:00	*	657	586	562	578	444	317	596	*	*	*	*	*	*
20:00	*	450	459	482	532	341	266	475	*	*	*	*	*	*
21:00	*	304	344	350	336	257	241	335	*	*	*	*	*	*
22:00	*	250	253	255	220	235	219	227	*	*	*	*	*	*
23:00	*	196	229	230	189	223	200	200	*	*	*	*	*	*
00:00	*	76	125	126	119	169	92	83	*	*	*	*	*	*
Summary Data														
0700-1900	0	3896	5198	4933	4900	4794	3904	5161	0	0	0	0	0	0
0600-2200	0	4900	6371	6135	6100	5721	4693	6316	0	0	0	0	0	0
0600-0000	0	5172	6725	6491	6408	6113	4985	6599	0	0	0	0	0	0
0000-0000	0	5172	6905	6677	6583	6368	5286	6762	85	0	0	0	0	0
0700-1000	0	0	811	838	788	746	396	833	0	0	0	0	0	0
1600-1900	0	1752	1795	1643	1634	1400	1043	1741	0	0	0	0	0	0
Peak Hour Analysis														
07:00-10:00	0	0	312	300	300	326	225	297	0	0	0	0	0	0
10:00-16:00	0	496	487	464	466	486	474	510	0	0	0	0	0	0
16:00-19:00	0	657	629	588	578	479	393	619	0	0	0	0	0	0

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed

Intelligent Data - Automatic Traffic Count Output

Period Commencing: 18/06/2018
Road Name: Rose Kiln Lane

Prepared by: Richard Collins
Checked by: David Collinge



Speed Summary Data

A-B Direction

Date	Mean Speed (mph)	85%ile Speed (mph)
18/06/2018	-	-
19/06/2018	23.1	30.2
20/06/2018	22.1	29.8
21/06/2018	22.6	30.1
22/06/2018	21.8	29.9
23/06/2018	22.2	30.8
24/06/2018	26.1	32.4
25/06/2018	22.6	30.1
26/06/2018	-	-
27/06/2018	-	-
28/06/2018	-	-
29/06/2018	-	-
30/06/2018	-	-
01/07/2018	-	-

B-A Direction

Date	Mean Speed (mph)	85%ile Speed (mph)
18/06/2018	-	-
19/06/2018	28.0	32.3
20/06/2018	28.2	32.5
21/06/2018	28.5	32.9
22/06/2018	27.6	32.6
23/06/2018	28.8	33.2
24/06/2018	30.2	34.5
25/06/2018	28.3	32.8
26/06/2018	-	-
27/06/2018	-	-
28/06/2018	-	-
29/06/2018	-	-
30/06/2018	-	-
01/07/2018	-	-

These speeds represent those which are between 1%-10% above the posted speed limit

These speeds represent those which are between 10%-20% above the posted speed limit

These speeds represent those which are over 20% above the posted speed limit

MOTION

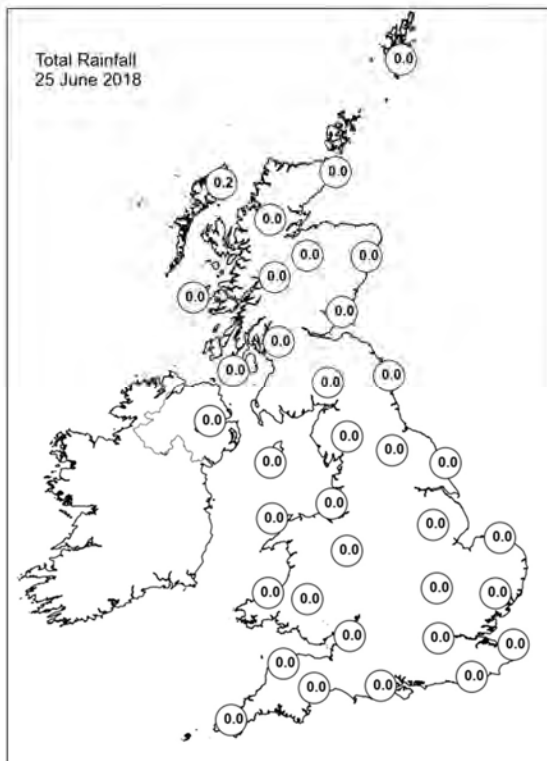
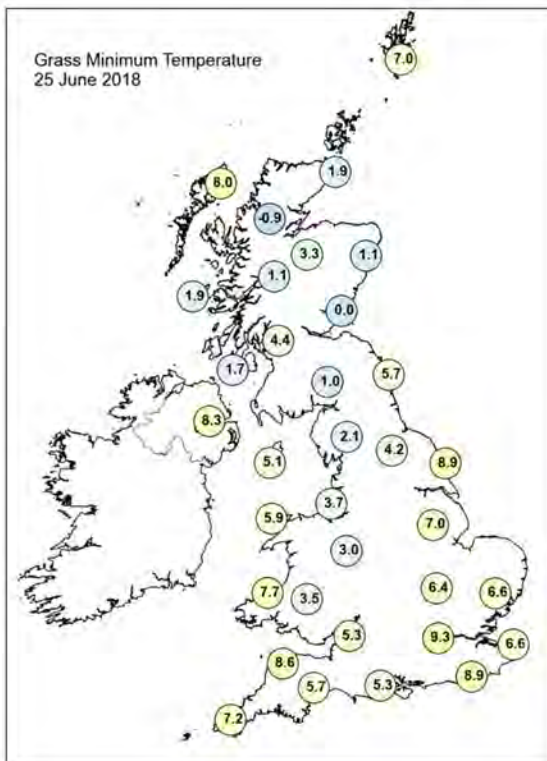
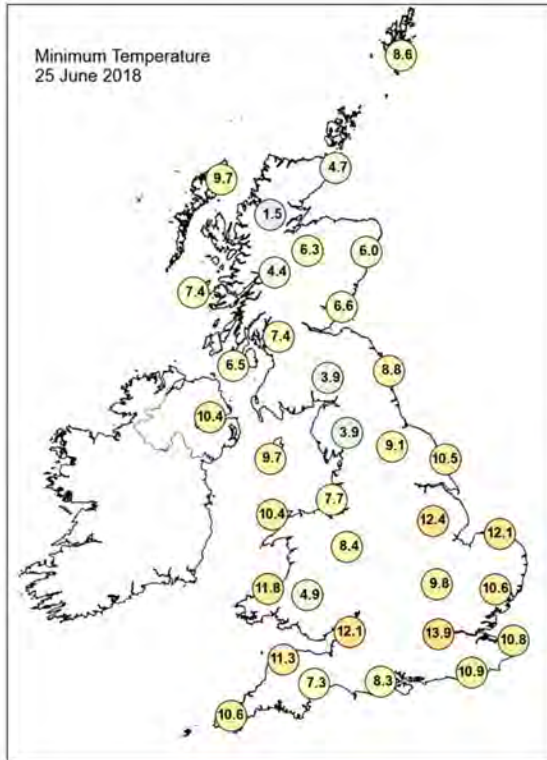
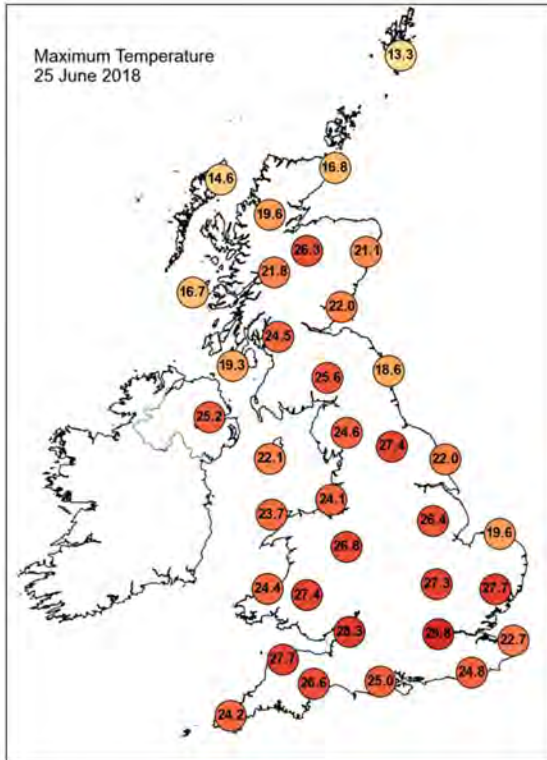
Recorded Speeds Summary

Direction	Average Speed	85th Percentile
Northbound	22.9	30.5
Southbound	28.5	33.0

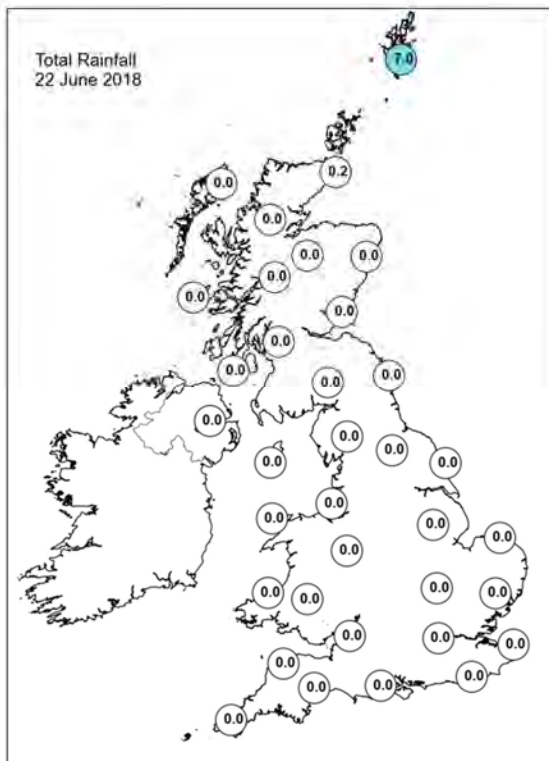
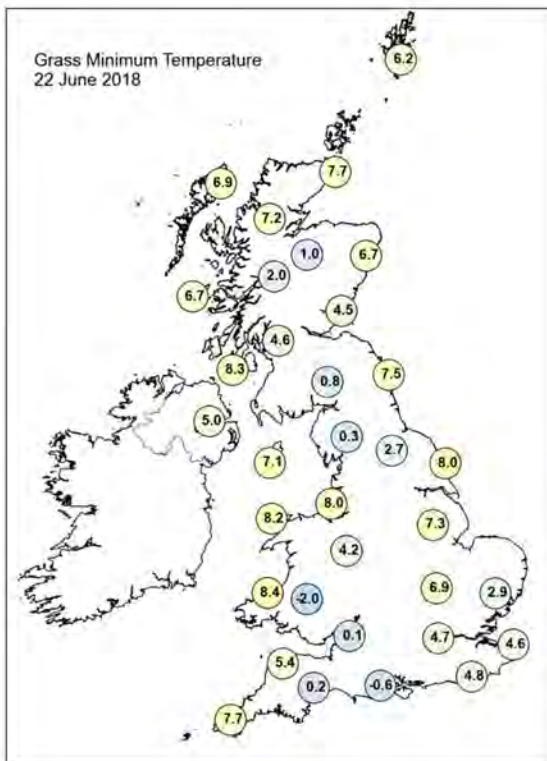
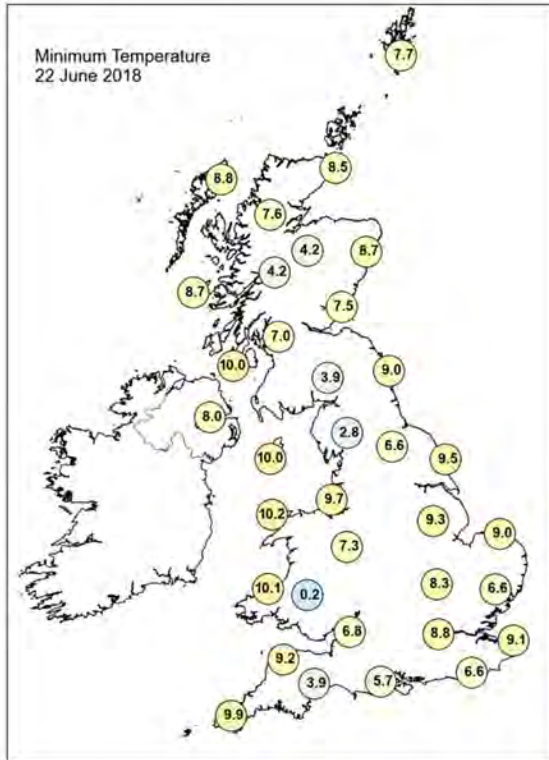
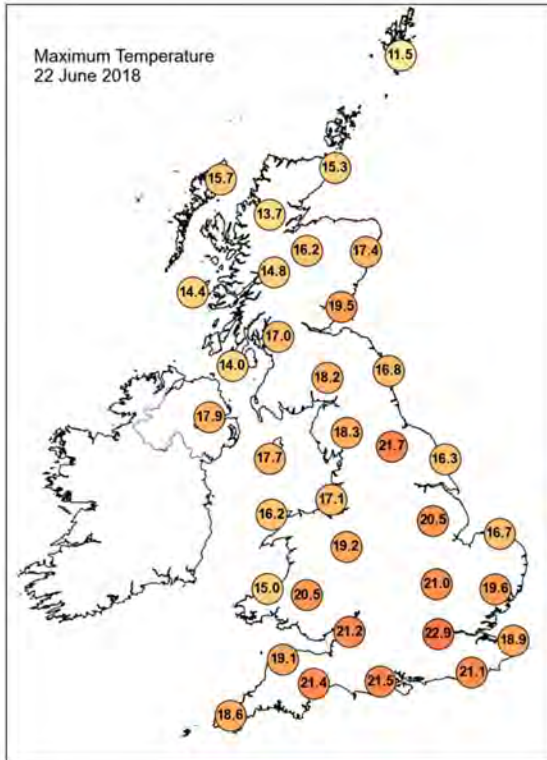
Appendix G

Met Office Weather Reports

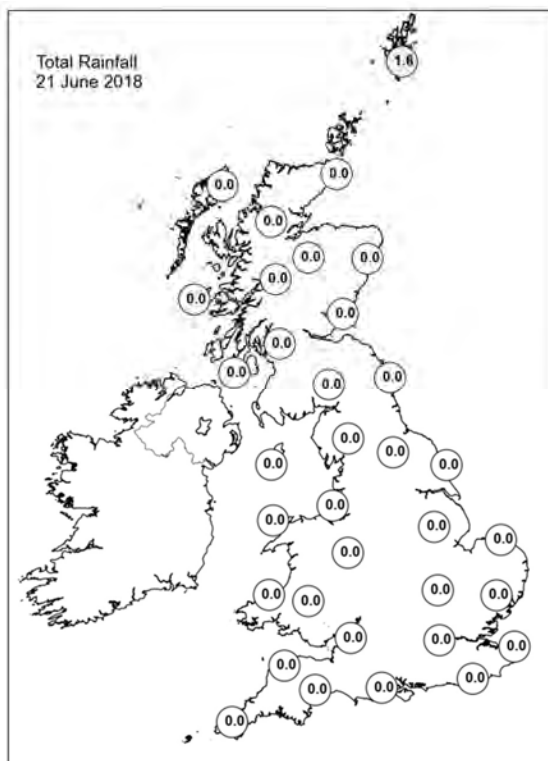
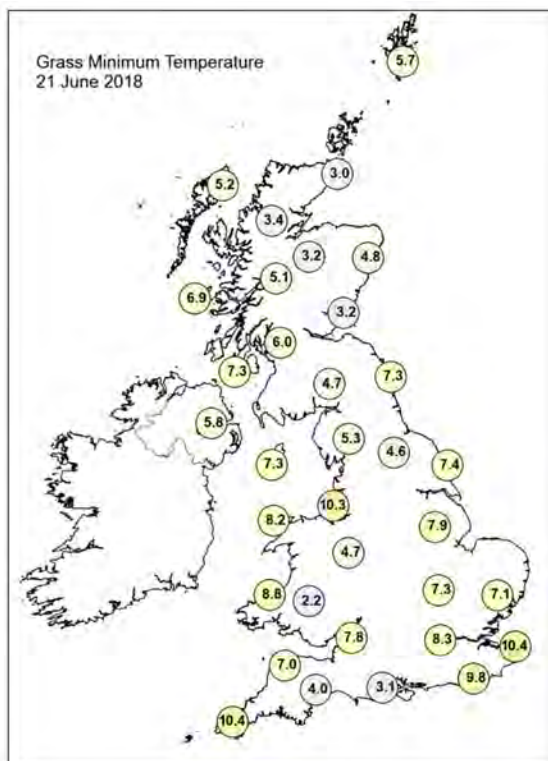
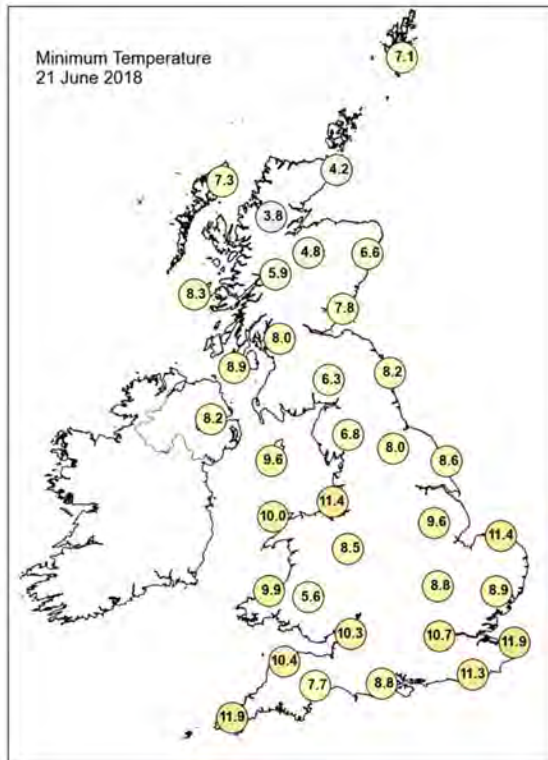
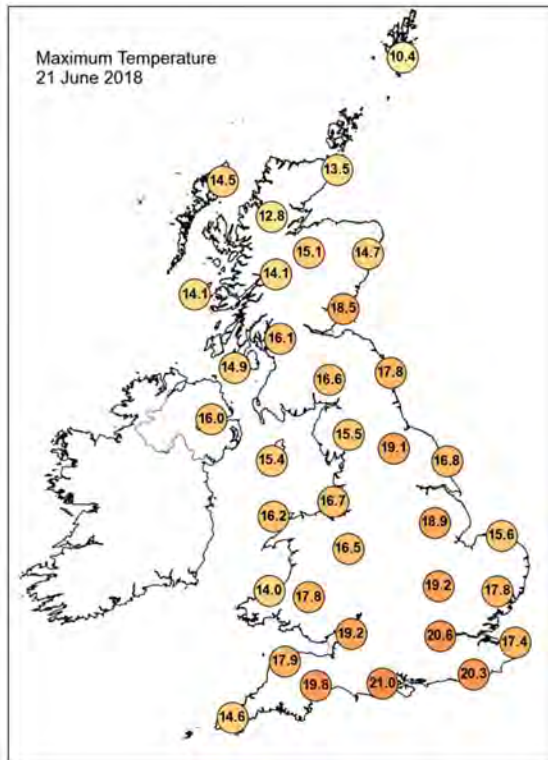
Daily Weather Summary for Monday 25 June 2018



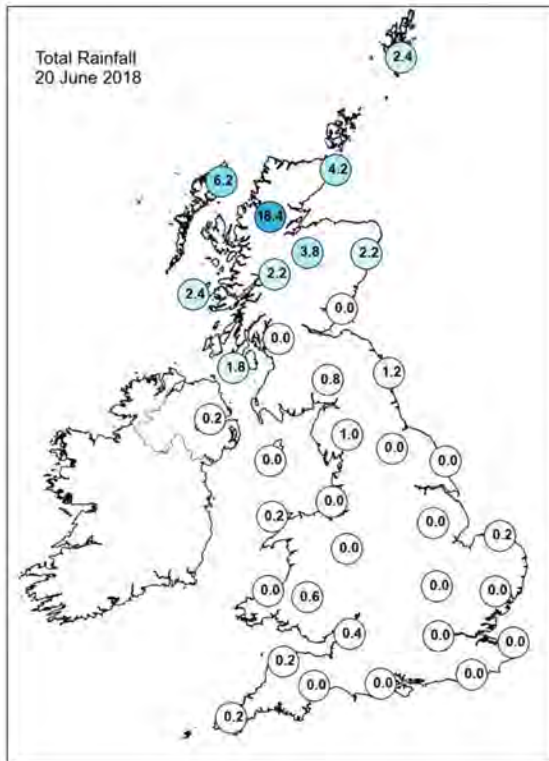
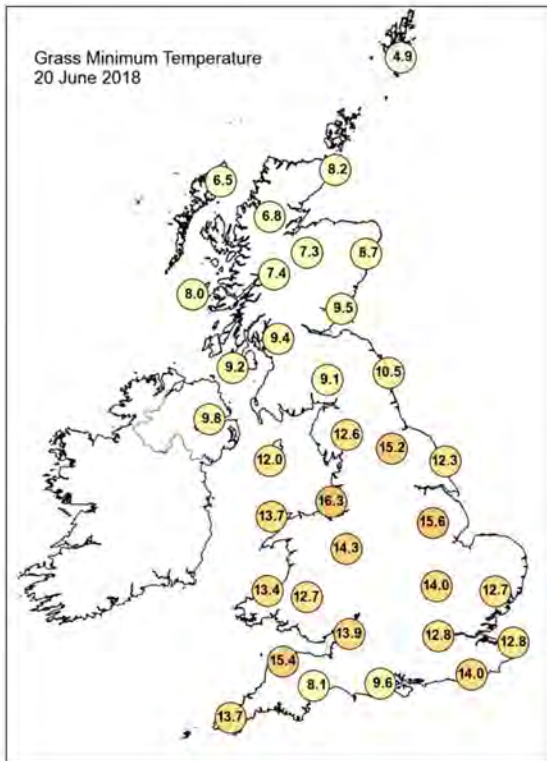
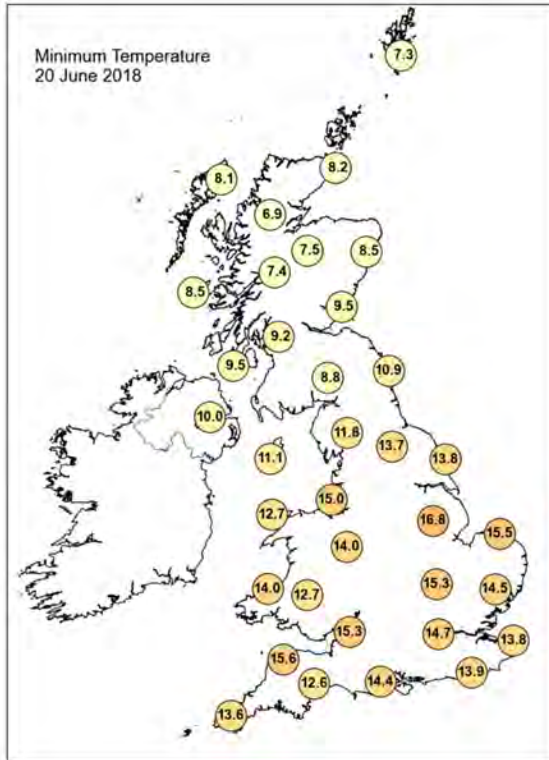
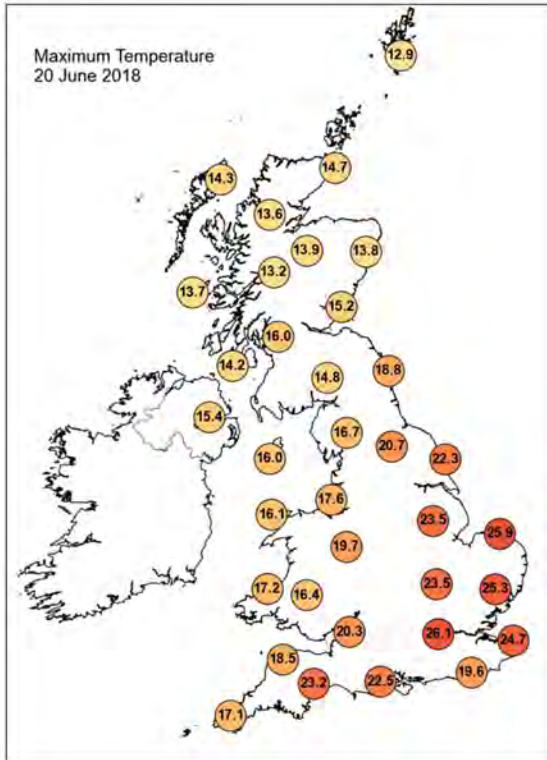
Daily Weather Summary for Friday 22 June 2018



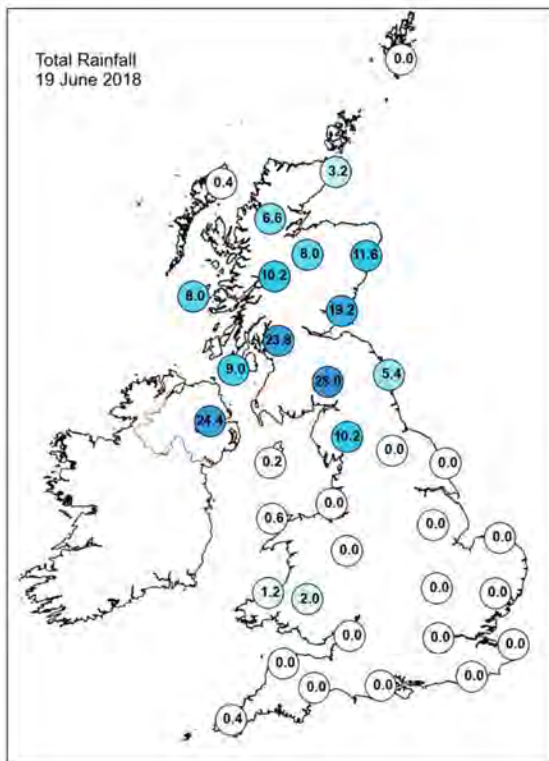
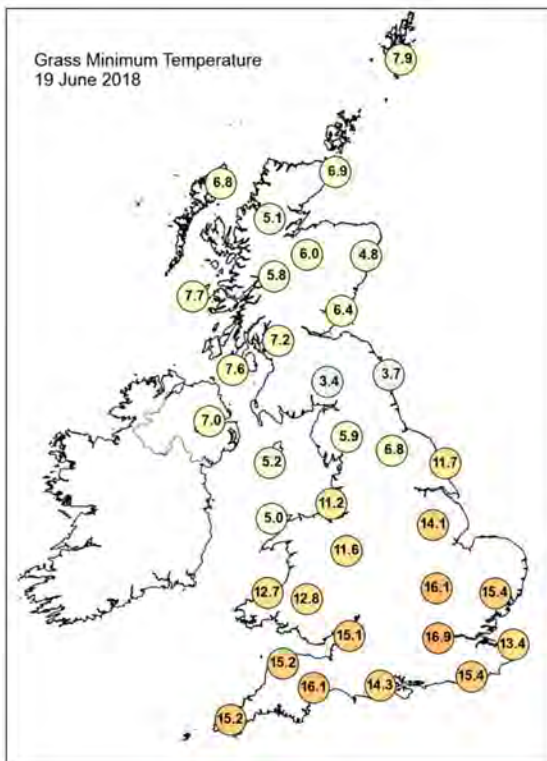
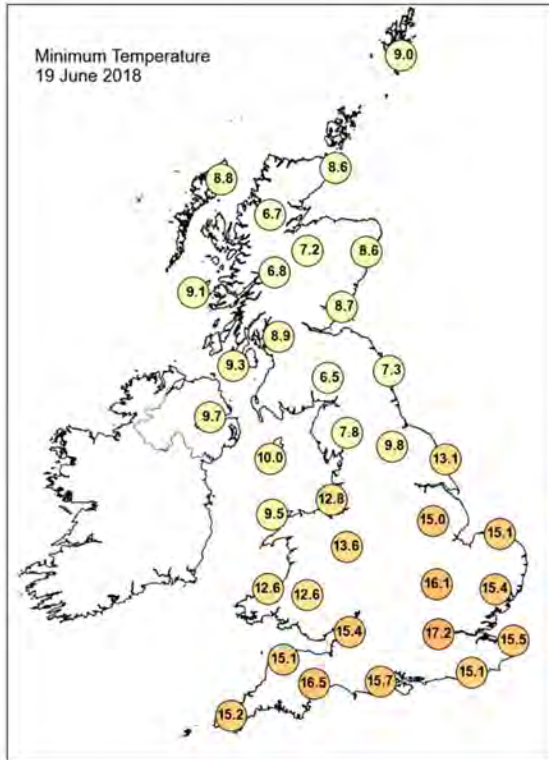
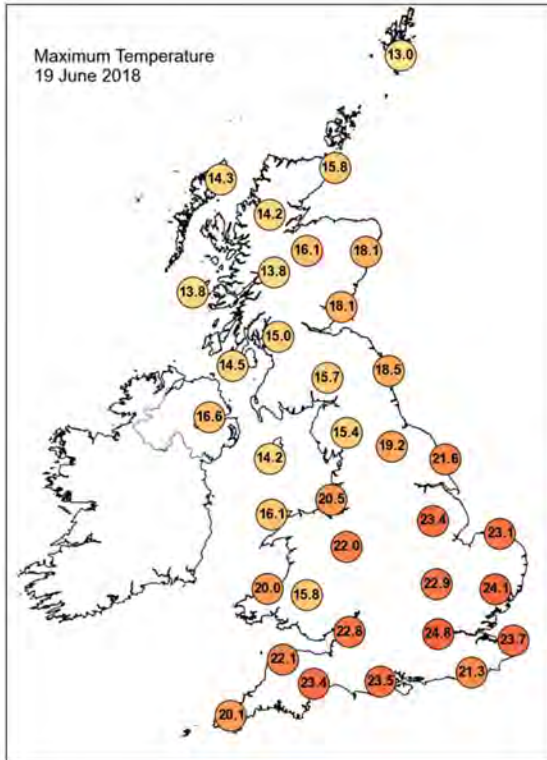
Daily Weather Summary for Thursday 21 June 2018



Daily Weather Summary for Wednesday 20 June 2018



Daily Weather Summary for Tuesday 19 June 2018



Appendix H

Visibility Splay Calculations

Visibility Splay Calculator - Reading Link Retail Park - Drive Thru

Northbound

Design Speed	mph
Recorded 85th Percentile Speed	28
Wet Weather 85th Percentile Speed	25.51

Manual For Streets

Criteria	Value
Speed (miles per hour)	25.51
Speed (metres per second)	11.40
Perception-reaction time (seconds)	1.5
Deceleration rate (g)	0.45
Gradient (%)	0
Deceleration rate including Gradient (m/s ²)	4.4145
SSD (m)	31.83
SSD asjusted for bonnet length (m)	34.23

DMRB

Criteria	Value
Speed (miles per hour)	25.51
Speed (metres per second)	11.40
Perception-reaction time (seconds)	2
Deceleration rate (g)	0.25
Gradient (%)	0
Deceleration rate including Gradient (m/s ²)	2.4525
SSD (m)	49.32
SSD asjusted for bonnet length (m)	51.72

Southbound

Design Speed	mph
Recorded 85th Percentile Speed	32
Wet Weather 85th Percentile Speed	29.51

Manual For Streets

Criteria	Value
Speed (miles per hour)	29.51
Speed (metres per second)	13.19
Perception-reaction time (seconds)	1.5
Deceleration rate (g)	0.45
Gradient (%)	0
Deceleration rate including Gradient (m/s ²)	4.4145
SSD (m)	39.50
SSD asjusted for bonnet length (m)	41.90

DMRB

Criteria	Value
Speed (miles per hour)	29.51
Speed (metres per second)	13.19
Perception-reaction time (seconds)	2
Deceleration rate (g)	0.25
Gradient (%)	0
Deceleration rate including Gradient (m/s ²)	2.4525
SSD (m)	61.86
SSD asjusted for bonnet length (m)	64.26

m m

mm

0.25g = 2.45 m/s², 0.375g = 3.677m/s²
 0.45g = 4.41m/s²

(enter either '+' or '-' or '0' if level)

0.25g = 2.45 m/s², 0.375g = 3.677m/s²
 0.45g = 4.41m/s²

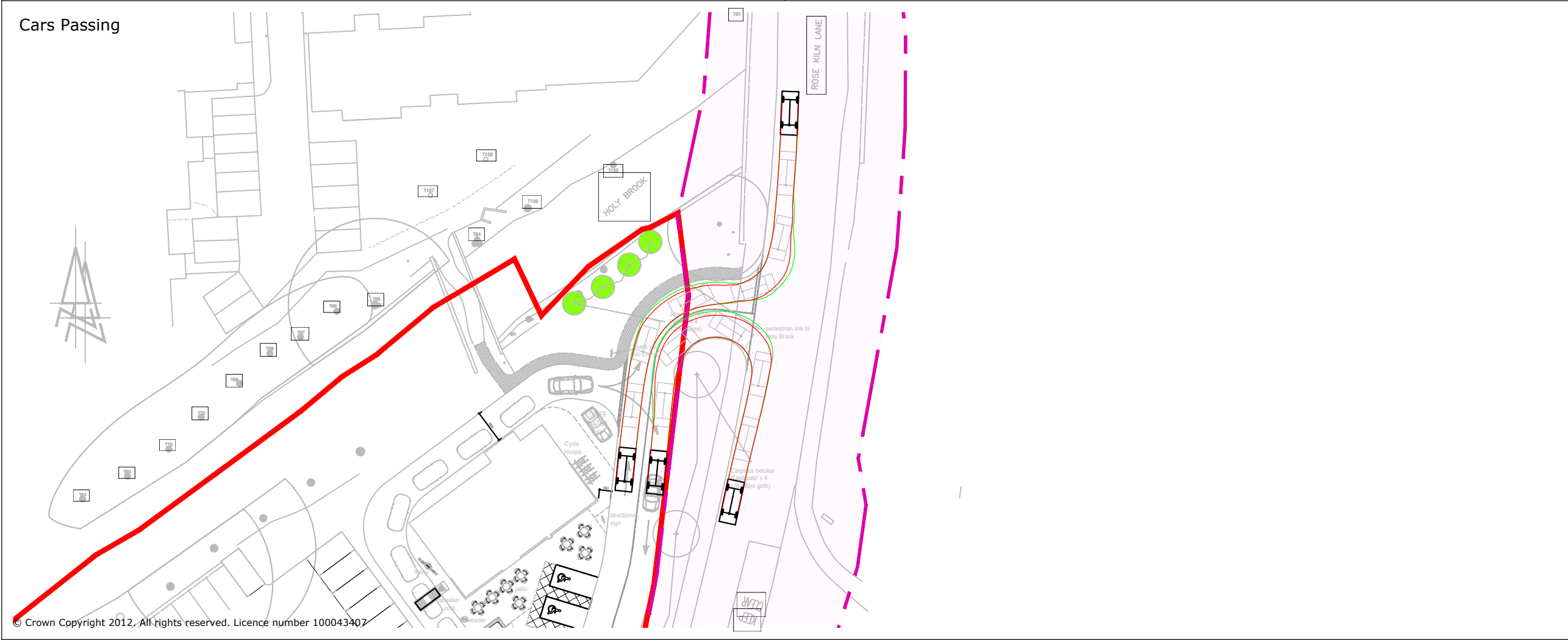
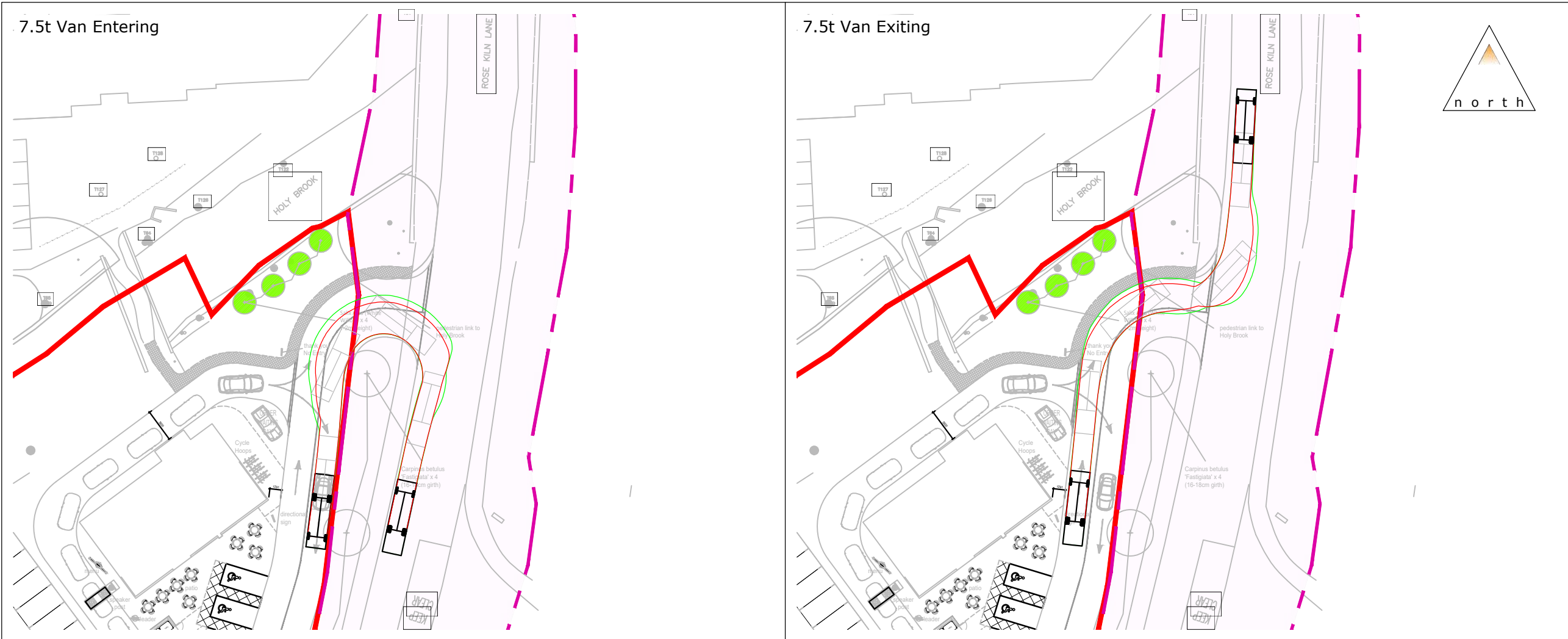
(enter either '+' or '-' or '0' if level)

Appendix I

Visibility Splay Drawing

Appendix K

Vehicle Swept Path Analysis



Rev: A
Description: New layout
Date: 04/10/2018
Rev By: CM
Chk'd: CS

Rev: B
Description: Revised layout
Date: 24/10/2018
Rev By: CM
Chk'd: CS

Legend

Site Boundary

Highway Boundary

Vehicle Specification

7.5t Box Van

Overall Length

Overall Width

Overall Body Height

Min Body Ground Clearance

Track Width

Lock-to-lock time

Curb to Curb Turning Radius

8.010m

2.100m

3.556m

0.351m

2.064m

4.00s

7.400m

Estate Car (2006)

Overall Length

Overall Width

Overall Body Height

Min Body Ground Clearance

Max Track Width

Lock-to-lock time

Curb to Curb Turning Radius

4.710m

1.804m

1.442m

0.207m

1.756m

4.00s

5.950m

9 Greyfriars, Reading, Berkshire, RG1 1NU

T: 0118 206 2930

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Project:

Reading Link Retail Park, Drive Thru

Title:

Delivery Vehicle Swept Path Analysis

Client:

Sorbon Estates

Drawing Status:

For Information

Scale:

1:500 (@ A3)

Date:

04/10/2018

Drawn:

CM

Checked:

CS

Approved:

CS

Drawing:

1804032-TK01

Revision:

B

Appendix L

MTC Existing Retail Path Entrance

Manual Traffic Count, Existing Entrance to Reading Link Retail Park

Tuesday 2nd October, Weather - Dry and Sunny

Time period 8am to 9am

In	Out		Total Number of Vehicles
	Rose Kiln Lane	A33 (N and S)	
31	4 (36%)	7 (64%)	42

Time Period 5pm to 6pm

In	Out		Total Number of Vehicles
	Rose Kiln Lane	A33 (N and S)	
119	55 (39%)	86 (61%)	260

Rose Kiln Lane Northbound Vehicle Flows

Day	Time	
	8am to 9am	5pm to 6pm
Wed 20/6/18	714	509
Thur 21/6/18	617	526
Fri 22/6/18	700	466
Mon 25/6/18	653	539
Average flow	671	510

Rose Kiln Lane Southbound Vehicle Flows

Day	Time	
	8am to 9am	5pm to 6pm
Wed 20/6/18	312	629
Thur 21/6/18	298	588
Fri 22/6/18	300	536
Mon 25/6/18	297	619
Average flow	302	593

Appendix M

Census Data

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

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population
units
date
place of work

All usual residents aged 16 and over in employment the week before the census
Persons
2011
E02003401 : Reading 013 (2011 super output area - middle layer)

usual residence : 2011 super output area - middle layer	All categories: Method of travel to work (2001 specification)	Driving a car or van		A33 North	A33 South	Rose Kiln Lane
E02003389 : Reading 001: Caversham Park	20	16		16		
E02003390 : Reading 002: Caversham Heights	17	13		13		
E02003391 : Reading 003 : Emmer Green	27	18		18		
E02003392 : Reading 004 : Lower Caversham	20	8		8		
E02003393 : Reading 005 : Kentwood	51	37				37
E02003394 : Reading 006 : Norcot	40	23				23
E02003395 : Reading 007 : Tilehurst	60	23				23
E02003396 : Reading 008 : Tilehurst Road (W. Reading)	93	42				42
E02003397 : Reading 009 : Medway	48	29				29
E02003398 : Reading 010: New Town	56	16		16		
E02003399 : Reading 011: Town Centre (Abbey)	66	13		13		
E02003400 : Reading 012 : Whiteknights	22	10			10	
E02003401 : Reading 013 : Coley Park	141	45				45
E02003402 : Reading 014 : The Mount	32	7				7
E02003403 : Reading 015 :Southcote	68	31				31
E02003404 : Reading 016 : shinfield Road	34	12			12	
E02003405 : Reading 017 : Whitley / Green Park	40	22			22	
E02003406 : Reading 018 :Whitley Wood	42	22			22	
E02003439 : Wokingham 001 : Wargrave	10	7		7		
E02003440 : Wokingham 002 :Twyford / Charvil	12	8		8		
E02003441 : Wokingham 003 : Sonning / Sonning Borders /North Woodley	12	7		7		
E02003442 : Wokingham 004 : Hurst / Woodley Airfield	17	15		15		
E02003443 : Wokingham 005 : Central Woodley	16	13			13	
E02003444 : Wokingham 006 : Earley	22	14			14	
E02003445 : Wokingham 007 : Wooldey (South Lake)	18	14			14	
E02003446 : Wokingham 008 : Maiden Earlegh	23	20			20	
E02003447 : Wokingham 009 : Winnersh	17	14		14		
E02003448 : Wokingham 010 : South Hurst / Emmbrook	10	8		8		
E02003449 : Wokingham 011 : Lower Earley	28	24			24	
E02003450 : Wokingham 012 : Shinfield	38	27			27	
E02003451 : Wokingham 013 : Wokingham	5	3			3	
E02003452 : Wokingham 014 : Beanoak	1	1			1	
E02003453 : Wokingham 015 : Barkham	9	8			8	
E02003454 : Wokingham 016 : Woosehill	6	6			6	
E02003455 : Wokingham 017 : Three Mile Cross / Swallowfield / Spencers Wood	13	9			9	
E02003456 : Wokingham 018 : Arborfield	10	8			8	
E02003457 : Wokingham 019 : Finchampstead	8	8			8	
E02003458 : Wokingham 020 : Wokingham Without	3	3			3	
E02003367 : West Berkshire 001 : East Ilsey	1	1			1	
E02003368 : West Berkshire 002 : Lambourne	3	3			3	
E02003369 : West Berkshire 003: Pangbourne / Streatley	8	7				7
E02003370 : West Berkshire 004 : Purley	36	35			35	
E02003371 : West Berkshire 005 : Tilehurst	31	24				24
E02003372 : West Berkshire 006 : calcot	45	37				37
E02003373 : West Berkshire 007 : Hermitage	7	7			7	
E02003374 : West Berkshire 008 : Beansheaf	44	30				30
E02003375 : West Berkshire 009 : Theale	15	10				10
E02003376 : West Berkshire 010 : Hungerford	3	3			3	
E02003377 : West Berkshire 011 : Bucklebury / Woolhampton	6	6			6	
E02003378 : West Berkshire 012 : Newbury	6	5			5	
E02003379 : West Berkshire 013 : Newbury	3	1			1	
E02003380 : West Berkshire 014 : Thatcham	11	10			10	
E02003381 : West Berkshire 015 : Burghfield	28	24			24	
E02003382 : West Berkshire 016 : Thatcham	9	8			8	
E02003383 : West Berkshire 017 : Thatcham	4	1			1	
E02003384 : West Berkshire 018 : kintbury	4	4			4	
E02003385 : West Berkshire 019 : Newbury	0	0				
E02003386 : West Berkshire 020 : Newbury / Greenham	2	2			2	
E02003387 : West Berkshire 021 : Newbury / wash Common	3	2			2	
E02003388 : West Berkshire 022 : Mortimer	14	13			13	
Basingstoke and Deane	57	50			50	
Bracknell Forest	27	21			21	
Hart	12	12			12	
Oxford	5	5		5		
Runnymede	3	3			3	
Rushmoor	6	4			4	
Slough	18	15			15	
South Bucks	2	2			2	
South Oxfordshire	50	45		45		
Spelthorne	0	0				
Surrey Heath	10	10			10	
Vale of White Horse	7	6			6	
Windsor and Maidenhead	25	23		11	12	
Wycombe	15	11		11		
Total	1,675	1,044		215	484	345
Percentage				20.6	46.4	33.0
						100

Appendix N

Junction 9 Outputs

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Site Access.j9

Path: N:\Projects\ksread 1804032\Analysis\Junctions 9

Report generation date: 05/10/2018 09:25:47

»With Development, AM

»With Development, PM

Summary of junction performance

	AM						PM					
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS
	With Development											
Stream B-C	0.0	7.49	0.01	A	0.17	A	0.1	7.49	0.11	A	0.86	A
Stream B-A	0.0	15.27	0.00	C			0.0	15.37	0.01	C		
Stream C-AB	0.0	5.42	0.04	A			0.4	4.67	0.15	A		
Stream C-A												
Stream A-B												
Stream A-C												

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	Reading Link Retail Park
Location	Reading
Site number	
Date	04/10/2018
Version	
Status	(new file)
Identifier	ksread
Client	Sorbon Estates
Jobnumber	1804032
Enumerator	MOTION"calummcgoff
Description	

Units

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

Analysis Options

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

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
With Development	AM	ONE HOUR	07:45	09:15	15
With Development	PM	ONE HOUR	16:45	18:15	15

With Development, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rose Kiln Lane South		Major
B	Site Access		Minor
C	Rose Kiln Lane North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.30			133.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	6.20	3.15	3.10	3.00	3.00		1.00	20	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	404.913	0.070	0.176	0.111	0.251
1	B-C	665.205	0.096	0.243	-	-
1	C-B	650.985	0.238	0.238	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	With Development	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	667.00	100.000
B		✓	6.00	100.000
C		✓	303.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		A	B	C
	A	0.000	0.000	667.000
	B	1.000	0.000	5.000
	C	290.000	13.000	0.000

Vehicle Mix

Heavy Vehicle proportion

From	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.01	7.49	0.0	A
B-A	0.00	15.27	0.0	C
C-AB	0.04	5.42	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3.76	542.75	0.007	3.74	0.0	6.678	A
B-A	0.75	289.99	0.003	0.74	0.0	12.446	B
C-AB	14.11	683.36	0.021	14.01	0.0	5.411	A
C-A	214.00			214.00			
A-B	0.00			0.00			
A-C	502.15			502.15			

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4.49	518.96	0.009	4.49	0.0	6.996	A
B-A	0.90	267.66	0.003	0.90	0.0	13.494	B
C-AB	18.25	692.04	0.026	18.22	0.0	5.377	A
C-A	254.14			254.14			
A-B	0.00			0.00			
A-C	599.62			599.62			

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	5.51	486.06	0.011	5.49	0.0	7.490	A
B-A	1.10	236.81	0.005	1.10	0.0	15.272	C
C-AB	25.01	704.97	0.035	24.95	0.0	5.335	A
C-A	308.60			308.60			
A-B	0.00			0.00			
A-C	734.38			734.38			

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	5.51	486.06	0.011	5.50	0.0	7.490	A
B-A	1.10	236.80	0.005	1.10	0.0	15.272	C
C-AB	25.03	704.99	0.036	25.03	0.0	5.339	A
C-A	308.58			308.58			
A-B	0.00			0.00			
A-C	734.38			734.38			

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4.49	518.96	0.009	4.51	0.0	6.999	A
B-A	0.90	267.64	0.003	0.90	0.0	13.495	B
C-AB	18.28	692.07	0.026	18.34	0.0	5.385	A
C-A	254.11			254.11			
A-B	0.00			0.00			
A-C	599.62			599.62			

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3.76	542.74	0.007	3.77	0.0	6.678	A
B-A	0.75	289.96	0.003	0.76	0.0	12.447	B
C-AB	14.15	683.39	0.021	14.18	0.0	5.417	A
C-A	213.97			213.97			
A-B	0.00			0.00			
A-C	502.15			502.15			

With Development, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.86	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	With Development	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	457.00	100.000
B		✓	58.00	100.000
C		✓	594.00	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
From	A	0.000	2.000	455.000
	B	2.000	0.000	56.000
	C	547.000	47.000	0.000

Vehicle Mix

Heavy Vehicle proportion

	To			
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.11	7.49	0.1	A
B-A	0.01	15.37	0.0	C
C-AB	0.15	4.67	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	42.16	581.01	0.073	41.85	0.1	6.674	A
B-A	1.51	290.01	0.005	1.49	0.0	12.477	B
C-AB	67.55	848.11	0.080	66.96	0.1	4.651	A
C-A	379.64			379.64			
A-B	1.51			1.51			
A-C	342.55			342.55			

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	50.34	564.61	0.089	50.26	0.1	6.999	A
B-A	1.80	267.54	0.007	1.79	0.0	13.546	B
C-AB	91.86	888.94	0.103	91.56	0.2	4.564	A
C-A	442.14			442.14			
A-B	1.80			1.80			
A-C	409.04			409.04			

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	61.66	541.90	0.114	61.54	0.1	7.492	A
B-A	2.20	236.53	0.009	2.19	0.0	15.362	C
C-AB	138.35	952.53	0.145	137.68	0.4	4.474	A
C-A	515.66			515.66			
A-B	2.20			2.20			
A-C	500.96			500.96			

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	61.66	541.89	0.114	61.65	0.1	7.495	A
B-A	2.20	236.43	0.009	2.20	0.0	15.369	C
C-AB	138.67	952.86	0.146	138.65	0.4	4.487	A
C-A	515.34			515.34			
A-B	2.20			2.20			
A-C	500.96			500.96			

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	50.34	564.60	0.089	50.46	0.1	7.005	A
B-A	1.80	267.39	0.007	1.81	0.0	13.557	B
C-AB	92.20	889.40	0.104	92.85	0.2	4.581	A
C-A	441.80			441.80			
A-B	1.80			1.80			
A-C	409.04			409.04			

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	42.16	581.00	0.073	42.24	0.1	6.684	A
B-A	1.51	289.84	0.005	1.51	0.0	12.485	B
C-AB	67.95	848.44	0.080	68.25	0.2	4.666	A
C-A	379.25			379.25			
A-B	1.51			1.51			
A-C	342.55			342.55			