Proposed Great Wolf Lodge
Chesterton, Bicester

Transport Assessment

For

Great Lakes UK Limited

November 2019

motion

Document Control Sheet

Transport Assessment

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This document has been issued and amended as follows:

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1.0   Introduction

1.1   Motion has been instructed by Great Lakes UK Limited (the Applicant) to advise on highways and transport matters associated with development proposals for a hotel and indoor family resort.

1.2   The Site is situated to the east of the M40, to the south of the A4095 and to the west of the village of Chesterton. The Site currently forms part of the Bicester Hotel Golf & Spa (BHGS) site that benefits from one vehicle access from the A4095 which operates as the service route to the golf course and a second vehicle access from Green Lane, that operates as the main customer/ visitor access to the golf course.

1.3   The Proposed Development comprises the redevelopment of 9 holes of the existing 18 holes of the golf course and construction of a new leisure resort incorporating waterpark, family entertainment centre, 498-bedroom hotel, conferencing facilities and restaurants with associated parking and landscaping. Vehicle access to the hotel for staff, guests and servicing vehicles will be taken from a new priority junction access from the A4095.

Report Structure

1.4   This Transport Assessment has been prepared in accordance with national and local guidance and considers the highways and transport matters associated with the Proposed Development and, in particular, the effect of the Proposed Development on the highway network local to the Site.

1.5   This Transport Assessment has been prepared with reference to the pre-application discussions undertaken with both Oxfordshire County Council (OCC) and Cherwell District Council (CDC). A Framework Travel Plan and Delivery and Servicing Management Plan have been prepared and are submitted under separate cover. An Environmental Statement has also been submitted under separate cover and includes a chapter covering transport matters.

1.6   Following this introduction, the remainder of this report comprises the following:

▶   Section 2 outlines the transport planning policies that are considered pertinent to this application;

▶   Section 3 considers the existing use of the Site and reviews the accessibility by all modes of transport;

▶   Section 4 provides an overview of the Proposed Development;

▶   Section 5 details the assessment methodology and the trip attraction of the Proposed Development;

▶   Section 6 outlines the results of the junction modelling undertaken; and,

▶   Section 7 summarises the key findings and conclusions of the report.

2.0   Policy Context

2.1   This section summarises the relevant transport policy documents against which the Proposed Development will be considered at a national, regional and local level. The most relevant policy documents relating to this study are detailed below:

▶   National Planning Policy Framework (February 2019);

▶   National Planning Practice Guidance (March 2014 and subsequent updates);

▶   Oxfordshire County Council Local Transport Plan 4 (2015);

▶   Cherwell Local Plan 2011-2031 (December 2016); and,

▶   Saved Policies of 1996 Local Plan (Saved September 2007).

National Planning Policy

National Planning Policy Framework (February 2019)

2.2   The National Planning Policy Framework (NPPF) February 2019 sets out the Government's planning policies for England and how they are expected to be applied.

2.3   The NPPF presumes in favour of sustainable development and is a material consideration in planning decisions. *"Transport issues should be considered from the earliest stages of plan-making and Development Proposals, so that:*

a) the potential impacts of development on transport networks can be addressed;

b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;

c) opportunities to promote walking, cycling and public transport use are identified and pursued;

d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places."

2.4   Section 9 of the NPPF deals with 'Promoting Sustainable Transport'. Paragraph 103 states that:

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

2.5   Off-street parking provision is referred to by Paragraph 105, which says that, in setting local parking standards for development, local planning authorities should take into account accessibility; the type, mix and use of the development; the availability of and opportunities for public transport; local car ownership levels; and an overall need to reduce the use of high-emission vehicles.

2.6   Paragraph 106 states:

"Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network, or for optimising the density of development in city and town centres and other locations that are well served by public transport (in accordance with chapter 11 of this Framework). In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists."

2.7   Paragraph 108 addresses the relationship between development and sustainable transport as follows:

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

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

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

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

2.8   Paragraph 109 states:

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

2.9   Paragraph 110 suggests that development should be located and designed where practical to, among other things, give priority to pedestrians and cycle movements, have access to high quality public transport facilities, create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians and consider the needs of people with disabilities by all modes of transport. Additionally, allow efficient delivery of goods and access by emergency vehicles and be designed to enable charging of plug-in and other ultra-low emission vehicles.

2.10   Paragraph 111 states:

"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."

National Planning Practice Guidance (March 2014 and subsequent updates)

2.11   On 6 March 2014 the Department for Communities and Local Government (DCLG) launched the National Planning Practice Guidance (NPPG) web-based resource. A section relates specifically to transport, titled 'Travel Plans, Transport Assessments and Statements', and sets out the overarching principles of the transport input into a planning application.

2.12   The guidance explains the role of Transport Assessments and Statements as:

"ways of assessing the potential transport impacts of developments (and they may propose mitigation measures to promote sustainable development. Where that mitigation relates to matters that can be addressed by management measures, the mitigation may inform the preparation of Travel Plans)."

2.13   The guidance also states that Travel Plans are:

"long-term management strategies for integrating proposals for sustainable travel into the planning process" and *"…should, where possible, be considered in parallel to Development Proposals and readily integrated into the design … of the new site …".*

2.14   The guidance explains that when preparing Transport Assessments and Travel Plans the following key principles should be considered:

► *"proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible;*

► *established at the earliest practicable possible stage of a development proposal;*

► *be 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);*

► *be brought forward through collaborative ongoing working between the local planning authority/transport authority, transport operators, rail network operators, Highways Agency 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 positively supporting higher levels of walking and cycling (which in turn can encourage greater social exclusion, community cohesion and healthier communities)."*

2.15   This guidance demonstrates that Transport Assessments and Statements and Travel Plans can positively contribute in the following ways:

► *"encouraging sustainable travel;*

► *lessening traffic generation and its detrimental impacts;*

► *reducing carbon emissions and climate impacts;*

► *creating accessible, connected, inclusive communities;*

► *improving health outcomes and quality of life;*

► *improving road safety; and*

► *reducing the need for new development to increase existing road capacity or provide new roads."*

Regional Policy

Oxfordshire County Council Local Transport Plan 4

2.16   Oxfordshire County Council Local Transport Plan 4 summarises the policies against which developments will be considered until 2031. In particular, Policy 34 of the LTP considers new developments, stating the following:

"*Oxfordshire County Council will require the layout and design of new developments to proactively encourage walking and cycling, especially for local trips, and allow developments to be served by frequent, reliable and efficient public transport. To do this, we will:*

► *Secure transport improvements to mitigate the cumulative adverse transport impacts from new developments in the locality and/or wider area, through effective Travel Plans, financial contributions from developers or direct works carried out by developers;*

► *Identify the requirement for passenger transport services to serve the development and negotiate the provision of these passenger transport services with the developer;*

► *Ensure that developers promote and enable cycling and walking for journeys associated with the new development, including through the provision of effective travel plans;*

► *Require that all infrastructure associated with the developments is provided to appropriate design standards and to appropriate timescales;*

▶ *Agree local routeing agreements where appropriate to protect environmentally sensitive locations from traffic generated by new developments;*

▶ *Seek support towards the long term operation and maintenance of facilities, services and selected highway infrastructure from appropriate developments, normally through the payment of commuted sums; and,*

▶ *Secure works to achieve suitable access to and mitigate against the impact of new developments in the immediate area, generally through direct works carried out by the developer."*

Local Planning Policy

Cherwell Local Plan 2011-2031 (December 2016)

2.17   The Cherwell Local Plan is the key planning policy document within the district and sets out the overarching planning policies upon which planning applications will be determined.

2.18   Policy SLE 3 considers transport and tourism growth stating that:

"*The Council will support proposals for new or improved tourist facilities in sustainable locations, where they accord with other policies in the plan, to increase overnight stays and visitor numbers within the District."*

2.19   Policy SLE 4 considers transport and connections and states:

"*All development where reasonable to do so, should facilitate the use of sustainable modes of transport to make the fullest possible use of public transport, walking and cycling. Encouragement will be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. Development which is not suitable for the roads that serve the development and which have a severe traffic impact will not be supported."*

2.20   In addition to the above, Policy ESD 1 considers development and its potential effect on climate change stating:

"*Measures will be taken to mitigate the impact of development within the District on climate change. At a strategic level, this will include:*

▶ *Distributing growth to the most sustainable locations as defined in this Local Plan;*

▶ *Delivering development that seeks to reduce the need to travel and which encourages sustainable travel options including walking, cycling and public transport to reduce dependence on private cars;*

▶ *Designing developments to reduce carbon emissions and use resources more efficiently, including water (see Policy ESD 3 Sustainable Construction); and,*

▶ *Promoting the use of decentralised and renewable or low carbon energy where appropriate (see Policies ESD 4 Decentralised Energy Systems and ESD 5 Renewable Energy).*

The incorporation of suitable adaptation measures in new development to ensure that development is more resilient to climate change impacts will include consideration of the following:

▶ *Taking into account the known physical and environmental constraints when identifying locations for development;*

▶ *Demonstration of design approaches that are resilient to climate change impacts including the use of passive solar design for heating and cooling;*

▶ *Minimising the risk of flooding and making use of sustainable drainage methods; and,*

▶ *Reducing the effects of development on the microclimate (through the provision of green infrastructure including open space and water, planting, and green roofs).*

Adaptation through design approaches will be considered in more locally specific detail in the in the Sustainable Buildings in Cherwell Supplementary Planning Document (SPD)."

Saved Policies of 1996 Local Plan (Saved September 2007)

2.21   Whilst largely superseded by the current Local Plan (2016), several policies from the 1996 Local Plan were saved in 2007 and continue to be referenced in planning decisions.

2.22   Policy TR7 considers the effect of developments on minor roads and states that:

"Development that would regularly attract large commercial vehicles or large numbers of cars onto unsuitable minor roads will not normally be permitted."

Summary

2.23   It is evident that the policies set out within the NPPF, Oxfordshire County Council Local Transport Plan and the Cherwell Local Plan focus on a presumption in favour of sustainable development and that development should only be resisted or refused on transport grounds where residual impacts of development are severe.

3.0   Baseline Conditions

3.1   The Site is located to the east of the M40 and south of the A4095 to the west of the village of Chesterton. The Site currently forms part of the BHGS site that benefits from a main customer/ visitor access from Green Lane and a secondary access from the A4095, which operates as the service access to the golf course.

3.2   The Site location in relation to the surrounding area is shown in Figure 3.1.

Local Highway Network

3.3   The Site is located to the west of Chesterton village and fronts the A4095 to the north with the M40 to the west. The A4095 is a two-way carriageway operating under the national speed limit of 60mph, from which a new vehicle access will be provided.

3.4   To the east of the Site, the A4095 passes through the edge of Chesterton village and links to Vendee Drive. North of this junction, Vendee Drive connects to Howes Lane and the A4095 Bicester ring road, as well as Middleton Stoney Road operating east towards Bicester town centre and the B4030 operating west towards Middleton Stoney. To the south east of its junction with the A4095, Vendee Drive joins the A41 providing connections to the wider area including Aylesbury and Oxford, via the A34.

3.5   To the west of the Site, the A4095 provides a link to Kirtlington, Enslow and Long Hanborough as well as connecting to the B430. The B430 operates on a north-south orientation between the A43 and Junction 10 of the M40 to the north and the A34 and Junction 9 of the M40 to the south, providing access to the wider strategic highway network.

Sustainable Transport Accessibility

3.6   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 Chartered Institution of Highways and Transportation (CIHT) 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 (approximately 8 kilometres) (Planning for Cycling, 2015); and,

► Walking distances to bus stops should not exceed 400 metres, whilst people are prepared to walk twice as far to rail stations (Planning for Walking, 2015).

3.7   The Chartered Institution of Highways and Transportation (CIHT) 'Guidelines for Providing Journeys on Foot' (2000) suggests acceptable, desirable and preferred maximum walking distances ('acceptable' walking distances will vary between individuals). Table 3.1 summarises the suggested walking distances for pedestrians without mobility impairment for some common trip purposes.

	Town Centres	Commuting/Schools	Elsewhere
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200
Source: 'Providing for Journeys on Foot', CIHT, 2000			

Table 3.1 Suggested Walking Distances (metres)

3.8   The following sections consider the opportunities for sustainable travel that are available in the vicinity of the Site.

Pedestrian Facilities

3.9 There is currently no footway provided on the A4095 in the immediate vicinity of the Site. However, a footway is provided approximately 500 metres to the east of the Site along the A4095, from which there is a network of interconnected footways that provide access into the centre of Chesterton.

3.10 A public right of way (161/06) runs through the Site from Green Lane to the A4095. Figure 3.2 attached provides details of the local footpaths and PROWs in the vicinity of the Site.

Cycle Facilities

3.11 There are a range of cycle opportunities in the vicinity of the Site including a shared foot/cycle way operating along Vendee Drive, which forms part of a signed cycle route connecting to Bicester town centre as well as nearby residential areas.

3.12 National Cycle Network Route 51 (NCN51), runs alongside the A41 Oxford Road south east of the Site and is a traffic-free shared pedestrian and cycle route. NCN51 provides a signed cycle route connecting the Site south towards Wendlebury, Kidlington and Oxford and north towards Bicester Village and Bicester Town Centre. Figure 3.3 summarises the local cycle routes.

Bus Services

3.13 The nearest bus stop to the Site is situated on Alchester Road approximately 700 metres east of the Site. This bus stop is served by the 21 service which runs once a day from Chesterton to Bicester town centre.

3.14 Additional bus stops are situated in the centre of Bicester, approximately 4.6 kilometres from the Site, along Manorsfield Road and provide services to the wider area. Table 3.2, summarises the bus routes within the centre of Bicester.

Route No.	Route	Frequency
8	Middle Baton to Bicester	2 per day (Friday only)
21	Highfield – Bicester	Every 30 minutes
26	Bicester to Kingsmere	Every 30 minutes
250	Oxford to Bicester	Every 60 minutes
NS5	Oxford to Gosford & Bicester	Every 60 minutes (night bus)
S5	Oxford to Gosford & Bicester	Every 10 to 20 minutes
X5	Cambridge to Bedford & Oxford	Every 30 minutes

Table 3.2 Bus Services

Train Services

3.15 The nearest station is Bicester Village Railway Station located approximately 4.6 kilometres to the east of the Site. Bicester Village Station is located on the Oxford to London Marylebone line with services operating in each direction every 30 minutes.

3.16 Bicester North Railway Station is located approximately 4.8 kilometres to the north east of the Site and offers connections to London Marylebone, Banbury, Birmingham Moor Street and Birmingham Snow Hill. Services run up to twice per hour in each direction.

Personal Injury Accident Data

3.17   Collision data for the latest available five-year period up to the 31st December 2018 has been obtained from OCC covering the following scope of highway network assessed as part of the Transport Assessment. The collision records refer only to road traffic collisions that resulted in personal injury, referred to as Personal Injury Collisions (PICs).

3.18   During the five-year period, a total of 61 incidents recorded of which 47 resulted in slight injury, 12 in serious injury and two resulted in fatality. A full summary of the accident description and causation factors if provided at Appendix A whist an accident causation summary is provided in Table 3.4 below.

Accident Description/Cause	Number of PIC's				% PIC's
	Slight	Serious	Fatal	Total	
Failed to look properly	24	6	1	31	51%
Poor turn or manoeuvre/illegal turn or direction of travel/junction overshoot	8	-	-	8	13%
Impaired by alcohol or drugs	4	1	-	5	8%
Careless/reckless/in a hurry	4	1	-	5	8%
Dazzling sun/slippery road	3	1	-	4	7%
Loss of control/travelling too fast	2	1	1	4	7%
Following too close/sudden braking	2	1	-	3	5%
Distraction in vehicle	-	1	-	1	2%
TOTAL	47	12	2	61	100%

Table 3.4 Summary of PIC Data

3.19   The incident reports in relation to the two incidents which result in a fatality, identified that they were as a result of a failure to judge the other vehicle speed and loss of control. One of which occurred along the A4095 to the east of the Site. This involved a motorcyclist travelling west on the A4095 lost control after braking sharply on approach to the right-hand bend and left carriageway to nearside, the motorcyclist sustained fatal injuries. The second occurred due to an HGV travelling north east along the A34 hit the rear of a car which was slowing due to queue ahead, which resulted in collisions with three additional cars.

3.20   The following paragraphs set out those collisions which occurred at key junctions surrounding the Site.

A4095/B430 Staggered Priority Junction

3.21   Four slight collisions have occurred at the A4095/B430 staggered priority junction within the latest five years. Three of these occurred due to drivers failing to look properly and pulling out in front of passing traffic. The remaining incident occurred due to careless/reckless driving and travelling too fast.

B430/B430 Mini-Roundabout

3.22   One serious accident occurred at the mini-roundabout located to the north of the A34 exit which leads to the B430 Northampton Road. The incident was the result of a car travelling north along the B430 Northampton Road, which entered the mini-roundabout and failed to give way to cyclist travelling west from the B430 spur turning right to the B430 Northampton Road. The car hit the cyclist and the cyclist sustained a serious injury.

B4030/Middleton Stoney Roundabout

3.23   Two slight incidents occurred at the B4030/Middleton Stoney roundabout. One was a result of the driver failing to look properly and the second was due to a driver disobeying the give way lines at the roundabout and colliding with a cyclist.

A4095/Vendee Drive Priority Junction

3.24   One slight incident occurred at the A9095/Vendee Drive priority junction. This was a result of a car travelling east along the A4095, which turned right onto Vendee Drive but failed to give way to a vehicle travelling north along Vendee Drive, a collision occurred.

Vendee Drive/A41 Oxford Road Roundabout

3.25   Five slight incidents and two serious incidents occurred at the Vendee Drive/A41 Oxford Road roundabout. Three slight incidents and one serious incident occurred due to drivers being impaired by alcohol or drugs. The remaining slight incidents occurred due to drivers failing to look properly, careless/reckless driving, following too close/sudden braking and a poor turn or manoeuvre. The remaining serious incident occurred as a result of a car travelling south east on Vendee Drive hitting an elderly cyclist crossing at the pedestrian refuge island.

3.26   Since obtaining the data from OCC, in June 2019 a fatal incident occurred at the roundabout junction with the A41 and Vendee Drive, this involved a van and a car colliding resulting in the driver and the passenger in the van sustaining fatal injuries.

Summary of Personal Injury Accident Data

3.27   The review of the incidents on the local network indicates that the identified causation factors were predominantly driver error or poor driver behaviour and, as such, are unrelated to the existing design or layout of the highway.

3.28   As such, it is concluded that there are no inherent safety issues associated with the existing highway network and junction arrangements in the vicinity of the Site.

4.0 Proposed Development

4.1 The Proposed Development comprises the redevelopment of 9 holes of the existing 18 holes of the golf course and construction of a new leisure resort incorporating waterpark, family entertainment centre, 498-bedroom hotel, conferencing facilities and restaurants with associated parking and landscaping. Vehicle access to the hotel will be taken from a new priority junction access from the A4095. The proposed site layout plan is presented at Appendix B.

4.2 The existing BHGS will remain open and operational. The golf course will be reduced from an 18-hole to 9-hole course, the hotel and spa will be unchanged as part of the proposals. It is noted that a separate application has been submitted with consent granted for an extension of the BHGS site. It is assumed that this will be implemented.

Access Arrangements

4.3 Vehicle access to the Proposed Development will be gained via a new priority junction access, with right turn ghost island, from the A4095. Visibility splays at the access are in accordance with DMRB guidance based on the recorded 85th percentile speeds on the A4095. To the east of the Site access 85th percentile speeds of 49mph were recorded and to the west of the Site access 85th percentile speeds of 66mph were recorded. On that basis, and in accordance with DMRB, visibility splays of 144 metres and 239 metres, at a set-back of 4.5 metres are provided and these are shown on Drawing 1803047-03 attached at Appendix C. The position of the proposed site access has been used to inform the wider site design.

4.4 Swept path analysis has been undertaken for the expected servicing, delivery and emergency vehicles that will require access to the Site and demonstrates that these vehicles can access the Site appropriately from the new access junction from the A4095.

4.5 Pedestrian and cycle access to the Site will be taken from the A4095 via the main site access. There is currently no footway along the A4095 in the vicinity of the Site. As part of the Proposed Development, a new 2.5 metre wide shared foot/cycleway will be provided along the southern side of the A4095 from the Site to Chesterton and will connect with the existing footway provision at the junction between the A4095 and The Hale. The proposed new shared foot/cycleway is shown on Drawings 1803047-03 and 1803047-02, attached at Appendix C.

4.6 There is an existing public right of way, PROW 161/06, which currently crosses the Site as shown on Figure 4.1. As part of the Proposed Development it is proposed to divert this existing PROW. The PROW will be diverted through a carefully designed and landscaped area on the western side of the Site and will connect with a new section of shared foot/cycleway running alongside the A4095. As set out above a new shared foot/cycleway is being provided from the Site to Chesterton village and this is detailed on Drawing 1803047-02. In addition, the proposed shared foot/cycleway will continue west along the frontage of the Site and extend as far as the existing PROW. Officers at OCC have confirmed that they are satisfied with the proposed diversion of the PROW.

4.7 In addition, the Proposed Development will provide improvements to the pedestrian crossing arrangements at the access to the existing public right of way, PROW 161/1, which is located just north of Chesterton. The proposed improvements comprise the provision a short stretch of footway adjacent to the access to the PROW and dropped kerbs with tactile paving to assist pedestrians crossing between the existing footway on the western side of the A4095, the new footway and the PROW. The proposed improvements are shown on Drawings 1803047-08, attached at Appendix C.

Shuttle Bus Service

4.8 As part of the Proposed Development it is proposed to provide a shuttle bus service between the Proposed Development and Bicester. The shuttle bus service will be available for guests and staff to use, free of charge. It is also intended that the shuttle bus will be available to residents of Chesterton, also free of charge.

4.9   For guests to the Proposed Development, the shuttle bus service will connect the resort with local trains stations; both Bicester Village and Bicester North. As set out in Section 3 of this report, Bicester Village station is served by train services to London and Oxford, whilst Bicester North is served by services to Birmingham, London and Banbury. It is proposed that the guest shuttle bus service will operate between the Proposed Development and each station on a once every two-hour basis and will be timed to meet with arriving/ departing trains at the stations. Figure 4.2 and 4.3 show potential routes of the shuttle bus service between the Proposed Development and the train stations. The shuttle bus service will be secured by legal obligation.

4.10   Based on analysis of guest arrivals and departures at existing Great Wolf Lodges it is estimated that the majority of guest arrivals and departures will occur between 9:00am and 17:00pm and as such it is proposed that the guest shuttle bus services will operate during these hours, although this could be amended should arrival/departure patterns differ. The proposed shuttle bus service will be advertised to guests at the time they book their stay at the resort and this will include details of the timing of bus services.

4.11   In addition to the proposed guest shuttle bus service, it is proposed to provide a separate shuttle bus service for staff at the resort and it is intended that this service will also be available to residents of Chesterton. It is envisaged that the staff shuttle bus service will likely call at local stations, the town centre and local centres around Bicester, and a potential route for a staff shuttle bus service is presented at Figure 4.4. Staff at the resort will work on a shift basis and as such it will not be necessary for the service to run throughout the day and it is envisaged the timing of the service will be based on the start/finish times of the main shifts at the Site. The staff shuttle bus service will be secured by legal obligation.

4.12   Swept path analysis is attached at Appendix D showing a shuttle-bus accessing the Site and stopping adjacent to the main entrance to the building.

Car Parking

4.13   CDC and OCC do not have adopted car parking standards for the proposed land use. On that basis the proposed parking provision for the Proposed Development has been developed with consideration of the expected parking demand and to meet the needs of the Proposed Development.

4.14   It is proposed that a total of 902 car parking spaces will be provided on site for use by guests and staff. A total of 56 disabled accessible parking bays will be provided on site, equating to 6% of total parking provision. Traffic Advisory Leaflet 5/95 'Parking for Disabled People' advises that for leisure facilities with over 200 parking spaces disabled parking should be provided at 4% of total capacity plus 4 spaces. BS8300 good practice guidance advises that 6% of parking bays should be allocated for disabled uses. The proposed disabled accessible parking provision therefore exceeds the requirements of Traffic Advisory Leaflet 5/95 and accords with good practice guidance in BS8300.

4.15   CDC and OCC do not have adopted standards for the provision of electric vehicle charging facilities Charging facilities for electric vehicles will be provided in accordance with BREEAM guidance, with 10% of car parking spaces including electric charging facilities. As such a total of 90 car parking spaces with electric vehicle charging facilities will be provided and this is considered sufficient to meet the needs of the Proposed Development.

4.16   The proposed parking provision is considered appropriate to meet the needs of the Proposed Development and is based on the operators' experience of their existing resorts. A parking accumulation analysis has been undertaken based on the expected vehicle trip profile establish in Section 5 of this report and based on existing Great Wolf Lodges. The parking accumulation analysis is presented at Appendix E and demonstrates that peak parking demand of around 829 cars, equivalent to 92% of total parking capacity is expected. The parking accumulation assessment demonstrates that the proposed parking provision is sufficient to meet the needs of the Proposed Development and provides for appropriate spare capacity to allow efficient turnover of spaces.

Cycle Parking

4.17 OCC cycle parking standards recommend the provision of 1 cycle parking per 10 staff for hotel uses. The Proposed Development is expected to have up to 200 staff on-site at peak times and, based on OCC cycle parking standards, this would equate to the provision of 20 staff cycle parking spaces.

4.18 The Proposed Development will provide 200% of the parking required by OCC standards with a total of 40 staff cycle parking spaces in a secure covered cycle store, close to the staff entrance to the building. A further 40 uncovered visitor cycle parking spaces will be provided at the front of the building, close to the main guest entrance.

4.19 The proposed cycle parking provision exceeds OCC minimum requirements and is considered appropriate to meet the needs of the Proposed Development. Details of the location of cycle parking can be seen on the site layout plan attached at Appendix B.

Servicing and Deliveries

4.20 Servicing and deliveries, including refuse collection, associated with the Proposed Development will be undertaken from a dedicated service yard on Site.

4.21 Swept path analysis has been undertaken for expected servicing and delivery vehicles accessing the Site and manoeuvring within the on-site service yard. The swept path analysis is attached at Appendix D and demonstrates that the expected servicing and delivery vehicles can access the Site and manoeuvre on site appropriately.

4.22 A Framework Servicing and Delivery Management Plan has been prepared and is submitted with the planning application under separate cover.

5.0 Assessment Methodology and Trip Attraction

5.1 This section of the report set outs the methodology that has been utilised to assess the future baseline traffic flows on the highway network local to the Site, the expected trip generation of the Proposed Development and the distribution of vehicle trips on the local road network.

Baseline Traffic Flows, Committed Developments & Assessment Periods

5.2 During pre-application scoping discussions, Officers at OCC requested that the assessment of the highway network local to the Site be undertaken using traffic flow information provided from the Bicester Transport Model (BTM). The BTM is based on a future assessment year of 2026.

5.3 OCC has provided outputs from the BTM for the weekday morning and evening peak hours. BTM outputs provided by OCC are attached at Appendix F. Figures 5.1 and 5.2, attached, summarise the 2026 baseline traffic flows for the weekday morning and evening peak hours, which form the base for the assessment.

5.4 The traffic flow data from the BTM includes vehicle trips associated with committed development in the local area. However, OCC has identified five committed or submitted development schemes in the local area which should be considered as part of the analysis comprising:

- ► Heyford Park (Planning Ref: 18/00825/HYBRID)

- ► BSA sports facility in Chesterton (Planning Ref: 19/00934/F);

- ► Alchester Park, Chesterton (Planning Ref: 12/00305/OUT);

- ► Audley Gardens (Planning Ref:14/01737/OUT); and,

- ► Bicester Hotel Golf & Spa, Hotel Extension (Planning Ref: 15/01068/F).

5.5 Details of the expected trip generation of the above permitted developments has been extracted from the respective transport reports submitted with the planning applications and has been included within the baseline traffic flows presented at Figures 5.1 and 5.2.

5.6 The BTM only covers the weekday morning and evening peak periods and does not include traffic data for the Saturday peak period. As such traffic surveys were undertaken on the local road network. The results of the 2019 surveys for the Saturday peak hour are presented at Figure 5.3.

5.7 The future baseline assessment year for the weekday morning and evening peak periods is 2026; the assessment year of the BTM. In order to consider the expected traffic growth between the 2019 and 2026 a TEMPRO (Trip End Model Presentation Program) factor has been established. The TEMPRO software is produced by the Department for Transport and is an industry standard methodology for estimating future traffic growth. A relevant TEMPRO factor has been established based on the local MOSA (Middle Layer Super Output Area) area in which the Site is located, Cherwell 016. The TEMPRO output is attached at Appendix G and has established the following traffic growth factor:

- ► Saturday Peak   1.1466

5.8 The TEMPRO factor has been applied to the surveyed 2019 flows to estimated baseline traffic flows in the 2026 assessment year. Figure 5.4, attached, presents the 2026 future assessment year flows for the Saturday peak hour.

5.9   Of the committed developments identified by OCC, the only development which assessed a Saturday peak hour as part of its supporting transport study was the BSA site in Chesterton. For the purpose of this assessment it is assumed that any other committed developments will either have an immaterial impact during the Saturday peak hour or that any traffic growth associated with committed developments will be accounted for within the TEMPRO growth factor applied to the baseline traffic flows. In order to account for trips associated with the BSA Chesterton development, trips associated with that development during the Saturday peak have been established from the Transport Assessment supporting that application and are presented at Figure 5.5. Figure 5.6 presents the 2026 assessment year flows including committed developments for the Saturday peak hour.

Development Trip Generation

5.10   The TRICS database is an industry standard database of traffic survey at development sites across the UK. The TRICS database was reviewed to assess hotel sites for the purpose of assessing the expected trip attraction of the Proposed Development. However, the hotel sites included within the TRICS database comprise hotels such as Travelodge, Premier Inn, Holiday Inn and Thistle branded hotels, which are not comparable to the Proposed Development as they do not provide similar facilities to the Proposed Development and do not cater for the same market/ users as the Proposed Development. On that basis it is concluded that the hotel trip data available from the TRICS database does not provide an appropriate basis for analysis.

5.11   In order to adequately assess the trip attraction of the Proposed Development, reference has been made to surveys undertaken in 2016 at three existing Great Wolf Lodges in the United States. The three existing surveyed sites are as follows:

►   Concord, North Carolina – 402 Guestrooms;

►   Grapevine, Texas – 605 Guestrooms; and,

►   Garden Grove, California – 608 Guestrooms.

5.12   The traffic surveys were undertaken over the Veteran Day weekend, which is a Federal Holiday in the United States comparable to a bank holiday weekend in the United Kingdom. The surveys are therefore considered to represent a peak period for occupation of the hotel. Based on the surveyed traffic flows at the three hotels, average trip rates per bedroom have been established for the weekday morning, evening and Saturday peak periods and are summarised in Table 5.1 below.

	Vehicle Trip Rate (per hotel room)		
	In	Out	Total
Weekday Morning Peak (0800-0900)	0.131	0.094	0.225
Weekday Evening Peak (1700-1800)	0.132	0.176	0.308
Saturday Peak (1300-1400)	0.244	0.251	0.495

Table 5.1 Expected Trip Rates per Guest Room

5.13   The Proposed Development comprises a 498-bedroom hotel. The assessment has been based on a 500-bedroom hotel and therefore provides a robust assessment of the trip attraction of the Proposed Development. The calculated trip rates set out at Table 5.1 have been applied to the Proposed Development in order to assess the expected vehicle trips and these are summarised at Table 5.2 below.

	Vehicle Trips		
	In	Out	Total
Weekday Morning Peak (0800-0900)	66	47	113
Weekday Evening Peak (1700-1800)	66	88	154
Saturday Peak (1300-1400)	122	125	247

Table 5.2 Expected Vehicle Trips

5.14   In order to provide a comparison to the survey data collected at the three existing Great Wolf Lodges in the United States, a first principles sensitivity test has been undertaken to consider the robustness of this assessment. The first principles sensitivity test was presented within a Technical Note, which was submitted to OCC as part of pre-application discussions.

5.15   The Technical Note provides a comparison of the first principles assessment with the trip rates derived from the surveys at the existing Great Wolf Lodges and demonstrates that surveyed trip rates at existing Great Wolf Lodges provide a robust assessment of the expected trip generation of the Development Proposals and should form the basis of the assessment. The submitted pre-application Technical Note is attached at Appendix H and the trip generation methodology has been agreed with Officers at OCC.

Day Visitors

5.16   Following feedback at public consultation events the Applicant is seeking to allow some day visitor access to the Proposed Development at times when the hotel is below full capacity for staying guests.

5.17   The Applicant has advised that its business model is based on a typical room occupancy of 4.5 guests per room, including children. On that basis the Proposed Development will accommodate up to 2,250 guests if the hotel were fully occupied.

5.18   Day visitor access to the resort will only be allowed at times when the hotel is below full capacity, allowing day pass access to the Proposed Development will not result in the Proposed Development exceeding its peak occupancy of 2,250 guests.

5.19   Day visitor passes will be released on a sliding scale dependant on the occupancy of the hotel. The maximum number day passes released will not exceed 20% of the total capacity of the resort, even if hotel occupancy were to fall below 80% occupancy. Table 5.3 below provides an example of the release of day passes based on the level of hotel staying guest occupancy.

Hotel Guests	Day Passes	Total Guests
1,800 (80% Capacity)	450 (20% Capacity)	2,250 (100% Capacity)
2,025 (90% Capacity)	225 (10% Capacity)	2,250 (100% Capacity)
2,250 (100% Capacity)	0 (0% Capacity)	2,250 (100% Capacity)

Table 5.3 Day Pass Provision

5.20   In summary, day passes will only be issued on the following principles:

► Day visitor access to the Proposed Development will only be allowed at time when the hotel is below full capacity of 2,250;

► Day visitor passes will be released on a sliding scale dependant on the occupancy of the hotel;

► The maximum number day passes that will be released will be 20% of total capacity of the Proposed Development, 450 guests, even if hotel occupancy were to fall below 80% occupancy; and,

► Day Pass access to the Proposed Development will only be valid after 10am.

5.21 Given that the allowance for day passes will not exceed the overall capacity of the Proposed Development, the inclusion of day visitor access to the Site at times when the hotel is not fully occupied will not result in material change in trips in comparison with the trip assessment presented.

5.22 However, to ensure a robust assessment a sensitivity test has been undertaken to assess the trip generation of the Proposed Development in a scenario where hotel occupancy is at 80% capacity and day visitor capacity is at 20% (450-day passes). That sensitivity assessment is presented in a Technical Note attached at Appendix I and demonstrates that the expected vehicle trip generation of the Proposed Development, if up to 20% of total capacity was made available for day visitors, will be lower than or not materially different to the trip generation presented at Table 5.2 of this report and therefore no separate assessment of the scenario of day visitor access to the report is considered necessary.

5.23 The Technical Note attached at Appendix I has been submitted to Officers at OCC in advance of submission of the application and they have confirmed agreement with the conclusions of the analysis and that no separate assessment of the scenario of day visitor access to the report is necessary.

Trip Distribution

5.24 In order to assess the distribution of vehicle trips on the highway network local to the Site, reference has been made to the expected catchment area of visitors to the Site. Based on the Applicant's experience in the United States, it is expected that visitors to the Proposed Development will be drawn from a catchment area encompassing a 125-mile drive of the Site.

5.25 Figure 5.7, attached, shows the expected catchment area of visitors to the Proposed Development. Based on the expected catchment area, visitor vehicle trips have been distributed based on the basis of population within the catchment and is based on the likely routeing of vehicles to and from the application site. The assessment assumes access via the primary road network and online vehicle routeing tools.

5.26 In addition, consideration has been given to the proposed signage strategy for the Proposed Development and it has been concluded that the more appropriate signed route between the Proposed Development and M40 Junction 9 is via the A34 and the B430. It is therefore proposed that the signage strategy to be developed for the Proposed Development will include signage at M40 Junction 9 directing guests via the A34 and B430. Similarly, guests departing the Proposed Development towards M40 Junction 9 will be directed via the B430 and A34. Notwithstanding the proposed signage strategy, it has been assumed that some guests approaching the Site from the M40 Junction 9 will not follow the signed route and will access the Site from M40 Junction 9 via the A41 and Vendee Drive.

5.27 Therefore, it has been assumed that half of vehicles approaching the Site via M40 Junction 9 will follow the signed route to the Site via the A34 and B430 and half will utilise the alternative route via the A41 and Vendee Drive and this is reflected in the expected distribution of vehicle trips. The expected distribution of trips has been discussed with Officers at OCC in advance of submission of the planning application and Officers have confirmed agreement to the proposed distribution of trips.

5.28 On the basis of the above, Figure 5.8, shows expected distribution of vehicles on the local road network. Figure 5.9, Figures 5.10 and 5.11 show the distributed traffic flows during the weekday morning, weekday evening and Saturday peak periods on the road network local to the Site.

5.29 Figure 5.12, Figures 5.13 and 5.14 show the expected traffic flow on the local highway network with the proposed development in place during the weekday morning, weekday evening and Saturday peak periods.

6.0 Effect of Development

6.1 This section of the report considers the effect of the development on the highway network local to the Site based on junction capacity modelling of the junctions agreed with Officers at OCC during pre-application scoping discussions.

6.2 As part of pre-application scoping discussions, Officers at OCC have requested that the following junctions be assessed as part of the Transport Assessment:

► A4095/ Site Access priority junction;

► A4095/ B430 priority crossroads;

► B430/ B430 Roundabout (north of A34 interchange);

► A4095/ Vendee Drive priority junction; and,

► Vendee Drive/ A41 Oxford Road roundabout.

6.3 In addition, OCC has requested that consideration be given to the effect of the Proposed Development at the B430/B4030 signalised crossroad in Middleton Stoney, the B430 junction with Church Road in Weston-on the-Green, and M40 Junction 9 and M40 Junction 10 southern roundabout.

6.4 Junction capacity modelling has been undertaken using the industry standard modelling package for each junction type i.e. PICADY (Priority Intersection Capacity and Delay) for priority junctions, ARCADY (Assessment of Roundabout Capacity and Delay) for roundabouts and LinSig for signal-controlled junctions.

6.5 The PICADY and ARCADY software report the Ratio of Flow to Capacity ("RFC") of an approach to a give-way controlled junction (priority junction or roundabout junction). The RFC is a ratio of the theoretical capacity of a road link in comparison with the demand for vehicles using that link. A RFC of 1 would suggest that demand for vehicles using that link is equal to the theoretical capacity of that link. However, a RFC of 0.85 is typically regarded as the practical capacity of a give-way link to ensure efficient operation.

6.6 The LinSig software reports the Degree of Saturation ("DoS") of an approach to a signal-controlled junction. The DoS provides a ratio of the theoretical capacity of a road link in comparison with the demand for vehicles using that link. A DoS of 100% would suggest that demand for vehicles using that link is equal to the theoretical capacity of that link. However, a DoS of 90% is typically regarded as the practical capacity of a signal-controlled link to ensure efficient operation. Practical Reserve Capacity (PRC) is a measure of the capacity within a junction in comparison with its practical capacity. A Degree of Saturation value below 90% will report a positive value of PRC, whilst a Degree of Saturation measurement in excess of 90% will report a negative value of PRC.

6.7 The importance of the Practical Reserve Capacity of a link relates to the ability for a junction to operate efficiently. Once a link exceeds 90% DoS and moves towards 100% DoS, small fluctuations in capacity and traffic flow can result in significant changes in queuing and delay.

A4095/ Site Access Junction

6.8 The proposed site access junction from the A4095 has been modelled using PICADY and based on the proposed access junction layout presented at Appendix C.

6.9 Table 6.1 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the Development Proposals in place. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
Site Access – A4095 (west)	0.05	0.1	0.09	0.1	0.13	0.1
Site Access – A4095 (east)	0.03	0.0	0.06	0.1	0.07	0.1
A4095 (west)	0.08	0.1	0.53	1.1	0.17	0.2

Table 6.1 A4095/Site Access Modelling – 2026 with Development

6.10   The analysis shows that the proposed site access junction is expected to operate within its theoretical capacity in the 2026 future assessment year once committed developments and development traffic are accounted for. As such, it is concluded that the proposed site access junction will operate appropriately with minimal queueing or vehicle delay.

A4095/ B430 Priority Crossroads

6.11   The priority crossroads between the A4095 and the B430 has been modelled using PICADY. Table 6.2 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at *Appendix J*.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
A4095 (w) – left turn	0.25	0.3	0.36	0.6	0.10	0.1
A4095 (w) – right/ahead	0.48	0.9	0.57	1.3	0.15	0.2
B430 (s) – right turn	0.00	0.0	0.02	0.0	0.03	0.0
A4095 (e) – left turn	0.04	0.0	0.03	0.0	0.05	0.1
A4095 (e) – right/ahead	0.61	1.5	0.56	1.2	0.15	0.2
B430 (n) – right turn	0.11	0.1	0.15	0.2	0.11	0.1

Table 6.2 A4095/B430 Modelling – 2026 Baseline

6.12   The analysis shows that the staggered crossroad junction will operate within its theoretical capacity in the 2026 baseline scenario once committed developments are accounted for.

6.13   Table 6.3 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the development in place. Model output files are attached at *Appendix J*.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
A4095 (w) – left turn	0.25	0.3	0.37	0.6	0.10	0.1
A4095 (w) – right/ahead	0.48	0.9	0.59	1.4	0.16	0.2
B430 (s) – right turn	0.06	0.1	0.07	0.1	0.11	0.1
A4095 (e) – left turn	0.09	0.1	0.12	0.1	0.15	0.2
A4095 (e) – right/ahead	0.68	2.0	0.66	1.9	0.25	0.3
B430 (n) – right turn	0.10	0.1	0.15	0.2	0.11	0.1

Table 6.3 A405/B430 Modelling – 2026 with Development

6.14   The analysis shows that the junction will continue to operate within its theoretical capacity following the addition of traffic generated by the Proposed Development and it is evident that the development will not have a material effect on the operation of the junction.

B430/ B430 Mini-Roundabout (north of A34 Interchange)

6.15   The mini-roundabout on the B430, north of the A34 interchange, has been modelled using ARCADY. Table 6.4 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
A34 (south)	0.03	0.0	0.06	0.1	0.01	0.0
A34 (north)	0.45	0.8	0.44	0.8	0.23	0.3
B430	0.59	1.4	0.34	0.5	0.03	0.0

Table 6.4 B430/B430 Modelling – 2026 Baseline

6.16   The analysis shows that the B430 / B430 mini-roundabout will operate within its theoretical capacity in the 2026 future year scenario following the inclusion of the additional committed developments.

6.17   Table 6.5 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the Proposed Development in place. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
A34 (south)	0.05	0.1	0.08	0.1	0.04	0.0
A34 (north)	0.48	0.9	0.46	0.9	0.27	0.4
B430	0.61	1.5	0.37	0.6	0.07	0.1

Table 6.5 B430/B430 Modelling – 2026 with Proposed Development

6.18   The analysis shows that the mini-roundabout will continue to operate within its theoretical capacity in the 2026 future assessment year once traffic generated by the Proposed Development is included. As such, it is concluded that the development will not have a material effect on the operation of the junction and no further analysis is deemed necessary.

A4095/ Vendee Drive Priority Junction

6.19   The priority junction between the A4095 and Vendee Drive, has been modelled using PICADY. Table 6.6 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
A4095 – Vendee Drive (n)	0.42	0.7	0.83	4.5	0.41	0.7
A4095 – Vendee Drive (s)	0.09	0.1	0.40	0.6	0.11	0.1
Vendee Drive (n) – A4095	0.12	0.1	0.60	1.4	0.31	0.4

Table 6.6 A4095/Vendee Drive Modelling – 2026 Baseline

6.20   The analysis shows that the priority junction operates within its theoretical capacity in the 2026 with committed development scenario.

6.21   Table 6.7 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the development in place. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
A4095 – Vendee Drive (n)	0.43	0.7	0.87	5.9	0.43	0.8
A4095 – Vendee Drive (s)	0.12	0.1	0.56	1.2	0.19	0.2
Vendee Drive (n) – A4095	0.13	0.1	0.61	1.5	0.32	0.5

Table 6.7 A4095/Vendee Drive Modelling – 2026 with Development

6.22   The analysis shows that the junction continues to operate within its theoretical capacity following the inclusion of traffic generated by the Proposed Development. As such, it is concluded that the Proposed Development will not have a material effect on the operation of the junction and no further analysis is deemed necessary.

A41 / Bicester Park & Ride / Vendee Drive

6.23   The conventional roundabout junction between the A41, Vendee Drive and Bicester Park and Ride has been assessed using the industry standard software package for roundabout junctions, ARCADY.

6.24   The permitted development proposal at Bicester Business Park (Planning Ref: 16/02586/OUT) includes highway improvement works to the A41, Vendee Drive junction. The operation of the junction has been modelled inclusive of the permitted junction improvements.

6.25   Table 6.8 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
Wendlebury Road	0.14	0.2	0.18	0.2	0.17	0.2
A41 (south)	0.63	1.8	0.70	2.4	0.61	1.6
Bicester Park & Ride	0.01	0.0	0.01	0.0	0.07	0.1
Vendee Drive	0.71	2.5	0.44	0.8	0.26	0.4
A41 (north)	0.54	1.3	0.57	1.4	0.52	1.1

Table 6.8 A41/Bicester Park & Ride/Vendee Drive Modelling – 2026 Baseline

6.26   The analysis demonstrates that the Vendee Drive roundabout will operate within its theoretical capacity in the 2026 future year scenario when committed development traffic is included.

6.27   Table 6.9 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the Proposed Development operational. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
Wendlebury Road	0.15	0.2	0.14	0.2	0.18	0.2
A41 (south)	0.64	1.9	0.70	2.4	0.62	1.7
Bicester Park & Ride	0.01	0.0	0.01	0.0	0.07	0.1
Vendee Drive	0.72	2.7	0.45	0.8	0.37	0.6
A41 (north)	0.54	1.3	0.57	1.4	0.54	1.2

Table 6.9 A41/Bicester Park & Ride/Vendee Drive Modelling – 2026 with Development

6.28   The analysis shows that the junction continues to operate within its theoretical capacity following the inclusion of development traffic. As such, it is concluded that the development will not have a material effect on the operation of the junction and no further analysis is deemed necessary.

B430 / B4030 Signalised Crossroad

6.29   The permitted development proposals at Heyford Park (Planning Ref: 18/00825/HYBRID) include highway improvement works to the B430 / B4030 signalised junction. The operation of the junction has been modelled inclusive of the permitted junction improvements.

6.30   At the request of OCC, traffic flows associated with the submitted planning application in relation to Heyford Park Phase 2 (Planning Ref: 18/00825/HYBRID) are included within the traffic flows assessed as part of this Transport Assessment. The submitted Heyford Park Phase 2 scheme results in a significant increase in traffic movements at the B430/ B4030 junction but does not currently detail any mitigation works at the junction.

6.31   Table 6.10 below compares the change in traffic movements at the B430/ B4030 junction as a result of the Heyford Park Phase 2 and the Proposed Development, in comparison with the traffic flow data provided by OCC from the Bicester Transport Model.

| Peak | Traffic Movements at B430 Junction | | |
	2026 BTM Flows	Proposed Development	Heyford Park (submitted application only)
AM Peak	2,071	34	329
PM Peak	1,853	46	272

Table 6.10 B430/B4030 Signalised Crossroad Flow Comparison

6.32   The analysis shows that the Proposed Development will result in an increase of 34 vehicle trips at this junction during the morning peak hour and 46 vehicles during the evening peak hour. This is equivalent to less than one additional vehicle movement per minute during the morning and evening peak hours. The change in traffic flow at the B430/ B4030 junction as a result of the Proposed Development is just 1.6% in the morning peak hour and 2.5% in the evening peak hour.

6.33   The current Heyford Park application will result in an additional 329 vehicle at the junction during the morning peak hour and an additional 272 vehicles at the during the evening peak hour. It is evident that the effect of the Heyford Park development at this junction is significantly greater than that of the Proposed Development.

6.34   On that basis, it is considered that the Proposed Development will not have a material effect on the operation of the junction in comparison with currently consented and other submitted planning applications. However, at the request of OCC, modelling assessment of the junction has been undertaken.

6.35   Table 6.11 shows the operation of the B430 / B4030 signalised crossroads in the 2026 baseline BTM scenario. Model output files are attached at *Appendix J*.

| Approach | AM Peak | | PM Peak | |
	DoS	MMQ	DoS	MMQ
B430 (south)	131.6%	75.1	124.1%	68.5
B4030 (east)	126.8%	77.0	111.0%	35.3
B430 (north)	123.3%	90.6	107.3%	35.6
B4030 (west)	125.5%	50.6	118.1%	51.7
PRC	-46.2%		-37.9%	

Table 6.11 B430/B4030 Signalised Crossroad

6.36   The analysis demonstrates that the signalised junction is likely to operate in excess of its theoretical capacity in the 2026 scenario.

6.37   Table 6.12 shows the operation of the B430 / B4030 signalised crossroads in the 2026 baseline BTM plus committed developments scenario, including the Heyford Park development. Model output files are attached at *Appendix J*.

Approach	AM Peak		PM Peak		SAT Peak	
	DoS	MMQ	DoS	MMQ	DoS	MMQ
B430 (south)	128.1%	85.6	124.6%	85.9	51.5%	5.8
B4030 (east)	147.5%	155.6	130.8%	90.8	55.6%	7.7
B430 (north)	143.4%	139.8	121.8%	66.6	55.7%	8.5
B4030 (west)	145.5%	92.1	131.4%	86.1	55.1%	8.8
PRC	-63.9%		-46.0%		+61.6%	

Table 6.12 B430/B4030 Signalised Crossroad – 2026 Baseline

6.38   The analysis demonstrates that the signalised junction is likely to operate in excess of its theoretical capacity once committed development traffic is included. The model results demonstrate that the inclusion of committed developments results in the PRC decreasing from -46.2% to -63.9% during the morning peak hour and from -37.9% to -46.0% during the evening peak hour.

6.39   Table 6.13 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the development in place. Model output files are attached at *Appendix J*.

Approach	AM Peak		PM Peak		SAT Peak	
	DoS	MMQ	DoS	MMQ	DoS	MMQ
B430 (south)	130.7%	91.8	121.6%	83.4	55.9%	6.7
B4030 (east)	147.5%	155.6	136.0%	99.5	59.9%	8.1
B430 (north)	147.5%	151.0	131.7%	85.6	59.0%	9.4
B4030 (west)	145.5%	92.1	131.4%	86.2	58.2%	9.1
PRC	-63.9%		-51.1%		+50.2%	

Table 6.13 B430/B4030 Signalised Crossroad – 2026 Baseline

6.40   The analysis demonstrates that whilst the junction will continue to operate in excess of its theoretical capacity with the inclusion traffic associated with the Proposed Development. However, it is considered that the Proposed Development does not have a material effect on either the overall Degree of Saturation at the junction or expected queuing in comparison to the 2026 with committed developments scenario.

6.41   On the basis of the above, it is considered that the development will not have a material effect on the operation of the junction. Furthermore, it is anticipated that the Heyford Park Development will be required to provide a package of mitigation measures and as such the effect of the Proposed Development may be lessened. On this basis, no further analysis or mitigation works are deemed necessary.

B430 / Church Road

6.42   Table 6.14 shows the operation of the B430/ Church Road junction in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at *Appendix J*.

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Church Road – B430 (n)	0.03	0.0	0.05	0.0
Church Road – B430 (s)	0.03	0.0	0.04	0.0
B430 (n)	0.08	0.1	0.16	0.3

Table 6.14: B430/Church Road Modelling – 2026 Baseline

6.43 The analysis demonstrates that the B430/Church Road junction will operate within its theoretical capacity in the 2026 future year scenario when committed development traffic is included.

6.44 Table 6.14 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the Proposed Development in place. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Church Road – B430 (n)	0.03	0.0	0.05	0.1
Church Road – B430 (s)	0.03	0.0	0.04	0.0
B430 (n)	0.08	0.2	0.17	0.4

Table 6.14 B430/Church Road Modelling – 2026 with Development

6.45 The analysis demonstrates that the junction continues to operate within its theoretical capacity following the inclusion of development traffic. As such, it is concluded that the development will not have a material effect on the operation of the junction and no further analysis is deemed necessary.

M40 Junction 9

6.46 The M40 Junction 9 signal-controlled roundabout has been assessed using the industry standard software package for signal-controlled junctions, LinSig.

6.47 Table 6.15 shows the operation of the M40 Junction 9 in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak	
	DoS	MMQ	DoS	MMQ
A41 - left	34.4%	6.0	50.3%	9.2
A41 – ahead	81.7%	21.1	79.2%	19.4
M40 (nb) – ahead/left	64.8%	6.9	86.3%	15.4
M40 (nb) – ahead	50.5%	5.3	59.7%	9.8
A34 – left	58.5%	13.5	73.9%	20.0
A34 – ahead	83.0%	17.5	74.6%	17.0
M40 (sb) – ahead/left	57.1%	11.5	87.1%	20.2
M40 (sb) – ahead	80.5%	20.1	68.6%	24.9
PRC	8.4%		2.9%	

Table 6.15 M40 Junction 9 Modelling – 2026 Baseline

6.48 The analysis demonstrates that the M40 Junction 9 is expected to operate within its theoretical capacity in the 2026 future year scenario following the inclusion of committed development traffic.

6.49 Table 6.16 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the development in place. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak	
	DoS	MMQ	DoS	MMQ
A41 - left	32.8%	5.9	55.8%	10.1
A41 – ahead	87.9%	26.4	69.0%	16.3
M40 (nb) – ahead/left	72.9%	8.0	88.8%	17.0
M40 (nb) – ahead	51.6%	5.2	61.1%	10.1
A34 – left	53.1%	10.1	73.9%	20.0
A34 – ahead	84.9%	20.7	75.9%	17.5
M40 (sb) – ahead/left	54.5%	11.0	69.9%	19.7
M40 (sb) – ahead	78.3%	20.1	87.3%	25.3
PRC	2.4%		1.4%	

Table 6.16 M40 Junction 9 Modelling – 2026 with Development

6.50   The analysis demonstrates that the junction continues to operate within its theoretical capacity following the inclusion of development traffic. As such, it is concluded that the development will not have a material effect on the operation of the junction and no further analysis or mitigation measures are deemed necessary.

M40 Junction 10 – Southern Roundabout

6.51   Table 6.17 shows the operation of the M40 Junction 10 southern roundabout in the 2026 baseline BTM (plus committed developments) scenario. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak	
	RFC	Queue (veh)	RFC	Queue (veh)
B430	0.53	1.2	0.55	1.2
A43	0.64	1.8	0.48	1.0
M40	0.78	3.9	1.08	87.1

Table 6.17 M40 Junction 10 Southern Roundabout Modelling – 2026 Baseline

6.52   The analysis demonstrates that the southern roundabout of M40 Junction 10 is likely to operate within its theoretical capacity during the morning peak hour. In the evening peak hour, it is anticipated that the M40 exit arm of the junction will operate in excess of its theoretical capacity with a maximum RFC of 1.08.

6.53   Table 6.18 shows the operation of the junction in the 2026 baseline BTM (plus committed developments) with the Proposed Development in place. Model output files are attached at Appendix J.

Approach	AM Peak		PM Peak	
	RFC	Queue (veh)	RFC	Queue (veh)
B430	0.54	1.2	0.58	1.4
A43	0.65	1.9	0.49	1.0
M40	0.79	4.0	1.08	89.7

Table 6.18 M40 Junction 10 Southern Roundabout Modelling – 2026 with Development

6.54   The analysis demonstrates that the junction will continue to operate within its theoretical capacity during the morning peak hour. During the evening peak hour, the M40 exit arm of the junction will continue to operate in excess of its theoretical capacity as per the 2026 baseline scenario.

6.55 However, the addition of traffic associated with the Proposed Development will not result in any change in the expected RFC of that arm of the junction and will result in a negligible change in expected queuing on that arm of the junction. On that basis, it is concluded that the Proposed Development will not have a material effect on the operation of the junction and no further analysis or mitigation measures are deemed necessary.

Summary

6.56 The effect of the Proposed Development on the local highway network has been assessed at the following junctions, as agreed with OCC:

▶ A4095/ Site Access priority junction;

▶ A4095/ B430 priority crossroads;

▶ B430/ B430 Roundabout (north of A34 interchange);

▶ A4095/ Vendee Drive priority junction; and,

▶ Vendee Drive/ A41 Oxford Road roundabout.

6.57 In addition, as requested by OCC, consideration has been given to the effect of the Proposed Development at the B430/B4030 signalised crossroad in Middleton Stoney, the B430 junction with Church Road in Weston-on-the-Green, M40 Junctions 9 and M40 Junction 10 southern roundabout.

6.58 Detailed capacity assessment has demonstrated that the proposed site access junction from the A4095 will operate within capacity and with minimal queuing or vehicle delay. In addition, the analysis demonstrates that the Proposed Development will not have a material effect on the operation of the junctions on the local highway network and would not result in a severe impact on the highway network, as defined by the NPPF and outlined in Section 2 of this report. On this basis, it is concluded that no further assessment or highway mitigation works are necessary at these junctions as a result of the Proposed Development.

7.0   Summary and Conclusions

7.1   Motion has been instructed by Great Lakes UK Limited to advise on highways and transport matters associated with Development Proposals for a hotel and indoor family resort.

7.2   The Site is situated to the east of the M40, to the south of the A4095 and to the east of the village of Chesterton. The Site currently forms part of the Bicester Hotel Golf & Spa site that benefits from one vehicle access from the A4095 which operates as the service route to the golf course and a second vehicle access from Green Lane, that operates as the main customer/ visitor access to the golf course.

7.3   The Development Proposals comprise the redevelopment of 9 holes of the existing 18 holes of the golf course and construction of a 498-bedroom hotel and indoor family resort. Vehicle access to the hotel will be taken from a new priority junction access from the A4095.

7.4   This Transport Assessment has been prepared in accordance with national and local guidance and has considered the highways and transport matters associated with the current Development Proposals and, in particular, the effect of the Development Proposals on the highway network local to the Site.

7.5   This Transport Assessment demonstrates that:

►   The application site is accessible by foot, cycle and by public transport. A new 2.5 metre wide shared foot/cycleway will be provided from the Site to Chesterton, connecting with existing footway provision;

►   Cycle parking is provided in excess of local parking standards and is provided for both staff and visitors;

►   Car parking provision is appropriate to meet the needs of the development;

►   Shuttle bus services for both guests and staff will be provided. The guest shuttle bus service will connect from the resort to Bicester North and Bicester Village stations. The staff shuttle bus service will connect the resort to Bicester Town Centre, bus and trains stations and local centres. It is envisaged that the staff shuttle bus service will also be made available to residents of Chesterton free of charge;

►   All servicing and deliveries associated with the development will be accommodated within the on-site service area;

►   A Framework Delivery and Servicing Management Plan has been developed to manage all servicing activity associated with the resort and is submitted under separate cover;

►   Detailed pre-application discussions have been held with OCC and CDC and these have resulted in agreement on matters including expected trip generation, distribution and the assessment of day-pass provision;

►   Detailed junction capacity analysis demonstrates that the proposed site access junction from the A4095 will operate within capacity with negligible queuing or vehicle delay. Furthermore, the development will not have a material effect on the operation on junctions on the local highway network and no further analysis or junction capacity mitigation works are considered necessary; and,

►   A Framework Workplace Travel Plan has been developed in order to promote sustainable travel choices amongst staff and visitors to the proposed development, this is submitted under separate cover.

7.6   On the basis of the above it is concluded that the Proposed Development will not result in a material effect on the operation of the highway network local to the Site. The Proposed Development accords with national and local transport related planning policy and, as such, should not be resisted on highways or transportation grounds.

Figures

Legend:

- Site Location
- Station
- Bus Stop

Great Wolf,
Bicester
Figure 3.1 Site Location Plan
Not to Scale

motion

Highfield

BICESTER

Chesterton

Little Chesterton
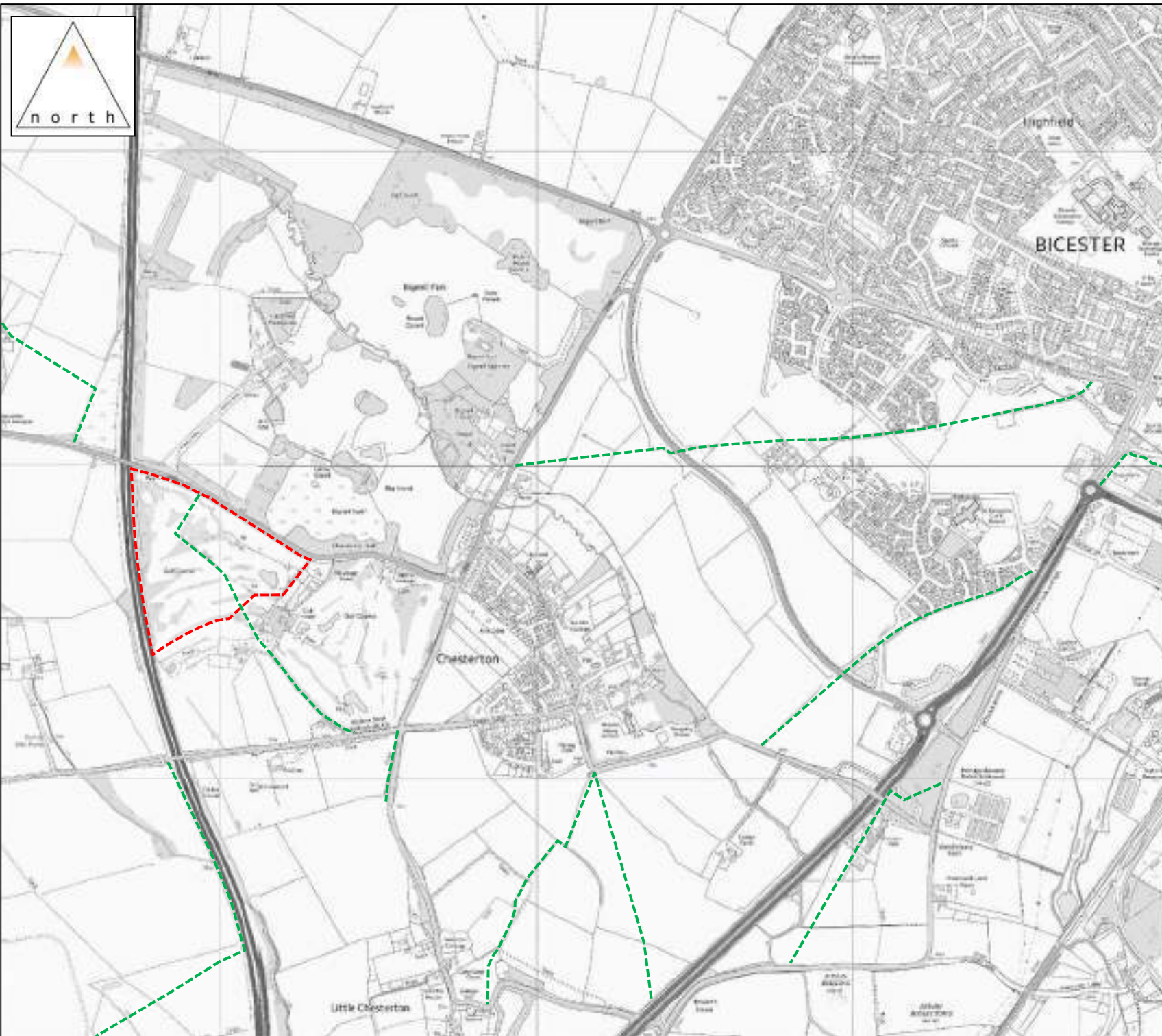
Legend:

Site Location

Existing Public Rights of Way

Great Wolf,
Bicester
Figure 3.2 Local Footpaths
Not to Scale

motion
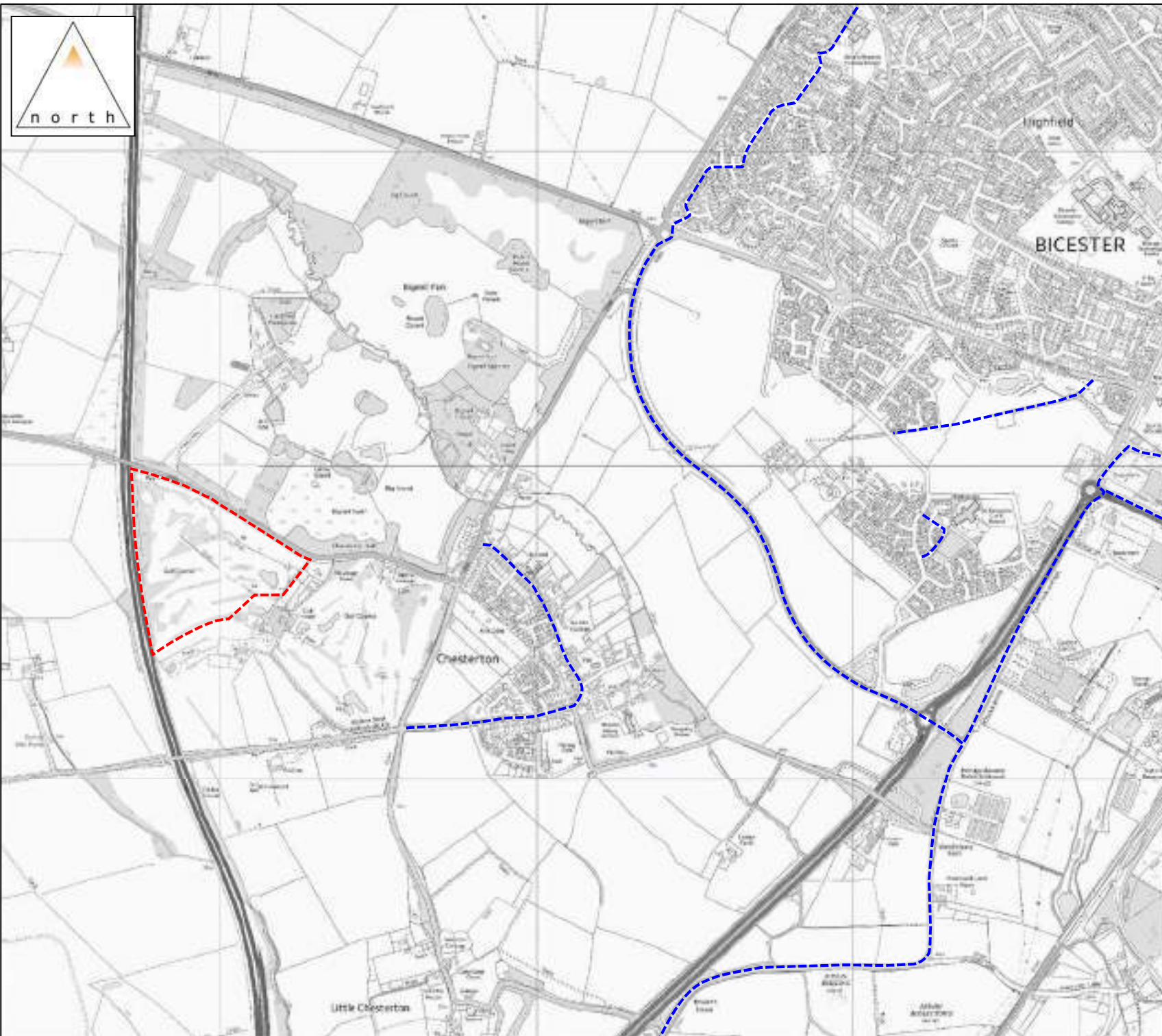
Legend:

Site Location

Existing Cycle Routes

Great Wolf,
Bicester
Figure 3.3 Local Cycle Routes
Not to Scale
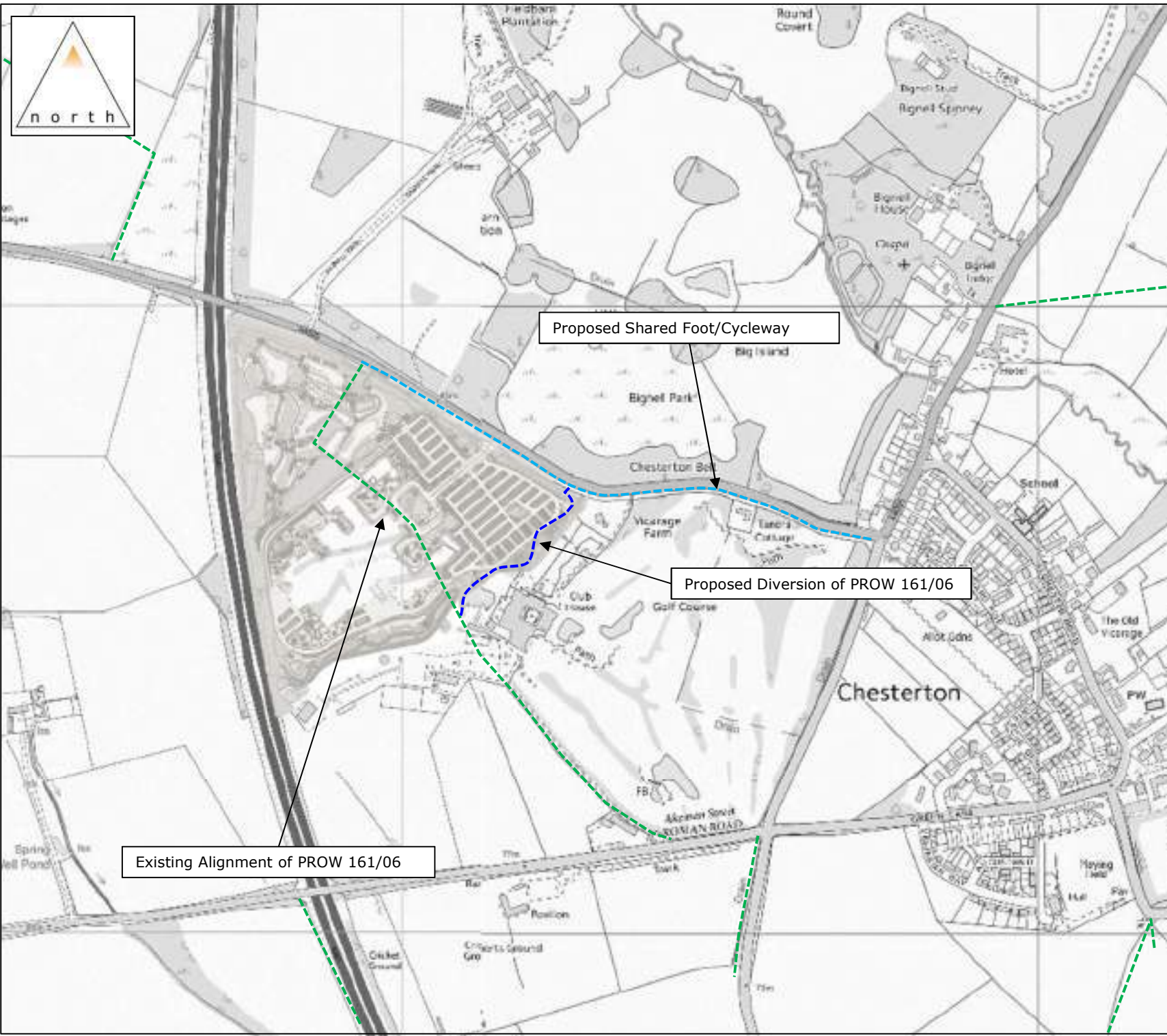
motion

Legend:

- Site Location
- Existing Public Rights of Way
- Proposed Diversion of 161/06
- Shared Foot/Cycleway

Proposed Shared Foot/Cycleway

Proposed Diversion of PROW 161/06

Existing Alignment of PROW 161/06

Great Wolf,
Bicester

Figure 4.1 Proposed Footpath Diversion
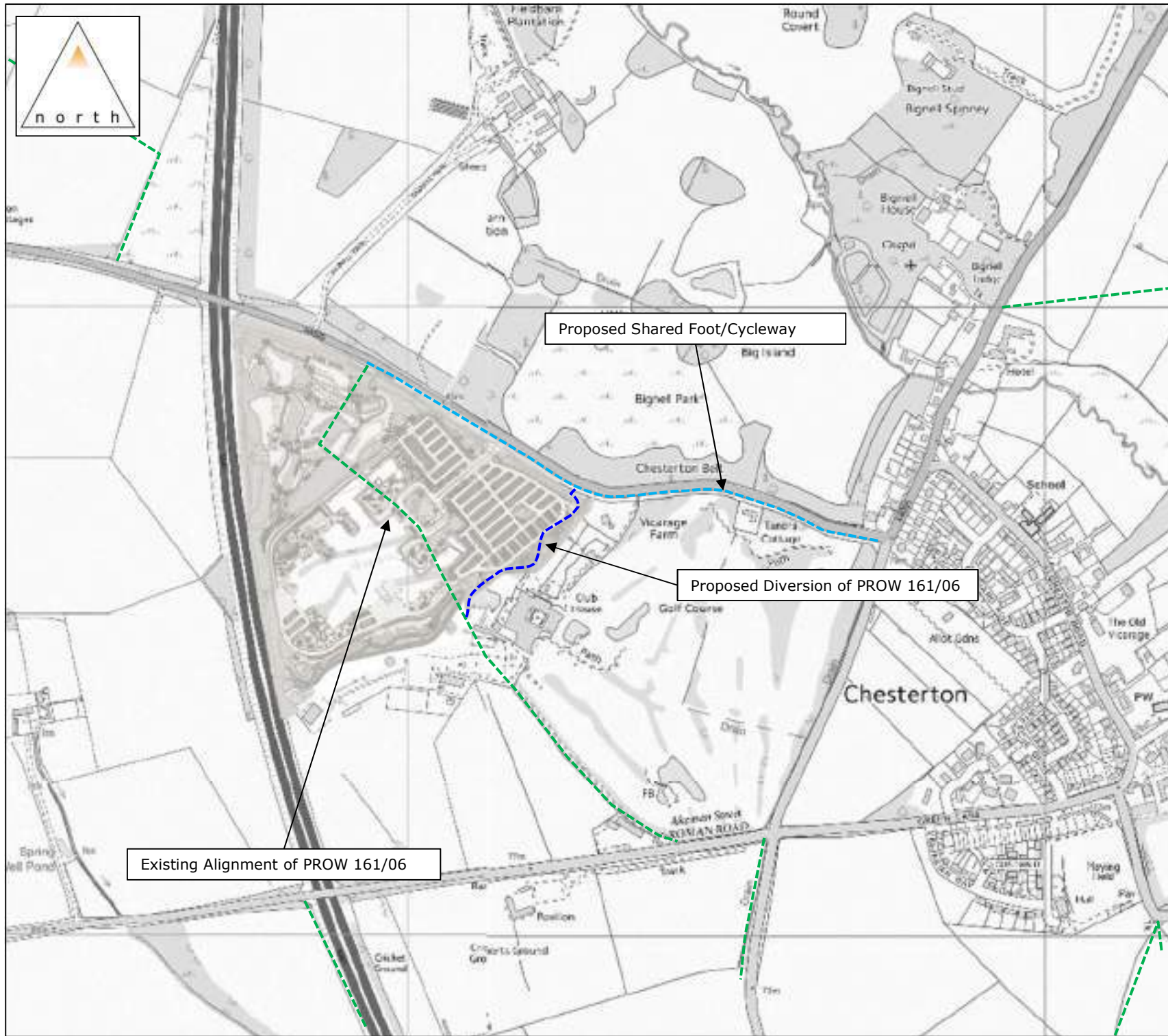
Not to Scale

motion

Legend:

Site Location

Existing Public Rights of Way

Proposed Diversion of 161/06

Shared Foot/Cycleway

Proposed Shared Foot/Cycleway

Proposed Diversion of PROW 161/06

Existing Alignment of PROW 161/06

north

Great Wolf,
Bicester

**Figure 6.1 Proposed Footpath
Diversion**

Not to Scale

motion

Great Wolf, Bicester

Figure 4.2 Guest Shuttle Bus Route to Bicester Village Station

Not to Scale

motion
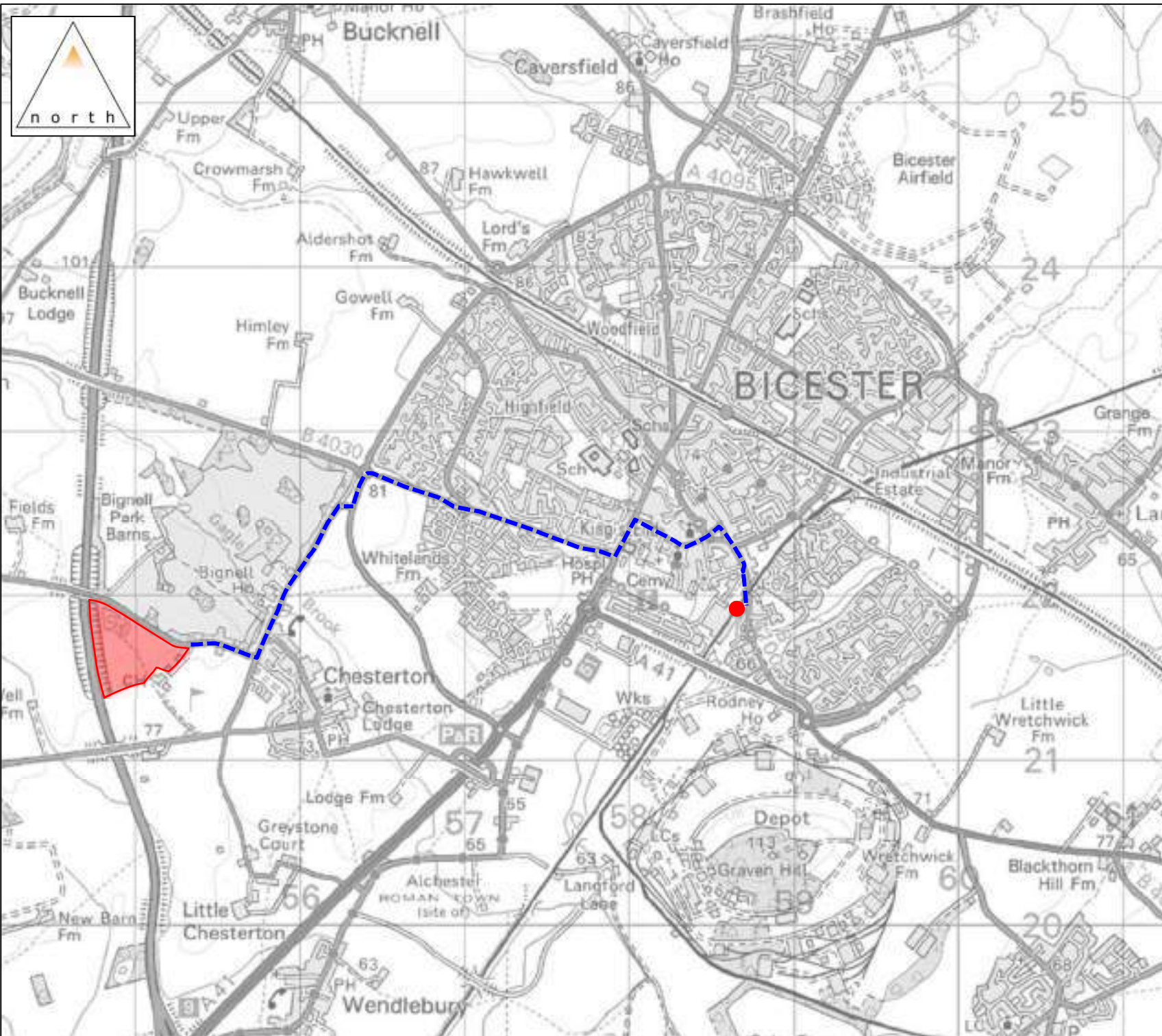
Legend:
- Site Location
- Route to Bicester North Station
- Station

Great Wolf, Bicester

Figure 4.3 Guest Shuttle Bus Route to Bicester North Station

Not to Scale

motion
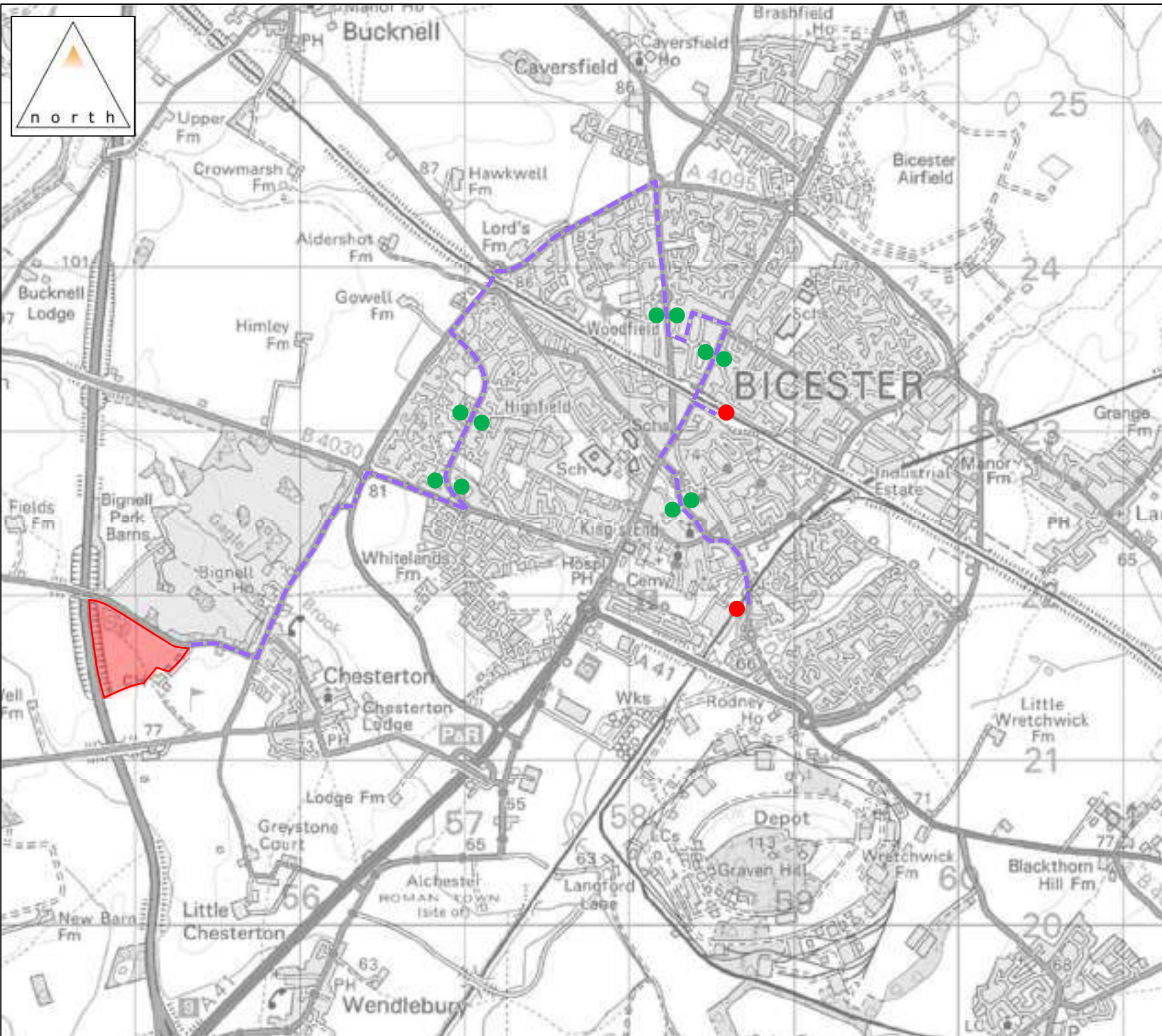
Legend:

- Site Location
- Proposed Route
- Station Served by Shuttle
- Bus Stop Served by Shuttle

Indicative Timetable

08:35 Depart Bicester Village

08:55 Arrive at Great Wolf

09:05 Depart Great Wolf

09:25 Arrive at Bicester Village

Great Wolf, Bicester

Figure 4.4 Staff Shuttle Bus Route

Not to Scale

motion

Junction labels: M40, A43, B430, Howes Lane, B4030, Middleton Stoney Road, Vendee Drive, A4095, Site Access, Church Road, P&R, A34, A41, A41, Unnamed Road, M40

M40

B430

A43

Howes Lane

B4030

Middleton Stoney Road

Vendee Drive

A4095

Site Access

Church Road

P&R

A34

A41

A41

M40

Unnamed Road
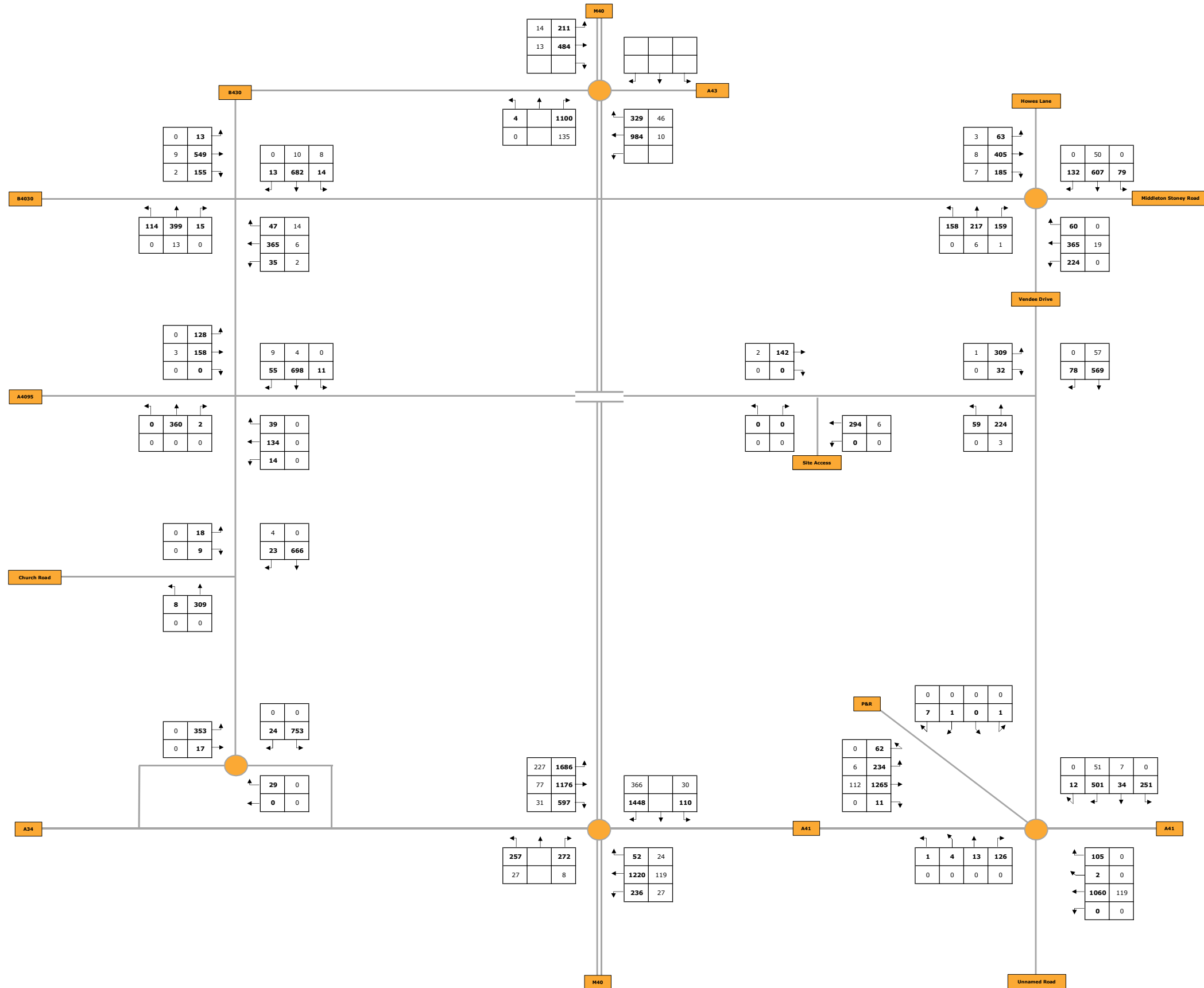
Great Wolf, Bicester

Figure 5.2 Bicester Tansport Model Traffic Flows - 2026 Evening Peak Hour
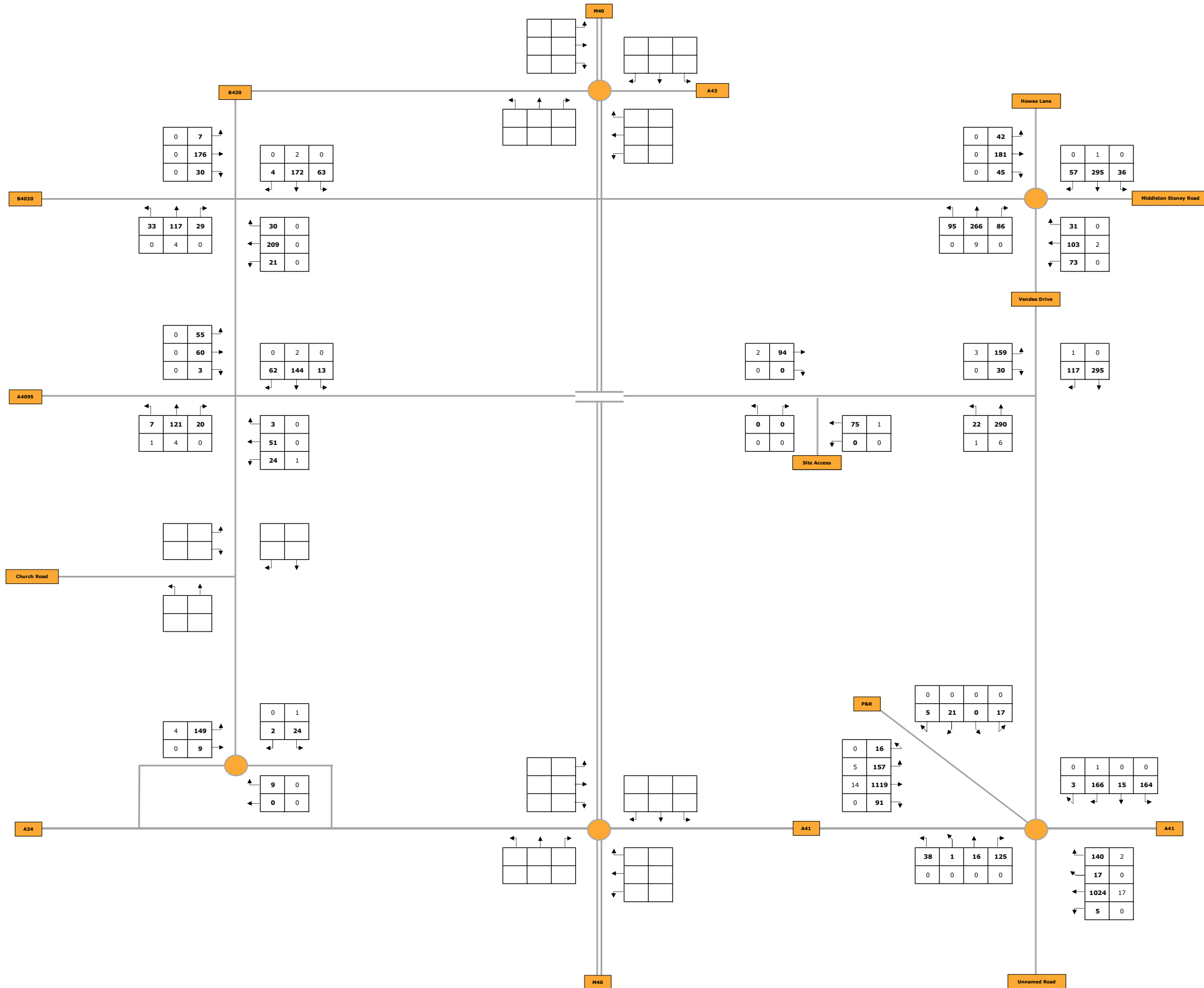
Great Wolf, Bicester

Figure 5.3 2019 Surveyed Flows - Saturday Peak Hour

Junction labels: M40, A43, B430, Howes Lane, B4030, Middleton Stoney Road, Vendee Drive, A4095, Site Access, Church Road, P&R, A34, A41, A41, M40, Unnamed Road

Turning count tables:

B430 / B4030:
0	7
0	176
0	30

| 0 | 2 | 0 |
| 4 | 172 | 63 |

Howes Lane / Middleton Stoney Road:
0	42
0	181
0	45

| 0 | 1 | 0 |
| 57 | 295 | 36 |

B4030:
| 33 | 117 | 29 |
| 0 | 4 | 0 |

30	0
209	0
21	0

| 95 | 266 | 86 |
| 0 | 9 | 0 |

31	0
103	2
73	0

A4095 / Vendee Drive:
0	55
0	60
0	3

| 0 | 2 | 0 |
| 62 | 144 | 13 |

| 2 | 94 |
| 0 | 0 |

| 3 | 159 |
| 0 | 30 |

| 1 | 0 |
| 117 | 295 |

| 7 | 121 | 20 |
| 1 | 4 | 0 |

3	0
51	0
24	1

Site Access:
| 0 | 0 |
| 0 | 0 |

| 75 | 1 |
| 0 | 0 |

| 22 | 290 |
| 1 | 6 |

A34:
| 4 | 149 |
| 0 | 9 |

| 0 | 1 |
| 2 | 24 |

| 9 | 0 |
| 0 | 0 |

P&R:
| 0 | 0 | 0 | 0 |
| 5 | 21 | 0 | 17 |

0	16
5	157
14	1119
0	91

A41:
| 0 | 1 | 0 | 0 |
| 3 | 166 | 15 | 164 |

| 38 | 1 | 16 | 125 |
| 0 | 0 | 0 | 0 |

140	2
17	0
1024	17
5	0

Great Wolf, Bicester

Figure 5.4 2026 Flows - Saturday Peak Hour

Junction labels: M40, B430, A43, Howes Lane, B4030, Middleton Stoney Road, Vendee Drive, A4095, Site Access, Church Road, P&R, A34, A41, A41, M40, Unnamed Road

Great Wolf, Bicester

Figure 5.5 BSA Chesterton Committed Development - Saturday Peak Hour

Great Wolf, Bicester
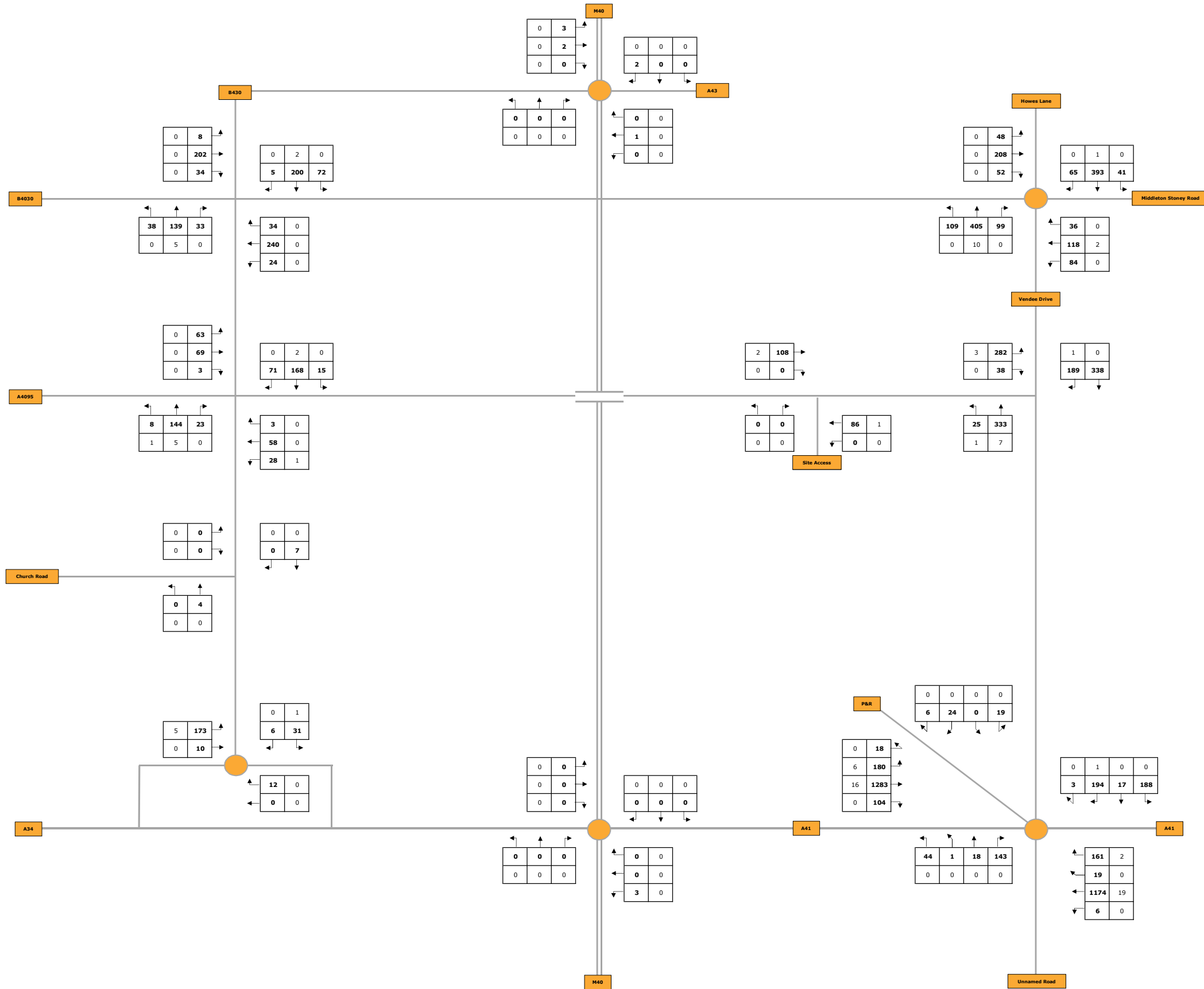
Figure 5.6 2026 Future Baseline plus Committed Developments - Saturday Peak Hour
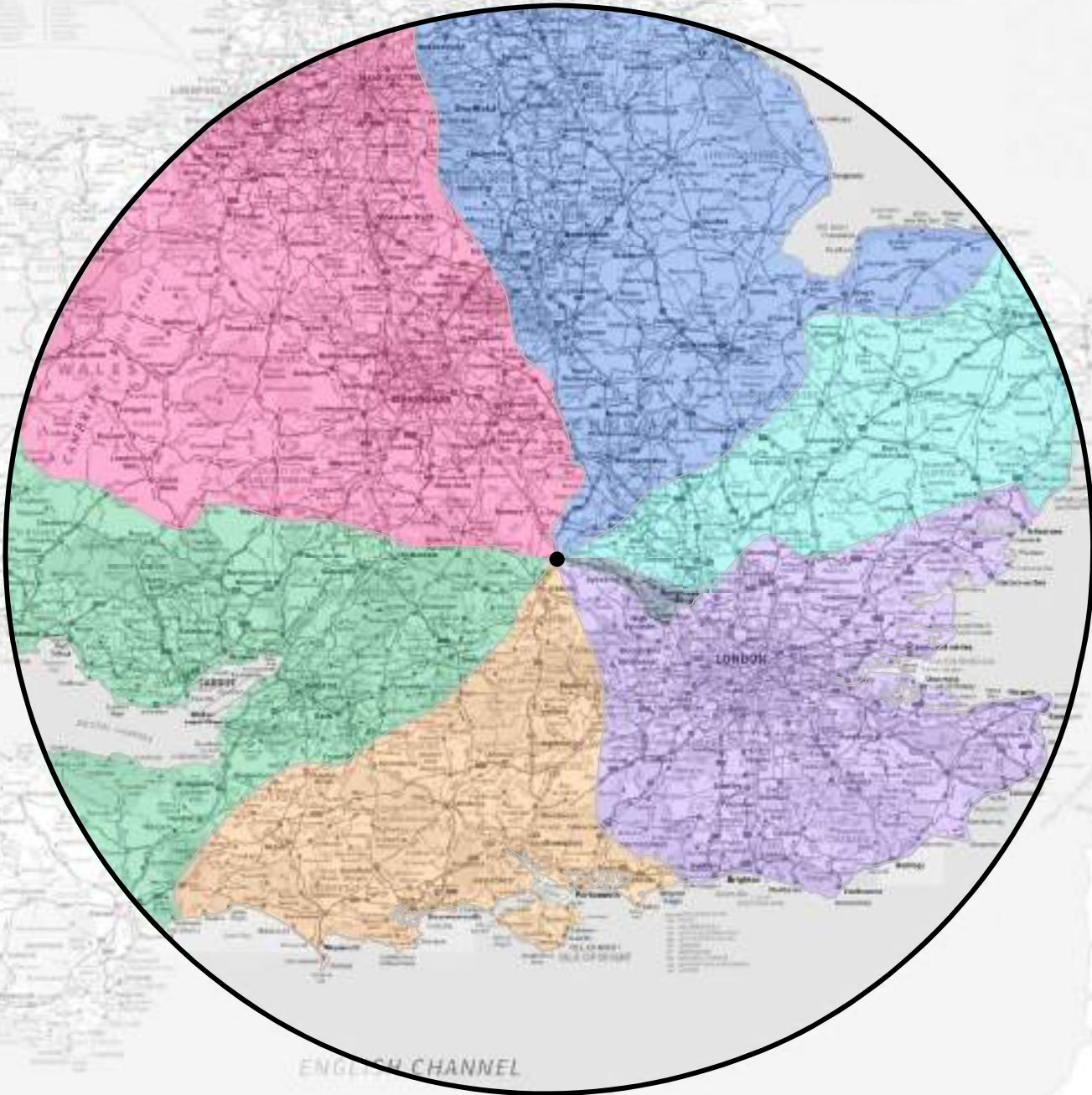
Great Wolf,
Bicester
**Figure 5.7 Guest Catchment
Area**
Not to Scale
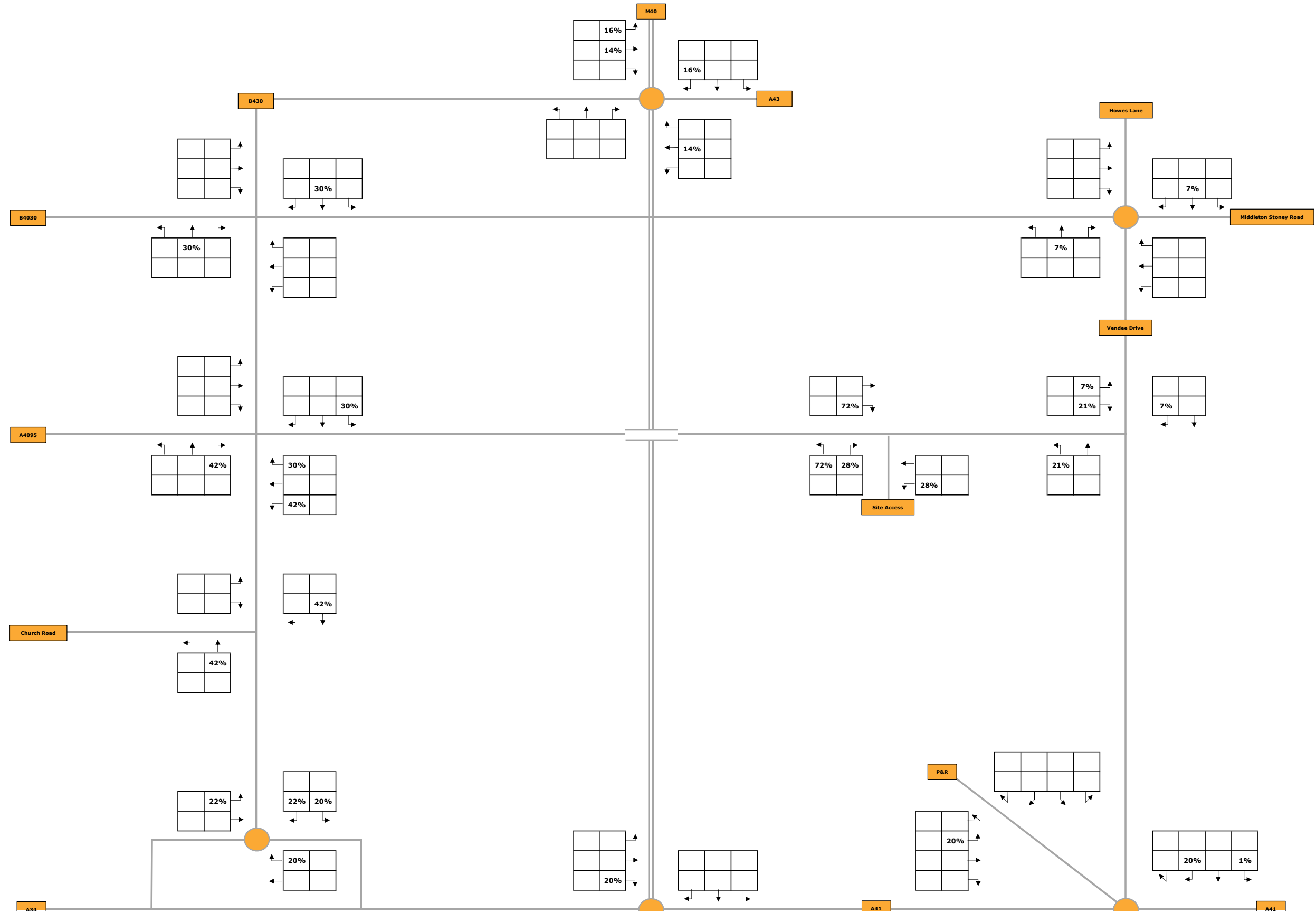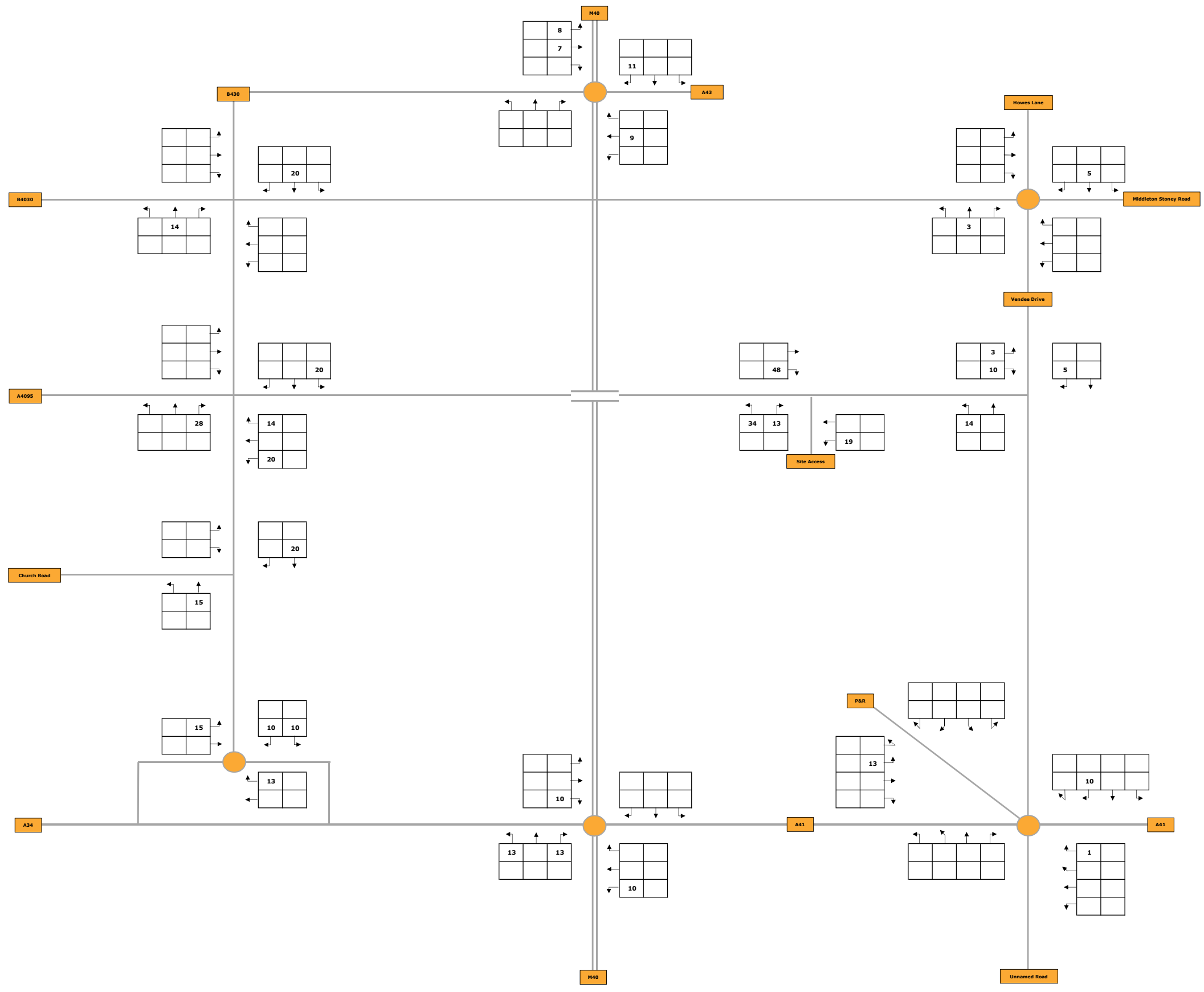
Great Wolf, Bicester

Figure 5.9 Development Trips - Morning Peak Hour
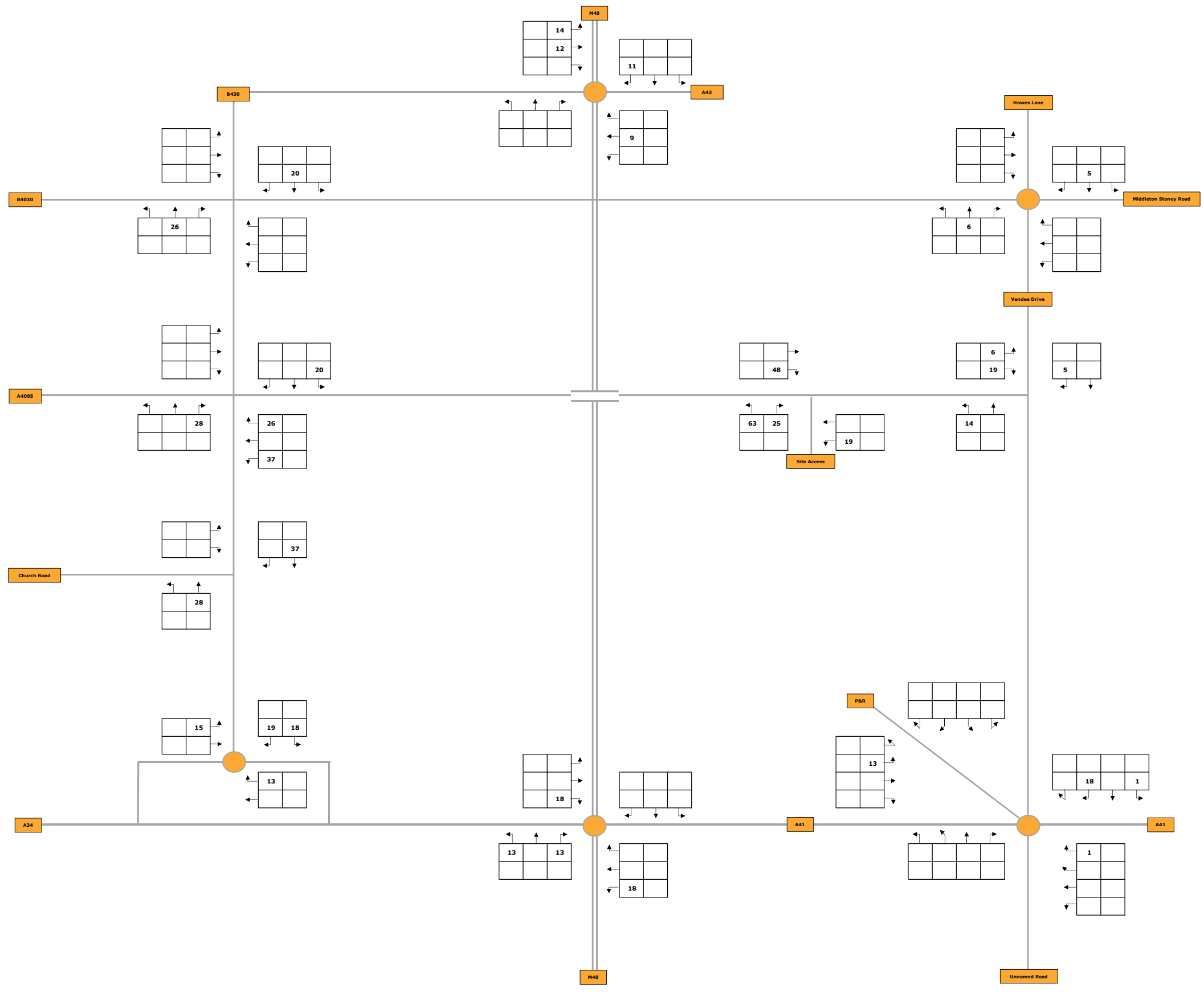
Great Wolf, Bicester

Figure 5.10 Development Trips - Evening Peak Hour

M40

20
18

20

A43

B430

Howes Lane

9

B4030

Middleton Stoney Road

37

38

9

Vendee Drive

17

37

88

9
26

9

A4095

51

38
53

90 35

34

26

53

Site Access

Church Road

51

P&R

27

28 25

24

24

25

25 1

A34

24 24

25

1

A41

A41

M40

Unnamed Road
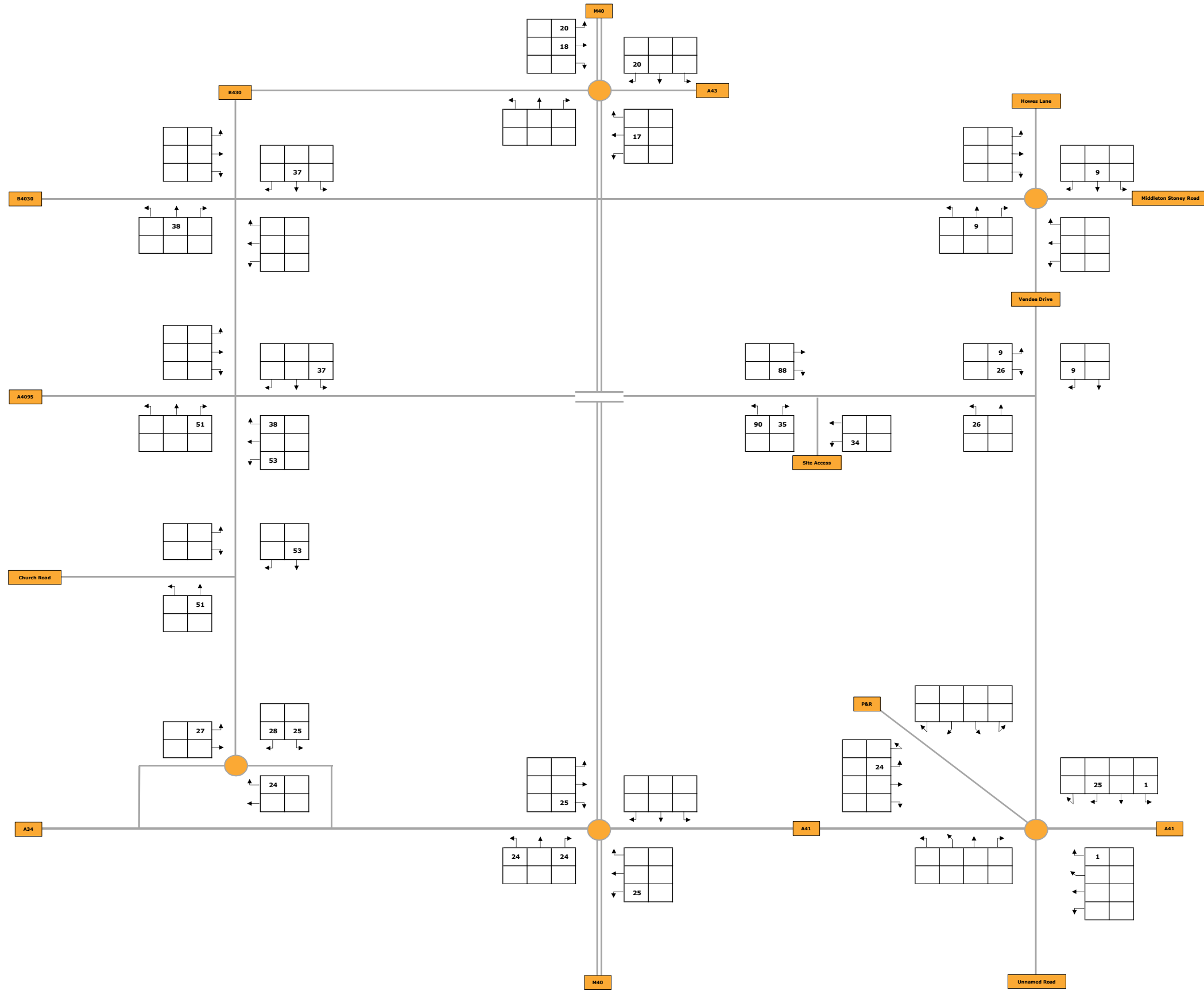
Great Wolf, Bicester

Figure 5.11 Development Trips - Saturday Peak Hour
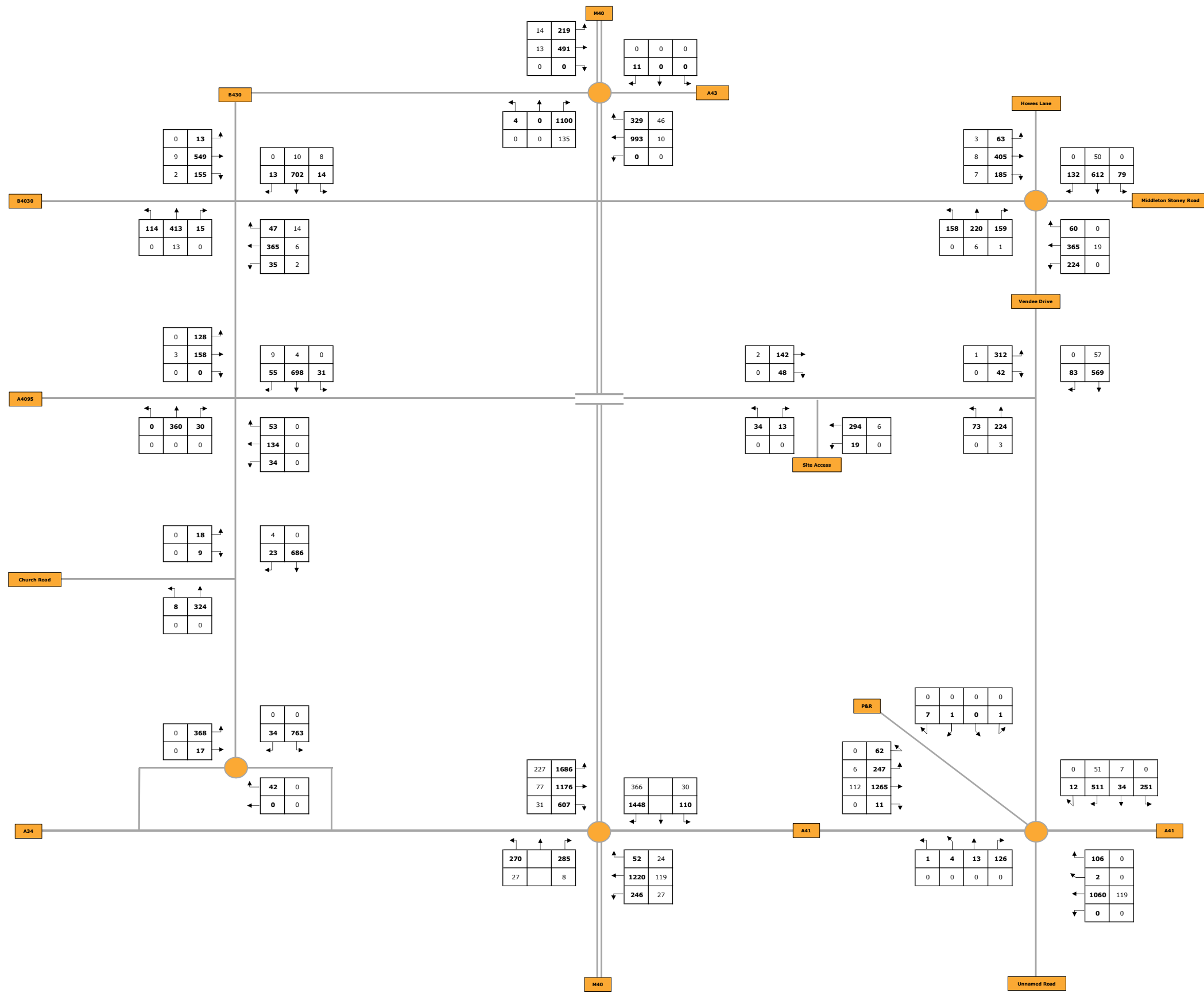
Great Wolf, Bicester

Figure 5.12 2026 'With Development' - Morning Peak Hour
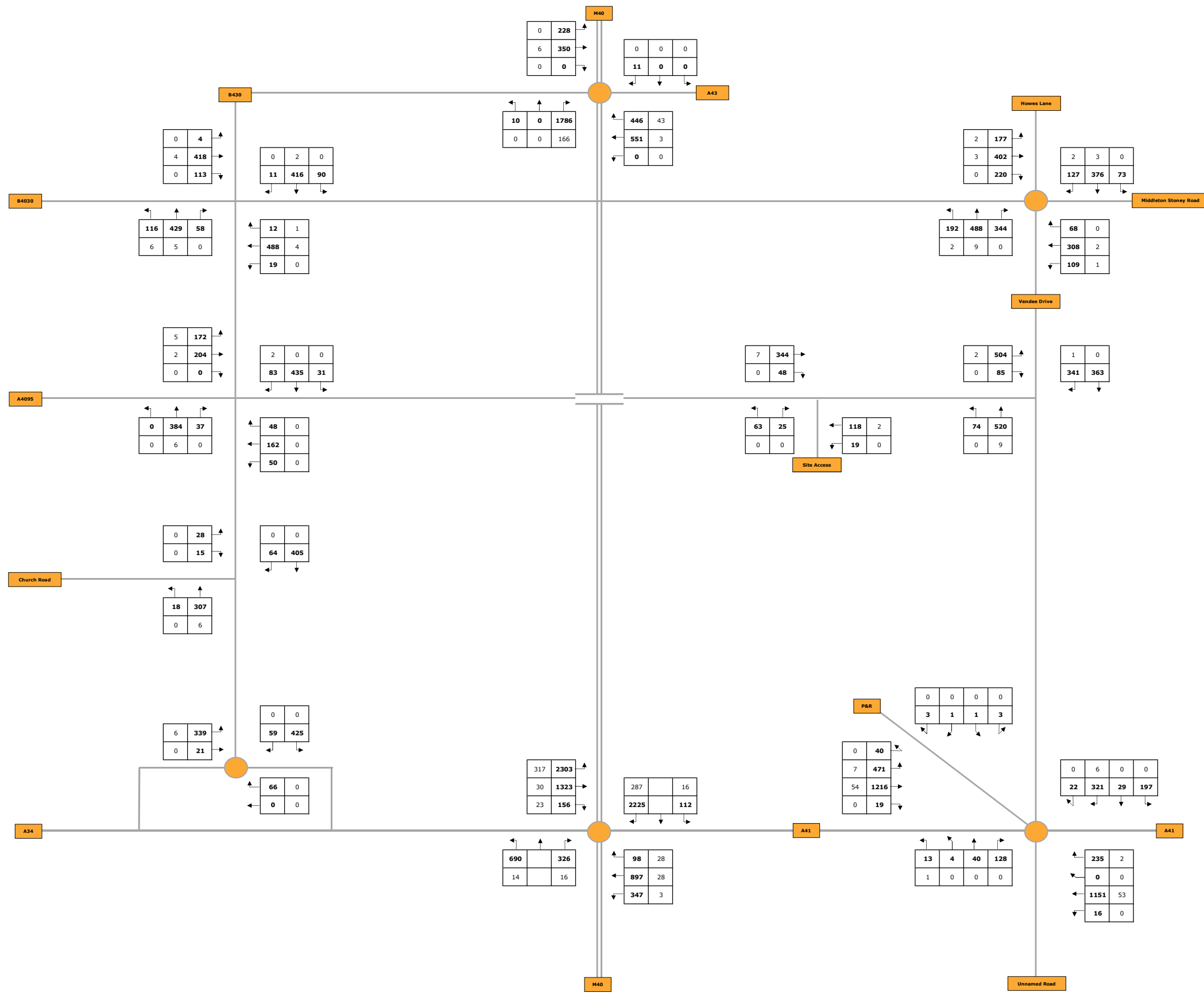
Great Wolf, Bicester

Figure 5.13 2026 'With Development' - Evening Peak Hour
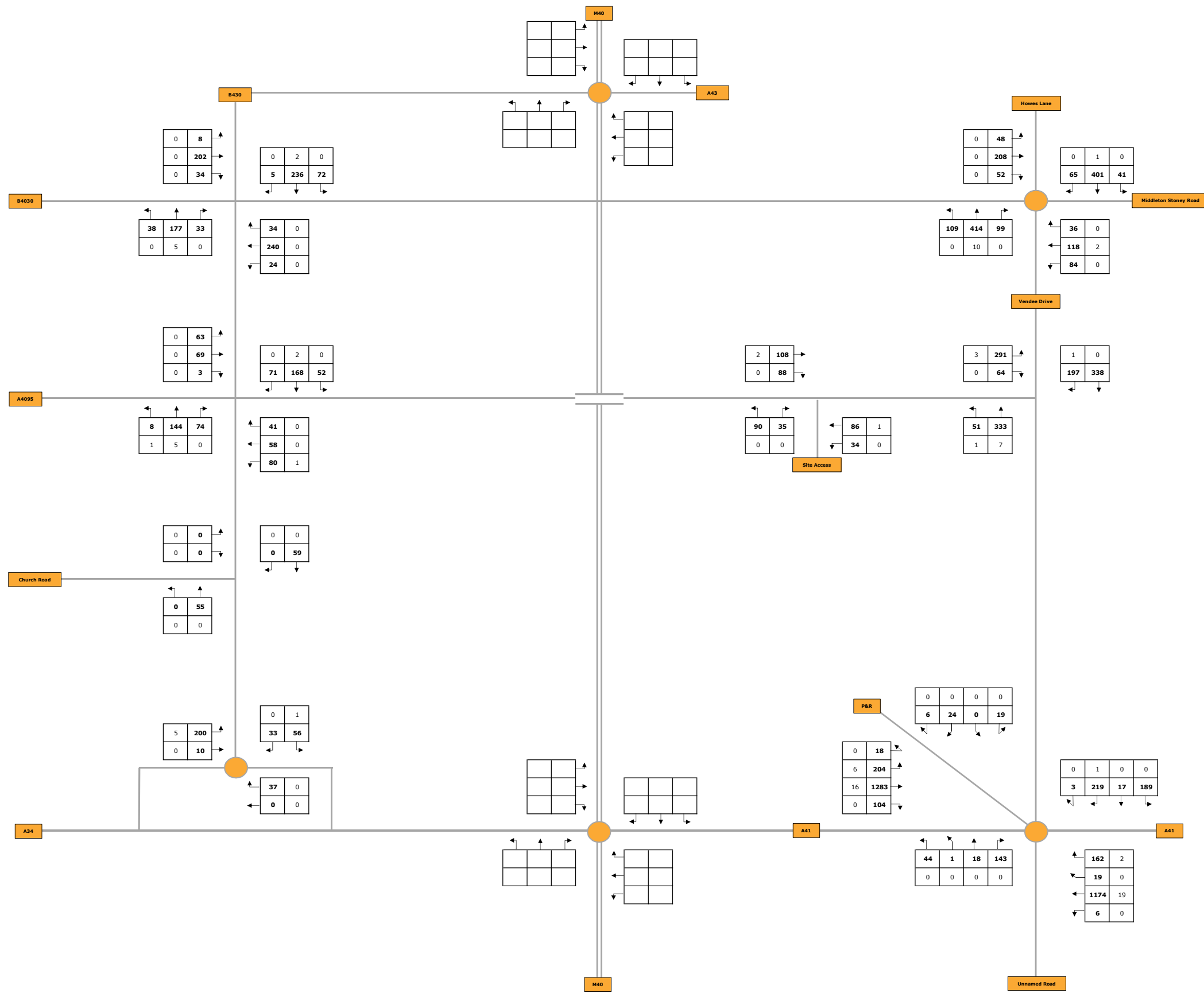
Great Wolf, Bicester

Figure 5.14 2026 'With Development' – Saturday Peak Hour

Appendix A

Personal Injury Accident Data

Legend

- ◆ Fatal (2)
- ■ Serious (12)
- ● Slight (47)

P3410114

180028501

P1620516

P0490415

170264588

170116913

1892025475

P1250715

180160033

170099318

P1240116

P2430414

P2110414

P2160714

(N.T.S)

OXFORDSHIRE COUNTY COUNCIL

Date drawn: 03/05/2019
Drawn by: CJM

Map centre:
easting: 455200, northing: 220579
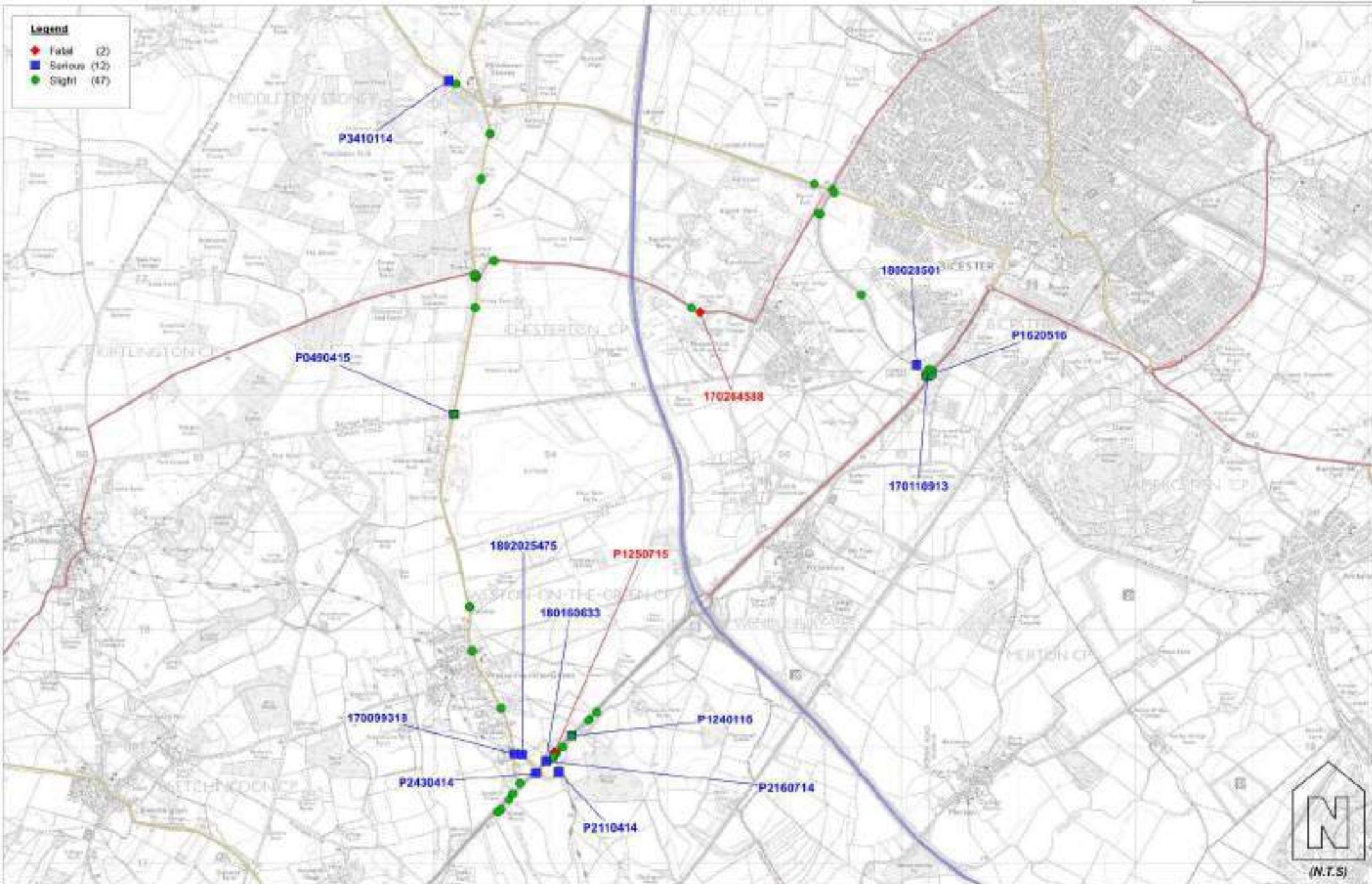
Accidents between dates **01/01/2014** **and** **31/12/2018** (60) months

Selection: **Notes:**

Monday 06/01/2014 Time 2050 Serious at B4030 HEYFORD ROAD J/W BULLMARSH CLOSE MIDDLETON STONEY

E: 453129 N: 223692 Junction Detail: T or staggered junct Control: Give way or controlled
Fine without high winds Road surface Wet/Damp Darkness: no street lighting

Vehicle Reference 1 Car Moving from S to SE Turning right On main carriageway

Vehicle Reference 2 Motorcycle over 500 Moving from SE to N Going ahead other On main carriageway

Casualty Reference: 1 Age: 48 Male Driver/rider Severity: Serious Injured by vehicle: 2

Sunday 19/01/2014 Time 1425 Slight at A4095 APPROX 150M NW OF VICARAGE FARM CHESTERTON

E: 455203 N: 221752 Junction Detail: Not within 20m of j Control:
Fine without high winds Road surface Dry Daylight

Vehicle Reference 1 Car Moving from SE to N Going ahead other On main carriageway

Casualty Reference: 1 Age: 23 Male Pedestrian Severity: Slight Injured by vehicle: 1

Accidents between dates **01/01/2014** and **31/12/2018** (60) months

Selection: Notes:

Tuesday 25/02/2014 Time 1010 Slight at A34 SBOUND AT MP97/1 WESTON ON THE GREEN

E: 454393 N: 218295 Junction Detail: Not within 20m of j Control:
Fine without high winds Road surface Wet/Damp Daylight

Vehicle Reference 1	Car	Moving from	NE to S	Going ahead other	On main carriageway
Vehicle Reference 2	Car	Moving from	NE to S	Stopping	On main carriageway

Casualty Reference: 1 Age: 61 Female Passenger Severity: Slight Injured by vehicle: 2

Vehicle Reference 3 Van or Goods 3.5 to Moving from NE to S Stopping On main carriageway

Saturday 15/03/2014 Time 1650 Slight at A41 OXFORD ROAD RBT J/W B4030 VENDEE DRIVE CHESTERTON

E: 457209 N: 221177 Junction Detail: Roundabout Control: Give way or controlled
Fine without high winds Road surface Dry Daylight

Vehicle Reference 1	Car	Moving from	S to NE	Reversing	On main carriageway
Vehicle Reference 2	Car	Moving from	S to NE	Going ahead other	On main carriageway

Casualty Reference: 1 Age: 35 Female Driver/rider Severity: Slight Injured by vehicle: 2

Accidents between dates   **01/01/2014** and   **31/12/2018**   (60) months
Selection: **Notes:**

Wednesday   23/04/2014   Time   0918   Serious   at   A34 SBOUND AT MP 96/4A   WESTON-ON-THE-GREEN

E: 453875   N: 217768   Junction Detail: Slip Road   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

Vehicle Reference 1	Car	Moving from	NE	to	S	Changing lane to right	On main carriageway
Vehicle Reference 2	Motor Cycle over 50	Moving from	NE	to	S	Going ahead other	On main carriageway

Casualty Reference: 1   Age: 72   Male   Driver/rider   Severity: Serious   Injured by vehicle: 2

Vehicle Reference 3   Goods 7.5 tonnes mg   Moving from   NE to S   Going ahead other   On main carriageway

Thursday   24/04/2014   Time   1800   Serious   at   B430 AT BEND ON SLIP RD APPROX 150M S OF J/W A34   WESTON-ON-THE-GREEN

E: 454067   N: 217780   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight

Vehicle Reference 1   Motorcycle over 500   Moving from   W   to N   Going ahead left bend   On main carriageway

Casualty Reference: 1   Age: 36   Male   Driver/rider   Severity: Serious   Injured by vehicle: 1

Accidents between dates   **01/01/2014** **and** **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   24/04/2014   Time   1357   Slight   at   B430 J/W ACCESS TO BLACK SHEEP PH APPROX 75M S OF J/W WESTLANDS AVE   WESTON ON THE GREEN

E: 453329   N: 218818   Junction Detail: Slip Road   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

	Vehicle Reference 1	Car	Moving from S to N	Going ahead other	On main carriageway
	Casualty Reference:	1	Age: 22	Female	Driver/rider	Severity: Slight	Injured by vehicle: 1
	Vehicle Reference 2	Car	Moving from S to N	Turning left	On main carriageway
	Casualty Reference:	2	Age: 29	Male	Passenger	Severity: Slight	Injured by vehicle: 2

Vehicle Reference 1   Car   Moving from   S   to   N   Going ahead other   On main carriageway

Casualty Reference: 1   Age: 22   Female   Driver/rider   Severity: Slight   Injured by vehicle: 1

Vehicle Reference 2   Car   Moving from   S   to   N   Turning left   On main carriageway

Casualty Reference: 2   Age: 29   Male   Passenger   Severity: Slight   Injured by vehicle: 2

Saturday   26/04/2014   Time   0655   Slight   at   B430 AT J/W A4095   CHESTERTON

E: 453364   N: 222015   Junction Detail: Crossroads   Control: Give way or controlled
Raining without high winds   Road surface   Wet/Damp   Daylight

Vehicle Reference 1   Car   Moving from   E   to   W   Going ahead other   On main carriageway

Casualty Reference: 1   Age: 30   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

Vehicle Reference 2   Car   Moving from   N   to   S   Going ahead other   On main carriageway

Casualty Reference: 2   Age: 33   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

Accidents between dates **01/01/2014** and **31/12/2018** (60) months

Selection: **Notes:**

Sunday 11/05/2014 Time 0849 Slight at A41 RBT AT J/W VENDEE DRIVE CHESTERTON

E: 457218 N: 221163 Junction Detail: Roundabout Control: Give way or controlled
Fine without high winds Road surface Dry Daylight

Vehicle Reference 1	Car	Moving from S to NE	Going ahead other	On main carriageway

Casualty Reference: 1	Age: 26	Male	Driver/rider	Severity: Slight	Injured by vehicle: 1
Casualty Reference: 2	Age: 26	Female	Passenger	Severity: Slight	Injured by vehicle: 1

Monday 19/05/2014 Time 0705 Slight at A41 SBOUND AT RBT J/WB4030 VENDEE DRIVE CHESTERTON

E: 457263 N: 221217 Junction Detail: Roundabout Control: Give way or controlled
Fine without high winds Road surface Dry Daylight

Vehicle Reference 1	Car	Moving from NE to S	Going ahead other	On main carriageway

Casualty Reference: 2	Age: 33	Male	Passenger	Severity: Slight	Injured by vehicle: 1
Casualty Reference: 3	Age: 32	Female	Driver/rider	Severity: Slight	Injured by vehicle: 1

Vehicle Reference 2	Car	Moving from NE to S	Going ahead but held up	On main carriageway

Casualty Reference: 1	Age: 34	Female	Driver/rider	Severity: Slight	Injured by vehicle: 2

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Saturday   24/05/2014   Time   1539   Slight   at   A34 SBOUND AT MP97/0   WESTON ON THE GREEN

E: 454336   N: 218233   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight
         Vehicle Reference 1   Goods 7.5 tonnes mg   Moving from   NE to S   Starting   On main carriageway

                  Casualty Reference: 1   Age: 57   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1
         Vehicle Reference 2   Goods 7.5 tonnes mg   Moving from   NE to   Parked   On main carriageway

Wednesday   02/07/2014   Time   1120   Slight   at   B4030 VENDEE DRIVE J/W A4095 FROM CHESTERTON   CHESTERTON

E: 456307   N: 222551   Junction Detail: T or staggered junct   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight
         Vehicle Reference 1   Car   Moving from   S   to N   Going ahead other   On main carriageway

                  Casualty Reference: 1   Age: 21   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1
         Vehicle Reference 2   Car   Moving from   W   to S   Turning right   On main carriageway

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: Notes:

Sunday   20/07/2014   Time   1520   Serious   at   A34 NBOUND AT MP 96/5A   WESTON-ON-THE-GREEN

E: 453961   N: 217871   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight

Vehicle Reference 1	Van or Goods 3.5 to	Moving from	S	to	NE	Going ahead other	On main carriageway

Casualty Reference:	1	Age:	26	Male	Driver/rider	Severity: Serious Injured by vehicle: 1
Casualty Reference:	2	Age:	17	Male	Passenger	Severity: Slight Injured by vehicle: 1

Vehicle Reference 2   Goods 7.5 tonnes mg   Moving from   S   to   NE   Stopping   On main carriageway

Sunday   31/08/2014   Time   1530   Slight   at   B430 OXFORD RD J/W ACCESS TO SIMMS FARM   CHESTERTON

E: 453355   N: 221752   Junction Detail: Using private drive c   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

Vehicle Reference 1   Car   Moving from   N   to   S   Going ahead other   On main carriageway

Casualty Reference: 1   Age: 35   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

Vehicle Reference 2   Car   Moving from   S   to   E   Turning right   On main carriageway

Accidents between dates   **01/01/2014** **and** **31/12/2018**   (60) months

Selection: **Notes:**

Tuesday   09/09/2014   Time   0610   Slight   at   A34 SBOUND AT MP97/0   WESTON ON THE GREEN

E: 454321   N: 218220   Junction Detail: Not within 20m of j   Control:
Fog or mist   Road surface   Dry   Daylight

Vehicle Reference 1	Goods 7.5 tonnes mg	Moving from	NE to S	Going ahead other	On main carriageway
Vehicle Reference 2	Motorcycle over 500	Moving from	NE to S	Going ahead other	On main carriageway

        Casualty Reference: 1   Age: 50   Male   Driver/rider   Severity: Slight   Injured by vehicle: 2

    Vehicle Reference 3   Goods 7.5 tonnes mg   Moving from   NE to S   Starting   Leaving lay-by or hard shoulder

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Saturday   15/11/2014   Time   1424   Slight   at   A34 SBOUND J/W ENTRANCE TO PETROL FILLING STATION BY MP 95/9   WESTON ON THE GREEN

E: 453576   N: 217460   Junction Detail: Slip Road   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

    Vehicle Reference 1   Car   Moving from   NE to S   Turning left   On main carriageway

        Casualty Reference: 1   Age: 34   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

        Casualty Reference: 2   Age: 29   Female   Passenger   Severity: Slight   Injured by vehicle: 1

Accidents between dates 01/01/2014 **and** 31/12/2018 (60) months

Selection: Notes:

Tuesday   30/12/2014   Time 1728   Slight   at   B430 ARDLEY ROAD APPROX 650M S OF J/W B4030 BICESTER ROAD   MIDDLETON STONEY

E: 453404   N: 222851   Junction Detail: Not within 20m of j   Control:
Raining without high winds   Road surface   Wet/Damp   Darkness: no street lighting
        Vehicle Reference 1   Car   Moving from   S   to   N   Going ahead left bend   On main carriageway
                Casualty Reference: 1   Age: 77   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1
        Vehicle Reference 2   Car   Moving from   N   to   S   Going ahead right bend   On main carriageway

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Thursday   15/01/2015   Time 1521   Slight   at   B430 J/W AKEMAN STREET   CHESTERTON

E: 453176   N: 220836   Junction Detail: Crossroads   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight
        Vehicle Reference 1   Car   Moving from   E   to   W   Going ahead other   On main carriageway
                Casualty Reference: 1   Age: 73   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1
        Vehicle Reference 2   Other Vehicle   Moving from   S   to   N   Going ahead other   On main carriageway

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Monday   26/01/2015   Time 1355   Slight   at   A4095 20M W OF J/W A4095 / B4030 VENDEE DRIVE   CHESTERTON

E: 456283   N: 222559   Junction Detail: T or staggered junct   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight
        Vehicle Reference 1   Motor Cycle over 50   Moving from   S   to   E   Going ahead right bend   On main carriageway
                Casualty Reference: 1   Age: 19   Female   Driver/rider   Severity: Slight   Injured by vehicle: 1

Accidents between dates **01/01/2014** **and** **31/12/2018** (60) months

Selection: **Notes:**

Saturday 07/02/2015 Time 1825 Slight at B430 APPROX 270M S OF J/W B4030 MIDDLETON STONEY

E: 453485 N: 223237 Junction Detail: Not within 20m of j Control:
Fine without high winds Road surface Wet/Damp Darkness: no street lighting

Vehicle Reference 1 Car Moving from N to S Going ahead right bend On main carriageway

Casualty Reference: 2 Age: 36 Male Driver/rider Severity: Slight Injured by vehicle: 1

Vehicle Reference 2 Car Moving from S to N Going ahead left bend On main carriageway

Casualty Reference: 1 Age: 57 Male Driver/rider Severity: Slight Injured by vehicle: 2

Accidents between dates **01/01/2014** and **31/12/2018** (60) months

Selection: **Notes:**

Friday 13/02/2015 Time 1541 Slight at A34 SBOUND APPROX 40M NE OF J/W EXIT SLIP RD TO B430 WESTON ON THE GREEN

E: 454050 N: 217943 Junction Detail: Slip Road Control: Give way or controlled

Raining without high winds Road surface Wet/Damp Daylight

Vehicle Reference 1	Car	Moving from	NE to S	Going ahead other	On main carriageway	
Casualty Reference:	1	Age: 45	Female	Driver/rider	Severity: Slight	Injured by vehicle: 1
Vehicle Reference 2	Car	Moving from	NE to S	Going ahead other	On main carriageway	
Vehicle Reference 3	Car	Moving from	NE to S	Going ahead other	On main carriageway	
Vehicle Reference 4	Car	Moving from	NE to S	Going ahead other	On main carriageway	
Casualty Reference:	2	Age: 39	Female	Driver/rider	Severity: Slight	Injured by vehicle: 4
Casualty Reference:	3	Age: 10	Female	Passenger	Severity: Slight	Injured by vehicle: 4
Vehicle Reference 5	Car	Moving from	NE to S	Going ahead other	On main carriageway	
Casualty Reference:	4	Age: 29	Female	Driver/rider	Severity: Slight	Injured by vehicle: 5
Casualty Reference:	5	Age: 3	Male	Passenger	Severity: Slight	Injured by vehicle: 5

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: Notes:

Monday   16/03/2015   Time   0808   Slight   at   A4095 HOWES LANE RBT J/W A4095 VENDEE DRIVE & B4030 MIDDLETON STONEY ROAD
                                                                  CHESTERTON

E: 456412   N: 222765   Junction Detail: Roundabout   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

         Vehicle Reference 1   Car   Moving from   NE to S   Going ahead other   On main carriageway

         Vehicle Reference 2   Car   Moving from   NE to S   Going ahead but held up   On main carriageway

                  Casualty Reference: 1   Age: 26   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

Friday   03/04/2015   Time   1415   Serious   at   B430 XRDS J/W AKEMAN STREET   CHESTERTON

E: 453176   N: 220842   Junction Detail: Crossroads   Control: Give way or controlled
Fine without high winds   Road surface   Wet/Damp   Daylight

         Vehicle Reference 1   Car   Moving from   W   to E   Going ahead other   On main carriageway

                  Casualty Reference: 1   Age: 40   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

         Vehicle Reference 2   Car   Moving from   N   to S   Going ahead other   On main carriageway

                  Casualty Reference: 2   Age: 56   Male   Driver/rider   Severity: Serious   Injured by vehicle: 2

                  Casualty Reference: 3   Age: 52   Female   Passenger   Severity: Serious   Injured by vehicle: 2

                  Casualty Reference: 4   Age: 17   Female   Passenger   Severity: Serious   Injured by vehicle: 2

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: Notes:

Friday   24/04/2015   Time   1714   Slight   at   B430 XRDS J/W AKEMAN ST   CHESTERTON

E: 453174   N: 220838   Junction Detail: Crossroads   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

     Vehicle Reference   1   Car   Moving from   W   to   E   Going ahead other   On main carriageway

     Vehicle Reference   2   Car   Moving from   N   to   S   Going ahead other   On main carriageway

         Casualty Reference: 1   Age: 52   Male   Driver/rider   Severity: Slight   Injured by vehicle: 2

Thursday   11/06/2015   Time   1520   Slight   at   B430   APPROX 150M N OF J/W KNOWLE LANE   WESTON ON THE GREEN

E: 453577   N: 218325   Junction Detail: Using private drive c   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

     Vehicle Reference   1   Car   Moving from   SE   to   N   Overtaking stat vehicle O/S   On main carriageway

         Casualty Reference: 1   Age: 70   Male   Pedestrian   Severity: Slight   Injured by vehicle: 1

     Vehicle Reference   2   Goods 7.5 tonnes mg   Moving from   SE   to   Parked   On main carriageway

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Accidents between dates　　**01/01/2014**　and　**31/12/2018**　　(60) months

Selection:　　　　　　　　　　　　　　　　　　**Notes:**

Friday　　　　10/07/2015　　Time　1405　　Slight　　　at　B4030 MIDDLETON STONEY ROAD APPROX 200M W OF RBT J/W A4095 HOWES LANE & VENDEE DRIVE
　　　　　　　　　　　　　　　　　　　　　　　　　　CHESTERTON

E: 456253　N: 222808　Junction Detail:　Not within 20m of j　Control:
Fine without high winds　　　　　　　　Road surface　　Dry　　　　　　　　Daylight
　　　　　Vehicle Reference 1　　Car　　　　　　Moving from　N　to　SE　　Going ahead other　　　　On main carriageway

　　　　　　　　Casualty Reference:　　1　　　Age:　　60　　　Female　　　　　Driver/rider　　　　Severity: Slight　　Injured by vehicle: 1

　　　　　Vehicle Reference 2　　Car　　　　　　Moving from　N　to　SE　　Going ahead but held up　　On main carriageway

　　　　　Vehicle Reference 3　　Car　　　　　　Moving from　N　to　SE　　Going ahead but held up　　On main carriageway

Saturday　　　11/07/2015　　Time　0604　　Slight　　　at　A41 NBOUND RBT J/W B4030 VENDEE DRIVE & WENDLEBURY ROAD　　　　BICESTER

E: 457217　N: 221155　Junction Detail:　Roundabout　　　Control: Give way or controlled
Fine without high winds　　　　　　　　Road surface　　Dry　　　　　　　　Daylight
　　　　　Vehicle Reference 1　　Car　　　　　　Moving from　S　to　NE　　Going ahead other　　　　On main carriageway

　　　　　　　　Casualty Reference:　　1　　　Age:　　20　　　Male　　　　　Driver/rider　　　　Severity: Slight　　Injured by vehicle: 1

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Sunday   12/07/2015   Time 1527   Fatal   at   A34 NBOUND AT MARKER POST 96/6A   WENDLEBURY

E: 454032   N: 217948   Junction Detail: Not within 20m of j   Control:
Unknown   Road surface   Dry   Daylight

Vehicle Reference 1	Goods 7.5 tonnes mg	Moving from	S	to	NE	Going ahead other	On main carriageway
Vehicle Reference 2	Car	Moving from	S	to	NE	Going ahead other	On main carriageway

             Casualty Reference: 1   Age: 73   Female   Driver/rider   Severity: Fatal   Injured by vehicle: 2

       Vehicle Reference 3   Car   Moving from   S   to   NE   Going ahead other   On main carriageway

             Casualty Reference: 2   Age: 53   Female   Driver/rider   Severity: Slight   Injured by vehicle: 3

       Vehicle Reference 4   Car   Moving from   S   to   NE   Going ahead other   On main carriageway

             Casualty Reference: 3   Age: 42   Male   Driver/rider   Severity: Slight   Injured by vehicle: 4

       Vehicle Reference 5   Car   Moving from   S   to   NE   Going ahead other   On main carriageway

Tuesday   13/10/2015   Time 2322   Slight   at   A4095 BICESTER ROAD AT BEND APPROX 200M NE OF J/W B430   CHESTERTON

E: 453515   N: 222152   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Darkness: no street lighting

       Vehicle Reference 1   Car   Moving from   S   to   E   Going ahead right bend   On main carriageway

             Casualty Reference: 1   Age: 18   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   29/10/2015   Time   1530   Slight   at   A34 SBOUND ON APPROACH TO EXIT TO B430   WESTON-ON-THE-GREEN

E: 454026   N: 217917   Junction Detail: T or staggered junct   Control: Give way or controlled
Other   Road surface   Wet/Damp   Daylight

          Vehicle Reference 1   Goods 7.5 tonnes mg   Moving from   NE to S   Changing lane to left   On main carriageway

          Vehicle Reference 2   Car   Moving from   NE to S   Going ahead other   On main carriageway

                    Casualty Reference: 1   Age: 32   Female   Passenger   Severity: Slight   Injured by vehicle: 2

Thursday   17/12/2015   Time   1423   Slight   at   A34 SBOUND J/W A34 SLIP ROAD FROM B430 AT MP 96/5A   WESTON-ON-THE-GREEN

E: 453993   N: 217881   Junction Detail: Slip Road   Control: Give way or controlled
Raining without high winds   Road surface   Wet/Damp   Daylight
          Vehicle Reference 1   Car   Moving from   SE to S   Going ahead left bend   On main carriageway

                    Casualty Reference: 1   Age: 46   Female   Driver/rider   Severity: Slight   Injured by vehicle: 1

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   14/01/2016   Time   1530   Serious   at   A34 NBOUND AT MP96/8   WESTON ON THE GREEN

E: 454180   N: 218092   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Wet/Damp   Daylight

Vehicle Reference 1	Van or Goods 3.5 to	Moving from	S	to	NE	Stopping	On main carriageway

          Casualty Reference: 1   Age: 58   Male   Passenger   Severity: Slight   Injured by vehicle: 1

Vehicle Reference 2   Car   Moving from   S   to   NE   Going ahead but held up   On main carriageway

          Casualty Reference: 2   Age: 41   Male   Driver/rider   Severity: Serious   Injured by vehicle: 2

Vehicle Reference 3   Car   Moving from   S   to   NE   Going ahead but held up   On main carriageway

          Casualty Reference: 3   Age: 64   Male   Driver/rider   Severity: Slight   Injured by vehicle: 3

Vehicle Reference 4   Car   Moving from   S   to   NE   Going ahead but held up   On main carriageway

Vehicle Reference 5   Car   Moving from   S   to   NE   Going ahead but held up   On main carriageway

          Casualty Reference: 4   Age: 48   Female   Passenger   Severity: Slight   Injured by vehicle: 5

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: Notes:

Thursday   28/01/2016   Time   1015   Slight   at   B4030 J/W A4095 HOWES LANE   CHESTERTON

E: 456428   N: 222729   Junction Detail: Roundabout   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

         Vehicle Reference 1   Car   Moving from   E   to   W   Going ahead other   On main carriageway

         Vehicle Reference 2   Pedal Cycle   Moving from   N   to   S   Going ahead other   On main carriageway

                 Casualty Reference: 1   Age: 43   Male   Driver/rider   Severity: Slight   Injured by vehicle: 2

Friday   29/01/2016   Time   0828   Slight   at   A34 SBOUND AT MP96/9   WESTON ON THE GREEN

E: 454186   N: 218084   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight

         Vehicle Reference 1   Goods vehicle - unk   Moving from   NE   to   S   Changing lane to left   On main carriageway

         Vehicle Reference 2   Car   Moving from   NE   to   S   Going ahead other   On main carriageway

                 Casualty Reference: 1   Age: 23   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

Accidents between dates   **01/01/2014** **and** **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   11/02/2016   Time   1635   Slight   at   B430 AT J/W A4095   CHESTERTON

E: 453353   N: 222011   Junction Detail: T or staggered junct   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

          Vehicle Reference 1   Car   Moving from   S   to   W   Turning left   On main carriageway

          Vehicle Reference 2   Pedal Cycle   Moving from   S   to   N   Going ahead other   On main carriageway

                    Casualty Reference: 1   Age: 27   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

Thursday   24/03/2016   Time   1750   Slight   at   B4030 APPROX 300M NW OF J/W B430   MIDDLETON STONEY

E: 453192   N: 223667   Junction Detail: Not within 20m of j   Control:
Raining without high winds   Road surface   Wet/Damp   Daylight

          Vehicle Reference 1   Car   Moving from   SE to   N   Going ahead other   On main carriageway

                    Casualty Reference: 1   Age: 28   Female   Driver/rider   Severity: Slight   Injured by vehicle: 1

          Vehicle Reference 2   Car   Moving from   N   to   SE   Going ahead other   On main carriageway

Accidents between dates　　**01/01/2014**　**and**　**31/12/2018**　　(60) months
Selection:　　　　　　　　　　　　　　　　　　Notes:

Friday　　　　08/04/2016　　Time　0815　　Slight　　　at　B430 AT J/W PRIVATE DRIVE TO PROPERTY (CAERLEON) APPROX 200M N OF NORTH LANE
　　　　　　　　　　　　　　　　　　　　　　　　　WESTON ON THE GREEN

E: 453308　N: 219190　Junction Detail:　Using private drive o　Control: Give way or controlled
Fine without high winds　　　　　　　　Road surface　　Wet/Damp　　　　　　Daylight
　　　　Vehicle Reference 1　　Car　　　　　　Moving from　S　to　N　　　Going ahead other　　　　　On main carriageway
　　　　　　　　Casualty Reference:　　2　　Age:　　26　　Male　　　　Driver/rider　　　　Severity: Slight　　Injured by vehicle: 1
　　　　Vehicle Reference 2　　Car　　　　　　Moving from　S　to　N　　　Waiting to turn right　　　On main carriageway
　　　　　　　　Casualty Reference:　　1　　Age:　　59　　Female　　　Driver/rider　　　　Severity: Slight　　Injured by vehicle: 2

Monday　　　16/05/2016　　Time　0452　　Serious　　　at　A41 RBT AT J/W B4030 VENDEE DRIVE　　　CHESTERTON

E: 457220　N: 221170　Junction Detail:　Roundabout　　　Control: Give way or controlled
Fine without high winds　　　　　　　　Road surface　　Dry　　　　　　　Darkness: street lighting unknown
　　　　Vehicle Reference 1　　Van or Goods 3.5 to　Moving from　S　to　NE　　Going ahead other　　　　　On main carriageway
　　　　　　　　Casualty Reference:　　1　　Age:　　46　　Female　　　Driver/rider　　　　Severity: Serious　　Injured by vehicle: 1

Sunday　　　17/07/2016　　Time　1915　　Slight　　　at　A41 RBT AT J/W VENDEE DRIVE　　　CHESTERTON

E: 457208　N: 221170　Junction Detail:　Roundabout　　　Control: Give way or controlled
Fine without high winds　　　　　　　　Road surface　　Dry　　　　　　　Daylight
　　　　Vehicle Reference 1　　Car　　　　　　Moving from　SE　to　W　　　Turning left　　　　　　On main carriageway
　　　　　　　　Casualty Reference:　　1　　Age:　　25　　Male　　　　Driver/rider　　　　Severity: Slight　　Injured by vehicle: 1

Accidents between dates   01/01/2014   and   31/12/2018   (60) months

Selection: Notes:

Monday   25/07/2016   Time   1010   Slight   at   B430 AT J/W A4095   CHESTERTON

E: 453360   N: 222030   Junction Detail: T or staggered junct   Control: Give way or controlled

Fine without high winds   Road surface   Dry   Daylight

     Vehicle Reference 1   Car   Moving from   W   to   S   Turning right   On main carriageway

     Vehicle Reference 2   Car   Moving from   N   to   S   Going ahead other   On main carriageway

         Casualty Reference: 1   Age: 57   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

         Casualty Reference: 2   Age: 55   Female   Passenger   Severity: Slight   Injured by vehicle: 2

Tuesday   27/12/2016   Time   1450   Slight   at   B430 J/W AKEMAN STREET   CHESTERTON

E: 453178   N: 220839   Junction Detail: Crossroads   Control: Give way or controlled

Fine without high winds   Road surface   Dry   Daylight

     Vehicle Reference 1   Car   Moving from   E   to   N   Turning right   On main carriageway

         Casualty Reference: 2   Age: 34   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

     Vehicle Reference 2   Car   Moving from   N   to   S   Going ahead other   On main carriageway

         Casualty Reference: 1   Age: 57   Female   Passenger   Severity: Slight   Injured by vehicle: 2

         Casualty Reference: 3   Age: 46   Male   Driver/rider   Severity: Slight   Injured by vehicle: 2

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Saturday   04/02/2017   Time   0551   Slight   at   A34 SBOUND CWAY J/W EXIT SLIP ROAD TO B430   WESTON ON THE GREEN

E: 454023   N: 217896   Junction Detail: Slip Road   Control: Give way or controlled

Fine without high winds   Road surface   Dry   Darkness: no street lighting

       Vehicle Reference 1   Car   Moving from   NE to   S   Turning left   On main carriageway

            Casualty Reference: 1   Age: 20   Female   Passenger   Severity: Slight   Injured by vehicle: 1

Friday   24/02/2017   Time   2245   Slight   at   A41 RBT J/W B4030 VENDEE DRIVE   CHESTERTON

E: 457215   N: 221162   Junction Detail: Roundabout   Control: Give way or controlled

Fine without high winds   Road surface   Dry   Darkness: street lights present and lit

       Vehicle Reference 1   Car   Moving from   S   to   NE   Going ahead other   On main carriageway

       Vehicle Reference 2   Car   Moving from   S   to   NE   Going ahead other   On main carriageway

       Vehicle Reference 3   Car   Moving from   SE   to   NE   Turning right   On main carriageway

            Casualty Reference: 1   Age: 46   Female   Driver/rider   Severity: Slight   Injured by vehicle: 3

Accidents between dates   01/01/2014 **and** 31/12/2018   (60) months

Selection: Notes:

Sunday   26/03/2017   Time   1515   Serious   at   B430 NORTHAMPTON ROAD MINI RBT J/W B430 SPUR TO JUNCTION WITH A34 WESTON ON THE GREEN

E: 453689   N: 217933   Junction Detail: Mini roundabout   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight
        Vehicle Reference 1   Car   Moving from   S   to N   Going ahead other   On main carriageway

        Vehicle Reference 2   Pedal Cycle   Moving from   E   to N   Turning right   On main carriageway

                Casualty Reference: 1   Age: 51   Female   Driver/rider   Severity: Serious   Injured by vehicle: 2

Monday   03/04/2017   Time   2122   Serious   at   A41 RBT AT J/W B4030 VENDEE DRIVE   CHESTERTON

E: 457224   N: 221166   Junction Detail: Roundabout   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Darkness: street lights present and lit
        Vehicle Reference 1   Car   Moving from   S   to NE   Going ahead other   On main carriageway

                Casualty Reference: 1   Age: 38   Male   Driver/rider   Severity: Serious   Injured by vehicle: 1

Sunday   06/08/2017   Time   1530   Slight   at   A34 NBOUND AT MP96/1 WESTON ON THE GREEN

E: 453677   N: 217595   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight
        Vehicle Reference 1   Motorcycle over 500   Moving from   S   to NE   Going ahead other   On main carriageway

                Casualty Reference: 1   Age: 28   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

        Vehicle Reference 2   Car   Moving from   S   to NE   Going ahead other   On main carriageway

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Accidents between dates   **01/01/2014** **and** **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   10/08/2017   Time   1855   Slight   at   A41 OXFORD ROAD RBT J/W B4030 VENDEE DRVIE   BICESTER

E: 457237   N: 221224   Junction Detail: Roundabout   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

| | Vehicle Reference 1 | Car | Moving from | S | to | NE | Changing lane to right | On main carriageway |

          Vehicle Reference 1   Car   Moving from   S   to   NE   Changing lane to right   On main carriageway

          Vehicle Reference 2   Motorcycle over 500   Moving from   S   to   NE   Going ahead other   On main carriageway

               Casualty Reference: 1   Age: 53   Male   Driver/rider   Severity: Slight   Injured by vehicle: 2

Sunday   03/09/2017   Time   0907   Fatal   at   A4095 AT BEND BY ENTRANCE TO VICARAGE FARM   CHESTERTON

E: 455277   N: 221712   Junction Detail: Using private drive   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight

          Vehicle Reference 1   Motorcycle over 500   Moving from   E   to   N   Going ahead right bend   On main carriageway

               Casualty Reference: 1   Age: 46   Male   Driver/rider   Severity: Fatal   Injured by vehicle: 1

Sunday   24/09/2017   Time   2156   Slight   at   A34 SBOUND J/W B430   WESTON ON THE GREEN

E: 454021   N: 217900   Junction Detail: T or staggered junct   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Darkness: no street lighting

          Vehicle Reference 1   Car   Moving from   NE   to   S   Turning left   On main carriageway

               Casualty Reference: 1   Age: 31   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

Accidents between dates **01/01/2014** and **31/12/2018** (60) months

Selection: **Notes:**

Monday 13/11/2017 Time 1756 Slight at A41 AT RBT J/W B4030 VENDEE DRIVE & BICESTER PARK AND RIDE ACCESS CHESTERTON

E: 457212 N: 221167 Junction Detail: Roundabout Control: Give way or controlled
Fine without high winds Road surface Dry Darkness: street lights present and lit

	Vehicle Reference 1	Car		Moving from	S	to	NE	Starting	On main carriageway			
	Vehicle Reference 2	Car		Moving from	NE	to	S	Turning left	On main carriageway			
	Casualty Reference:	1	Age:	13	Female			Passenger	Severity: Slight	Injured by vehicle:	2

Monday 13/11/2017 Time 1746 Slight at B430 XRDS J/W AKEMAN STREET CHESTERTON

E: 453173 N: 220840 Junction Detail: Crossroads Control: Give way or controlled
Fine without high winds Road surface Dry Darkness: no street lighting

	Vehicle Reference 1	Car		Moving from	S	to	E	Turning right	On main carriageway			
	Casualty Reference:	1	Age:	18	Female			Driver/rider	Severity: Slight	Injured by vehicle:	1
	Vehicle Reference 2	Car		Moving from	N	to	S	Going ahead other	On main carriageway			
	Casualty Reference:	2	Age:	45	Male			Driver/rider	Severity: Slight	Injured by vehicle:	2

Accidents between dates **01/01/2014** **and** **31/12/2018** (60) months

Selection: Notes:

Saturday   27/01/2018   Time   0656   Serious   at   B4030 VENDEE DRIVE AT PEDESTRIAN REFUGE APPROX 100M NW OF RBT J/W A41   BICETSER

E: 457126   N: 221261   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Wet/Damp   Darkness: street lights present and lit

Vehicle Reference 1	Car	Moving from N to SE	Going ahead other	On main carriageway	
Vehicle Reference 2	Pedal Cycle	Moving from NE to S	Going ahead other	On main carriageway	
Casualty Reference:	1	Age: 83	Male	Driver/rider	Severity: Serious Injured by vehicle: 2

Tuesday   10/04/2018   Time   0717   Slight   at   A34 SBOUND AT MP 96/7   WESTON ON THE GREEN

E: 454100   N: 217994   Junction Detail: Not within 20m of j   Control:
Raining without high winds   Road surface   Wet/Damp   Daylight

Vehicle Reference 1	Car	Moving from NE to S	Going ahead but held up	On main carriageway	
Casualty Reference:	1	Age: 32	Female	Driver/rider	Severity: Slight Injured by vehicle: 1
Casualty Reference:	2	Age: 36	Male	Passenger	Severity: Slight Injured by vehicle: 1
Vehicle Reference 2	Car	Moving from NE to S	Going ahead other	On main carriageway	
Casualty Reference:	5	Age: 24	Male	Driver/rider	Severity: Slight Injured by vehicle: 2
Vehicle Reference 3	Car	Moving from NE to S	Going ahead but held up	On main carriageway	
Casualty Reference:	3	Age: 39	Male	Driver/rider	Severity: Slight Injured by vehicle: 3
Vehicle Reference 4	Car	Moving from NE to S	Going ahead but held up	On main carriageway	
Casualty Reference:	4	Age: 25	Male	Driver/rider	Severity: Slight Injured by vehicle: 4

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Monday   28/05/2018   Time   0334   Serious   at   A34 NBOUND AT MP 96/5A   WESTON-ON-THE-GREEN

E: 453964   N: 217876   Junction Detail: Slip Road   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Darkness: street lights present but unlit

Vehicle Reference 1	Car		Moving from	S	to	NE	Going ahead other	On main carriageway	
	Casualty Reference:	1	Age:	17	Female		Passenger	Severity: Serious	Injured by vehicle: 1
	Casualty Reference:	2	Age:	19	Male		Passenger	Severity: Serious	Injured by vehicle: 1
	Casualty Reference:	4	Age:	19	Male		Driver/rider	Severity: Slight	Injured by vehicle: 1
Vehicle Reference 2	Car		Moving from	S	to	NE	Going ahead other	On main carriageway	
	Casualty Reference:	3	Age:	47	Male		Driver/rider	Severity: Slight	Injured by vehicle: 2

Sunday   17/06/2018   Time   2153   Slight   at   B430 AT J/W A4095   CHESTERTON

E: 453344   N: 222035   Junction Detail: T or staggered junct   Control: Give way or controlled
Fine without high winds   Road surface   Wet/Damp   Darkness: no street lighting

Vehicle Reference 1	Motor Cycle over 50		Moving from	S	to	W	Turning left	On main carriageway	
	Casualty Reference:	1	Age:	22	Male		Driver/rider	Severity: Slight	Injured by vehicle: 1

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   21/06/2018   Time   0933   Slight   at   B4030 VENDEE DRVIE J/W WHITELANDS FARM BICESTER

E: 456657   N: 221860   Junction Detail: Using private drive (Control: Give way or controlled

Fine without high winds   Road surface   Dry   Daylight

        Vehicle Reference 1   Van or Goods 3.5 to   Moving from   SE   to   N   Going ahead other   On main carriageway

        Vehicle Reference 2   Car   Moving from   SE   to   N   Waiting to turn right   On main carriageway

                 Casualty Reference: 1   Age: 54   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

        Vehicle Reference 3   Minibus   Moving from   N   to   SE   Going ahead other   On main carriageway

---

Saturday   23/06/2018   Time   0855   Slight   at   A34 NBOUND J/W B430 WESTON ON THE GREEN

E: 453737   N: 217680   Junction Detail: T or staggered junct   Control: Give way or controlled

Fine without high winds   Road surface   Dry   Daylight

        Vehicle Reference 1   Car   Moving from   S   to   N   Turning left   On main carriageway

                 Casualty Reference: 1   Age: 76   Male   Driver/rider   Severity: Slight   Injured by vehicle: 1

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Thursday   28/06/2018   Time   2144   Slight   at   A34 SBOUND AT MP95/9   WESTON ON THE GREEN

E: 453545   N: 217441   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight

       Vehicle Reference 1   Car   Moving from   NE to S   Changing lane to right   On main carriageway

            Casualty Reference: 1   Age: 51   Female   Driver/rider   Severity: Slight   Injured by vehicle: 1

       Vehicle Reference 2   Car   Moving from   NE to S   Going ahead other   On main carriageway

       Vehicle Reference 3   Goods 7.5 tonnes mg   Moving from   NE to S   Going ahead other   On main carriageway

---

Thursday   28/06/2018   Time   0859   Slight   at   A34 SBOUND AT MP 96/1   WESTON ON THE GREEN

E: 453645   N: 217542   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight

       Vehicle Reference 1   Van or Goods 3.5 to   Moving from   NE to S   Stopping   On main carriageway

       Vehicle Reference 2   Car   Moving from   NE to S   Stopping   On main carriageway

            Casualty Reference: 1   Age: 27   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

Accidents between dates   01/01/2014 **and** 31/12/2018   (60) months

Selection: **Notes:**

Wednesday   04/07/2018   Time   1520   Serious   at   B430 SPUR TO JUNCTION WITH A34 APPROX 50M SE OF MINI RBT J/W B430   WESTON ON THE GREEN

E: 453761   N: 217927   Junction Detail: Not within 20m of j   Control:
Fine without high winds   Road surface   Dry   Daylight
          Vehicle Reference 1   Car   Moving from   SE   to   W   Going ahead left bend   On main carriageway

                    Casualty Reference: 1   Age: 49   Female   Driver/rider   Severity: Serious   Injured by vehicle: 1

Saturday   28/07/2018   Time   0802   Slight   at   A41 RBT J/W LINK ROAD FROM WENDLEBURY VILLAGE & VENDEE DRIVE   BICESTER

E: 457260   N: 221172   Junction Detail: Roundabout   Control: Give way or controlled
Fine without high winds   Road surface   Dry   Daylight
          Vehicle Reference 1   Car   Moving from   SE   to   N   Going ahead other   On main carriageway

          Vehicle Reference 2   Car   Moving from   NE   to   S   Going ahead other   On main carriageway

                    Casualty Reference: 1   Age: 27   Female   Driver/rider   Severity: Slight   Injured by vehicle: 2

Accidents between dates   **01/01/2014** and **31/12/2018**   (60) months

Selection: **Notes:**

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	1	7	40	48
2-wheeled motor vehicles	1	3	5	9
Pedal cycles	0	2	2	4
Horses & other	0	0	0	0
Total	2	12	47	61

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	1	6	51	58
Passenger	0	4	16	20
Motorcycle rider	1	3	5	9
Cyclist	0	2	2	4
Pedestrian	0	0	2	2
Other	0	0	0	0
Total	2	15	76	93

Number of casualties meeting the criteria: **93**

Appendix B

Site Layout Plan

A4095 Road

M40 Motorway
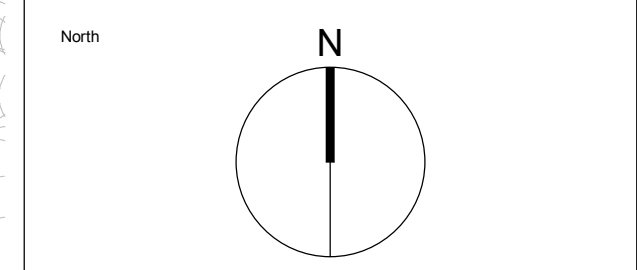
Notes:
1. Do not scale
2. Contractor to Check all dimensions and report omissions and errors to the Architect
3. EPR Architects accepts no liability for use of this drawing by parties other than the party for whom it was prepared or for purposes other than those for which it was prepared.
4. This drawing is issued in dwg/dgn format as an uncontrolled version to enable the recipient to prepare their own documents/drawings/models for which they are solely responsible. This drawing is based on project information current at the time of issue. EPR Architects Limited accepts no liability for any alterations or additions to or discrepancies arising out of any change to such project information that occurs to the information after it is issued by EPR Architects Limited.
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No.	Revision	Date	Initial	Chk'd
1	S2 - for Information	05.11.19	LGO	AJ

Notes:
1. This drawing has been prepared for planning application purposes only.
2. EPR Architects accepts no liability for use of this drawing by parties other than the party for whom it was prepared or for purposes other than those for which it was prepared.
3. Landscape shown for illustrative purposes only; refer to Landscape Architect's for Landscape proposals for further details.
4. Tree locations & existing trees beyond site perimeter - indicative - for illustrative purposes only.

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Proposed Great Wolf Lodge
Chesterton, Bicester, Oxfordshire

Proposed Site Plan

Scale @A1	Status		Revision
As indicated	Work in Progress		S1 1

Project Code   Originator   Zone   Level   Type   Role   Class.   Number
10875 - EPR - 00 - ZZ - DR - A - SK-0063

Appendix C

Highways Layout Plans

Proposed 2.5m shared foot/cycleway
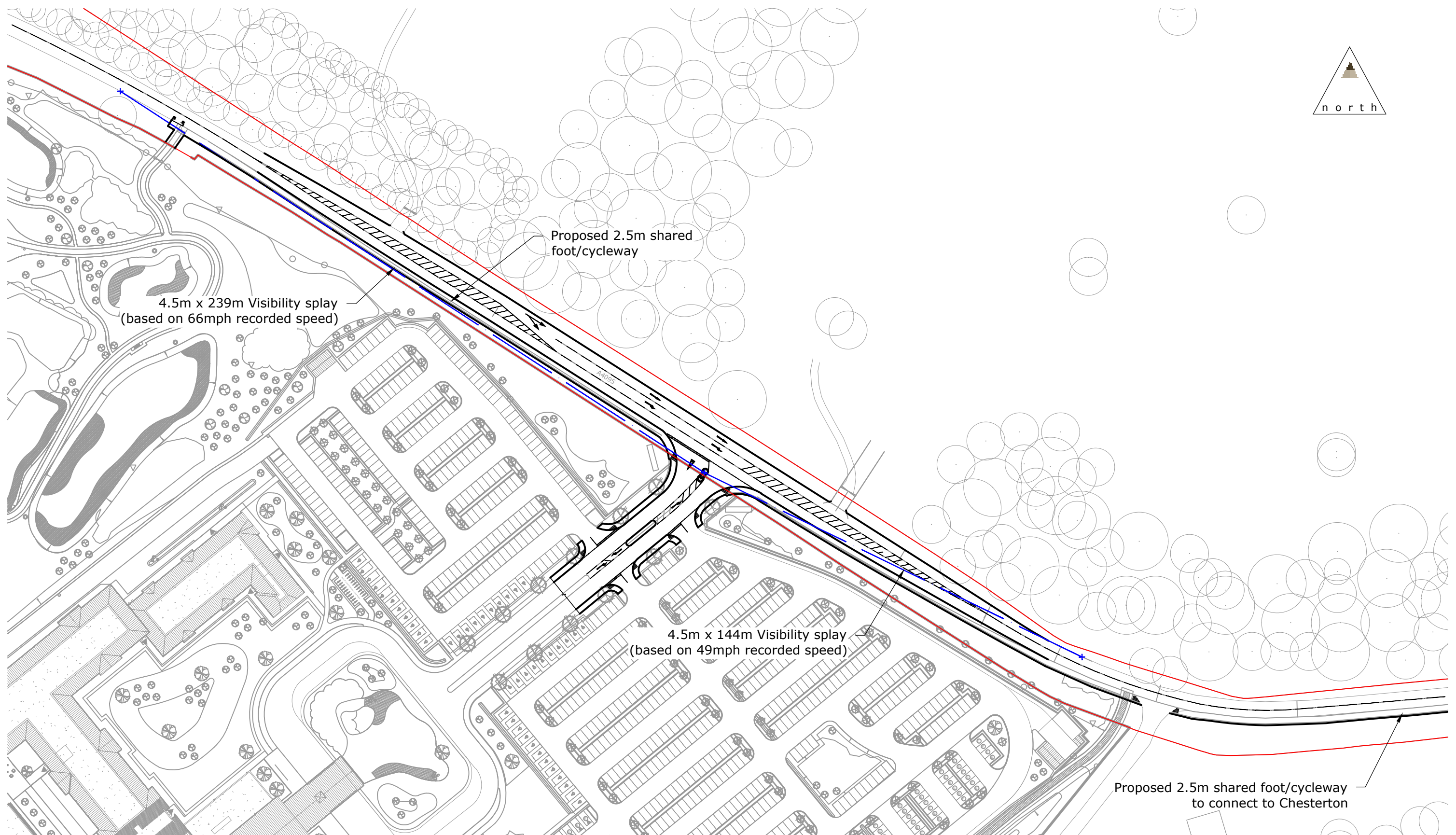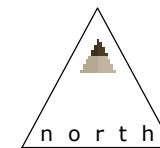
4.5m x 239m Visibility splay
(based on 66mph recorded speed)

4.5m x 144m Visibility splay
(based on 49mph recorded speed)

Proposed 2.5m shared foot/cycleway
to connect to Chesterton

north

Legend:

Highway Boundary

N:\Projects\gwbice 1803047\Drawings\1803047-03E.dwg

motion

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GU1 4AU

Cargo Works
1-2 Hatfields
London
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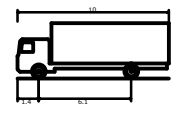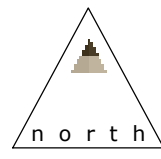www.motion.co.uk

Project:
Great Wolf Resort, Bicester

Title:
Proposed Access Arrangement

Scale: 1:1250 (@ A3)

Notes:

Drawing:
1803047-03

Revision:
E

Chesterton Belt

Bignell Park

Parkside Cottages

Old Post Office

Proposed 2.5m shared foot/cycleway to connect from site access to Chesterton

Chesterton Belt

Holly-Bush Cottage

TCB

Yew Tree Cottage
West Green Cottage
Stone Cottage

FB

Drain

Drain

Olive Cottage

The Old Thatched Cottage

Pond

Vicarage Farm

Plumtree Cottage

Squirrel Cottage

Stone Cottage

Bignell View

Tanora Cottage

Alleen

Corner Cottage

Proposed 2.5m shared foot/cycleway to connect from site access to Chesterton

Path

Inset **A**

Alleen

Corner Cottage

Bignell

Pond

Allo

79

Inset **A**
Scale 1:500

north

Note:
Shared foot/cycleway roundels to be mounted along proposed foot/cycle way

Legend

Highway Boundary ─────

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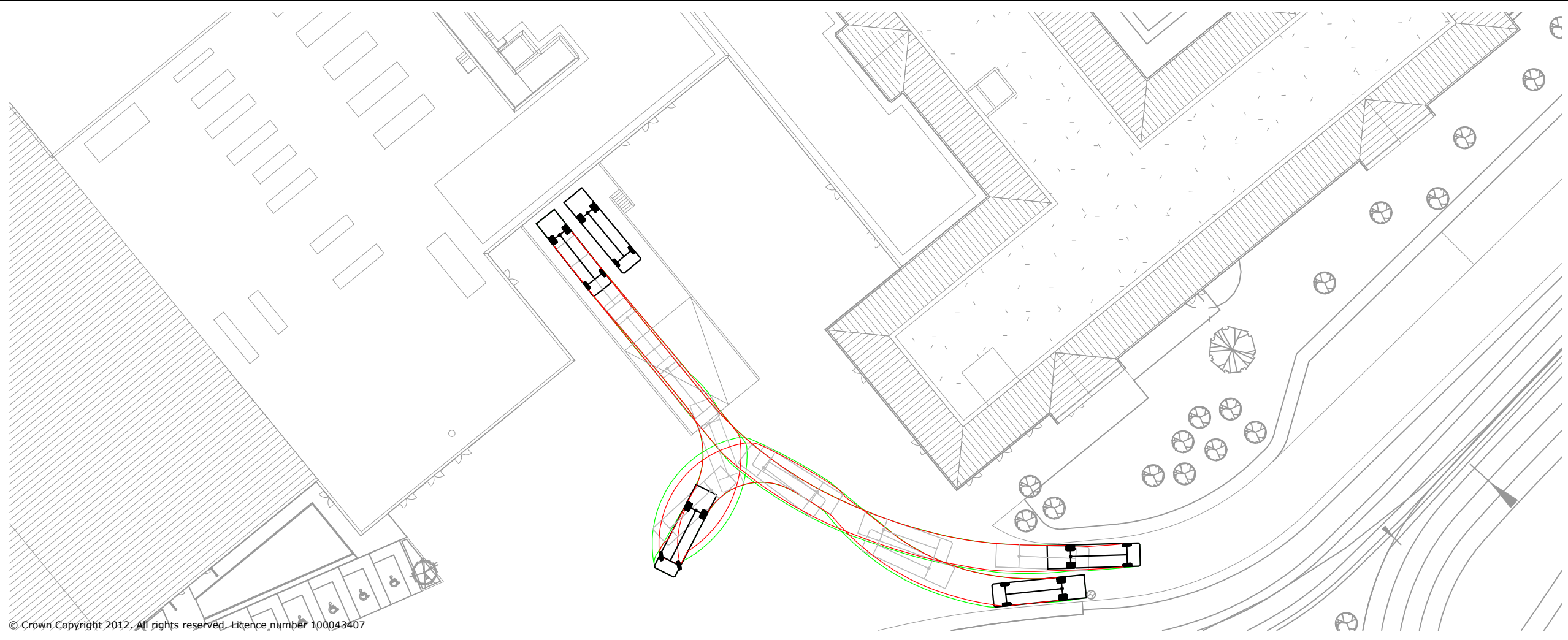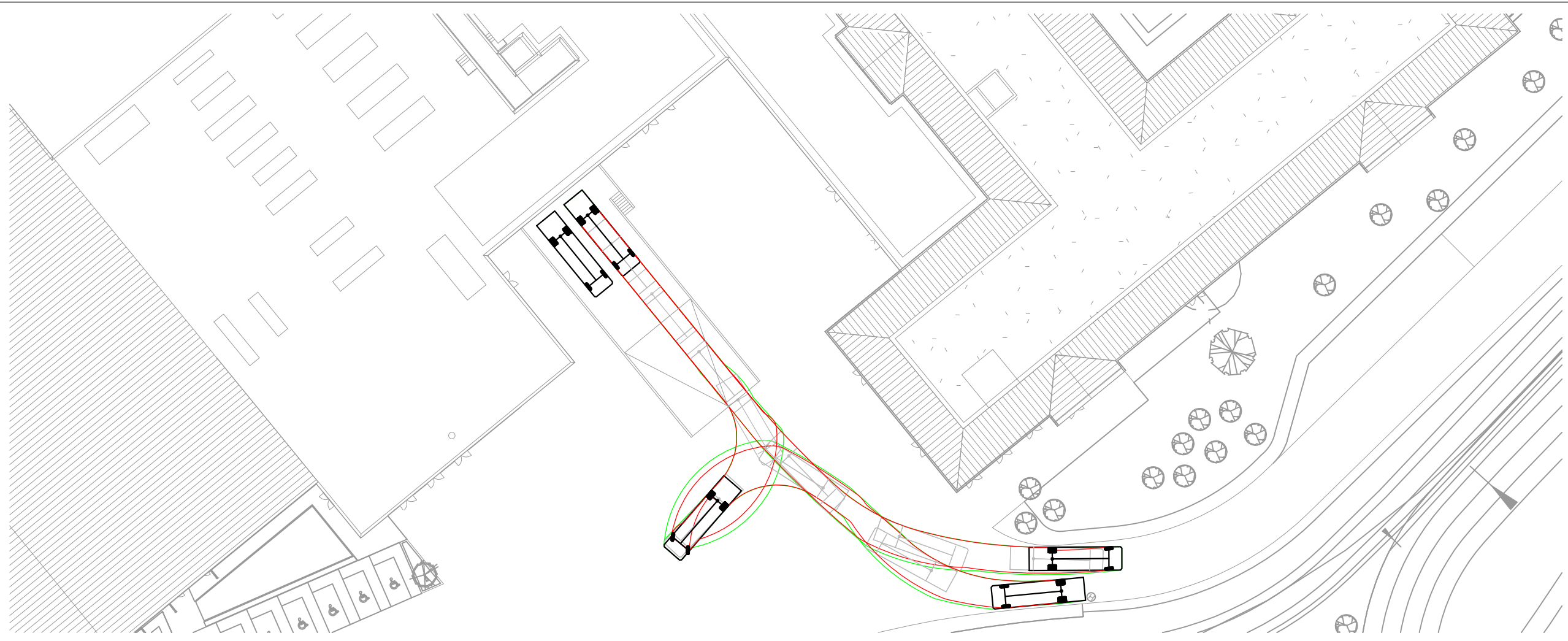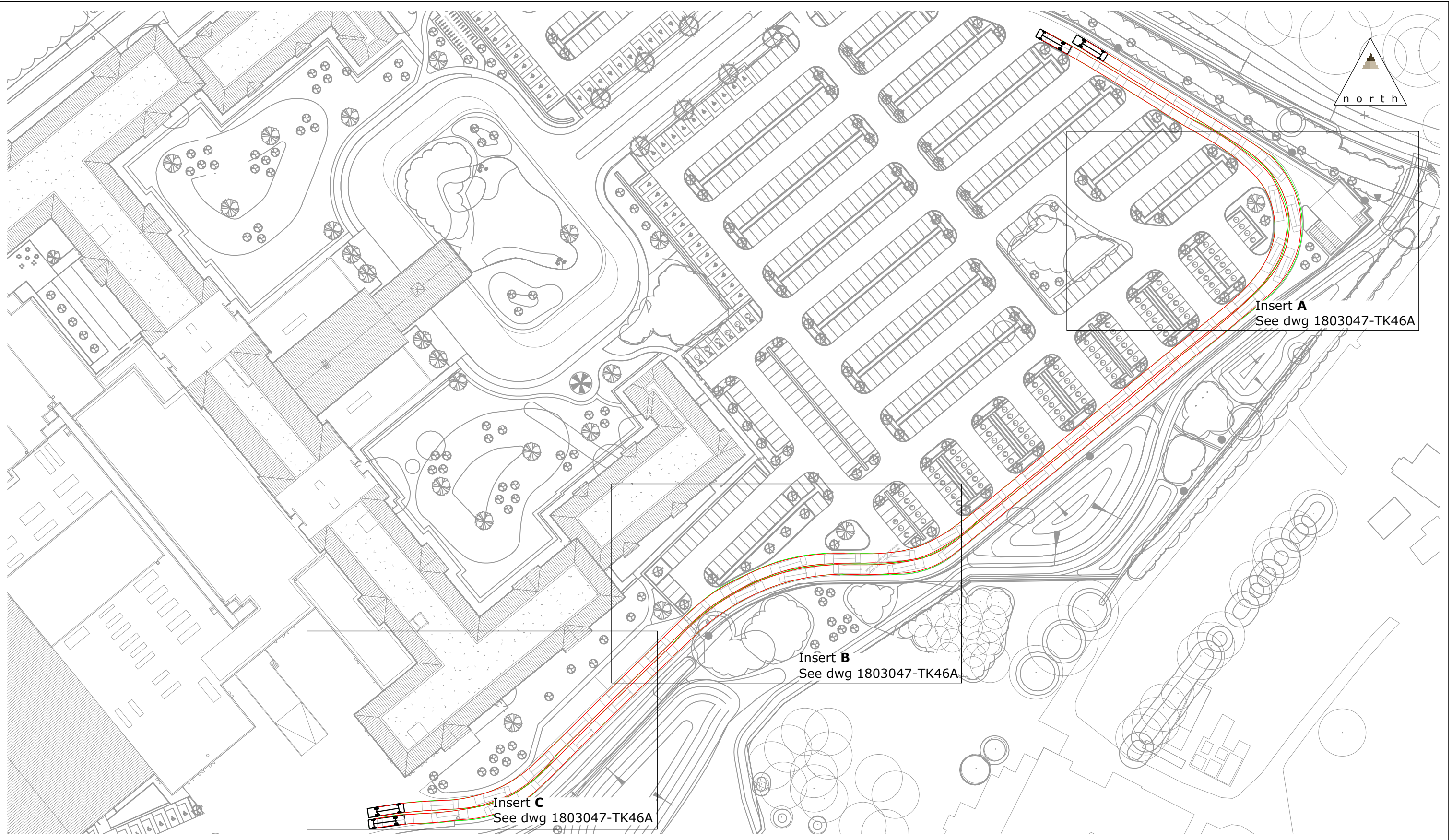**Great Wolf Resort, Bicester**

Title:
Proposed Shared Foot/Cycleway

Scale: 1:2000 (@ A3)

Notes:

Drawing:
1803047-02

Revision:
A
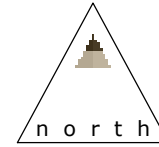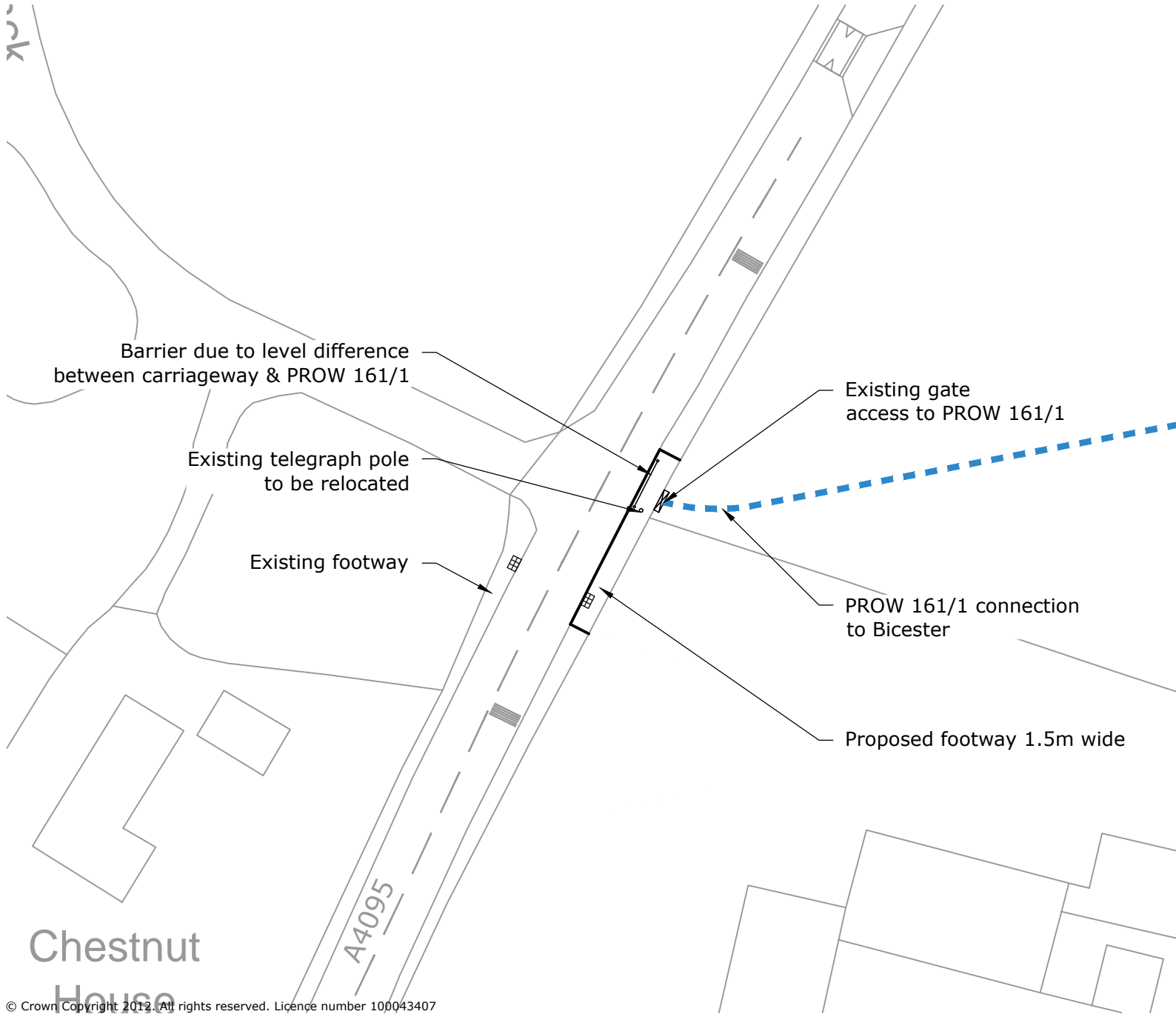
N:\Projects\gwbice 1803047\Drawings\1803047-02A.dwg

Barrier due to level difference
between carriageway & PROW 161/1

Existing gate
access to PROW 161/1

Existing telegraph pole
to be relocated

Existing footway

PROW 161/1 connection
to Bicester

Proposed footway 1.5m wide

A4095

Chestnut
House

N:\Projects\gwbice 1803047\Drawings\1803047-08.dwg

north

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Project:
Great Wolf Resort, Bicester

Title:
Footway Connection to
PROW 161/1

Scale: 1:500   (@ A4)

Drawing: Revision:

1803047-08   -

Appendix D

Swept Path Analysis

north
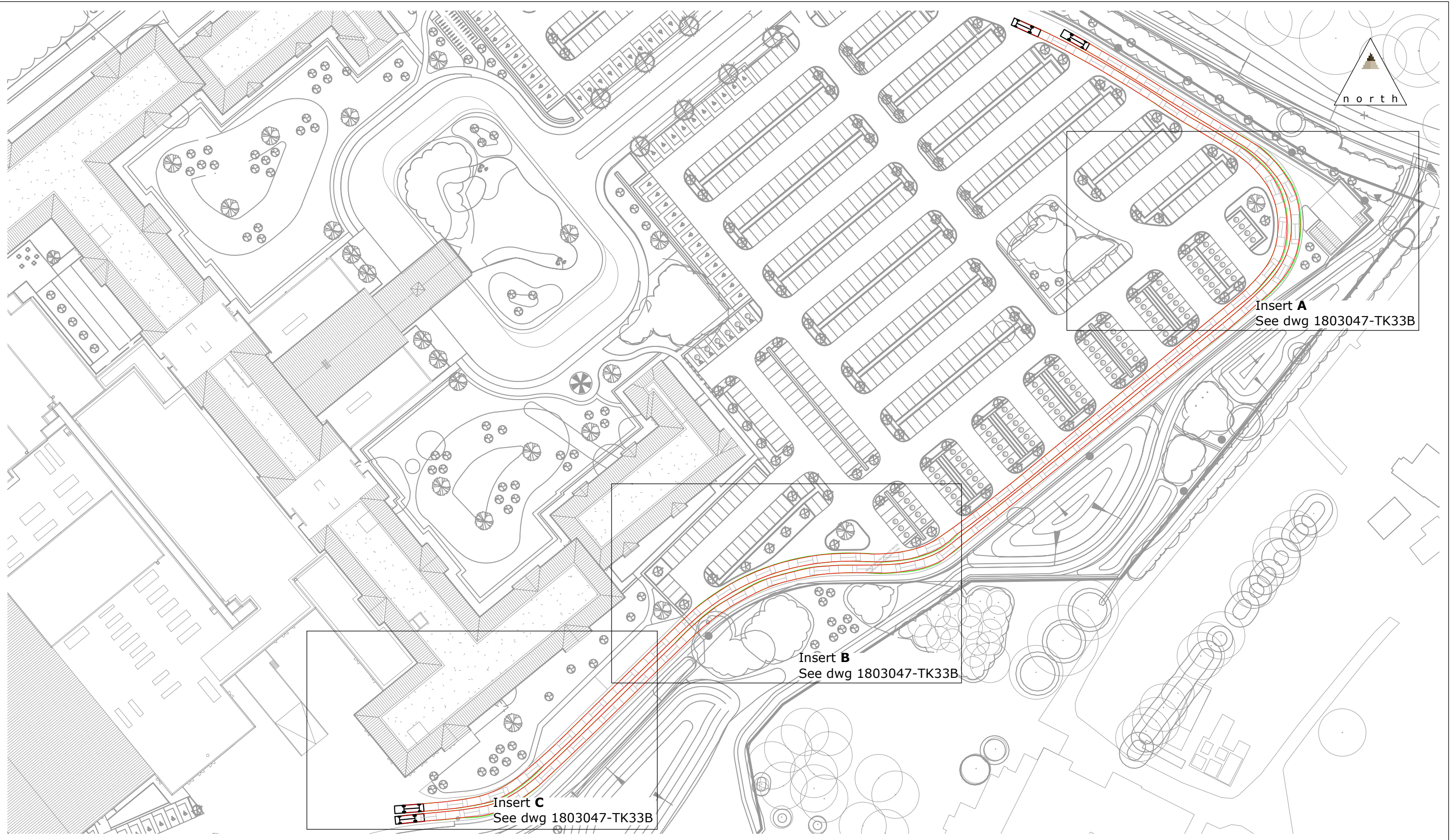
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See dwg 1803047-TK33B

Insert **B**
See dwg 1803047-TK33B

Insert **C**
See dwg 1803047-TK33B
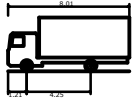
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7.5t Box Van	
Overall Length	8.010m
Overall Width	3.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.400m

motion

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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis - Sheet 1 of 2
Service Route - 7.5t Box Van

Scale: 1:1000 (@ A3)

Notes:
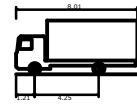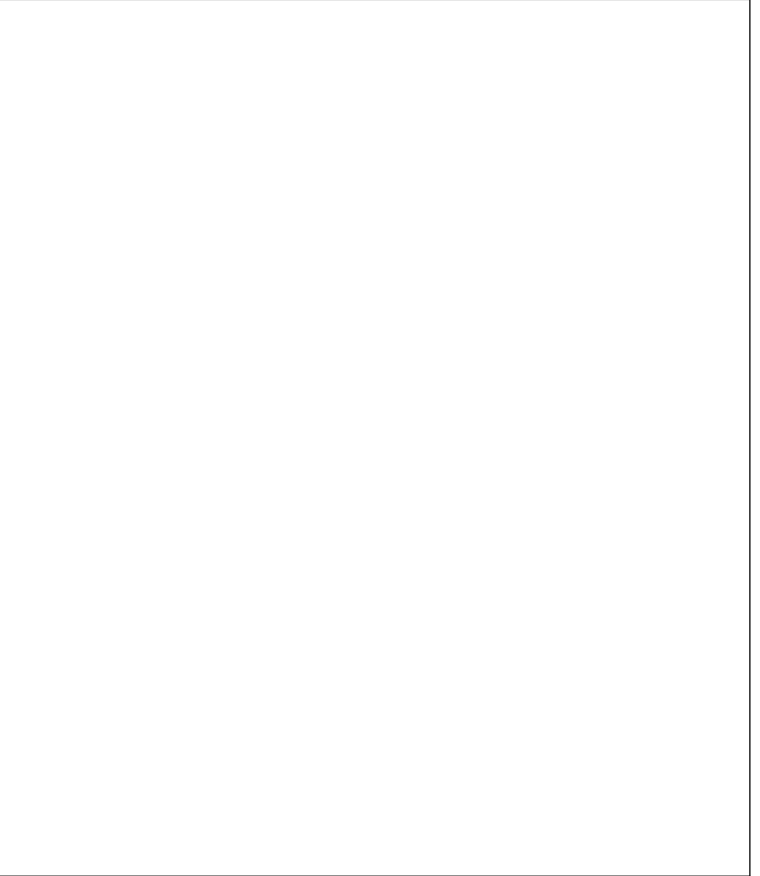
| Drawing:	Revision:
1803047-TK32	B

Insert **A**

Insert **B**

n o r t h

Insert **C**

N:\Projects\gwbice 1803047\Drawings\1803047-TK28B - TK33B.dwg

7.5t Box Van
Overall Length   8.010m
Overall Width   3.100m
Overall Body Height   3.556m
Min Body Ground Clearance   0.351m
Track Width   2.064m
Lock-to-lock time   4.00s
Curb to Curb Turning Radius   7.400m

motion

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Surrey   London
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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis - Sheet 2 of 2
Service Route - 7.5t Box Van

Scale: 1:500   (@ A3)

Notes:

Drawing:
1803047-TK33

Revision:
B

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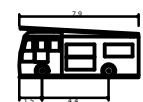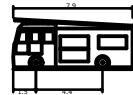
north

M40 Motorway

A4095 Road

Pumping Appliance
Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.750m

motion

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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
Pumping Appliance - Clockwise

Scale: 1:2000 (@ A3)

Notes:

Drawing:
1803047-TK36

Revision:
B

north

A4095 Road

M40 Motorway

Pumping Appliance
Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7.750m

motion

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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
Pumping Appliance - Anti-Clockwise

Scale: 1:2000 (@ A3)

Notes:

Drawing:	Revision:
1803047-TK37	B

north

FTA Design HG Rigid Vehicle (1998)
Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.448m
Track Width	2.470m
Lock-to-lock time	3.00s
Curb to Curb Turning Radius	11.000m

motion

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Surrey   London
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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
10m Rigid Vehicle

Scale: 1:500   (@ A3)

Drawing: Revision:
1803047-TK44   A

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See dwg 1803047-TK46A

Insert **B**
See dwg 1803047-TK46A

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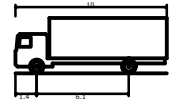
north

N:\Projects\gwbice 1803047\Drawings\1803047-TK45A - TK50A.dwg

FTA Design HG Rigid Vehicle (1998)
Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock-to-lock time	3.00s
Curb to Curb Turning Radius	11.000m

motion

84 North Street   Cargo Works
Guildford   1-2 Hatfields
Surrey   London
GU1 4AU   SE1 9PG
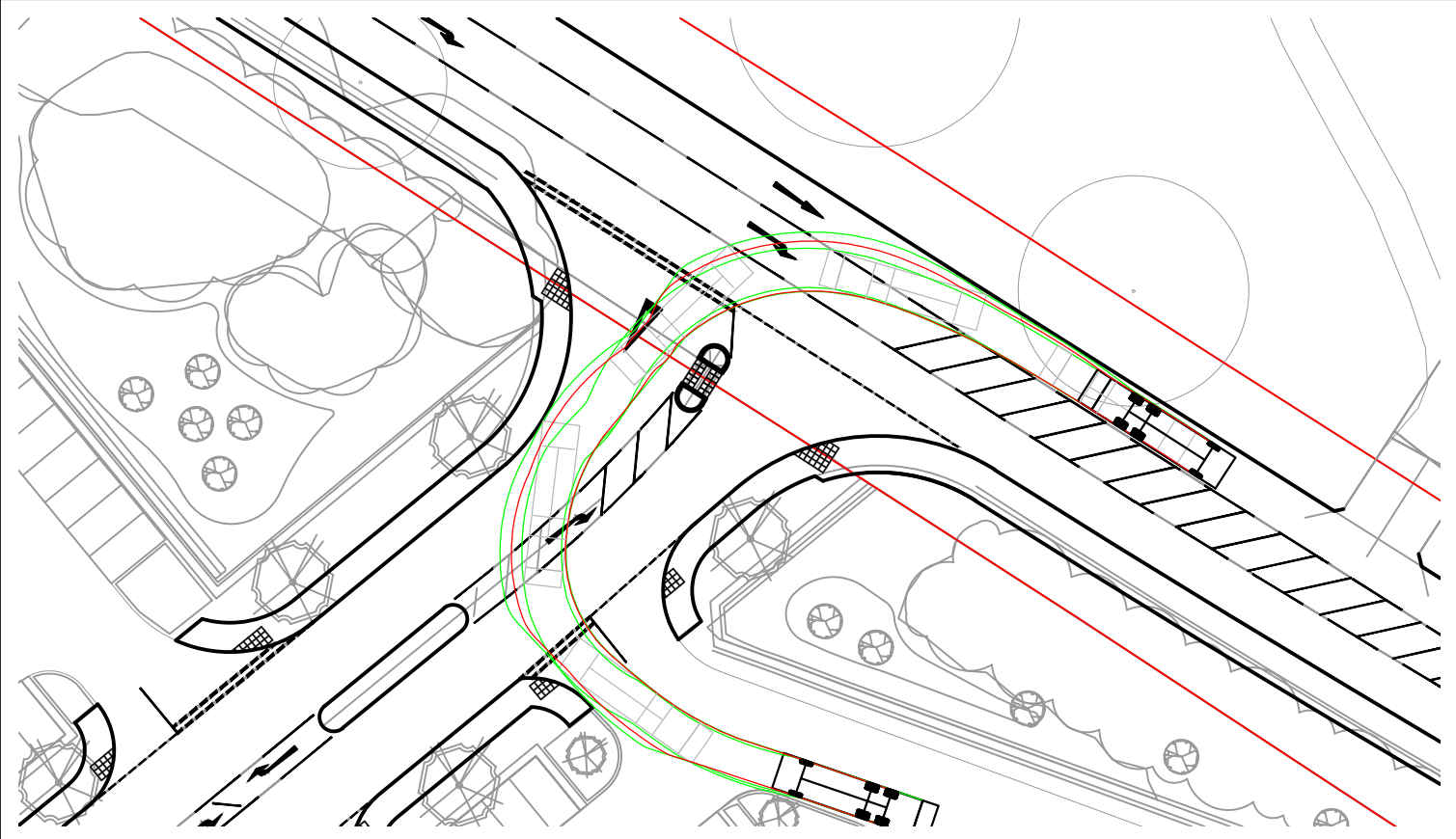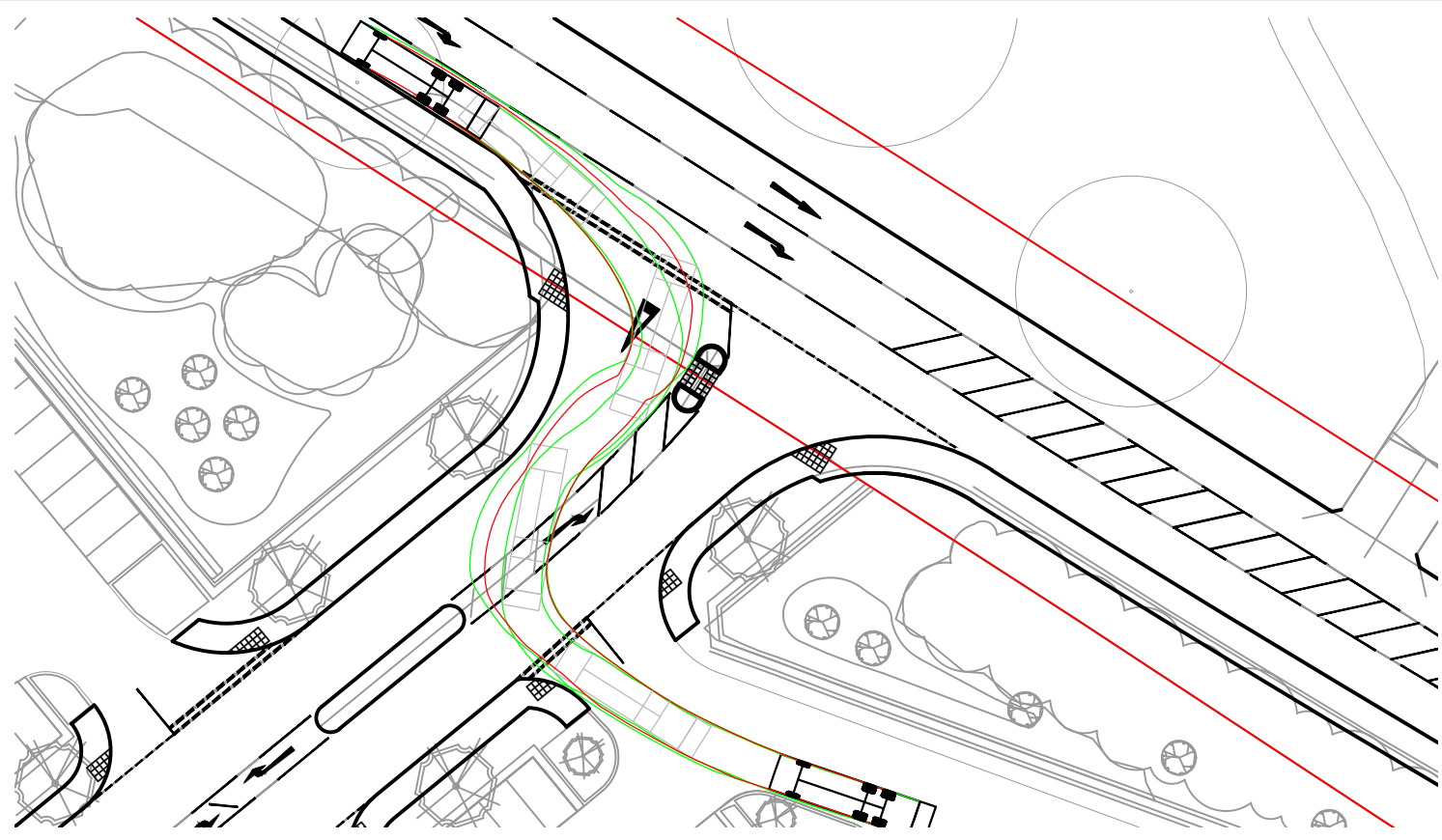
T: 01483 531 300   T: 020 8065 5208

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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis - Sheet 1 of 2
Service Route - 10 Rigid Vehicle

Scale: 1:1000 (@ A3)

Notes:

Drawing:
1803047-TK45

Revision:
A

Insert **A**

Insert **B**
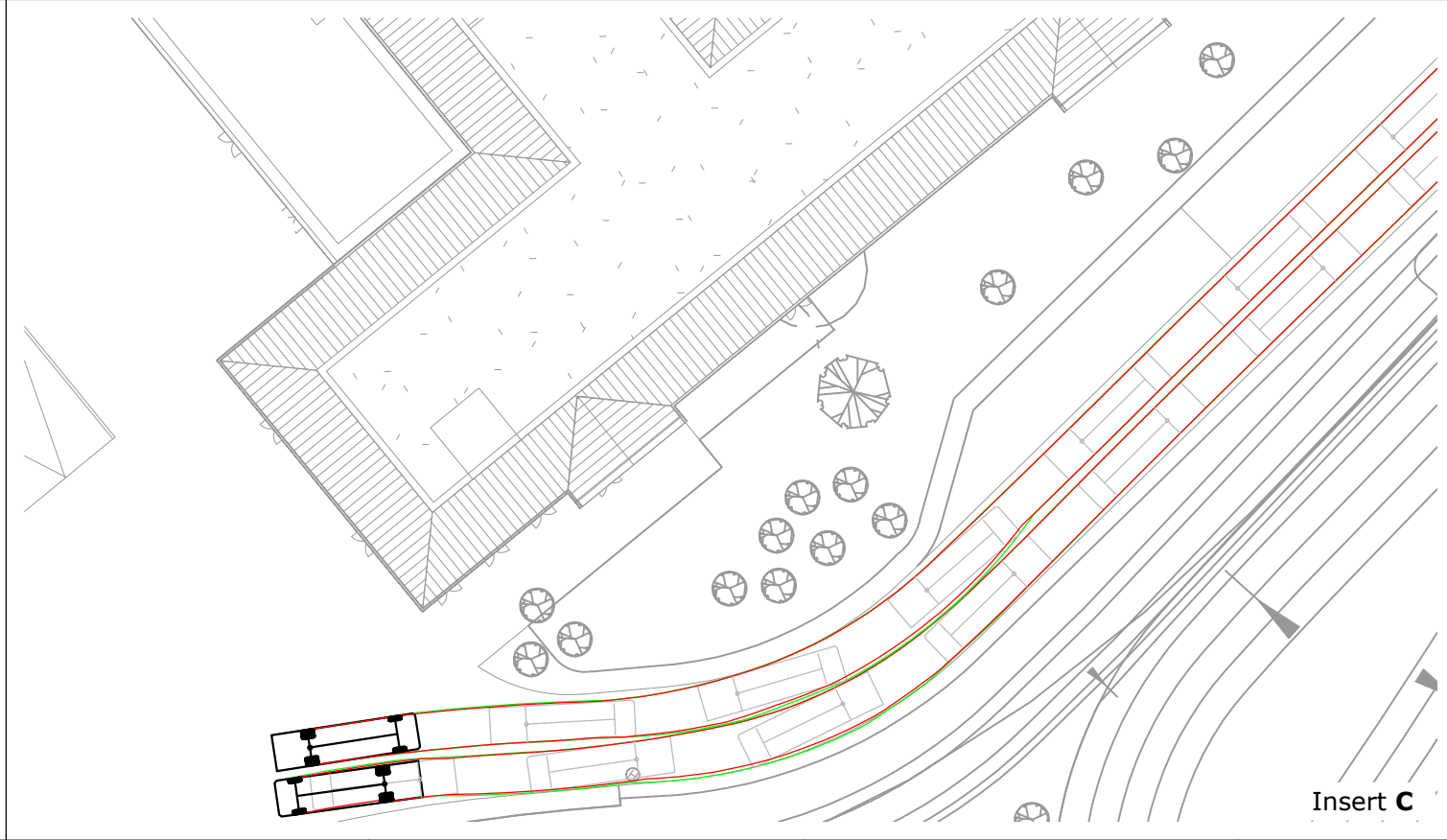
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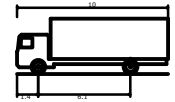
n o r t h

FTA Design HG Rigid Vehicle (1998)
Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock-to-lock time	3.00s
Curb to Curb Turning Radius	11.000m

motion

84 North Street
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Surrey
GU1 4AU

Cargo Works
1-2 Hatfields
London
SE1 9PG

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Project:
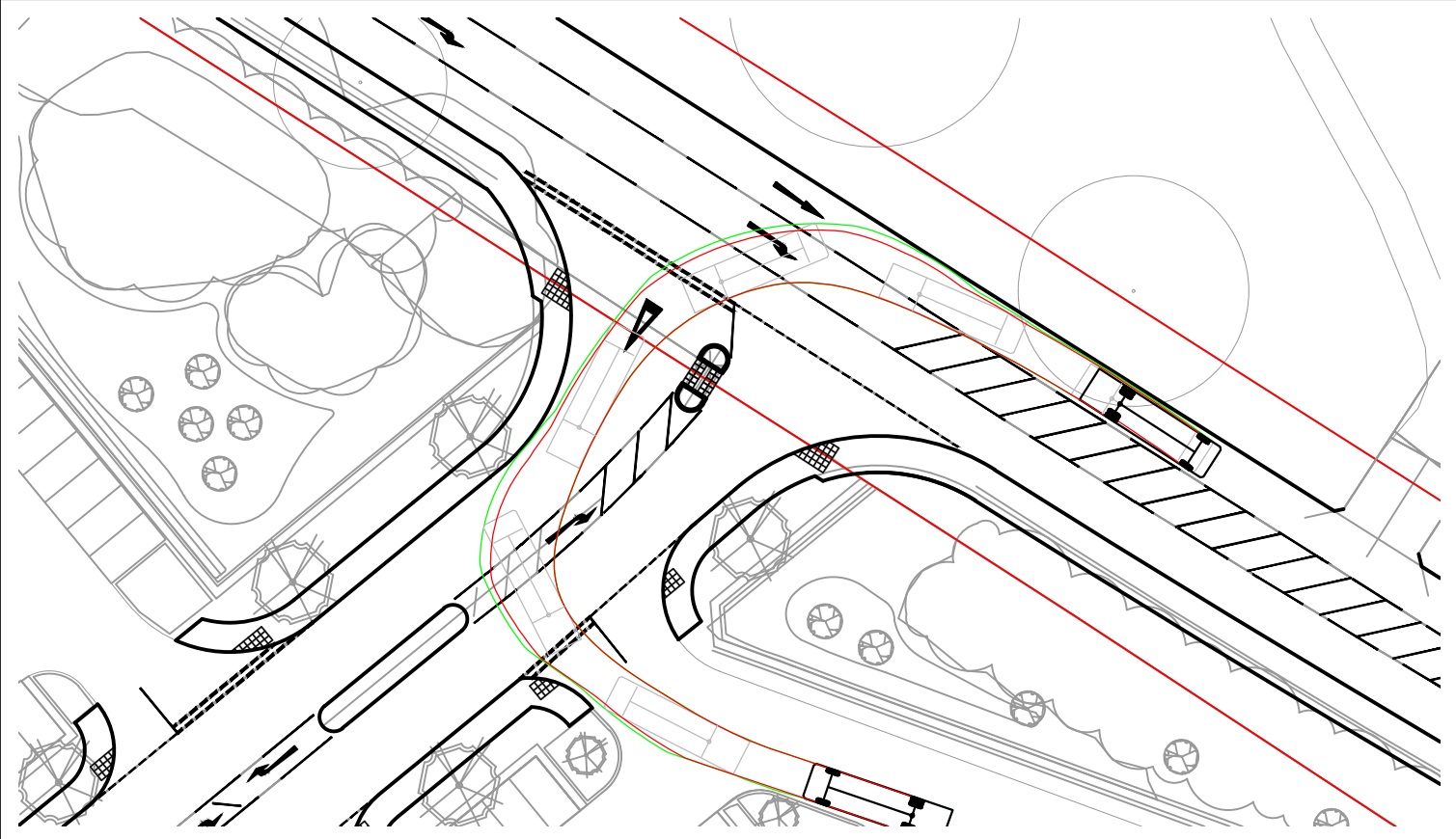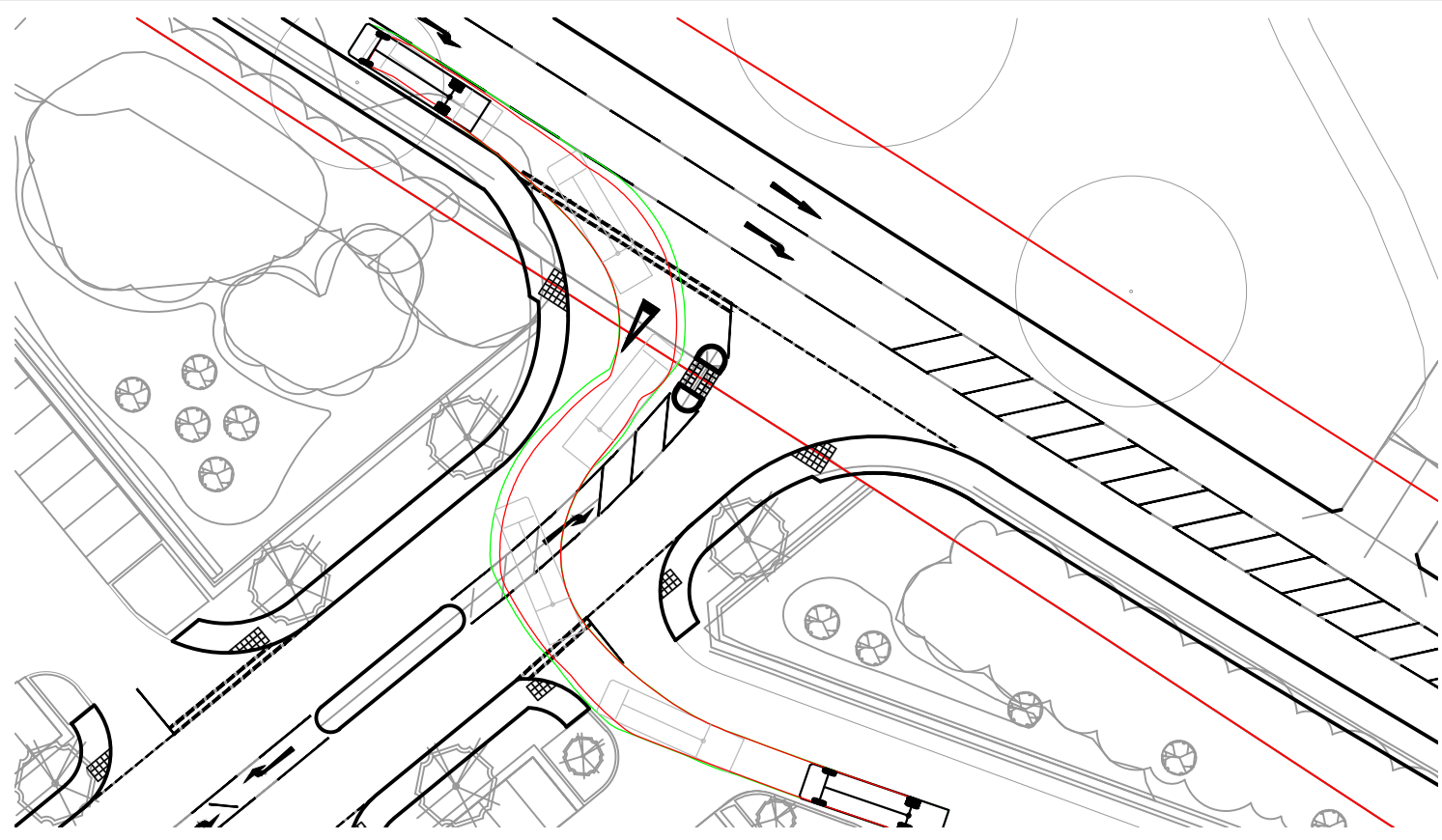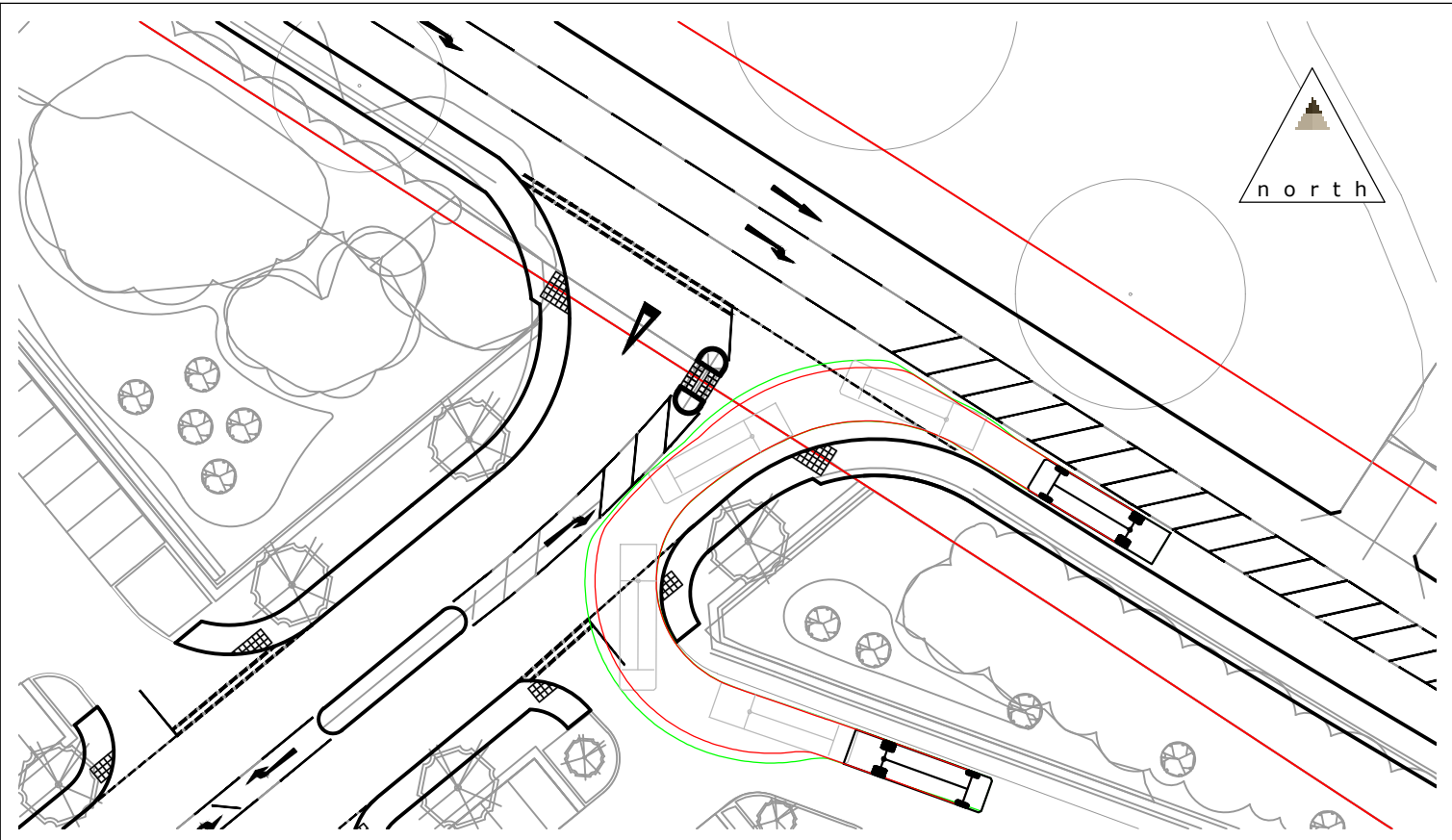Great Wolf Resort, Bicester

Title:
Swept Path Analysis - Sheet 2 of 2
Service Route - 10m Rigid Vehicle

Scale: 1:500 (@ A3)

Notes:

Drawing:
1803047-TK46

Revision:
A
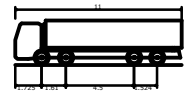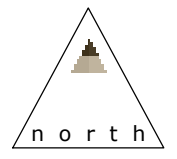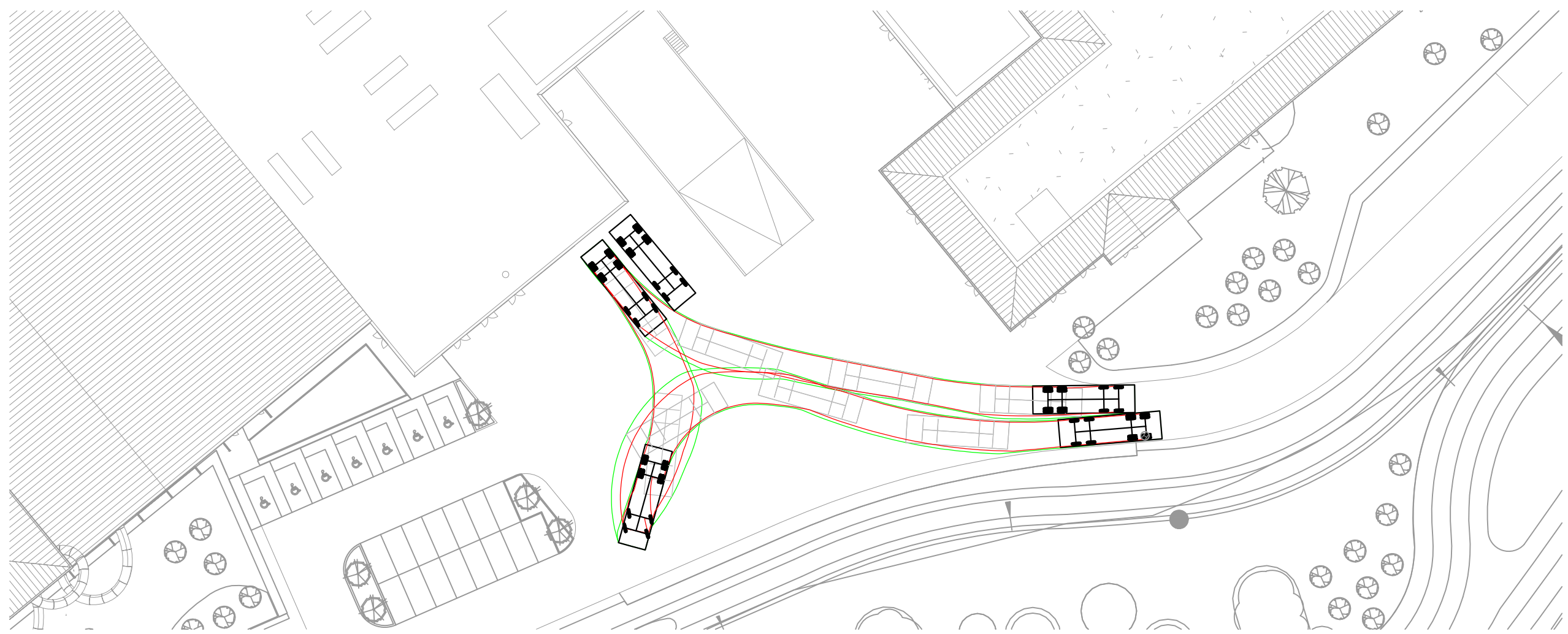
north

Rolonof Vehicle
Overall Length   11.000m
Overall Width   3.000m
Overall Body Height   2.941m
Min Body Ground Clearance   0.391m
Track Width   2.760m
Lock-to-lock time   6.00s
Curb to Curb Turning Radius   10.750m

motion

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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
Rolonof Vehicle

Scale: 1:500   (@ A3)

Drawing: Revision:

1803047-TK56   -

Refuse Vehicle

10m Rigid Vehicle

north
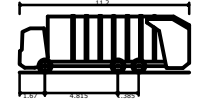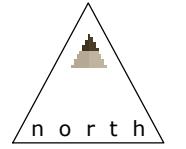
Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)
Overall Length   11.200m
Overall Width   2.530m
Overall Body Height   3.751m
Min Body Ground Clearance 0.304m
Track Width   2.500m
Lock-to-lock time   4.00s
Curb to Curb Turning Radius 9.500m

FTA Design HG Rigid Vehicle (1998)
Overall Length   10.000m
Overall Width   2.500m
Overall Body Height   3.445m
Min Body Ground Clearance 0.440m
Track Width   2.470m
Lock-to-lock time   3.00s
Curb to Curb Turning Radius 11.000m
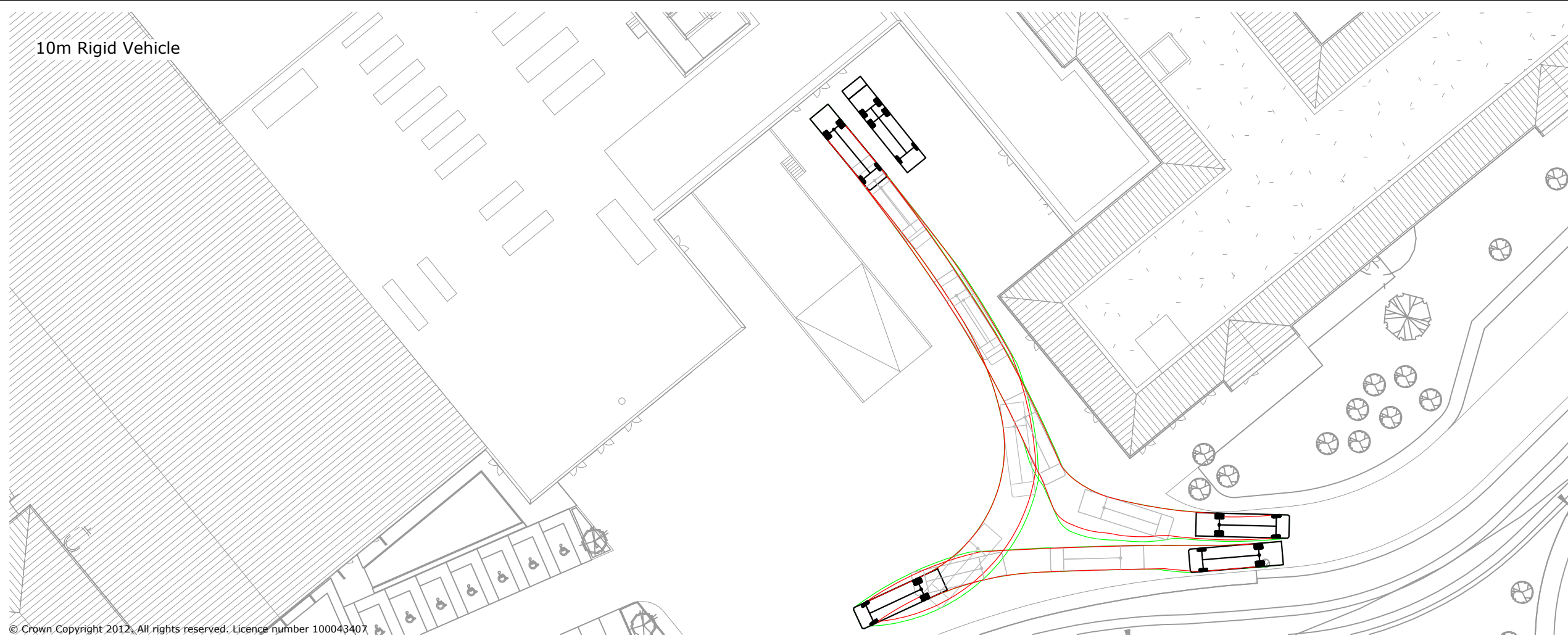
motion

Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
Delivery Yard

Scale: 1:500   (@ A3)

Drawing: Revision:
1803047-TK58   -

N:\Projects\gwbice 1803047\Drawings\1803047-TK58 [Delivery Yard].dwg
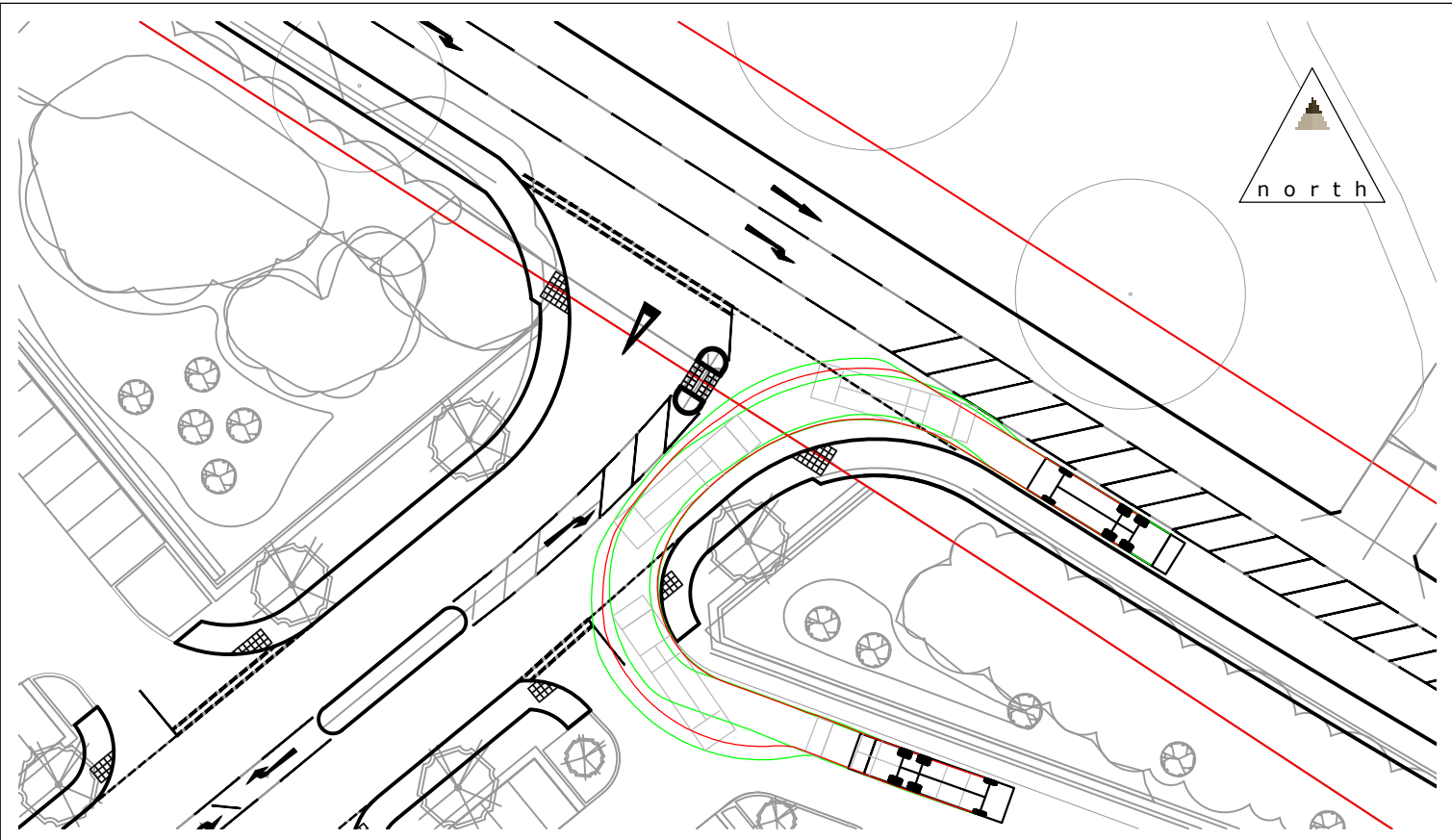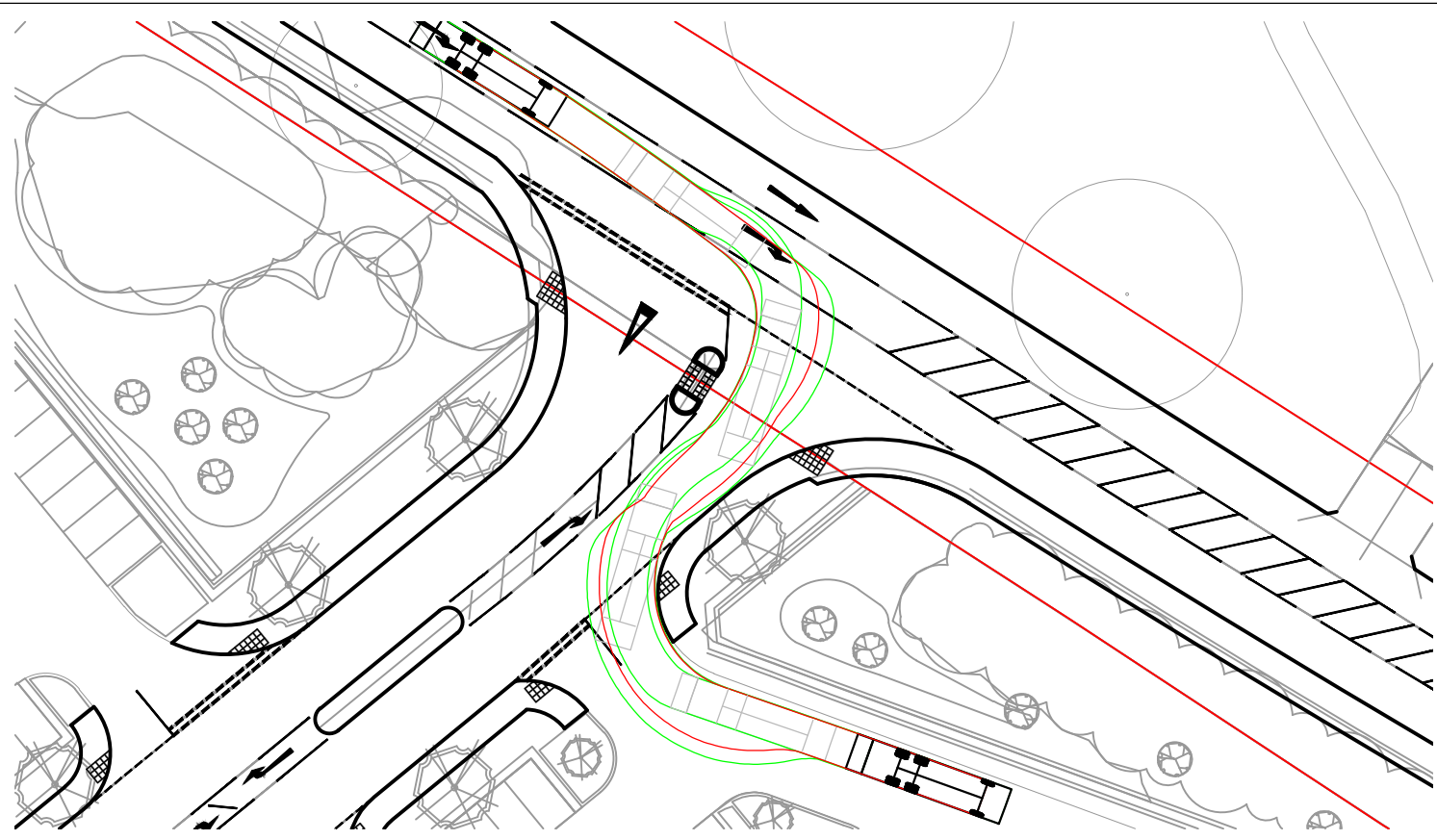
Legend:

Highway Boundary ——————
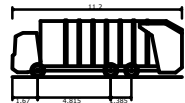
Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)
Overall Length	11.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	9.500m

motion

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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
Refuse Vehicle

Scale: 1:500 (@ A3)

Notes:

Drawing:	Revision:
1803047-TK59	-

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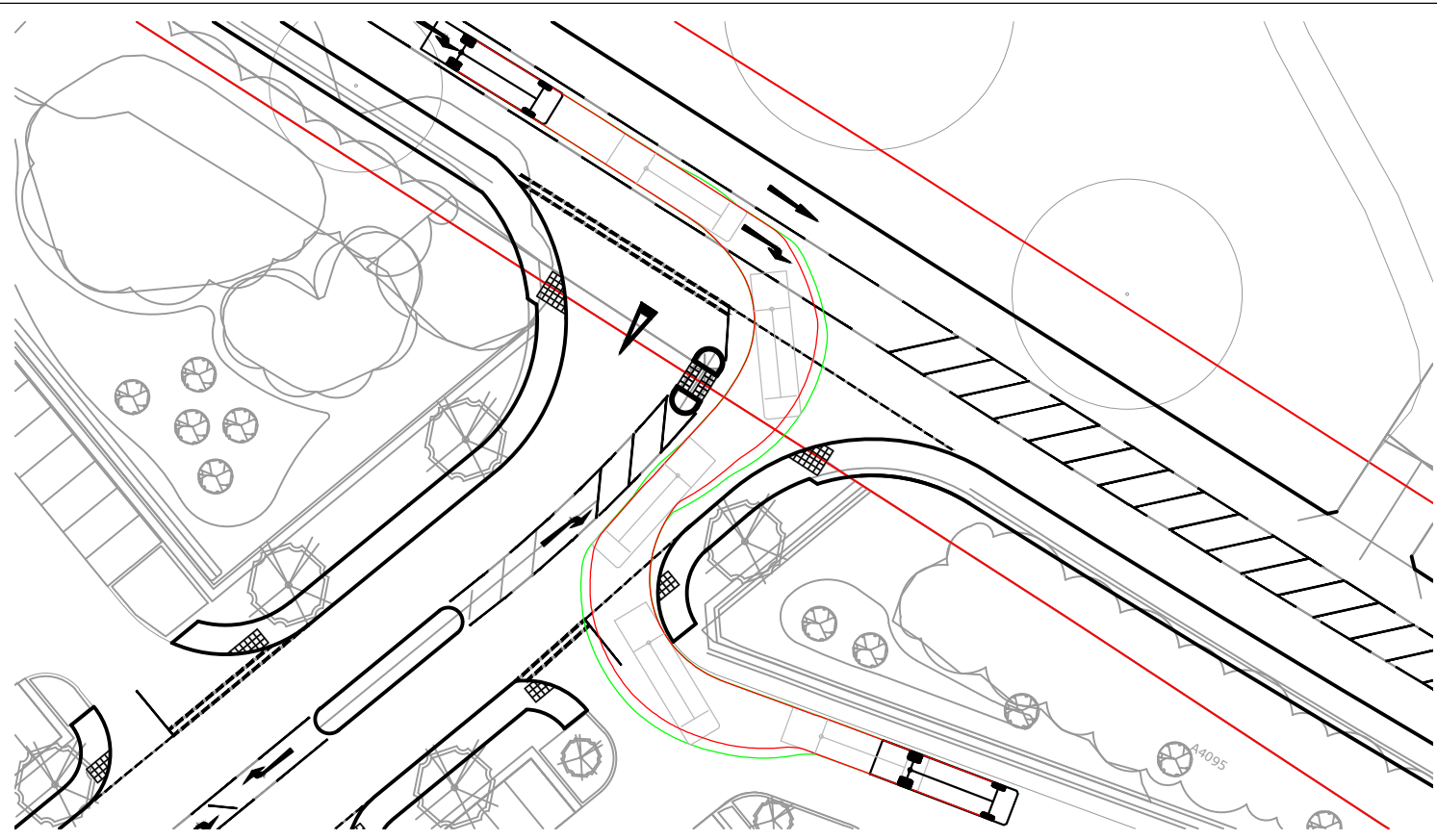
Legend:

Highway Boundary ————————

FTA Design HG Rigid Vehicle (1998)
Overall Length	10,000m
Overall Width	2.500m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock-to-lock time	3.00s
Curb to Curb Turning Radius	11.000m

motion

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Guildford   1-2 Hatfields
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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis
10m Rigid Vehicle

Scale: 1:500 (@ A3)

Notes:

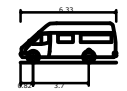| Drawing:	Revision:
1803047-TK60	**-**
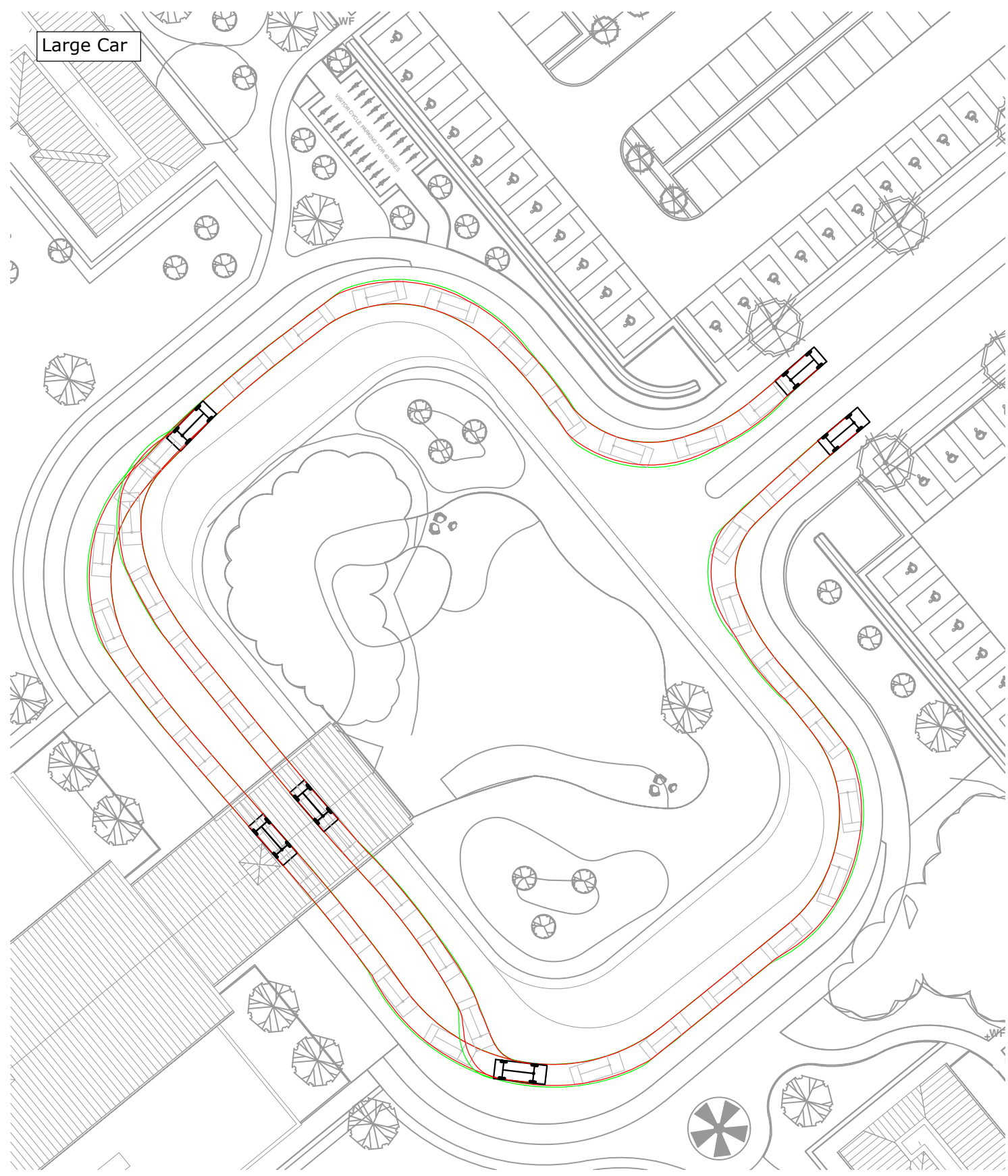
Large Car

15 Seater Mini Bus

north
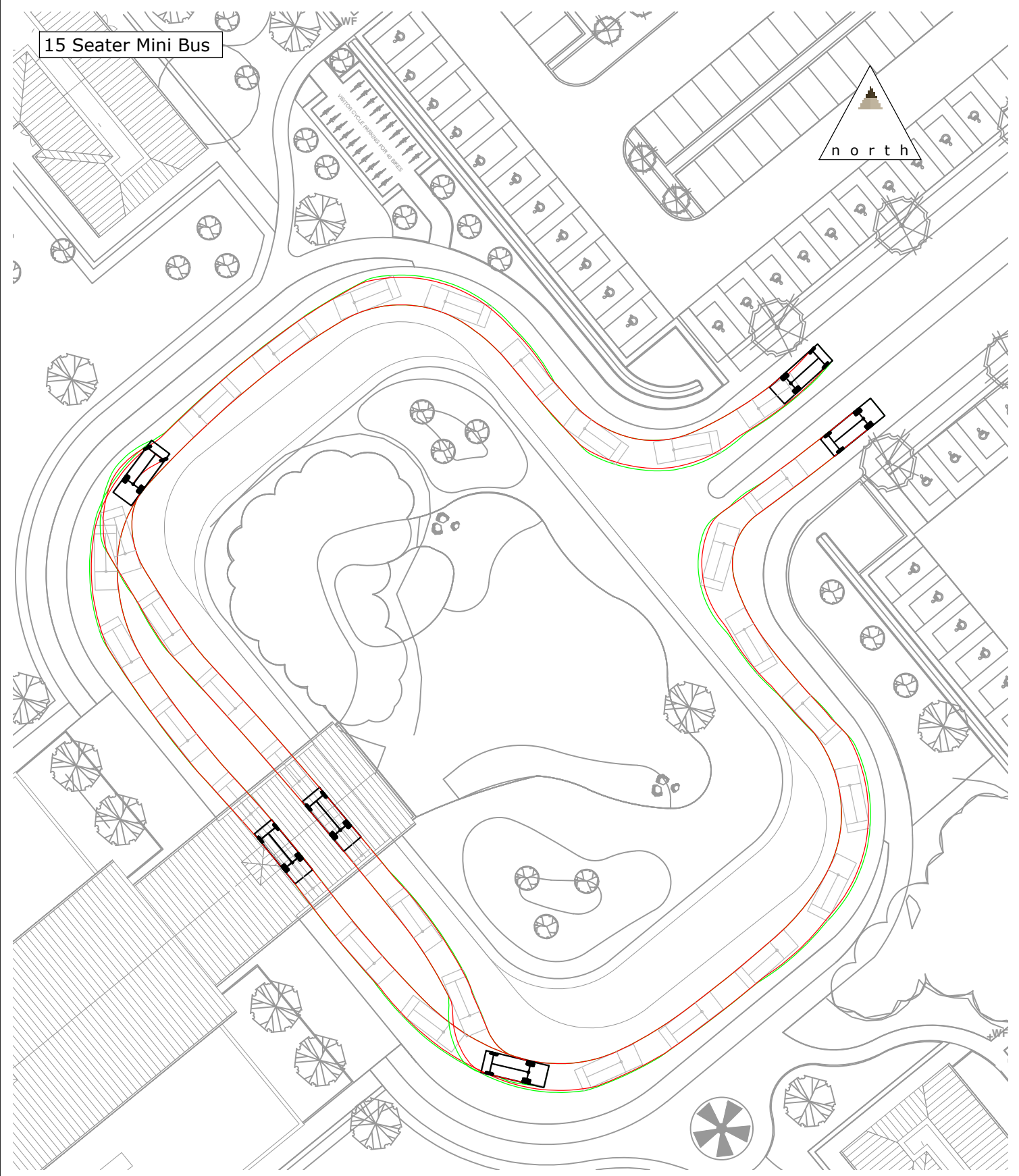
Large Car (2006)
Overall Length   5.079m
Overall Width   1.872m
Overall Body Height   1.525m
Min Body Ground Clearance 0.310m
Max Track Width   1.831m
Lock-to-lock time   4.00s
Curb to Curb Turning Radius 5.900m

Mini Bus
Overall Length   6.330m
Overall Width   2.192m
Overall Body Height   2.601m
Min Body Ground Clearance 0.374m
Track Width   2.192m
Lock-to-lock time   4.00s
Curb to Curb Turning Radius 6.450m

motion

84 North Street   Cargo Works
Guildford   1-2 Hatfields
Surrey   London
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Project:
Great Wolf Resort, Bicester

Title:
Swept Path Analysis - Pick Up/Drop Off Area

Scale: 1:500   (@ A3)

Notes:

Drawing:
1803047-TK61

Revision:
-

Appendix E

Parking Accumulation Assessment

Weekday	Vehicle Movements			Car Park Occupany	
	in	out	two-way	Vehicles	Percentage
0000-0100	8	7	15	786	87%
0100-0200	3	3	6	786	87%
0200-0300	2	2	4	787	87%
0300-0400	2	2	4	787	87%
0400-0500	4	3	7	788	87%
0500-0600	7	9	16	786	87%
0600-0700	18	17	35	788	87%
0700-0800	34	30	64	792	88%
0800-0900	66	47	113	810	90%
0900-1000	65	47	112	828	92%
1000-1100	51	50	101	829	92%
1100-1200	49	70	119	808	90%
1200-1300	51	71	122	789	87%
1300-1400	68	72	140	785	87%
1400-1500	71	69	140	786	87%
1500-1600	83	85	168	784	87%
1600-1700	78	96	173	765	85%
1700-1800	66	88	154	743	82%
1800-1900	54	61	115	736	82%
1900-2000	47	48	95	735	81%
2000-2100	42	44	86	732	81%
2100-2200	38	59	98	711	79%
2200-2300	29	37	65	704	78%
2300-2400	19	20	39	703	78%

Weekend	Vehicle Movements			Car Park Occupany	
	in	out	two-way	Vehicles	Percentage
0000-0100	27	22	49	789	88%
0100-0200	8	4	13	793	88%
0200-0300	5	4	10	794	88%
0300-0400	3	3	6	794	88%
0400-0500	4	6	10	792	88%
0500-0600	10	9	19	793	88%
0600-0700	16	17	33	792	88%
0700-0800	39	42	81	789	87%
0800-0900	79	62	141	806	89%
0900-1000	70	68	139	807	89%
1000-1100	75	84	159	799	89%
1100-1200	70	114	183	754	84%
1200-1300	91	112	204	733	81%
1300-1400	122	125	247	730	81%
1400-1500	116	110	225	736	82%
1500-1600	106	115	221	728	81%
1600-1700	98	113	211	713	79%
1700-1800	79	115	194	677	75%
1800-1900	76	75	152	678	75%
1900-2000	60	60	120	678	75%
2000-2100	54	56	110	675	75%
2100-2200	50	51	102	674	75%
2200-2300	41	42	83	673	75%
2300-2400	28	26	54	675	75%

Appendix F

Bicester Transport Model Outputs

Description	From Arm	To Arm	A_node	B_node	C_node	Concatenate	Car	LGV	HGV (PCU)	HGV (Veh)	Bus (Veh)	Total Veh	Total PCUs	Car	LGV	HGV (PCU)	HGV (Veh)	Bus (Veh)	Total Veh	Total PCUs	Car	LGV	HGV (PCU)	HGV (Veh)	Bus (Veh)	Total Veh	Total PCUs
A4095 at location of Development Access Junction		Eastbound	40950	40275		40950_40275_	136	32	6	3	0	171	173	82	20	4	2	0	104	106	187	35	3	2	0	223	225
		Westbound	40275	40950		40275_40950_	149	38	1	0	0	187	187	92	20	0	0	0	111	111	173	24	0	0	0	197	197
A4095 / B430 Staggered Priority Junction	Oxford Road	A4095 East	40953	40954	40950	40953_40954_40950	9	2	0	0	0	11	11	4	0	4	2	0	6	7	11	0	0	0	0	11	11
	Oxford Road	Northampton Road	40953	40954	40951	40953_40954_40951	618	75	8	4	0	697	701	174	4	5	3	0	181	183	367	0	0	0	0	367	367
	Oxford Road	A4095 West	40997	40953	40952	40997_40953_40952	41	5	17	9	0	55	63	45	4	1	0	0	49	49	78	2	4	2	0	83	84
	A4095 East	Oxford Road	40950	40954	40953	40950_40954_40953	38	1	0	0	0	39	39	11	1	0	0	0	12	12	20	2	0	0	0	22	22
	A4095 East	Northampton Road	40950	40951	40265	40950_40951_40265	14	0	0	0	0	14	14	5	0	0	0	0	5	5	13	0	0	0	0	13	13
	A4095 East	A4095 West	40950	40954	40952	40950_40954_40952	97	37	1	0	0	134	135	76	19	0	0	0	95	95	140	22	0	0	0	162	162
	Northampton Road	Oxford Road	40951	40954	40953	40951_40954_40953	237	59	0	0	0	296	296	129	16	14	8	0	153	159	268	33	11	6	0	308	313
	Northampton Road	A4095 East	40265	40951	40950	40265_40951_40950	2	0	0	0	0	2	2	2	0	0	0	0	2	2	9	0	0	0	0	9	9
	Northampton Road	A4095 West	40951	40954	40952	40951_40954_40952	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	A4095 West	Oxford Road	40952	40953	40997	40952_40953_40997	101	14	23	13	0	128	138	70	6	9	5	0	81	85	163	4	9	5	0	172	176
	A4095 West	A4095 East	40952	40954	40950	40952_40954_40950	125	30	6	3	0	158	161	77	20	0	0	0	97	97	168	34	3	2	0	204	205
	A4095 West	Northampton Road	40952	40954	40951	40952_40954_40951	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B430 / B4030 signal junction	Ardley Road	Bicester Road	a	b		a_b_	6	0	14	8	0	14	20	58	0	0	0	0	58	58	90	0	0	0	0	90	90
	Ardley Road	Oxford Road	a	c		a_c_	589	82	18	10	0	681	689	176	4	4	2	0	183	185	391	0	4	2	0	393	395
	Ardley Road	Heyford Road	a	d		a_d_	13	0	0	0	0	13	13	9	0	0	0	0	9	9	8	3	0	0	0	11	11
	Bicester Road	Ardley Road	b	a		b_a_	33	0	24	14	0	47	58	71	2	12	7	0	79	85	11	0	2	1	0	12	13
	Bicester Road	Oxford Road	b	c		b_c_	33	0	4	2	0	35	37	7	0	0	0	0	7	7	17	2	0	0	0	19	19
	Bicester Road	Heyford Road	b	d		b_d_	248	30	11	6	1	285	291	268	17	7	4	1	290	294	400	25	8	4	1	430	435
	Oxford Road	Ardley Road	c	a		c_a_	323	63	24	13	0	399	409	169	6	9	5	0	181	185	363	34	10	5	0	403	407
	Oxford Road	Bicester Road	c	b		c_b_	13	2	0	0	0	15	15	19	0	0	0	0	19	19	54	4	1	0	0	58	59
	Oxford Road	Heyford Road	c	d		c_d_	40	10	0	0	0	50	50	22	17	13	7	0	46	51	32	2	10	6	0	40	44
	Heyford Road	Ardley Road	d	a		d_a_	9	4	0	0	0	13	13	3	0	0	0	0	3	3	4	0	0	0	0	4	4
	Heyford Road	Bicester Road	d	b		d_b_	417	39	16	9	1	466	474	246	15	20	11	1	274	283	322	16	8	4	1	344	348
	Heyford Road	Oxford Road	d	c		d_c_	49	2	3	2	0	53	55	39	4	5	3	0	46	48	49	1	0	0	0	49	49
B430 / B430 Roundabout	B430 Northampton Road North	B430 Northampton Road North	91215	12071	91215	91215_12071_91215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B430 Northampton Road North	B430 Overbridge	91215	12071	41066	91215_12071_41066	576	75	0	0	0	651	651	142	0	0	0	0	142	142	343	0	0	0	0	343	343
	B430 Northampton Road North	B430 Northampton Road South	91215	12071	12465	91215_12071_12465	24	0	0	0	0	24	24	14	15	4	2	0	31	32	35	5	0	0	0	40	40
	B430 Overbridge	B430 Northampton Road North	41066	12071	91215	41066_12071_91215	29	0	0	0	0	29	29	19	29	0	0	0	49	49	39	11	0	0	0	51	51
	B430 Overbridge	B430 Overbridge	41066	12071	41066	41066_12071_41066	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B430 Overbridge	B430 Northampton Road South	41066	12071	12465	41066_12071_12465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B430 Northampton Road South	B430 Northampton Road North	12465	12071	91215	12465_12071_91215	230	59	0	0	0	289	289	110	4	19	11	0	124	133	207	33	11	6	0	247	251
	B430 Northampton Road South	B430 Overbridge	12465	12071	41066	12465_12071_41066	17	0	0	0	0	17	17	13	0	0	0	0	13	13	21	0	0	0	0	21	21
	B430 Northampton Road South	B430 Northampton Road South	12465	12071	12465	12465_12071_12465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A4095 / Vendee Drive priority junction	B4030 Vendee Drive (N)	B4030 Vendee Drive (S)	30025	22087	22180	30025_22087_22180	463	49	103	57	0	569	615	195	4	30	17	0	216	229	353	7	6	3	0	363	366
	B4030 Vendee Drive (N)	A4095	30025	22087	22088	30025_22087_22088	325	93	1	0	0	418	418	113	27	4	2	0	142	144	219	29	2	1	0	249	250
	B4030 Vendee Drive (S)	A4095	22180	22087	22088	22180_22087_22088	59	0	0	0	0	59	59	29	0	0	0	0	29	29	60	0	0	0	0	60	60
	B4030 Vendee Drive (S)	B4030 Vendee Drive (N)	22180	22087	30025	22180_22087_30025	215	7	5	3	0	224	227	195	5	20	11	0	212	220	475	36	16	9	0	520	527
	A4095	B4030 Vendee Drive (N)	22088	22087	30025	22088_22087_30025	224	41	7	4	0	269	272	155	37	8	4	0	196	199	417	51	3	2	0	469	470
	A4095	B4030 Vendee Drive (S)	22088	22087	22180	22088_22087_22180	32	0	0	0	0	32	32	48	0	0	0	0	48	48	66	0	0	0	0	66	66
A41 Oxford Road / Vendee Drive roundabout	A41 (North)	A41 (North)	a	a		a_a_	63	0	0	0		63	63	27	4	0	0		31	31	64	0	0	0		64	64
	A41 (North)	Unlabelled Rd (East)	a	b		a_b_	0	0	0	0		0	0	0	0	0	0		0	0	16	0	0	0		16	16
	A41 (North)	A41 (South)	a	c		a_c_	781	150	214	119	10	1060	1165	661	160	193	107	10	938	1033	956	132	95	53	10	1151	1203
	A41 (North)	P&R (West)	a	d		a_d_	2	0	0	0		2	2	3	0	0	0		3	3	0	0	0	0		0	0
	A41 (North)	Vendee Dr (North)	a	e		a_e_	103	0	0	0	2	105	107	102	0	5	3	2	107	111	230	0	4	2	2	234	237
	Unlabelled Rd (East)	A41 (North)	b	a		b_a_	97	29	0	0		126	126	82	23	12	7		111	116	128	0	0	0		128	128
	Unlabelled Rd (East)	Unlabelled Rd (East)	b	b		b_b_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	Unlabelled Rd (East)	A41 (South)	b	c		b_c_	1	0	0	0		1	1	2	0	4	2		4	5	13	0	1	1		13	14
	Unlabelled Rd (East)	P&R (West)	b	d		b_d_	4	0	0	0		4	4	27	0	0	0		27	27	4	0	0	0		4	4
	Unlabelled Rd (East)	Vendee Dr (North)	b	e		b_e_	13	0	0	0		13	13	19	5	0	0		24	24	40	0	0	0		40	40
	A41 (South)	A41 (North)	c	a		c_a_	985	158	201	112	10	1265	1364	552	161	219	122	10	845	951	977	176	97	54	10	1216	1269
	A41 (South)	Unlabelled Rd (East)	c	b		c_b_	11	0	0	0		11	11	33	0	0	0		33	33	19	0	0	0		19	19
	A41 (South)	A41 (South)	c	c		c_c_	0	0	0	0		0	0	1	0	0	0		1	1	2	0	0	0		2	2
	A41 (South)	P&R (West)	c	d		c_d_	62	0	0	0		62	62	202	0	0	0		202	202	40	0	0	0		40	40
	A41 (South)	Vendee Dr (North)	c	e		c_e_	218	8	10	6	2	234	241	116	3	18	10	2	131	141	408	41	13	7	2	458	466
	P&R (West)	A41 (North)	d	a		d_a_	0	0	0	0		0	0	0	0	0	0		0	0	1	0	0	0		1	1
	P&R (West)	Unlabelled Rd (East)	d	b		d_b_	1	0	0	0		1	1	0	0	0	0		0	0	0	0	0	0		0	0
	P&R (West)	A41 (South)	d	c		d_c_	7	0	0	0		7	7	0	0	0	0		0	0	3	0	0	0		3	3
	P&R (West)	P&R (West)	d	d		d_d_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	P&R (West)	Vendee Dr (North)	d	e		d_e_	1	0	0	0		1	1	1	0	0	0		1	1	3	0	0	0		3	3
	Vendee Dr (North)	A41 (North)	e	a		e_a_	251	0	0	0		251	251	126	0	0	0		126	126	196	0	1	0		196	197
	Vendee Dr (North)	Unlabelled Rd (East)	e	b		e_b_	27	0	13	7		34	40	22	0	12	7		29	35	29	0	0	0		29	29
	Vendee Dr (North)	A41 (South)	e	c		e_c_	392	57	91	51	2	501	543	171	7	23	13	2	193	205	286	9	11	6	2	303	310
	Vendee Dr (North)	P&R (West)	e	d		e_d_	12	0	0	0		12	12	0	0	0	0		0	0	22	0	0	0		22	22
	Vendee Dr (North)	Vendee Dr (North)	e	e		e_e_	1	0	0	0		1	1	1	0	0	0		1	1	1	0	0	0		1	1
M40 Junction 9	M40 (North)	M40 (North)	a	a		a_a_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	M40 (North)	A41 (East)	a	b		a_b_	78	1	55	30		110	134	52	0	50	28		79	101	95	1	29	16		112	125
	M40 (North)	M40 (South)	a	c		a_c_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	M40 (North)	A34 (West)	a	d		a_d_	915	167	657	366		1448	1739	1035	227	657	366		1628	1919	1575	362	516	287		2225	2453
	A41 (East)	M40 (North)	b	a		b_a_	28	0	43	24		52	71	39	0	56	31		70	95	70	0	49	28		98	120
	A41 (East)	A41 (East)	b	b		b_b_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	A41 (East)	M40 (South)	b	c		b_c_	178	28	49	27		233	254	153	36	25	14		203	223	307	17	6	3		327	330
	A41 (East)	A34 (West)	b	d		b_d_	899	180	213	119	12	1210	1316	661	108	139	78	12	859	933	765	87	51	28	12	892	927
	M40 (South)	M40 (North)	c	a		c_a_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	M40 (South)	A41 (East)	c	b		c_b_	223	39	15	8		270	277	153	34	35	20		207	222	273	21	28	16		310	322
	M40 (South)	M40 (South)	c	c		c_c_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
	M40 (South)	A34 (West)	c	d		c_d_	198	33	48	27		257	279	159	31	47	26		216	237	554	109	25	14		677	688
	A34 (West)	M40 (North)	d	a		d_a_	1242	217	409	227		1686	1867	1183	244	794	443		1870	2221	1668	319	569	317		2303	2555
	A34 (West)	A41 (East)	d	b		d_b_	959	122	138	77	12	1169	1242	701	130	151	84	12	927	1006	1078	194	54	30	12	1314	1350
	A34 (West)	M40 (South)	d	c		d_c_	478	88	55	31		597	621	100	12	33	19		130	145	61	55	41	23		138	156
	A34 (West)	A34 (West)	d	d		d_d_	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0
M40 J10 (Northern Roundabout)	A43 North	A43 South	b	c		b_c_	1659	327	337	188	0	2174	2323	926	145	385	214	0	1285	1455	1399	245	178	100	0	1745	1823
	A43 South	A43 North	c	b		c_b_	1067	172	257	143	0	1382	1496	937	157	327	182	0	1276	1421	1599	277	247	139	0	2015	2124
	M40 SB Off Slip	A43 North	a	b		a_b_	256	59	34	19	0	334	349	202	19	54	30	0	250	274	107	25	0	0	0	132	132
	M40 SB Off Slip	A43 South	a	c		a_c_	335	40	103	57	0	432	478	196	32	80	45	0	273	309	205	37	91	51	0	292	332
M40 J10 (Central Signalised Roundabout)	A43 North	Services	90256	90240	41261	90256_90240_41261	146	58	107	60	0	263	311	116	36	69	38	0	189	220	212	43	93	52	0	307	348
	A43 North	M40 SB On Slip	a	c		a_c_	915	179	313	174	0	1267	1406	664	120	318	177	0	961	1102	707	186	167	94	0	988	1061
	A43 North	A43 West	a	d		a_d_	950	129	18	10	0	1089	1097	342	21	78	44	0	407	442	719	57	12	7	0	783	788
	Services	A43 North	41261	90230	90234	41261_90230_90234	44	6	22	12	0	63	72	39	5	15	9	0	52	59	67	8	23	13	0	87	97
	Services	M40 SB On Slip	41261	90230	90231	41261_90230_90231	126	25	98	54	0	206	249	111	32	56	31	0	174	199	162	20	83	46	0	228	265
	Services	A43 West	41261	90230	90215	41261_90230_90215	125	57	78	44	0	226	261	86	14	49	27	0	128	150	155	17	67	37	0	208	238
	A43 West	A43 North	d	a		d_a_	1023	166	234	130	0	1319	1423	898	152	311	173	0	1224	1361	1533	270	223	125	0	1928	2025
	A43 West	Services	90245	90240	41261	90245_90240_41261	199	21	28	16	0	236	248	117	14	44	24	0	155	174	170	19	78	43	0	233	267
	A43 West	M40 SB On Slip	d	c		d_c_	24	0	0	0	0	24	24	3	0	0	0	0	3	3	2	0	0	0	0	2	2
M40 J10 (Southern Roundabout)	A43 East	M40 NB On Slip	a	b		a_b_	227	57	83	46	0	329	366	134	19	115	64	0	217	268	342	65	76	43	0	449	482
	A43 East	B430	a	c		a_c_	844	130	18	10	0	984	992	294	16	13	7	0	318	323	531	8	4	3	0	542	544
	M40 NB Off Slip	A43 East	b	a		b_a_	842	122	243	135	0	1100	1208	821	160	345	193	0	1173	1326	1370	250	295	166	0	1786	1915
	M40 NB Off Slip	B430	b	c		b_c_	4	0	0	0	0	4	4	6	0	14	8	0	14	21	10	0	0	0	0	10	10
	B430	A43 East	c	a		c_a_	404	67	24	13	0	484	495	196	7	9	5	0	208	212	297	36	10	6	0	338	343
	B430	M40 NB On Slip	c	b		c_b_	179	18	25	14	0	211	222	119	26	12	7	0	152	157	205	9	0	0	0	214	214
B430 Northampton Road / Church Road priority junction (Weston-on-the-Greeny)	B430 Northampton Road (N)	B430 Northampton Road (S)	91224	91215	12071	91224_91215_12071	591	75	0	0	0	666	666	155	4	4	2	0	161	163	363	5	0	0	0	368	368
	B430 Northampton Road (N)	Church Road	91224	91215	12219	91224_91215_12219	19	0	8	4	0	23	27	13	0	1	1	0	14	14	64	0	0	0	0	64	64
	B430 Northampton Road (S)	Church Road	12071	91215	12219	12071_91215_12219	8	0	0	0	0	8	8	7	13	0	0	0	21	21	7	11	0	0	0	18	18
	B430 Northampton Road (S)	B430 Northampton Road (N)	12071	91215	91224	12071_91215_91224	250	59	0	0	0	309	309	122	20	19	11	0	152	161	239	33	11	6	0	279	284
	Church Road	B430 Northampton Road (N)	91219	91215	91224	91219_91215_91224	18	0	0	0	0	18	18	14	0	0	0	0	14	14	28	0	0	0	0	28	28
	Church Road	B430 Northampton Road (S)	91219	91215	12071	91219_91215_12071	9	0	0	0	0	9	9	0	11	0	0	0	11	11	15	0	0	0	0	15	15

motion

Appendix G

TEMPRO Output Files

Saturday Peak

Appendix H

Pre-Application Technical note – Trip Attraction

Scoping Note Addendum: Trip Generation Analysis

Project:	Great Wolf Lodge, Chesterton
Prepared by:	Kathryn Lewis
Approved by:	David Lewis
Date:	9th July 2019

1.0   Introduction

1.1   Motion has been instructed by Great Wolf Resorts (the parent company of Great Wolf Lodge) to advise on highways and transport matters associated with development proposals for a new family resort at a site in Chesterton near Bicester.

1.2   The site is situated to the south of the A4095 to the west of Chesterton. The site currently forms part of the Bicester Golf Course and Hotel site that benefits from a main customer/ visitor access from Green Lane and a secondary access from the A4095 which operates as the service access to the golf course.

1.3   The development proposals comprise the redevelopment of 9 holes of the existing 18 holes of the golf course and construction of a 500-bedroom hotel and indoor family resort. Vehicle access to the proposed hotel would be taken from a new priority junction access from the A4095.

1.4   Motion submitted a Scoping Note to Oxfordshire County Council (OCC) dated 25th April 2019 and Motion subsequently met with Officers at OCC on 7th May 2019 to discuss the proposals and Scoping Note.

1.5   This Scoping Note Addendum has been prepared to provide additional assessment of the expected trip generation of the development proposals and parking provision, and seeks agreements on these matters with Officers at Oxfordshire County Council (OCC) and Cherwell District Council (CDC). It is proposed that this Note be discussed at the upcoming pre-application meeting on 13th June 2019

1.6   Since submission of previous Scoping Note and subsequent meeting, there has been further discussions between Motion and OCC which are summarised as follows:

► Motion has provided OCC with details of the proposed diversion of PROW 161/6 across the site and improvements to the pedestrian crossing at PROW 161/1 and are awaiting comment from OCC on these matters;

► OCC has advised that they would strongly object to the opening of a second access to the development solely for access to a pumping station and sub-station. Motion can confirm that all vehicle access to the site will be taken from the main vehicle entrance as presented on Drawing 1803047-03 submitted with the previous Scoping Note;

► OCC and CDC have advised a list of committed developments which will need to be considered as part of the assessment. Motion are preparing a separate Scoping Note Addendum considering the junctions at which committed development traffic will be assessed and consider the use of TEMPRO to ensure background traffic growth is not double counted; and

► OCC has confirmed that no S106 contributions are currently envisaged.

2.0 Trip Generation Methodology

2.1   The Scoping Note submitted in April 2019 detailed the expected trip generation of the development proposals during a weekday morning, weekday evening and Saturday peak periods. The trip generation analysis presented in the Scoping Note was based on traffic survey information at three existing Great Wolf sites in the United States.

2.2   Table 2.1 below is extracted from the submitted Scoping Note and summarises the expected trip generation of the development proposals based on surveys of existing Great Wolf sites.

	Vehicle Trips		
	In	Out	Total
Weekday Morning Peak (08:00-09:00)	66	47	113
Weekday Evening Peak (17:00-18:00)	66	88	154
Saturday Peak (13:00-14:00)	122	125	247
Weekday Daily (07:00-19:00)	917	1061	1,977
Saturday Daily (07:00-19:00)	1,230	1,531	2,761

Table 2.1 Expected Vehicle Trips (based on Great Wolf Surveys)

TRICS Database

2.3   Following discussions with OCC and Highways England, consideration has been given to whether there are suitable sites within the TRICS database to use for trip assessment purposes.

2.4   The TRICS database was reviewed to assess whether there are any comparable hotel sites for the purpose of assessing the expected trip attraction of the development proposals. However, the hotel sites included within the TRICS database comprise hotels such as Travelodge, Premier Inn, Holiday Inn and Thistle branded hotels which are not comparable to the proposed hotel as they do not provide comparable facilities to the development proposals and do not cater for the same market/ users as the development. On that basis it is concluded that the hotel trip data available from the TRICS database does not provide an appropriate comparison for the development proposals.

First Principles Sensitivity Test

2.5   As a comparison to the survey data collected at the three existing Great Wolf Lodges in the United States, a first principles sensitivity test has been undertaken to consider the appropriateness of the trip generation analysis presented in the Scoping Note dated 25th April 2019.

Guests Trip Attraction

2.6   The proposed hotel will have a total of 500 bedrooms and Great Wolf Lodge have advised that their business model is based on a typical room occupancy of 4.5 guests per room, including children. On that basis the proposed hotel would accommodate up to 2,250 guests if the hotel were fully occupied.

2.7   In order to assess the number of guests staying at the resort it has been assumed that occupancy could be 100% at weekends and 75% during weekdays. This would equate to a total of 2,250 guests within the hotel over the Friday and Saturday nights, with circa 1,688 guests in the hotel at other times.

2.8   Great Wolf has advised that at their existing resorts guest have an average duration of stay of 1.6 days although the business plan seeks to increase this. On that basis it is expected that typically half of the occupied rooms would changeover each day during the week.

2.9   Based on the expected hotel occupancy, room occupancy and duration of stay, Table 2.2 below summarises the expected profile of daily guest arrivals and departures throughout a week. It is noted that the proposed hotel is a family resort and therefore the majority of guests at the hotel will be families with children who would therefore arrive and depart the hotel as a group.

	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Occupancy	75%	75%	75%	75%	100%	100%	75%
Guests	1,688	1,688	1,688	1,688	2,250	2,250	1,688
Changeover	50%	50%	50%	50%	63%	38%	50%
Arrivals (Guests)	844	844	844	844	1,406	844	844
Departures (Guests)	844	844	844	844	844	844	1,406

Table 2.2 Hotel Occupancy and Guest Arrivals/ Departures

2.10   In order to assess the mode share of guest trips to/from the hotel and the expected car occupancy of guest trips, reference has been made to data presented within the Transport Assessment submitted alongside the planning application for the Center Parcs resort in Woburn, the most recently opened Center Parcs site. The business model for Center Parcs is based on fixed changeover days on Mondays and Fridays and therefore the total daily trip generation of Center Parcs will not be comparable to the proposed Great Wolf site with flexible arrivals and departures on any day of the week. However, Center Parcs is considered to provide a reasonable comparison for guest mode share, car occupancy and arrival/departure profile during a day.

2.11   The Center Parcs survey data, presented in the Woburn Center Parcs Transport Assessment, included all vehicle movements to and from the main site entrance and does not disaggregate between guest and staff vehicle movements. For the purpose of this analysis it is assumed that all single occupancy car trips to/from the Center Parcs site were staff trips as it is considered highly unlikely for guests to travel to the site alone. Table 2.3 below summarises the mode share data for guests based on survey data presented in the Woburn Center Parcs Transport Assessment and excludes single occupancy car trips, which are assumed to be undertaken by staff.

	Arrivals	Departures	Total	Mode Share
Walk	2	1	3	<0.5%
Cycle	12	10	22	0.5%
Motorcycle	22	6	28	0.5%
Car Driver	1044	974	2018	32%
Car Passenger	2106	2050	4156	66%
Bus	25	15	40	1%

Table 2.3: Woburn Center Parcs Mode Share

2.12   The Woburn Center Parcs data indicates that two-thirds of guests would arrive as car passengers. The Center Parcs data indicates only a small proportion of guests arriving by sustainable modes of travel. However, it is noteworthy that the proposed development will include sustainable travel initiatives which will encourage the use of sustainable modes of travel and reduce the number of car trips associated with the development. However, for the purpose of this assessment it is considered that the above mode share provides a robust assessment of the likely trip generation of the development proposals in terms of overall vehicle numbers.

2.13   The data from the Center Parcs survey also includes information of car occupancy of vehicles to the site and demonstrates an average car occupancy of 3 guests per car. This is based on the on survey data presented in the Woburn Center Parcs Transport Assessment and excludes single occupancy car trips, which are assumed to be undertaken by staff.

2.14   The mode share established from the Center Parcs data (as presented at Table 2.3) has been applied to expected daily guest arrivals and departures (as presented at Table 2.2) in order to assess the daily vehicle arrivals and departures to the proposed hotel by guests. Table 2.4 below summarises the expected daily guest and guest vehicle arrivals and departures.

	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Arrivals (Guests)	844	844	844	844	1,406	844	844
Departures (Guests)	844	844	844	844	844	844	1,406
Arrivals (Cars)	270	270	270	270	450	270	270
Departures (Cars)	270	270	270	270	270	270	450

Table 2.4 Expected Daily Guest Vehicle Trips

2.15   The data presented in Table 2.4 shows the daily guest arrivals and departures. In order to assess the vehicle movements during the weekday morning, weekday evening and Saturday peak periods, reference has been made to the daily inbound and outbound profile of trips to the Center Parcs site at Elveden Forest, as presented within the Woburn Center Parcs Transport Assessment.

2.16   Chart 2.1 below shows the arrival and departure profile of vehicle trips to the Center Parcs site at Elveden Forest.
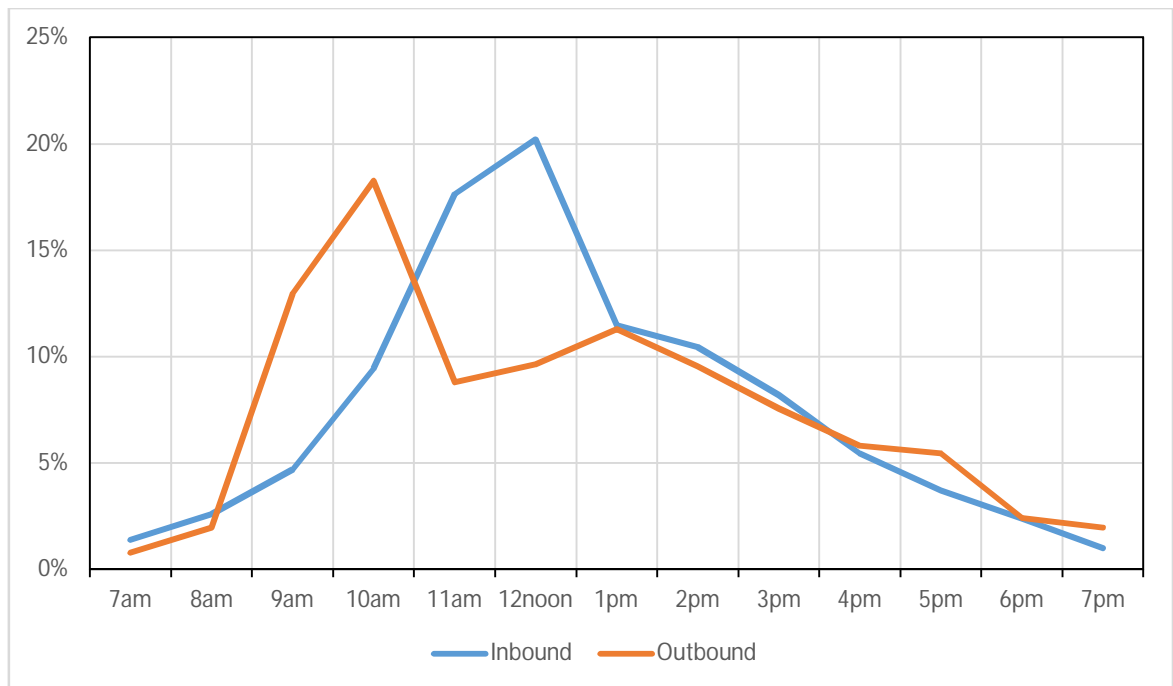
Chart 2.1 Expected Guest Arrival/ Departure Profile

2.17   The chart shows that the majority of guest arrivals and departures occur outside the morning and evening peak periods, with the majority of arrivals and departs spread across from 10am to 3pm. Table 2.5 below details the percentage of guest arrival and departure trips during each of the weekday morning, evening and Saturday peak periods and the expected guest vehicle trips in each pf the peak periods.

	Arrivals		Departures	
	% Total	Vehicle Trips	% Total	Vehicle Trips
Weekday Morning Peak (08:00 to 09:00)	5%	23	2%	5
Weekday Evening Peak (17:00 to 18:00)	4%	18	5%	14
Saturday Peak (12:00 to 13:00)	20%	54	10%	27

Table 2.5 Expected Guest Vehicle Trips

2.18   The first principles assessment demonstrates that the development would be expected to attract 28 guest vehicle trips during the weekday morning peak hour, 32 guest vehicle trips during the weekday evening peak hour and 81 guest vehicle trips during the Saturday peak period.

Staff

2.19   In order to assess the arrive and departure profiles of staff at the site and the peak number of staff on site at any given time, reference has been made to staff data from existing Great Wolf Lodges in the United States. The facilities and services to be provided at the proposed hotel are based on the business model of existing Great Wolf Lodges in the United States and therefore staff numbers and shift patterns are expected to be comparable with the existing Great Wolf hotels in the United States.

2.20   Chart 2.2 below shows the expected arrival and departure profile of staff during a typical day.
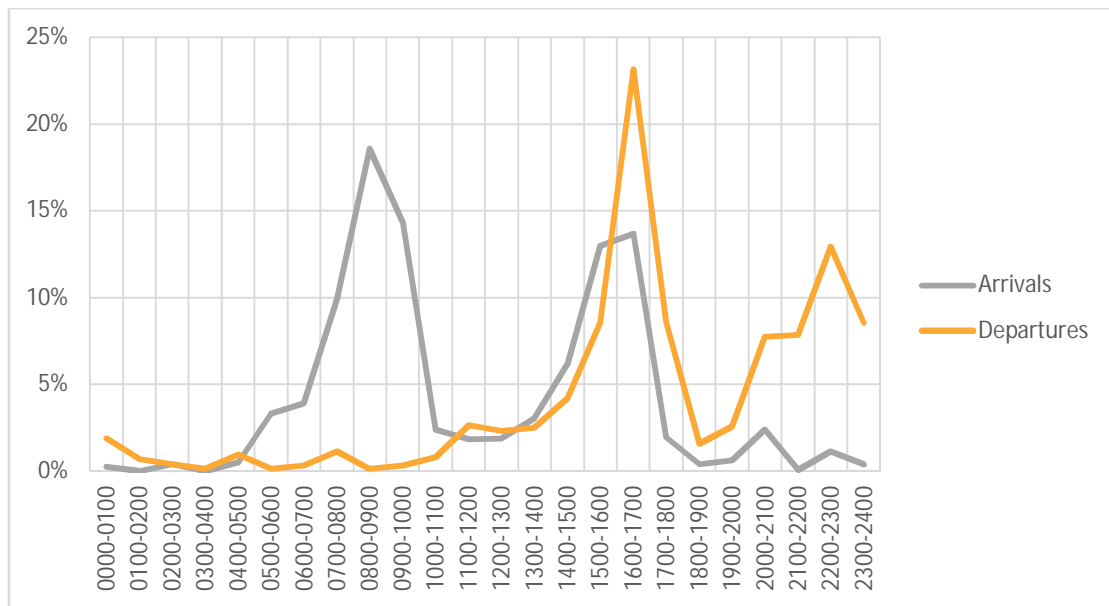
Chart 2.2 Expected Staff Arrival/ Departure Profile

2.21   In order to assess the likely mode share of staff at the hotel, reference is made to journey to work data from the 2011 Census for the output area in which the site is located; Bicester 016. Data from 2011 census indicates the 80% of people that work within the local census output area drive to work. This mode share has been applied to the expected staff arrivals and departures

2.22   Table 2.6 below shows the expected staff arrivals and departures and vehicles trips during each of the weekday morning, evening and Saturday peak hours.

	Arrivals		Departures	
	Staff	Vehicles	Staff	Vehicles
Weekday Morning Peak (08:00 to 09:00)	65	52	0	0
Weekday Evening Peak (17:00 to 18:00)	7	6	30	24
Saturday Peak (12:00 to 13:00)	6	5	7	6

Table 2.6 Expected Staff Vehicle Trips

Total Trip Generation

2.23   Based on the first principles sensitivity test the total trip generation of the site has been calculated by summing the first principles guest trip generation (presented at Table 2.5) and the first principles staff trip generation (presented at Table 2.6).

2.24   Table 2.7 provides a comparison of the expected trip generation of the development based on traffic surveys at existing Great Wolf sites, as presented in the Scoping Note dated 25th April 2019 and the first principles sensitivity test presented in the Note.

	Great Wolf Surveys		First Principles Assessment	
	Arrivals	Departures	Arrivals	Departures
Weekday Morning Peak (08:00 to 09:00)	66	47	75	5
Weekday Evening Peak (17:00 to 18:00)	66	88	24	38
Saturday Peak (12:00 to 13:00)	122	125	59	33

Table 2.7: Comparison of Trip Generation Methodology

2.25 Table 2.7 demonstrates that the trip generation analysis presented in the submitted Scoping Note dated 25th April 2019 and based on surveys of existing Great Wolf sites provides a robust assessment of the expected trip generation of the development proposals in comparison with a first principles sensitivity test. Therefore, no change to the trip generation methodology is proposed and the previously submitted trip generation analysis will form the basis of the Transport Assessment to be submitted alongside the planning application.

3.0 Parking

3.1 It was originally proposed that 1,000 car parking spaces would be provided on site. Having considered feedback received from OCC the proposed parking provision has been reduced to circa 900-920 car parking spaces. This section of the Addendum Scoping Note demonstrates how the proposed car parking provision is appropriate to meet the needs of the development.

3.2 As set out in Section 2 of this Note, the proposed hotel will have a total of 500 bedrooms and the expected occupancy of those rooms is 4.5 guests per bedroom, resulting in a peak occupancy of the hotel of 2,250 guests

3.3 In addition, the information presented above shows that typical car occupancy is 3 guests per car. On the basis that the hotel would accommodate up to 2,250 guests this would equate to a typical parking demand of 750 car parking spaces associated with guests at the hotel when fully occupied.

3.4 In addition to parking for guests, it is necessary to provide on-site parking for staff at the hotel. It is expected that there will be in the order of 420-450 full time equivalent (FTE) staff employed at the hotel. However, the maximum number of staff on the site, at any one time, is expected to be up to 200 staff.

3.5 In order to assess the likely mode share and parking demand associated with staff at the hotel, reference is made to journey to work data from the 2011 Census for the output area in which the site is located; Bicester 016. Data from 2011 census indicates the 80% of people that work within the local census output area drive to work. On that basis, it is expected that up to 160 staff could drive to the site and be parked on site at peak times.

3.6 On the basis of the expected parking demand associated with guests and staff set out above, total parking demand of 910 cars on site is expected during peak periods. On that basis the proposed provision of 900-920 car parking spaces is considered appropriate to accommodate the expected parking demand and provide sufficient spare capacity for turnover of parking spaces and circulation.

4.0   Summary

4.1   This Scoping Note Addendum has been prepared to provide additional assessment of the expected trip generation of the development proposals and parking provision and seek agreements on these matters with Officers at Oxfordshire County Council and Cherwell District Council.

4.2   This Note demonstrates that the trip generation analysis presented in the previously submitted Scoping Note, based on surveys of existing Great Wolf sites, provides a robust assessment of the expected trip generation of the development proposals in comparison with a first principles sensitivity test. Therefore, no change to the trip generation methodology is proposed and the previously submitted trip generation analysis will form the basis of the Transport Assessment to be submitted alongside the planning application.

4.3   The proposed provision of 900-920 car parking spaces has been demonstrated to be appropriate to accommodate the expected parking demand and provide sufficient spare capacity for turnover of parking spaces and circulation.

Appendix I

Pre-Application Technical Note – Day Visitors

Technical Note – Day Visitors & Vehicle Distribution

Project:	Great Wolf Lodge, Chesterton
Prepared by:	Kathryn Lewis
Approved by:	David Lewis
Date:	16th September 2019

Cargo Works, 1-2 Hatfields
London
SE1 9PG

Tel: 020 8065 5210
www.motion.co.uk

1.0   Introduction

1.1   Motion has been instructed by Great Wolf Resorts (the parent company of Great Wolf Lodge) to advise on highways and transport matters associated with development proposals for a new family resort at a site in Chesterton near Bicester.

1.2   The site is situated to the south of the A4095 to the west of Chesterton. The site currently forms part of the Bicester Golf Course and Hotel site that benefits from a main customer/ visitor access from Green Lane and a secondary access from the A4095 which operates as the service access to the golf course.

1.3   The development proposals comprise the redevelopment of 9 holes of the existing 18 holes of the golf course and construction of a 500-bedroom hotel and indoor family resort. Vehicle access to the proposed hotel would be taken from a new priority junction access from the A4095.

1.4   Motion submitted a Scoping Note to Oxfordshire County Council (OCC) dated 25th April 2019 and Motion subsequently met with Officers at OCC on 7th May 2019 to discuss the proposals and Scoping Note.

1.5   This Scoping Note Addendum dated 9th July 2019 which provided an assessment of the expected trip generation of the development proposals. The contents of the Scoping Note have been agreed with Officers at OCC.

1.6   Since submission and agreement of the Scoping Note Addendum, additional matters have been identified and this Technical Note seeks agreement with Officers on the following matters:

► Day visitors to the resort, details of the arrangements/restriction on day visitor access and a sensitivity test assessment of the trip attraction of day visitors; and

► Amendments to the distribution of guest trips based on the proposed signage strategy.

2.0   Day Visitors Sensitivity Test

2.1   The Addendum Scoping Note submitted in June 2019 detailed the expected trip generation of the development proposals during a weekday morning, weekday evening and Saturday peak periods. The trip generation analysis presented in the Addendum Scoping Note was based on the principle that all visitors to the resort would be staying at the resort and there would be no day visitors, as this is the approach at most existing Great Wolf resorts. Following feedback at public consultation events, Great Wolf Resorts are seeking to allow some day visitor access to the resort at times when the hotel is below full capacity.

2.2   As set out in the Addendum Scoping Note, the proposed hotel will have a total of 500 bedrooms and Great Wolf Lodge have advised that their business model is based on a typical room occupancy of 4.5 guests per room, including children. On that basis the proposed hotel would accommodate up to 2,250 guests if the hotel were fully occupied.

2.3   Day visitor access to the resort would only be allowed at time when the hotel is below full capacity of 2,250 guests and, on that basis, the total occupancy of the resort would never exceed peak occupancy of 2,250 guests, as assessed within the Addendum Scoping Note. On that basis it is considered that the inclusion of day visitor access to the site at times when the hotel is not fully occupied would not be materially different for that assessed within the agreed Addendum Scoping Note.

2.4   Day visitor passes would be released on a sliding scale dependant on the occupancy of the hotel. The maximum number day passes that would be released would not exceed 20% of total capacity of the resort, 450 guests, even if hotel occupancy were to fall below 80% occupancy. Table 2.1 below provides an example of the release of day passes based on the level of hotel staying guest occupancy.

Hotel Guests	Day Passes	Total Guests
1,800 (80% Capacity)	450 (20% Capacity)	2,250 (100% Capacity)
2,025 (90% Capacity)	225 (10% Capacity)	2,250 (100% Capacity)
2,250 (100% Capacity)	0 (0% Capacity)	2,250 (100% Capacity)

Table 2.1 – Day Pass Provision

2.5   Given that the allowance for day passes would not exceed the overall capacity of the resort previously assesses, the inclusion of day visitor access to the site at times when the hotel is not fully occupied would not be materially different for that assessed within the agreed Addendum Scoping Note. However, to ensure a robust assessment a sensitivity test has been undertaken to assess the trip generation of the site in a scenario where hotel occupancy is at 80% capacity and day visitor capacity is at 20% (450 guests).

2.6   Table 2.2 below summaries the total trip generation of the site, as presented in the previously agreed Scoping Note. This is based on surveys of existing Great Wolf sites and is considered the most appropriate basis for the trip generation analysis.

	Vehicle Trips		
	In	Out	Total
Weekday Morning Peak (08:00-09:00)	66	47	113
Weekday Evening Peak (17:00-18:00)	66	88	154
Saturday Peak (13:00-14:00)	122	125	247

Table 2.2 Expected Vehicle Trips (based on Great Wolf Surveys)

2.7 The trip generation figures presented at Table 2.2 will include both guest and staff trips. In order to provide a split between guest and staff trips reference is made to analysis of staff trips presented a previous Addendum Scoping Note dated 7th June 2019 and this is summarised in the Table below. In order to assess the proportion of trip generation associated solely with guests, the staff trip generation presented below has been subtracted from the total trip generation presented at Table 2.2. Table 2.3 summaries the expected split of staff and guest vehicle trip generation based on the Great Wolf Surveys.

	Staff		Guests	
	Arrivals	Departures	Arrivals	Departures
Weekday Morning Peak (08:00 to 09:00)	52	0	14	47
Weekday Evening Peak (17:00 to 18:00)	6	24	60	64
Saturday Peak (12:00 to 13:00)	5	6	117	119

Table 2.3 Expected Staff and Guest Vehicle Trips

2.8 In to assess the expected trip generation of the reduced capacity of the hotel, the guest trip generation presented in Table 2.3 has been reduced by a factor of 0.8 to represent the hotel at 80% occupancy. The staff vehicle trip generation has not been reduced. Table 2.4 below shows the expected trip generation of staying guests based on 80% occupation of the hotel.

	Staff		Staying Guests (80% Occupancy)	
	Arrivals	Departures	Arrivals	Departures
Weekday Morning Peak (08:00 to 09:00)	52	0	11	38
Weekday Evening Peak (17:00 to 18:00)	6	24	48	51
Saturday Peak (12:00 to 13:00)	5	6	94	95

Table 2.4 Expected Staff and Guest (Staying Guests at 80% Occupancy) Vehicle Trips

2.9 The maximum number of day passes that could be issued is 450. Day passes will only be eligible to access the site after 10am. On that basis day passes would not be expected to arrive at the site during the morning peak hour and, as such, no assessment of the effect of day visitors during the morning peak hour is considered necessary.

2.10 In order to assess the likely day visitor movements during the weekday evening and Saturday peak periods, reference has been made to visitor profile data presented with a Transport Assessment supporting development proposals at the Legoland resort in Windsor (Planning Ref: 17/01878/OUT). Whilst the Legoland resort is not a comparable use to the proposed hotel and resort, it is considered that the arrival/ departure profile of day visitors would be a reasonable comparison.

2.11 Data presented within the Legoland Transport Assessment shows the daily arrival and departure profile of visitors (predominantly day visitors) on a weekday and Saturday during peak periods. That data shows that during the weekday evening peak period 2% of daily arrivals and 15% of daily departures would be expected to occur. During the Saturday mid-day period 11% of daily arrivals and 3% of daily departures are shown to occur. These proportions of daily visitors have been applied to maximum 450 day pass visitors and this is summarised at Table 2.5 below.

2.12 Information presented in the previous Addendum Scoping Note dated 9th July included expected car occupancy for visitors to the proposed development and set out that an average car occupancy of 3 guests per car is expected. The expected car occupancy has been applied to the person trips to calculate the number of day visitor vehicle trips during the weekday evening and Saturday peak period. Table 2.5 below summarises the expected vehicle trips associated with day visitors.

	Day Visitor - Person Trips			Day Visitor - Vehicle Trips		
	In	Out	Total	In	Out	Total
Weekday Morning Peak (08:00-09:00)	0	0	0	0	0	0
Weekday Evening Peak (17:00-18:00)	9	68	77	3	23	26
Saturday Peak (13:00-14:00)	50	14	64	17	5	22

Table 2.5 Expected Day Visitors Arrival/ Departure (Person & Vehicle Trips)

2.13 The expected vehicle trips associated with day visitors, as presented at Table 2.5, has been added to the expected vehicle trips associated with staying guests (at 80% capacity) and staff, as presented at Table 2.4. Table 2.6 compares the expected trip generation of the hotel when full occupied by staying guests, as presented at Table 2.2 (and agreed in the Addendum Scoping Note dated 9th July) and the scenario with up to 20% occupancy of day guests.

	Staying Guests Only			80% Staying Guests/ 20% Day Guests		
	In	Out	Total	In	Out	Total
Weekday Morning Peak (08:00-09:00)	66	47	113	63	38	101
Weekday Evening Peak (17:00-18:00)	66	88	154	57	98	155
Saturday Peak (13:00-14:00)	122	125	247	116	106	222

Table 2.6 Comparison of Expected Vehicle Trips

2.14 The analysis presented at Table 2.6 demonstrates that the expected vehicle trip generation of the resort, if up to 20% of total capacity was made available for day visitors would be lower than or no material difference to the scenario in which the hotel is occupied solely by staying visitors.

2.15 On that basis it is considered that, based on the principles set out in this Technical Note no additional or separate analysis of day visitors using the resort is required. The trip generation analysis presented in the agreed Addendum Scoping Note dated 9th July provides a robust assessment of the trip generation of the development under both scenarios.

2.16 In summary, day passes would only be issued on the following principles:

► Day visitor access to the resort would only be allowed at time when the hotel is below full capacity of 2,250

► Day visitor passes would be released on a sliding scale dependant on the occupancy of the hotel;

- The maximum number day passes that would be released would be 20% of total capacity of the resort, 450 guests, even if hotel occupancy were to fall below 80% occupancy; and,

- Day Pass access to the resort will only be valid after 10am.

3.0   Signage Strategy and Distribution

3.1   The Scoping Note dated 25th April 2019 included information on the expected distribution of vehicle trips to the site based on information on the expected catchment area of visitors to the site. The April Scoping Note included an expected distribution of visitor trips based on the catchment area of visitors.

3.2   The distribution assessment presented in the April 2019 Scoping Note assumed that all vehicle approaching/ leaving the site to/from M40 Junction 9 would route along the A41 northbound and Vendee Drive to access and exit the site.

3.3   Following further consideration of a signage strategy for the development, it has been concluded that the more appropriate signed route between the resort and M40 Junction 9 is via the A34 and the B430. It is therefore proposed that the signage strategy to be developed for the resort will include signage at M40 Junction 9 signing guest via the A34 and B430. Similarly, for guests departing the resort towards M40 Junction 9 will be signed via the B430 and A34.

3.4   Notwithstanding the proposed signage strategy, it has been assumed that some guests approaching the site from the M40 Junction 9 will not follow the signed route and would connect to the site from M40 Junction 9 via the A41 and Vendee Drive.

3.5   On that basis it has been assumed that half of vehicles approaching the site via M40 Junction 9 would follow the signed route to the site via the A34 and B430 and half would utilise the alternative route via the A41 and Vendee Drive and this is reflected in the expected distribution of vehicle trips. Figure 3.1 attached shows the updated distribution of visitor trips to/from the site.

4.0   Summary

4.1   Motion has been instructed by Great Wolf Resorts (the parent company of Great Wolf Lodge) to advise on highways and transport matters associated with development proposals for a new family resort at a site in Chesterton near Bicester. The Technical Note has been prepared to seek agreement with Officers from OCC in relation to matters associated with day visitor access to the resort and the expected distribution of vehicle trips.

4.2   This Note has presented a sensitivity test of day visitor access to the resort and has demonstrated that the inclusion of day visitor access to the park would not result in a material change in vehicle trips in comparison with the analysis presented in the agreed Addendum Scoping Note dated 9th July and that analysis provides a robust assessment of the trip generation of the development under both scenarios. Day visitor access to the resort would only be issued on the following principles:

- Day visitor access to the resort would only be allowed at time when the hotel is below full capacity of 2,250

- Day visitor passes would be released on a sliding scale dependant on the occupancy of the hotel;

- The maximum number day passes that would be released would be 20% of total capacity of the resort, 450 guests, even if hotel occupancy were to fall below 80% occupancy; and,

- Day Pass access to the resort will only be valid after 10am.

4.3   The expected distribution of vehicle trips to the site has been updated based on a signage strategy that would sign vehicle arriving/departing via the M40 Junction 9 via the A34 and the B430, rather than the A41 and Vendee Drive. The proposed distribution of vehicle trip trips has been updated to reflect this revised signage strategy.

16% via M40 (north)

14% via A43 (north)

7% via A4421 and A421

Route to Great Wolf
from Junction 9 signed
via A34 and B430

1% via A41

10% via A34 (south)

12% via A34 and M4

20% via M40 (south) and A34

20% via M40 (south) and A41
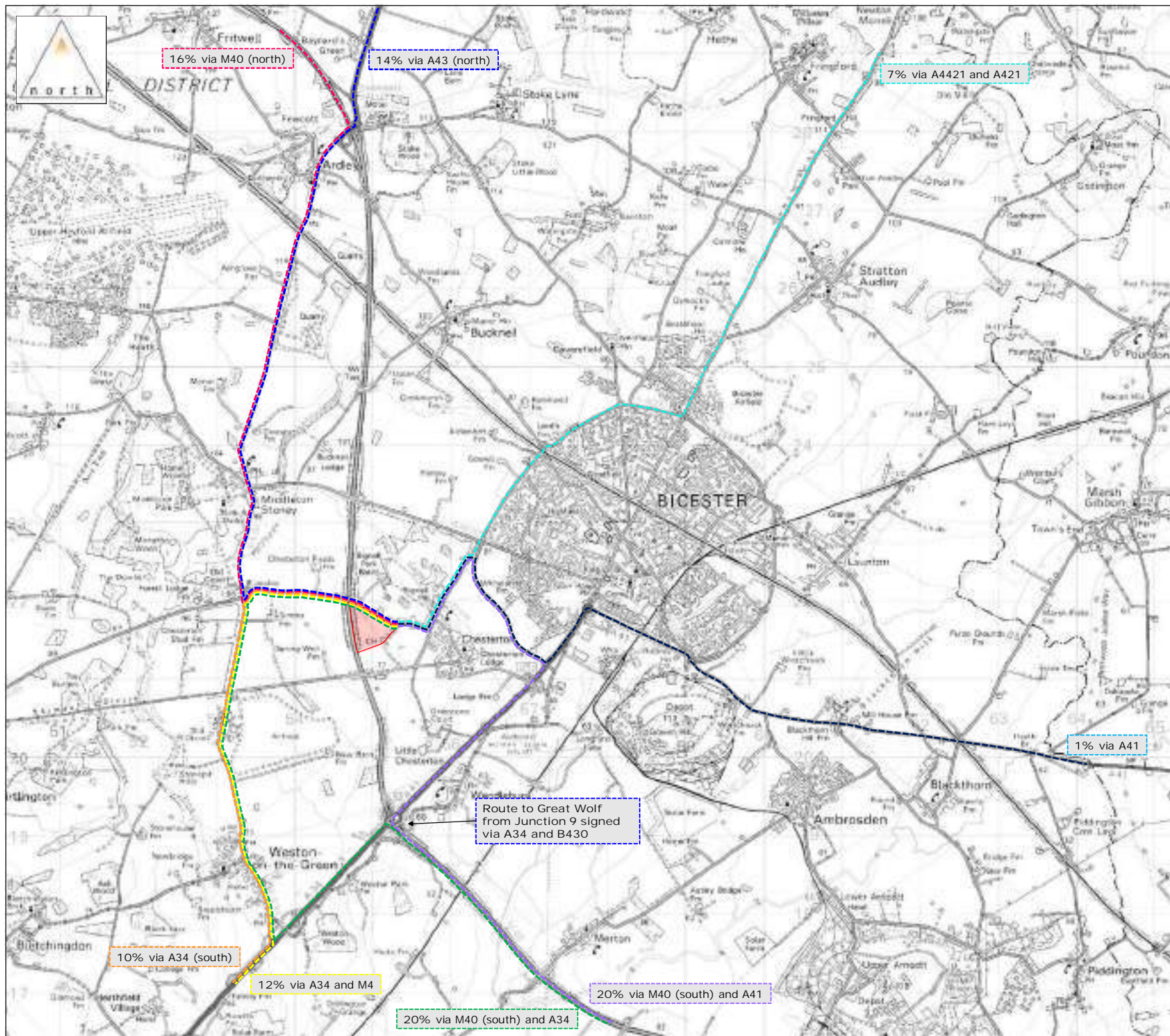
Great Wolf,
Bicester
Figure 3.1 - Visitor Distribution
Not to Scale

motion

Appendix J

Junction Model Output Files

motion

A4095/Site Access Junction

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: Junction 4 - A4095-Site Access Priority Junction.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling
Report generation date: 19/09/2019 08:21:23

«2026 with Dev, PM
>»Junction Network
>»Arms
>»Traffic Demand
>»Origin-Destination Data
>»Vehicle Mix
>»Results

Summary of junction performance

	AM				PM				SAT			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2026												
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
2026 with Dev												
Stream B-C	0.1	5.26	0.05	A	0.1	5.17	0.09	A	0.1	5.35	0.13	A
Stream B-A	0.0	7.57	0.03	A	0.1	8.70	0.06	A	0.1	7.35	0.07	A
Stream C-AB	0.1	5.91	0.08	A	1.1	10.83	0.53	B	0.2	6.05	0.17	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	18/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
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	Veh	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

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2026 with Dev	PM	ONE HOUR	17:00	18:30	15

2026 with Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	6.90	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A4095 (East)		Major
B	Site Access		Minor
C	A4095 (West)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	10.00		✓	3.50	137.0	✓	4.00

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	10.00	7.00	4.28	4.00	3.65		1.00	88	146

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	609	0.092	0.232	0.146	0.331
1	B-C	815	0.103	0.261	-	-
1	C-B	746	0.239	0.239	-	-

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

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 (Veh/hr)	Scaling Factor (%)
A		✓	137	100.000
B		✓	88	100.000
C		✓	392	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	19	118
	B	25	0	63
	C	48	344	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	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	0.09	5.17	0.1	A
B-A	0.06	8.70	0.1	A
C-AB	0.53	10.83	1.1	B
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	47	783	0.061	47	0.1	4.895	A
B-A	19	496	0.038	19	0.0	7.546	A
C-AB	259	721	0.359	257	0.6	7.730	A
C-A	37			37			
A-B	14			14			
A-C	91			91			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	57	776	0.073	57	0.1	5.006	A
B-A	22	473	0.048	22	0.0	7.993	A
C-AB	310	717	0.432	309	0.7	8.798	A
C-A	43			43			
A-B	17			17			
A-C	108			108			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	69	766	0.091	69	0.1	5.167	A
B-A	28	442	0.062	27	0.1	8.683	A
C-AB	381	713	0.534	380	1.1	10.733	B
C-A	52			52			
A-B	21			21			
A-C	133			133			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	69	766	0.091	69	0.1	5.167	A
B-A	28	442	0.062	28	0.1	8.695	A
C-AB	381	714	0.534	381	1.1	10.826	B
C-A	52			52			
A-B	21			21			
A-C	133			133			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	57	776	0.073	57	0.1	5.007	A
B-A	22	472	0.048	23	0.1	8.009	A
C-AB	310	717	0.432	311	0.8	8.900	A
C-A	43			43			
A-B	17			17			
A-C	108			108			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	47	782	0.061	47	0.1	4.898	A
B-A	19	495	0.038	19	0.0	7.566	A
C-AB	259	721	0.359	260	0.6	7.818	A
C-A	37			37			
A-B	14			14			
A-C	91			91			

A4095/B430 Priority Crossroads

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: Junction 5 - A4095-B430 Staggered Junction.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling\Junction 5 - A4095-B430 Staggered Junction
Report generation date: 10/10/2019 10:05:02

«2026, PM
  »Junction Network
  »Arms
  »Traffic Demand
  »Origin-Destination Data
  »Vehicle Mix
  »Results

Summary of junction performance

	AM				PM				SAT			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2026												
Stream B-C	0.3	8.62	0.25	A	0.6	10.80	0.36	B	0.1	5.88	0.10	A
Stream B-AD	0.9	19.22	0.48	C	1.3	21.22	0.57	C	0.2	8.13	0.15	A
Stream A-D	0.0	6.49	0.00	A	0.0	5.91	0.02	A	0.0	5.11	0.03	A
Stream D-A	0.0	8.94	0.04	A	0.0	7.81	0.03	A	0.1	6.26	0.05	A
Stream D-B C	1.5	29.45	0.61	D	1.2	22.76	0.56	C	0.2	9.23	0.15	A
Stream C-B	0.1	7.52	0.11	A	0.2	7.04	0.15	A	0.1	5.69	0.11	A
2026 with Dev												
Stream B-C	0.3	8.67	0.25	A	0.6	11.08	0.37	B	0.1	5.98	0.10	A
Stream B-AD	0.9	18.77	0.48	C	1.4	22.56	0.59	C	0.2	8.43	0.16	A
Stream A-D	0.1	7.05	0.06	A	0.1	6.29	0.07	A	0.1	5.64	0.11	A
Stream D-A	0.1	9.69	0.09	A	0.1	8.91	0.12	A	0.2	7.30	0.15	A
Stream D-B C	2.0	36.51	0.68	E	1.9	30.09	0.66	D	0.3	10.94	0.25	B
Stream C-B	0.1	6.42	0.10	A	0.2	7.15	0.15	A	0.1	5.79	0.11	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	18/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
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	Veh	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

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2026	PM	ONE HOUR	17:00	18:30	15

2026, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	7.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B430 (South)		Major
B	A4095 (West)		Minor
C	B430 (North)		Major
D	A4095 (East)		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	10.35		✓	3.25	250.0		-
C	10.35		✓	3.25	200.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	4.00	4.30	75	100
D	Two lanes	3.25	3.25	35	59

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	801	-	-	-	0.252	0.252	0.252	-	0.252	-	-
1	B-AD	624	0.092	0.233	-	-	-	0.147	0.333	0.147	0.092	0.233
1	B-C	756	0.094	0.237	-	-	-	-	-	-	0.094	0.237
1	C-B	769	0.241	0.241	-	-	-	-	-	-	0.241	0.241
1	D-A	678	-	-	-	0.213	0.084	0.213	-	0.084	-	-
1	D-BC	531	0.125	0.125	0.283	0.198	0.078	0.198	-	0.078	-	-

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

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 (Veh/hr)	Scaling Factor (%)
A		✓	393	100.000
B		✓	376	100.000
C		✓	529	100.000
D		✓	197	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	384	9
	B	0	0	172	204
	C	435	83	0	11
	D	13	162	22	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	0
	B	0	0	3	1
	C	0	2	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.36	10.80	0.6	B
B-AD	0.57	21.22	1.3	C
A-B				
A-C				
A-D	0.02	5.91	0.0	A
D-A	0.03	7.81	0.0	A
D-BC	0.56	22.76	1.2	C
C-D				
C-A				
C-B	0.15	7.04	0.2	A

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	133	615	0.217	132	0.3	7.664	A
B-AD	155	470	0.330	153	0.5	11.417	B
A-B	0			0			
A-C	295			295			
A-D	7	677	0.010	7	0.0	5.367	A
D-A	10	545	0.018	10	0.0	6.729	A
D-BC	139	415	0.334	137	0.5	12.862	B
C-D	8			8			
C-A	327			327			
C-B	64	664	0.096	63	0.1	6.109	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	159	584	0.273	159	0.4	8.716	A
B-AD	185	439	0.421	184	0.7	14.195	B
A-B	0			0			
A-C	352			352			
A-D	8	653	0.012	8	0.0	5.582	A
D-A	12	516	0.023	12	0.0	7.134	A
D-BC	165	392	0.422	165	0.7	15.775	C
C-D	10			10			
C-A	391			391			
C-B	76	643	0.118	76	0.1	6.472	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	195	539	0.362	194	0.6	10.716	B
B-AD	227	398	0.570	225	1.3	20.705	C
A-B	0			0			
A-C	431			431			
A-D	10	620	0.016	10	0.0	5.904	A
D-A	14	476	0.030	14	0.0	7.791	A
D-BC	203	360	0.562	201	1.2	22.218	C
C-D	12			12			
C-A	479			479			
C-B	93	615	0.152	93	0.2	7.035	A

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	195	538	0.362	195	0.6	10.798	B
B-AD	227	398	0.570	227	1.3	21.222	C
A-B	0			0			
A-C	431			431			
A-D	10	619	0.016	10	0.0	5.909	A
D-A	14	475	0.030	14	0.0	7.808	A
D-BC	203	360	0.562	202	1.2	22.756	C
C-D	12			12			
C-A	479			479			
C-B	93	614	0.152	93	0.2	7.044	A

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	159	582	0.274	160	0.4	8.797	A
B-AD	185	439	0.422	187	0.8	14.570	B
A-B	0			0			
A-C	352			352			
A-D	8	652	0.012	8	0.0	5.589	A
D-A	12	515	0.023	12	0.0	7.155	A
D-BC	165	392	0.422	167	0.8	16.200	C
C-D	10			10			
C-A	391			391			
C-B	76	642	0.118	76	0.1	6.489	A

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	133	614	0.217	134	0.3	7.737	A
B-AD	155	469	0.331	156	0.5	11.647	B
A-B	0			0			
A-C	295			295			
A-D	7	677	0.010	7	0.0	5.376	A
D-A	10	543	0.018	10	0.0	6.747	A
D-BC	139	414	0.334	139	0.5	13.146	B
C-D	8			8			
C-A	327			327			
C-B	64	663	0.096	64	0.1	6.129	A

B430/B4030 Mini-Roundabout (north of A34 Interchange)

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: Junction 6 - B430-A34 Slips Mini Roundabout.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling\Junction 6 - B430-A34 Slips Mini Roundabout
Report generation date: 10/10/2019 09:57:31

«2026, AM
  »Junction Network
  »Arms
  »Traffic Demand
  »Origin-Destination Data
  »Vehicle Mix
  »Results

Summary of junction performance

	AM				PM				SAT			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2026												
Arm 1	0.0	3.98	0.03	A	0.1	4.15	0.06	A	0.0	3.84	0.01	A
Arm 2	0.8	7.35	0.45	A	0.8	7.43	0.44	A	0.3	5.27	0.23	A
Arm 3	1.4	6.08	0.59	A	0.5	3.79	0.34	A	0.0	2.61	0.03	A
2026 with Dev												
Arm 1	0.1	4.07	0.05	A	0.1	4.29	0.08	A	0.0	4.05	0.04	A
Arm 2	0.9	7.75	0.48	A	0.9	7.84	0.46	A	0.4	5.66	0.27	A
Arm 3	1.5	6.32	0.61	A	0.6	3.96	0.37	A	0.1	2.71	0.07	A

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

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	18/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
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	Veh	PCU	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9			0.85	36.00	20.00

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026	AM	ONE HOUR	08:00	09:30	15

2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 97% of the total flow for the roundabout for one or more time segments]
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout	1, 2, 3	6.43	A

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
1	A34 (Southbound)	
2	A34 (Northbound)	
3	B430	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	3.80	3.80	5.70	5.2	19.55	14.75	0.0	
2	4.20	4.20	4.20	0.0	20.00	2.00	0.0	
3	4.00	4.00	5.70	5.2	14.90	20.00	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.676	955
2	0.636	917
3	0.964	1465

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

Traffic Demand

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 (Veh/hr)	Scaling Factor (%)
1		✓	29	100.000
2		✓	370	100.000
3		✓	777	100.000

Origin-Destination Data

Demand (Veh/hr)

From \ To	1	2	3
1	0	0	29
2	17	0	353
3	753	24	0

Vehicle Mix

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	0	0
2	0	0	0
3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	3.98	0.0	A
2	0.45	7.35	0.8	A
3	0.59	6.08	1.4	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	22	18	943	0.023	22	0.0	3.908	A
2	279	22	904	0.308	277	0.4	5.727	A
3	585	13	1453	0.403	582	0.7	4.123	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	26	22	940	0.028	26	0.0	3.936	A
2	333	26	901	0.369	332	0.6	6.321	A
3	699	15	1450	0.482	698	0.9	4.776	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	32	26	937	0.034	32	0.0	3.976	A
2	407	32	897	0.454	406	0.8	7.320	A
3	855	19	1447	0.591	853	1.4	6.043	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	32	26	937	0.034	32	0.0	3.976	A
2	407	32	897	0.454	407	0.8	7.349	A
3	855	19	1447	0.591	855	1.4	6.084	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	26	22	940	0.028	26	0.0	3.938	A
2	333	26	901	0.369	334	0.6	6.355	A
3	699	15	1450	0.482	700	0.9	4.813	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	22	18	943	0.023	22	0.0	3.910	A
2	279	22	904	0.308	279	0.4	5.772	A
3	585	13	1453	0.403	586	0.7	4.159	A

A4095/Vendee Drive Priority Junction

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: Junction 3 - Vendee Drive‑A4095 Priority Junction - 2019-09-20 Updates.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling\Junction 3 - Vendee Drive‑A4095 Priority Junction
Report generation date: 20/09/2019 12:28:25

«2026 with Dev, SAT
   »Junction Network
   »Arms
   »Traffic Demand
   »Origin-Destination Data
   »Vehicle Mix
   »Results

Summary of junction performance

	AM				PM				SAT			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2026												
Stream B-C	0.7	7.73	0.42	A	4.5	30.59	0.83	D	0.7	7.90	0.41	A
Stream B-A	0.1	10.12	0.09	B	0.6	32.45	0.40	D	0.1	10.85	0.11	B
Stream C-B	0.1	5.79	0.12	A	1.4	14.34	0.60	B	0.4	7.66	0.31	A
2026 with Dev												
Stream B-C	0.7	7.84	0.43	A	5.9	40.06	0.87	E	0.8	8.58	0.43	A
Stream B-A	0.1	10.47	0.12	B	1.2	48.27	0.56	E	0.2	11.93	0.19	B
Stream C-B	0.1	5.88	0.13	A	1.5	14.91	0.61	B	0.5	7.93	0.32	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	18/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
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	Veh	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

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2026 with Dev	SAT	ONE HOUR	13:00	14:30	15

2026 with Dev, SAT

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Vendee Drive (South)		Major
B	A4095		Minor
C	Vendee Drive (North)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.45		✓	3.50	203.0		-

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	10.00	6.50	6.30	4.75	4.70	✓	3.00	185	250

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	597	0.092	0.234	0.147	0.334
1	B-C	903	0.118	0.297	-	-
1	C-B	789	0.260	0.260	-	-

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

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 (Veh/hr)	Scaling Factor (%)
A		✓	384	100.000
B		✓	355	100.000
C		✓	535	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	51	333
	B	64	0	291
	C	338	197	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	2
	B	0	0	1
	C	0	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.43	8.58	0.8	A
B-A	0.19	11.93	0.2	B
C-A				
C-B	0.32	7.93	0.5	A
A-B				
A-C				

Main Results for each time segment

13:00 - 13:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	221	800	0.277	220	0.4	6.251	A
B-A	48	446	0.108	48	0.1	9.027	A
C-A	254			254			
C-B	150	713	0.210	149	0.3	6.435	A
A-B	39			39			
A-C	256			256			

13:15 - 13:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	264	778	0.339	264	0.5	7.058	A
B-A	58	416	0.138	57	0.2	10.045	B
C-A	304			304			
C-B	179	698	0.256	179	0.3	6.997	A
A-B	47			47			
A-C	305			305			

13:30 - 13:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	324	747	0.433	323	0.8	8.532	A
B-A	70	372	0.189	70	0.2	11.899	B
C-A	372			372			
C-B	219	677	0.323	219	0.5	7.914	A
A-B	57			57			
A-C	374			374			

13:45 - 14:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	324	747	0.433	324	0.8	8.580	A
B-A	70	372	0.189	70	0.2	11.929	B
C-A	372			372			
C-B	219	677	0.323	219	0.5	7.935	A
A-B	57			57			
A-C	374			374			

14:00 - 14:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	264	778	0.340	265	0.5	7.105	A
B-A	58	415	0.139	58	0.2	10.077	B
C-A	304			304			
C-B	179	698	0.256	179	0.4	7.022	A
A-B	47			47			
A-C	305			305			

14:15 - 14:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	221	800	0.277	222	0.4	6.299	A
B-A	48	446	0.108	48	0.1	9.068	A
C-A	254			254			
C-B	150	713	0.210	150	0.3	6.468	A
A-B	39			39			
A-C	256			256			

A41/Bicester Park & Ride/Vendee Drive

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: Junction 7 - Vendee Drive-A41-P&R Roundabout - Gateway Scheme.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling\Junction 7 - Vendee Drive-A41-P&R Roundabout
Report generation date: 07/11/2019 13:25:07

«2026 with Dev, SAT
   »Junction Network
   »Arms
   »Traffic Demand
   »Origin-Destination Data
   »Vehicle Mix
   »Results

Summary of junction performance

	AM				PM				SAT			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026											
Arm 1	0.2	3.92	0.14	A	0.2	3.94	0.18	A	0.2	3.29	0.17	A
Arm 2	1.8	3.57	0.63	A	2.4	4.44	0.70	A	1.6	3.27	0.61	A
Arm 3	0.0	4.44	0.01	A	0.0	5.62	0.01	A	0.1	4.83	0.07	A
Arm 4	2.5	9.88	0.71	A	0.8	4.59	0.44	A	0.4	3.79	0.26	A
Arm 5	1.3	3.24	0.54	A	1.4	3.07	0.57	A	1.1	2.59	0.52	A
	2026 with Dev											
Arm 1	0.2	3.97	0.15	A	0.2	3.81	0.14	A	0.2	3.57	0.18	A
Arm 2	1.9	3.62	0.64	A	2.4	4.31	0.70	A	1.7	3.36	0.62	A
Arm 3	0.0	4.48	0.01	A	0.0	5.45	0.01	A	0.1	4.93	0.07	A
Arm 4	2.7	10.20	0.72	B	0.8	4.73	0.45	A	0.6	4.45	0.37	A
Arm 5	1.3	3.27	0.54	A	1.4	3.10	0.57	A	1.2	2.80	0.54	A

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

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	18/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
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	Veh	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

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2026 with Dev	SAT	ONE HOUR	13:00	14:30	15

2026 with Dev, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 5 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	3.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Wendlebury Road	
2	A41 (South)	
3	Bicester Park & Ride	
4	Vendee Drive	
5	A41 (North)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	10.00	32.0	25.0	70.0	25.0	
2	7.00	12.00	25.0	35.0	70.0	25.0	
3	4.00	8.50	15.0	18.0	70.0	20.0	
4	3.70	8.22	90.0	18.0	70.0	20.0	
5	7.00	11.00	32.0	32.0	70.0	20.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.609	2315
2	0.745	3161
3	0.554	1963
4	0.618	2368
5	0.745	3145

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

Traffic Demand

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 (Veh/hr)	Scaling Factor (%)
1		✓	206	100.000
2		✓	1609	100.000
3		✓	49	100.000
4		✓	428	100.000
5		✓	1361	100.000

Origin-Destination Data

Demand (Veh/hr)

From \ To	1	2	3	4	5
1	0	44	1	18	143
2	104	0	18	204	1283
3	24	6	0	0	19
4	17	219	3	0	189
5	6	1174	19	162	0

Vehicle Mix

Heavy Vehicle Percentages

From \ To	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	3	1
3	0	0	0	0	0
4	0	1	0	0	0
5	0	2	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.18	3.57	0.2	A
2	0.62	3.36	1.7	A
3	0.07	4.93	0.1	A
4	0.37	4.45	0.6	A
5	0.54	2.80	1.2	A

Main Results for each time segment

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	155	1210	1579	0.098	155	0.1	2.527	A
2	1226	261	2967	0.413	1223	0.7	2.084	A
3	37	1453	1159	0.032	37	0.0	3.208	A
4	324	1196	1630	0.199	323	0.2	2.767	A
5	1044	282	2935	0.356	1041	0.6	1.933	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	185	1447	1435	0.129	185	0.1	2.880	A
2	1463	312	2929	0.500	1462	1.0	2.481	A
3	44	1738	1001	0.044	44	0.0	3.761	A
4	387	1430	1485	0.260	386	0.4	3.293	A
5	1246	337	2894	0.431	1245	0.8	2.222	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	227	1771	1237	0.183	227	0.2	3.562	A
2	1792	382	2877	0.623	1790	1.7	3.342	A
3	54	2127	785	0.069	54	0.1	4.922	A
4	474	1750	1287	0.368	473	0.6	4.437	A
5	1526	412	2838	0.538	1524	1.2	2.788	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	227	1773	1236	0.184	227	0.2	3.566	A
2	1792	383	2876	0.623	1792	1.7	3.359	A
3	54	2130	784	0.069	54	0.1	4.933	A
4	474	1753	1286	0.368	474	0.6	4.454	A
5	1526	413	2837	0.538	1526	1.2	2.795	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	185	1450	1433	0.129	185	0.1	2.888	A
2	1463	313	2928	0.500	1466	1.0	2.494	A
3	44	1742	998	0.044	44	0.0	3.775	A
4	387	1434	1483	0.261	388	0.4	3.305	A
5	1246	338	2893	0.431	1248	0.8	2.230	A

14:15 - 14:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	155	1213	1577	0.098	155	0.1	2.534	A
2	1226	262	2966	0.413	1227	0.7	2.096	A
3	37	1458	1156	0.032	37	0.0	3.216	A
4	324	1200	1627	0.199	324	0.3	2.777	A
5	1044	283	2934	0.356	1044	0.6	1.940	A

B430/B4030 Signalised Crossroad

Basic Results Summary

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	Junction 1 - B430-B4030 Signalised Junction.lsg3x
Author:	
Company:	
Address:	

Basic Results Summary

Scenario 1: 'BTM AM' (FG1: 'BTM AM', Plan 1: 'Network Control Plan 1')
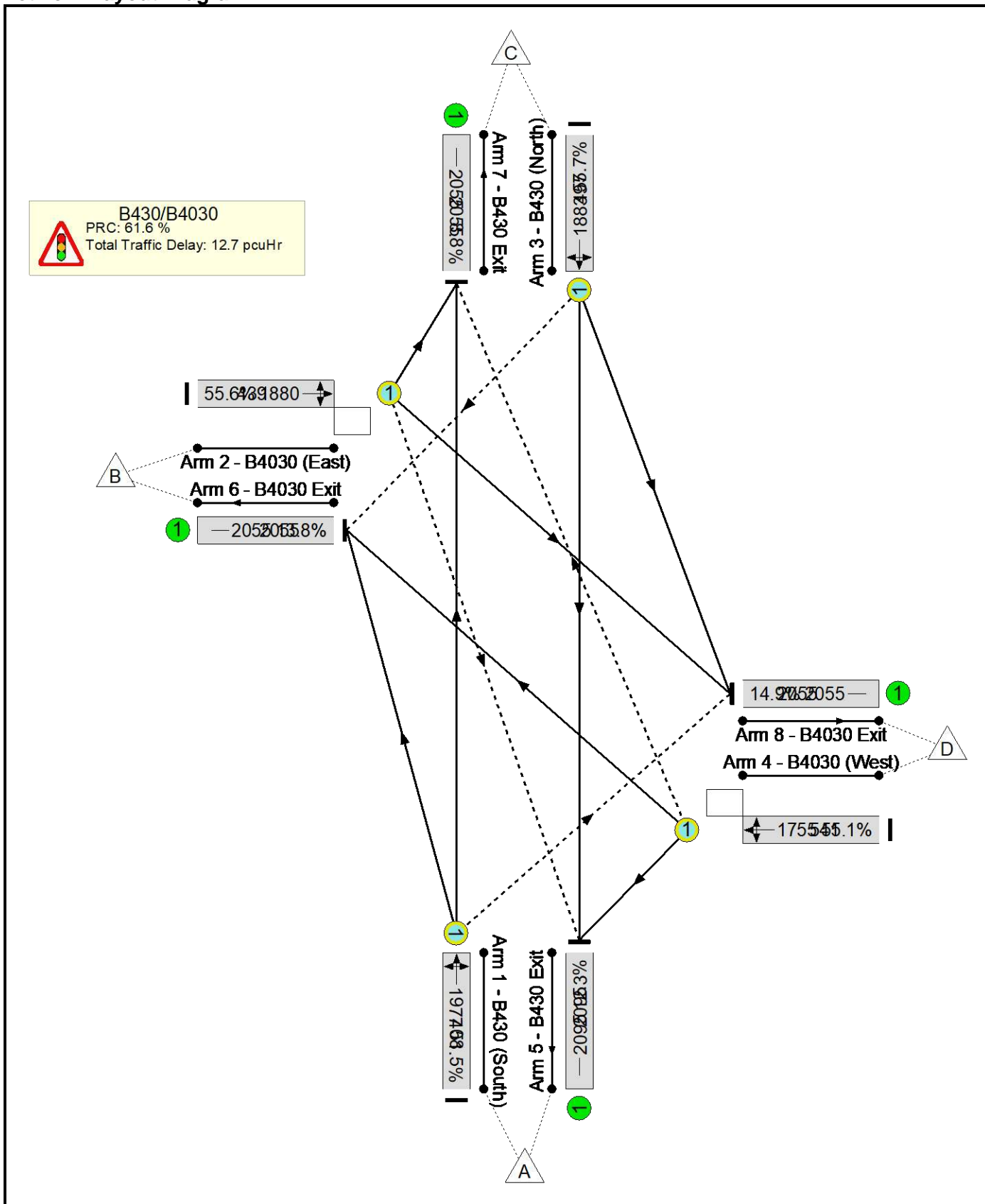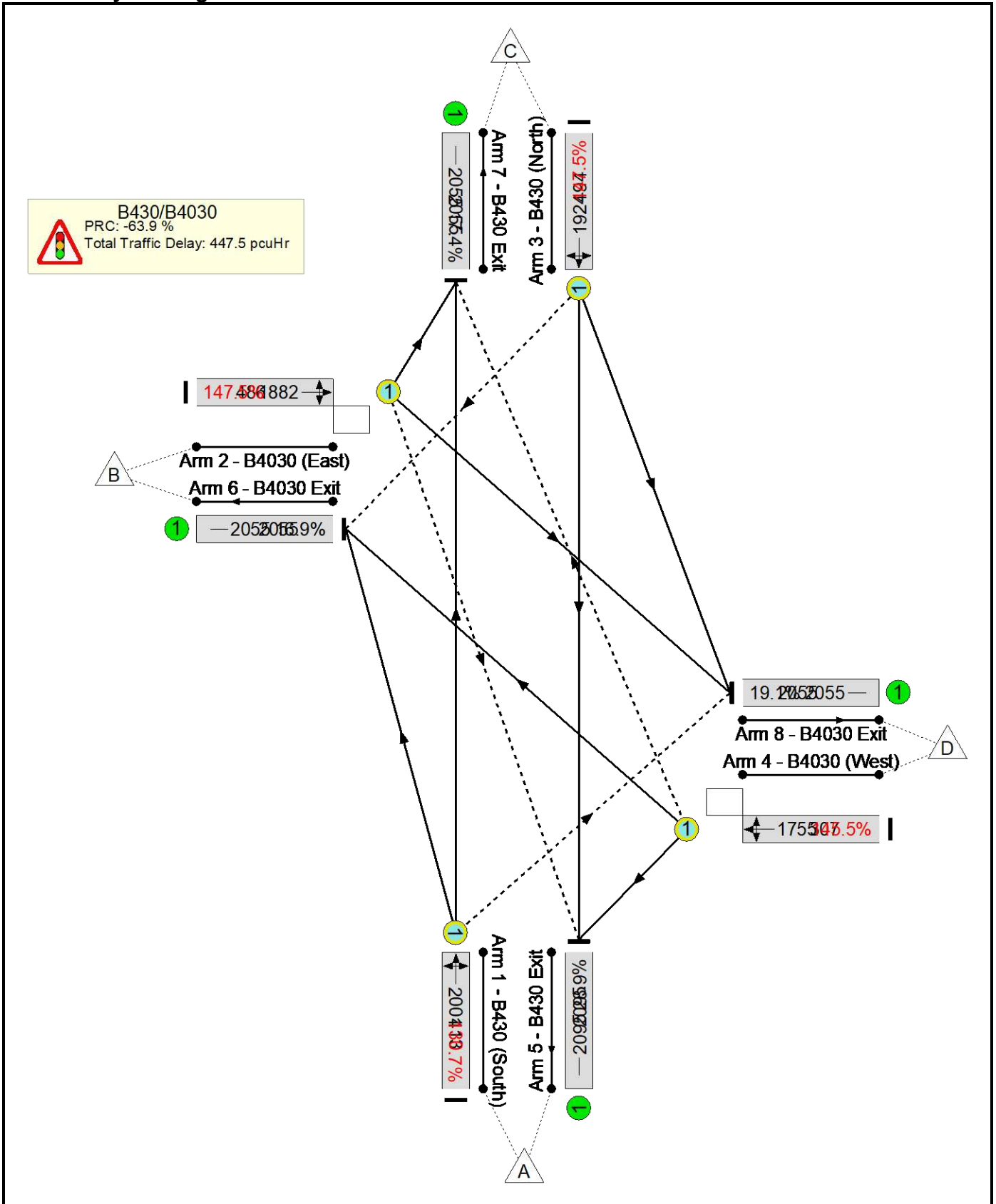**Network Layout Diagram**

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**131.6%**	**20**	**72**	**9**	**263.8**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**131.6%**	**20**	**72**	**9**	**263.8**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	41	-	464	2007	353	131.6%	11	1	0	67.5	523.4	75.1
2/1	B4030 (East) Right Left Ahead	O	C		1	19	-	532	1888	420	126.8%	0	38	4	69.5	470.5	77.0
3/1	B430 (North) Ahead Right Left	O	A		1	42	-	708	1924	574	123.3%	9	1	0	80.5	409.5	90.6
4/1	B4030 (West) Left Ahead Right	O	D		1	14	-	367	1755	293	125.5%	0	32	5	45.8	449.5	50.6
5/1	B430 Exit	U	-		-	-	-	769	2095	2095	29.7%	-	-	-	0.2	1.2	0.2
6/1	B4030 Exit	U	-		-	-	-	348	2055	2055	13.4%	-	-	-	0.1	1.0	0.1
7/1	B430 Exit	U	-		-	-	-	459	2055	2055	17.1%	-	-	-	0.1	1.1	0.1
8/1	B4030 Exit	U	-		-	-	-	495	2055	2055	19.0%	-	-	-	0.1	1.1	0.1

C1	PRC for Signalled Lanes (%):	-46.2	Total Delay for Signalled Lanes (pcuHr):	263.34	Cycle Time (s):	90
	PRC Over All Lanes (%):	-46.2	Total Delay Over All Lanes(pcuHr):	263.84		

Scenario 2: 'BTM PM' (FG2: 'BTM PM', Plan 1: 'Network Control Plan 1')
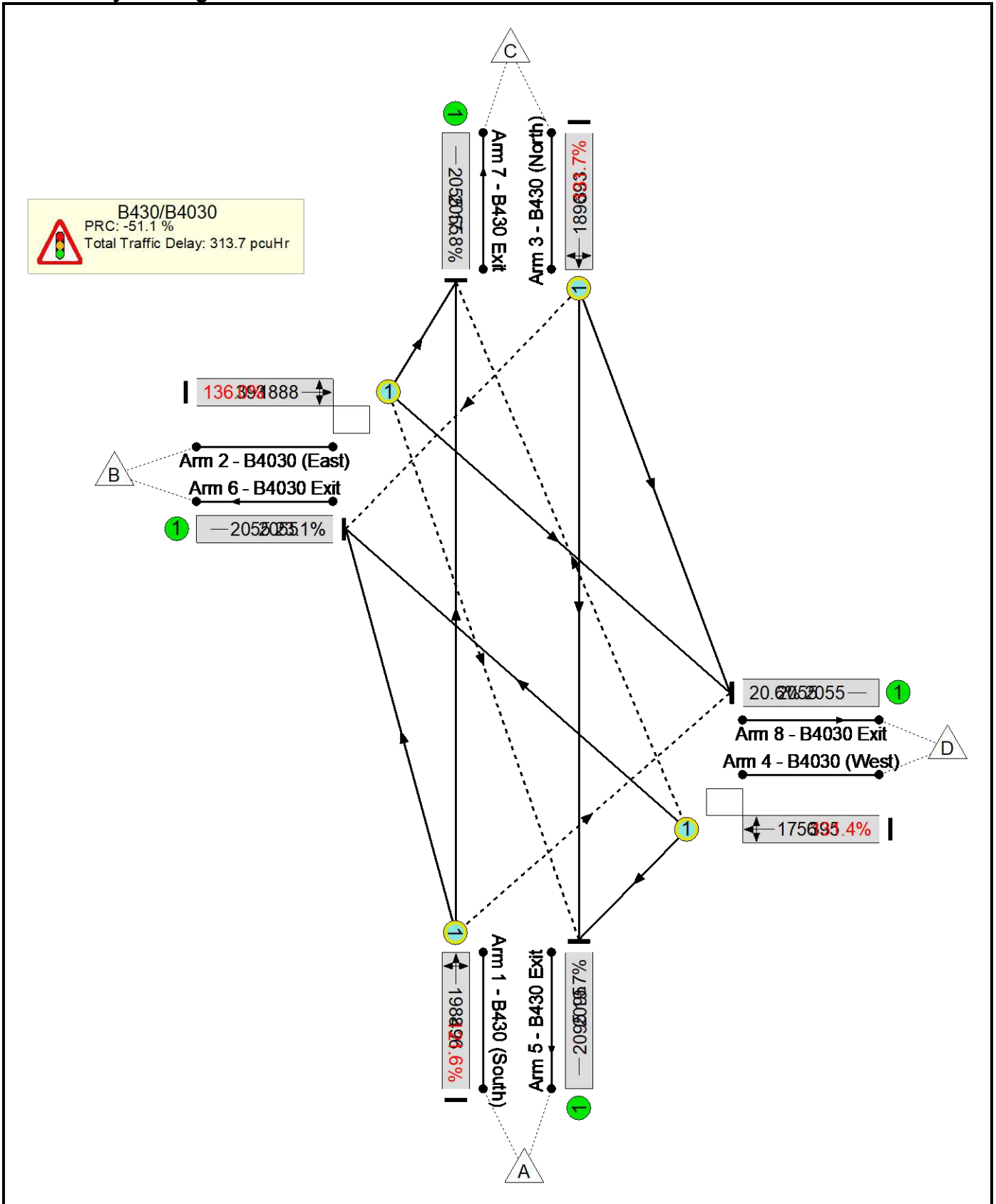**Network Layout Diagram**

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**124.1%**	**53**	**52**	**6**	**163.6**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**124.1%**	**53**	**52**	**6**	**163.6**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	39	-	501	1993	404	124.1%	44	3	0	60.3	433.5	68.5
2/1	B4030 (East) Right Left Ahead	O	C		1	16	-	397	1894	358	111.0%	0	39	5	29.8	270.6	35.3
3/1	B430 (North) Ahead Right Left	O	A		1	40	-	494	1894	460	107.3%	9	1	0	27.8	202.5	35.6
4/1	B4030 (West) Left Ahead Right	O	D		1	19	-	461	1756	390	118.1%	0	9	1	45.1	352.5	51.7
5/1	B430 Exit	U	-		-	-	-	461	2095	2095	20.4%	-	-	-	0.1	1.1	0.1
6/1	B4030 Exit	U	-		-	-	-	481	2055	2055	19.8%	-	-	-	0.1	1.1	0.1
7/1	B430 Exit	U	-		-	-	-	419	2055	2055	16.5%	-	-	-	0.1	1.0	0.1
8/1	B4030 Exit	U	-		-	-	-	492	2055	2055	21.4%	-	-	-	0.1	1.1	0.1

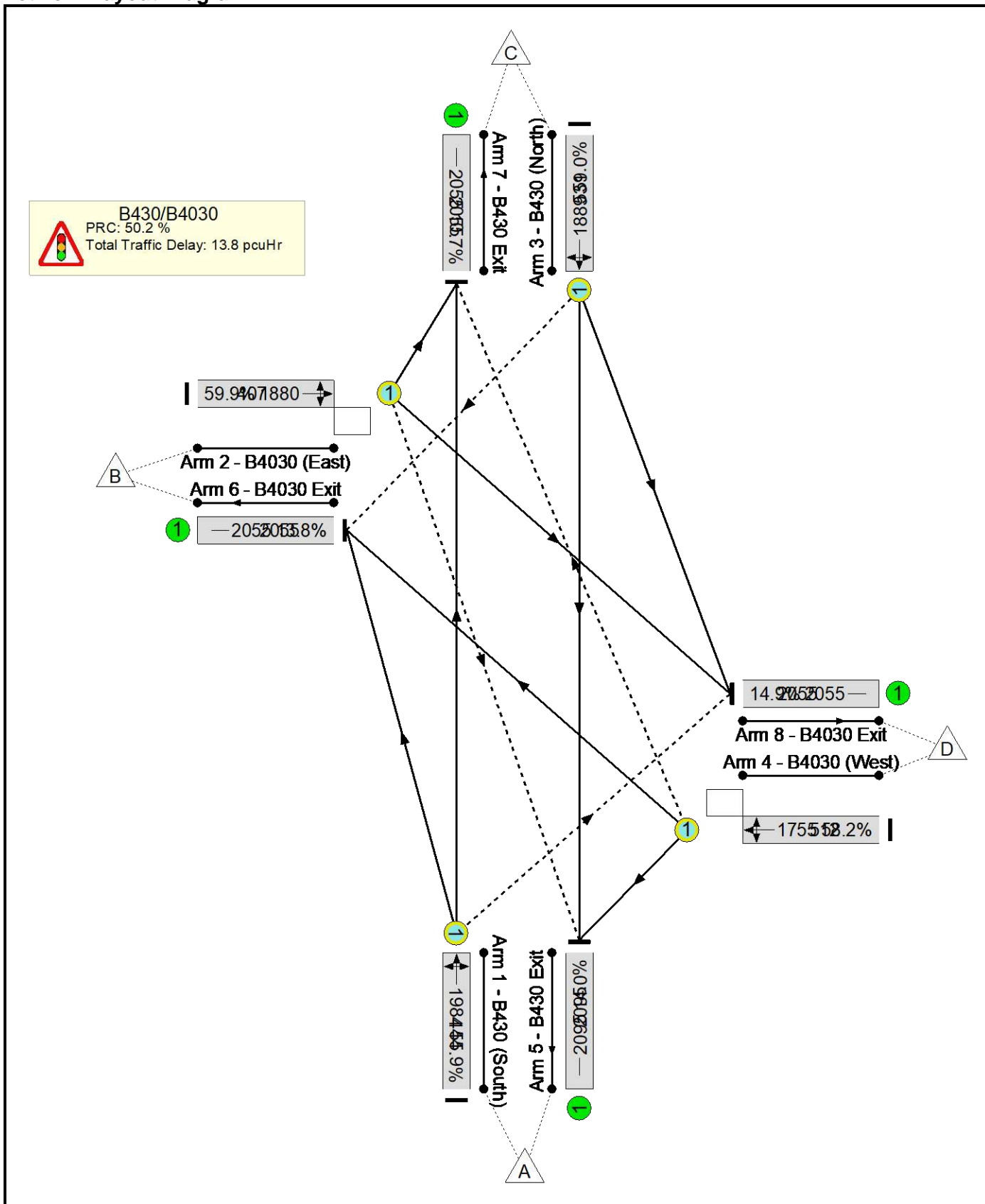|			
C1	PRC for Signalled Lanes (%): -37.9	Total Delay for Signalled Lanes (pcuHr): 163.10	Cycle Time (s): 90
	PRC Over All Lanes (%): -37.9	Total Delay Over All Lanes(pcuHr): 163.59	

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**147.5%**	**19**	**129**	**10**	**430.2**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**147.5%**	**19**	**129**	**10**	**430.2**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	54	-	528	1999	412	128.1%	11	0	0	74.1	505.2	85.6
2/1	B4030 (East) Right Left Ahead	O	C		1	30	-	717	1882	486	147.5%	0	98	7	142.0	713.1	155.6
3/1	B430 (North) Ahead Right Left	O	A		1	55	-	709	1924	494	143.4%	8	1	0	128.6	653.0	139.8
4/1	B4030 (West) Left Ahead Right	O	D		1	20	-	447	1755	307	145.5%	0	29	3	84.9	684.0	92.1
5/1	B430 Exit	U	-		-	-	-	872	2095	2095	28.9%	-	-	-	0.2	1.2	0.2
6/1	B4030 Exit	U	-		-	-	-	492	2055	2055	17.0%	-	-	-	0.1	1.1	0.1
7/1	B430 Exit	U	-		-	-	-	459	2055	2055	17.2%	-	-	-	0.1	1.1	0.1
8/1	B4030 Exit	U	-		-	-	-	578	2055	2055	19.2%	-	-	-	0.1	1.1	0.1

C1	PRC for Signalled Lanes (%):	-63.9	Total Delay for Signalled Lanes (pcuHr):	429.65	Cycle Time (s): 120
	PRC Over All Lanes (%):	-63.9	Total Delay Over All Lanes(pcuHr):	430.18	

Scenario 4: '2026 PM' (FG4: '2026 PM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

B430/B4030
PRC: -46.0 %
Total Traffic Delay: 289.1 pcuHr

C

1

Arm 7 - B430 Exit
—2052055.3%
Arm 3 - B430 (North)
1894108.8%
1

130.808.1888
1
Arm 2 - B4030 (East)
B
Arm 6 - B4030 Exit
1 —2052055.0%

21.4705055 —
1
Arm 8 - B4030 Exit
D
Arm 4 - B4030 (West)
1756895.4%
1

1
Arm 1 - B430 (South)
1987402.6%
Arm 5 - B430 Exit
2092055.3%
1

A

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**131.4%**	**53**	**91**	**7**	**289.1**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**131.4%**	**53**	**91**	**7**	**289.1**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	53	-	577	1987	463	124.6%	45	2	0	73.5	458.3	85.9
2/1	B4030 (East) Right Left Ahead	O	C		1	25	-	535	1888	409	130.8%	0	80	7	80.8	543.5	90.8
3/1	B430 (North) Ahead Right Left	O	A		1	54	-	497	1895	408	121.8%	8	1	0	57.6	417.1	66.6
4/1	B4030 (West) Left Ahead Right	O	D		1	26	-	519	1756	395	131.4%	0	8	1	76.8	532.6	86.1
5/1	B430 Exit	U	-		-	-	-	528	2095	2095	20.3%	-	-	-	0.1	1.1	0.1
6/1	B4030 Exit	U	-		-	-	-	615	2055	2055	23.0%	-	-	-	0.1	1.1	0.1
7/1	B430 Exit	U	-		-	-	-	419	2055	2055	16.3%	-	-	-	0.1	1.0	0.1
8/1	B4030 Exit	U	-		-	-	-	566	2055	2055	21.4%	-	-	-	0.1	1.1	0.1

C1	PRC for Signalled Lanes (%):	-46.0	Total Delay for Signalled Lanes (pcuHr):	288.60	Cycle Time (s): 120
	PRC Over All Lanes (%):	-46.0	Total Delay Over All Lanes(pcuHr):	289.12	

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**55.7%**	**35**	**70**	**1**	**12.7**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**55.7%**	**35**	**70**	**1**	**12.7**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	41	-	210	1977	408	51.5%	30	3	0	2.3	40.3	5.8
2/1	B4030 (East) Right Left Ahead	O	C		1	27	-	244	1880	439	55.6%	0	33	1	3.4	49.7	7.7
3/1	B430 (North) Ahead Right Left	O	A		1	42	-	277	1883	497	55.7%	4	1	0	3.2	41.9	8.5
4/1	B4030 (West) Left Ahead Right	O	D		1	36	-	298	1755	541	55.1%	0	33	1	3.5	41.9	8.8
5/1	B430 Exit	U	-		-	-	-	258	2095	2095	12.3%	-	-	-	0.1	1.0	0.1
6/1	B4030 Exit	U	-		-	-	-	283	2055	2055	13.8%	-	-	-	0.1	1.0	0.1
7/1	B430 Exit	U	-		-	-	-	181	2055	2055	8.8%	-	-	-	0.0	1.0	0.0
8/1	B4030 Exit	U	-		-	-	-	307	2055	2055	14.9%	-	-	-	0.1	1.0	0.1

C1	PRC for Signalled Lanes (%): 61.6	Total Delay for Signalled Lanes (pcuHr): 12.42	Cycle Time (s): 120
	PRC Over All Lanes (%): 61.6	Total Delay Over All Lanes(pcuHr): 12.70	

Scenario 6: '2026 + Development AM' (FG6: '2026 with Dev AM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

B430/B4030
PRC: -63.9 %
Total Traffic Delay: 447.5 pcuHr

Arm 7 - B430 Exit
Arm 3 - B430 (North)
Arm 2 - B4030 (East)
Arm 6 - B4030 Exit
Arm 8 - B4030 Exit
Arm 4 - B4030 (West)
Arm 1 - B430 Exit
Arm 5 - B430 (South)

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**147.5%**	**18**	**129**	**10**	**447.5**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**147.5%**	**18**	**129**	**10**	**447.5**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	54	-	540	2001	413	130.7%	10	0	0	80.2	535.0	91.8
2/1	B4030 (East) Right Left Ahead	O	C		1	30	-	717	1882	486	147.5%	0	98	7	142.0	713.1	155.6
3/1	B430 (North) Ahead Right Left	O	A		1	55	-	729	1924	494	147.5%	8	1	0	139.8	690.3	151.0
4/1	B4030 (West) Left Ahead Right	O	D		1	20	-	447	1755	307	145.5%	0	29	3	84.9	684.0	92.1
5/1	B430 Exit	U	-		-	-	-	892	2095	2095	28.9%	-	-	-	0.2	1.2	0.2
6/1	B4030 Exit	U	-		-	-	-	492	2055	2055	16.9%	-	-	-	0.1	1.1	0.1
7/1	B430 Exit	U	-		-	-	-	473	2055	2055	17.4%	-	-	-	0.1	1.1	0.1
8/1	B4030 Exit	U	-		-	-	-	576	2055	2055	19.1%	-	-	-	0.1	1.1	0.1

C1	PRC for Signalled Lanes (%):	-63.9	Total Delay for Signalled Lanes (pcuHr):	446.99	Cycle Time (s): 120
	PRC Over All Lanes (%):	-63.9	Total Delay Over All Lanes(pcuHr):	447.52	

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**136.0%**	**53**	**87**	**7**	**313.7**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**136.0%**	**53**	**87**	**7**	**313.7**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	54	-	603	1988	496	121.6%	46	2	0	70.0	417.9	83.4
2/1	B4030 (East) Right Left Ahead	O	C		1	24	-	535	1888	393	136.0%	0	76	7	89.6	602.7	99.5
3/1	B430 (North) Ahead Right Left	O	A		1	55	-	517	1896	393	131.7%	7	1	0	76.8	534.5	85.6
4/1	B4030 (West) Left Ahead Right	O	D		1	26	-	519	1756	395	131.4%	0	8	1	76.9	533.4	86.2
5/1	B430 Exit	U	-		-	-	-	548	2095	2095	19.7%	-	-	-	0.1	1.1	0.1
6/1	B4030 Exit	U	-		-	-	-	615	2055	2055	23.1%	-	-	-	0.2	1.1	0.2
7/1	B430 Exit	U	-		-	-	-	445	2055	2055	17.8%	-	-	-	0.1	1.1	0.1
8/1	B4030 Exit	U	-		-	-	-	566	2055	2055	20.6%	-	-	-	0.1	1.1	0.1

C1	PRC for Signalled Lanes (%): -51.1	Total Delay for Signalled Lanes (pcuHr): 313.23	Cycle Time (s): 120
	PRC Over All Lanes (%): -51.1	Total Delay Over All Lanes(pcuHr): 313.74	

Scenario 8: '2026 + Development Sat' (FG8: '2026 with Dev SAT', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

B430/B4030
PRC: 50.2 %
Total Traffic Delay: 13.8 pcuHr

Arm 7 - B430 Exit
Arm 3 - B430 (North)
Arm 2 - B4030 (East)
Arm 6 - B4030 Exit
Arm 8 - B4030 Exit
Arm 4 - B4030 (West)
Arm 1 - B430 (South)
Arm 5 - B430 Exit

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**59.9%**	**35**	**70**	**1**	**13.8**	-	-
B430/B4030	-	-	-		-	-	-	-	-	-	**59.9%**	**35**	**70**	**1**	**13.8**	-	-
1/1	B430 (South) Left Ahead Right	O	B		1	45	-	248	1984	444	55.9%	31	2	0	2.6	38.3	6.7
2/1	B4030 (East) Right Left Ahead	O	C		1	25	-	244	1880	407	59.9%	0	33	1	3.6	53.2	8.1
3/1	B430 (North) Ahead Right Left	O	A		1	46	-	313	1889	531	59.0%	4	1	0	3.5	40.4	9.4
4/1	B4030 (West) Left Ahead Right	O	D		1	34	-	298	1755	512	58.2%	0	33	1	3.7	44.6	9.1
5/1	B430 Exit	U	-		-	-	-	294	2095	2095	14.0%	-	-	-	0.1	1.0	0.1
6/1	B4030 Exit	U	-		-	-	-	283	2055	2055	13.8%	-	-	-	0.1	1.0	0.1
7/1	B430 Exit	U	-		-	-	-	219	2055	2055	10.7%	-	-	-	0.1	1.0	0.1
8/1	B4030 Exit	U	-		-	-	-	307	2055	2055	14.9%	-	-	-	0.1	1.0	0.1

	C1	PRC for Signalled Lanes (%):	50.2	Total Delay for Signalled Lanes (pcuHr):	13.45	Cycle Time (s): 120
		PRC Over All Lanes (%):	50.2	Total Delay Over All Lanes(pcuHr):	13.76	

B430/Church Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.2.5947
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Filename: Junction 8 - Church Road-B430 Priority Junction.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling\Junction 8 - Church Road-B430 Priority Junction
Report generation date: 10/10/2019 08:43:44

»2026, AM
»2026, PM
»2026 with Dev, AM
»2026 with Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2026								
Stream B-C	0.0	5.80	0.03	A	0.0	5.85	0.05	A
Stream B-A	0.0	9.55	0.03	A	0.0	8.64	0.04	A
Stream C-AB	0.1	4.35	0.08	A	0.3	5.14	0.16	A
2026 with Dev								
Stream B-C	0.0	5.84	0.03	A	0.1	5.93	0.05	A
Stream B-A	0.0	9.77	0.03	A	0.0	8.98	0.04	A
Stream C-AB	0.2	4.30	0.08	A	0.4	5.06	0.17	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	08/10/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026	AM	ONE HOUR	08:00	09:30	15
D2	2026	PM	ONE HOUR	17:00	18:30	15
D3	2026 with Dev	AM	ONE HOUR	08:00	09:30	15
D4	2026 with Dev	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2026, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B430 (south)		Major
B	Church Road		Minor
C	B430 (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	6.90			120.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	3.30	3.20	150	149

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	616	0.108	0.273	0.171	0.389
1	B-C	739	0.109	0.275	-	-
1	C-B	643	0.240	0.240	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	317	100.000
B		✓	27	100.000
C		✓	689	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	8	309
	B	9	0	18
	C	666	23	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	17	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.03	5.80	0.0	A
B-A	0.03	9.55	0.0	A
C-AB	0.08	4.35	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	14	672	0.020	13	0.0	5.465	A
B-A	7	459	0.015	7	0.0	7.952	A
C-AB	38	924	0.041	38	0.1	4.347	A
C-A	481			481			
A-B	6			6			
A-C	233			233			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	16	659	0.025	16	0.0	5.600	A
B-A	8	429	0.019	8	0.0	8.554	A
C-AB	53	983	0.054	53	0.1	4.123	A
C-A	566			566			
A-B	7			7			
A-C	278			278			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	20	641	0.031	20	0.0	5.799	A
B-A	10	387	0.026	10	0.0	9.551	A
C-AB	82	1065	0.077	81	0.1	3.852	A
C-A	677			677			
A-B	9			9			
A-C	340			340			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	20	641	0.031	20	0.0	5.799	A
B-A	10	387	0.026	10	0.0	9.552	A
C-AB	82	1065	0.077	82	0.1	3.836	A
C-A	677			677			
A-B	9			9			
A-C	340			340			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	16	659	0.025	16	0.0	5.601	A
B-A	8	429	0.019	8	0.0	8.559	A
C-AB	53	983	0.054	53	0.1	4.076	A
C-A	566			566			
A-B	7			7			
A-C	278			278			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	14	672	0.020	14	0.0	5.468	A
B-A	7	459	0.015	7	0.0	7.955	A
C-AB	38	925	0.041	38	0.1	4.322	A
C-A	481			481			
A-B	6			6			
A-C	233			233			

2026, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2026	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	297	100.000
B		✓	43	100.000
C		✓	432	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	18	279
	B	15	0	28
	C	368	64	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.05	5.85	0.0	A
B-A	0.04	8.64	0.0	A
C-AB	0.16	5.14	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	21	676	0.031	21	0.0	5.495	A
B-A	11	491	0.023	11	0.0	7.500	A
C-AB	75	776	0.097	74	0.2	5.127	A
C-A	250			250			
A-B	14			14			
A-C	210			210			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	25	664	0.038	25	0.0	5.637	A
B-A	13	467	0.029	13	0.0	7.942	A
C-AB	98	804	0.122	98	0.2	5.103	A
C-A	290			290			
A-B	16			16			
A-C	251			251			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	31	646	0.048	31	0.0	5.848	A
B-A	17	433	0.038	16	0.0	8.641	A
C-AB	136	843	0.161	136	0.3	5.094	A
C-A	339			339			
A-B	20			20			
A-C	307			307			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	31	646	0.048	31	0.0	5.848	A
B-A	17	433	0.038	17	0.0	8.643	A
C-AB	136	844	0.162	136	0.3	5.098	A
C-A	339			339			
A-B	20			20			
A-C	307			307			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	25	664	0.038	25	0.0	5.641	A
B-A	13	467	0.029	14	0.0	7.947	A
C-AB	98	804	0.122	99	0.2	5.112	A
C-A	290			290			
A-B	16			16			
A-C	251			251			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	21	676	0.031	21	0.0	5.498	A
B-A	11	491	0.023	11	0.0	7.509	A
C-AB	75	776	0.097	75	0.2	5.141	A
C-A	250			250			
A-B	14			14			
A-C	210			210			

2026 with Dev, AM

Data Errors and Warnings
No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2026 with Dev	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	332	100.000
B		✓	27	100.000
C		✓	709	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A	B	C
A	0	8	324
B	9	0	18
C	686	23	0

Vehicle Mix

Heavy Vehicle Percentages

From \ To	A	B	C
A	0	0	0
B	0	0	0
C	0	17	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.03	5.84	0.0	A
B-A	0.03	9.77	0.0	A
C-AB	0.08	4.30	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	14	669	0.020	13	0.0	5.491	A
B-A	7	454	0.015	7	0.0	8.052	A
C-AB	39	933	0.042	39	0.1	4.305	A
C-A	495			495			
A-B	6			6			
A-C	244			244			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	16	655	0.025	16	0.0	5.633	A
B-A	8	422	0.019	8	0.0	8.694	A
C-AB	55	993	0.055	55	0.1	4.079	A
C-A	583			583			
A-B	7			7			
A-C	291			291			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	20	636	0.031	20	0.0	5.842	A
B-A	10	379	0.026	10	0.0	9.766	A
C-AB	85	1078	0.079	85	0.2	3.807	A
C-A	696			696			
A-B	9			9			
A-C	357			357			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	20	636	0.031	20	0.0	5.842	A
B-A	10	378	0.026	10	0.0	9.767	A
C-AB	85	1078	0.079	85	0.2	3.789	A
C-A	696			696			
A-B	9			9			
A-C	357			357			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	16	655	0.025	16	0.0	5.633	A
B-A	8	422	0.019	8	0.0	8.699	A
C-AB	55	993	0.055	55	0.1	4.031	A
C-A	582			582			
A-B	7			7			
A-C	291			291			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	14	669	0.020	14	0.0	5.492	A
B-A	7	454	0.015	7	0.0	8.058	A
C-AB	39	933	0.042	39	0.1	4.281	A
C-A	495			495			
A-B	6			6			
A-C	244			244			

2026 with Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2026 with Dev	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	325	100.000
B		✓	43	100.000
C		✓	469	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	A	B	C
A	0	18	307
B	15	0	28
C	405	64	0

Vehicle Mix

Heavy Vehicle Percentages

From \ To	A	B	C
A	0	0	2
B	0	0	0
C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.05	5.93	0.1	A
B-A	0.04	8.98	0.0	A
C-AB	0.17	5.06	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	21	670	0.031	21	0.0	5.542	A
B-A	11	481	0.023	11	0.0	7.666	A
C-AB	78	791	0.099	78	0.2	5.047	A
C-A	275			275			
A-B	14			14			
A-C	231			231			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	25	657	0.038	25	0.0	5.700	A
B-A	13	454	0.030	13	0.0	8.169	A
C-AB	104	822	0.126	103	0.3	5.015	A
C-A	318			318			
A-B	16			16			
A-C	276			276			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	31	638	0.048	31	0.1	5.931	A
B-A	17	418	0.040	16	0.0	8.971	A
C-AB	146	866	0.169	145	0.4	5.003	A
C-A	370			370			
A-B	20			20			
A-C	338			338			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	31	638	0.048	31	0.1	5.931	A
B-A	17	418	0.040	17	0.0	8.975	A
C-AB	146	866	0.169	146	0.4	5.009	A
C-A	370			370			
A-B	20			20			
A-C	338			338			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	25	657	0.038	25	0.0	5.701	A
B-A	13	454	0.030	14	0.0	8.174	A
C-AB	104	822	0.126	104	0.3	5.027	A
C-A	318			318			
A-B	16			16			
A-C	276			276			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	21	670	0.031	21	0.0	5.548	A
B-A	11	480	0.024	11	0.0	7.677	A
C-AB	79	791	0.100	79	0.2	5.062	A
C-A	274			274			
A-B	14			14			
A-C	231			231			

motion

M40 Junction 9

Basic Results Summary
Basic Results Summary

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	Junction 9 - J9 Signalised Roundabout.lsg3x
Author:	
Company:	
Address:	

Scenario 1: '2026 AM' (FG1: '2026 AM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**83.0%**	**0**	**0**	**0**	**79.7**	-	-
M40 J9	-	-	-		-	-	-	-	-	-	**83.0%**	**0**	**0**	**0**	**79.7**	-	-
1/1	A41 Left	U	C1:B		1	42	-	236	1913	685	34.4%	-	-	-	2.1	32.2	6.0
1/2+1/3	A41 Ahead	U	C1:B		1	42	-	1262	2155:2155	772+772	81.7 : 81.7%	-	-	-	14.4	41.2	21.1
2/2+2/1	M40 northbound off-slip Ahead Left	U	C2:B		1	18	-	370	2061:1859	299+271	64.8 : 64.8%	-	-	-	5.7	55.8	6.9
2/3	M40 northbound off-slip Ahead	U	C2:B		1	18	-	157	1965	311	50.5%	-	-	-	2.5	57.8	5.3
3/1	A34 Left	U	C3:B		1	86	-	806	1900	1378	58.5%	-	-	-	2.5	11.0	13.5
3/2	A34 Left	U	C3:B		1	86	-	880	2047	1484	59.3%	-	-	-	2.7	10.9	14.7
3/3+3/4	A34 Ahead	U	C3:B		1	86	-	1773	2135:2135	1126+1009	83.0 : 83.0%	-	-	-	6.3	12.7	17.5
4/1	M40 southbound off-slip Ahead Left	U	C4:B		1	40	-	399	2045	699	57.1%	-	-	-	4.2	38.3	11.5
4/2+4/3	M40 southbound off-slip Ahead	U	C4:B		1	40	-	1159	2080:2080	711+711	80.5 : 82.6%	-	-	-	13.8	42.8	20.1
5/1	Right Ahead	U	C1:A		1	67	-	886	1900	1077	82.3%	-	-	-	7.9	32.1	30.3
5/2	Right	U	C1:A		1	67	-	572	1900	1077	53.1%	-	-	-	1.2	7.5	15.6
5/3	Right	U	C1:A		1	67	-	587	1900	1077	54.5%	-	-	-	1.3	8.0	16.5
6/1	Ahead	U	C2:A		1	91	-	920	1900	1457	63.2%	-	-	-	1.1	4.1	14.6
6/2	Right Ahead	U	C2:A		1	91	-	784	1900	1457	53.8%	-	-	-	0.7	3.2	1.7
6/3	Right Ahead	U	C2:A		1	91	-	1006	1900	1457	69.1%	-	-	-	1.2	4.4	3.2
7/1	Ahead	U	C3:A		1	23	-	0	1900	380	0.0%	-	-	-	0.0	0.0	0.0
7/2	Right Ahead	U	C3:A		1	23	-	302	1900	380	79.5%	-	-	-	2.2	26.2	9.4
7/3	Right	U	C3:A		1	23	-	20	1900	380	5.3%	-	-	-	0.0	5.6	0.0

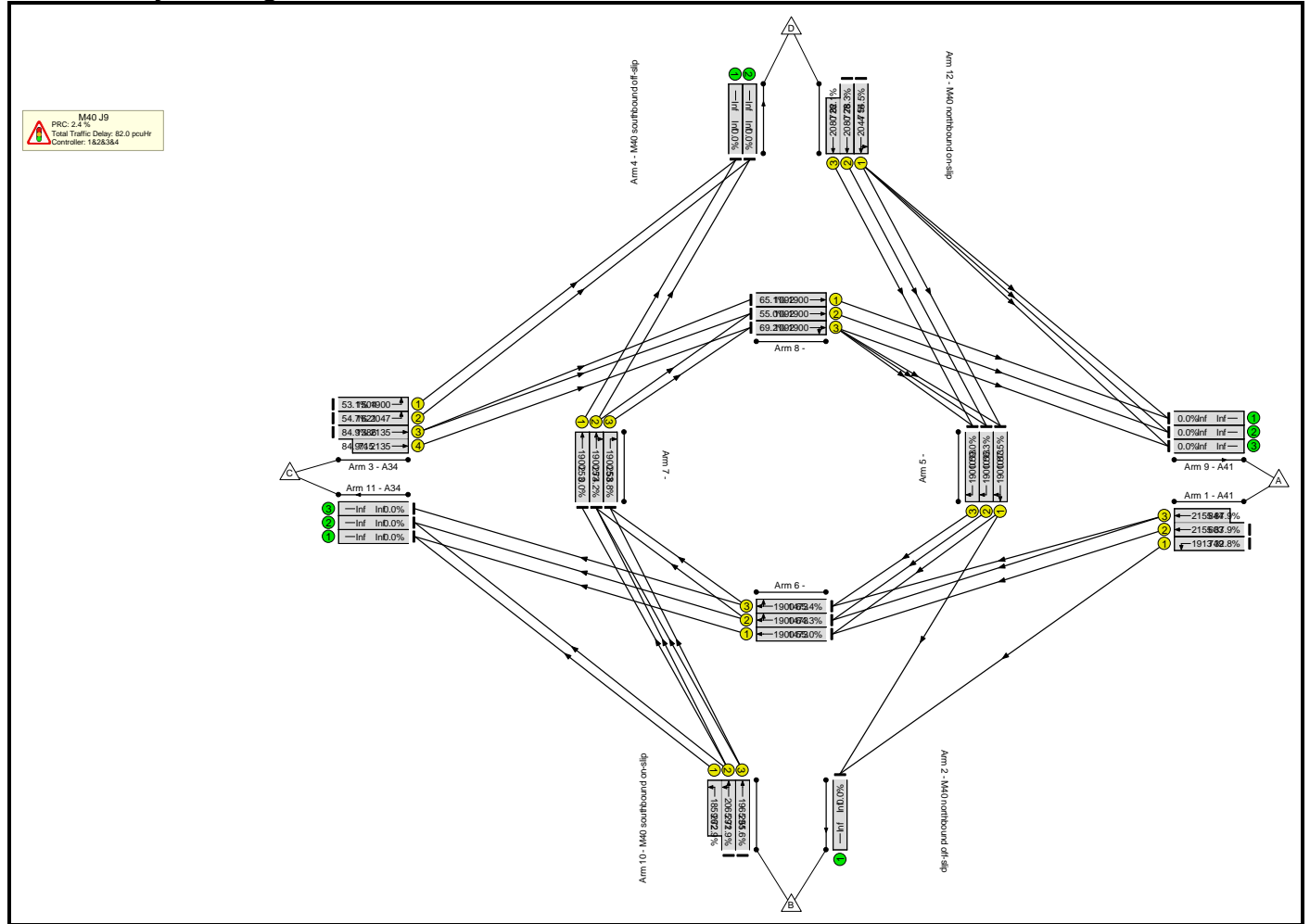## Basic Results Summary

8/1	Ahead	U	C4:A		1	69	-	539	1900	1108	48.6%	-	-	-	2.0	13.0	5.1
8/2	Ahead	U	C4:A		1	69	-	646	1900	1108	58.3%	-	-	-	3.3	18.4	16.3
8/3	Right Ahead	U	C4:A		1	69	-	858	1900	1108	77.4%	-	-	-	4.6	19.2	23.0

C1	PRC for Signalled Lanes (%):	9.4	Total Delay for Signalled Lanes (pcuHr):	26.95	Cycle Time (s): 120
C2	PRC for Signalled Lanes (%):	30.3	Total Delay for Signalled Lanes (pcuHr):	11.25	Cycle Time (s): 120
C3	PRC for Signalled Lanes (%):	8.4	Total Delay for Signalled Lanes (pcuHr):	13.62	Cycle Time (s): 120
C4	PRC for Signalled Lanes (%):	9.0	Total Delay for Signalled Lanes (pcuHr):	27.85	Cycle Time (s): 120
	PRC Over All Lanes (%):	8.4	Total Delay Over All Lanes(pcuHr):	79.67	

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	87.5%	0	0	0	106.0	-	-
M40 J9	-	-	-		-	-	-	-	-	-	87.5%	0	0	0	106.0	-	-
1/1	A41 Left	U	C1:B		1	40	-	329	1913	654	50.3%	-	-	-	3.4	36.9	9.2
1/2+1/3	A41 Ahead	U	C1:B		1	40	-	995	2155:2155	520+736	79.2 : 79.2%	-	-	-	11.3	41.0	19.4
2/2+2/1	M40 northbound off-slip Ahead Left	U	C2:B		1	31	-	677	2001:1859	407+378	86.3 : 86.3%	-	-	-	10.4	55.2	15.4
2/3	M40 northbound off-slip Ahead	U	C2:B		1	31	-	313	1965	524	59.7%	-	-	-	4.1	46.9	9.8
3/1	A34 Left	U	C3:B		1	93	-	1100	1900	1488	73.9%	-	-	-	3.5	11.3	20.0
3/2	A34 Left	U	C3:B		1	93	-	1203	2047	1603	75.0%	-	-	-	3.8	11.3	22.5
3/3+3/4	A34 Ahead	U	C3:B		1	93	-	1461	2135:2135	1446+512	74.6 : 74.6%	-	-	-	3.5	8.7	17.0
4/1	M40 southbound off-slip Ahead Left	U	C4:B		1	59	-	734	2060	1030	71.3%	-	-	-	6.0	29.3	20.2
4/2+4/3	M40 southbound off-slip Ahead	U	C4:B		1	59	-	1603	2080:2080	917+923	87.1 : 87.1%	-	-	-	14.2	31.8	24.9
5/1	Right Ahead	U	C1:A		1	69	-	760	1900	1108	68.6%	-	-	-	2.7	13.0	21.4
5/2	Right	U	C1:A		1	69	-	799	1900	1108	72.1%	-	-	-	1.5	6.8	21.5
5/3	Right	U	C1:A		1	69	-	804	1900	1108	72.5%	-	-	-	1.5	6.9	21.6
6/1	Ahead	U	C2:A		1	78	-	1034	1900	1251	82.7%	-	-	-	5.3	18.4	17.8
6/2	Right Ahead	U	C2:A		1	78	-	1094	1900	1251	87.5%	-	-	-	5.1	16.6	15.0
6/3	Right Ahead	U	C2:A		1	78	-	1092	1900	1251	87.3%	-	-	-	4.9	16.3	14.5
7/1	Ahead	U	C3:A		1	16	-	0	1900	269	0.0%	-	-	-	0.0	0.0	0.0
7/2	Right Ahead	U	C3:A		1	16	-	209	1900	269	77.6%	-	-	-	4.5	77.7	7.8
7/3	Right	U	C3:A		1	16	-	202	1900	269	75.0%	-	-	-	4.6	82.6	8.2

Basic Results Summary

8/1	Ahead	U	C4:A		1	50	-	605	1900	808	74.9%	-	-	-	5.8	34.5	13.7
8/2	Ahead	U	C4:A		1	50	-	585	1900	808	72.4%	-	-	-	5.1	31.3	15.2
8/3	Right Ahead	U	C4:A		1	50	-	584	1900	808	72.3%	-	-	-	4.8	29.8	18.6

C1	PRC for Signalled Lanes (%): 13.7	Total Delay for Signalled Lanes (pcuHr): 20.51	Cycle Time (s): 120
C2	PRC for Signalled Lanes (%): 2.9	Total Delay for Signalled Lanes (pcuHr): 29.75	Cycle Time (s): 120
C3	PRC for Signalled Lanes (%): 15.9	Total Delay for Signalled Lanes (pcuHr): 19.90	Cycle Time (s): 120
C4	PRC for Signalled Lanes (%): 3.3	Total Delay for Signalled Lanes (pcuHr): 35.84	Cycle Time (s): 120
	PRC Over All Lanes (%): 2.9	Total Delay Over All Lanes(pcuHr): 106.00	

Basic Results Summary
Scenario 3: '2026 with Dev AM' (FG3: '2026 with Dev AM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	**87.9%**	**0**	**0**	**0**	**82.0**	-	-
M40 J9	-	-	-		-	-	-	-	-	-	**87.9%**	**0**	**0**	**0**	**82.0**	-	-
1/1	A41 Left	U	C1:B		1	46	-	246	1913	749	32.8%	-	-	-	2.0	29.1	5.9
1/2+1/3	A41 Ahead	U	C1:B		1	46	-	1272	2155:2155	603+844	87.9 : 87.9%	-	-	-	14.8	41.9	26.4
2/2+2/1	M40 northbound off-slip Ahead Left	U	C2:B		1	17	-	403	2065:1859	291+262	72.9 : 72.9%	-	-	-	6.7	60.1	8.0
2/3	M40 northbound off-slip Ahead	U	C2:B		1	17	-	152	1965	295	51.6%	-	-	-	2.5	59.5	5.2
3/1	A34 Left	U	C3:B		1	94	-	799	1900	1504	53.1%	-	-	-	1.6	7.0	10.1
3/2	A34 Left	U	C3:B		1	94	-	887	2047	1621	54.7%	-	-	-	1.7	7.0	11.4
3/3+3/4	A34 Ahead	U	C3:B		1	94	-	1783	2135:2135	1386+715	84.9 : 84.9%	-	-	-	5.3	10.6	20.7
4/1	M40 southbound off-slip Ahead Left	U	C4:B		1	41	-	390	2044	715	54.5%	-	-	-	4.0	36.8	11.0
4/2+4/3	M40 southbound off-slip Ahead	U	C4:B		1	41	-	1168	2080:2080	728+728	78.3 : 82.1%	-	-	-	13.4	41.4	20.1
5/1	Right Ahead	U	C1:A		1	63	-	887	1900	1013	87.5%	-	-	-	10.2	41.5	32.1
5/2	Right	U	C1:A		1	63	-	570	1900	1013	56.3%	-	-	-	1.3	8.1	15.5
5/3	Right	U	C1:A		1	63	-	598	1900	1013	59.0%	-	-	-	1.4	8.6	16.8
6/1	Ahead	U	C2:A		1	92	-	810	1900	1473	55.0%	-	-	-	0.8	3.5	8.6
6/2	Right Ahead	U	C2:A		1	92	-	947	1900	1473	64.3%	-	-	-	1.1	4.3	3.6
6/3	Right Ahead	U	C2:A		1	92	-	963	1900	1473	65.4%	-	-	-	1.2	4.4	4.7
7/1	Ahead	U	C3:A		1	15	-	0	1900	253	0.0%	-	-	-	0.0	0.0	0.0
7/2	Right Ahead	U	C3:A		1	15	-	188	1900	253	74.2%	-	-	-	2.0	37.9	4.6
7/3	Right	U	C3:A		1	15	-	149	1900	253	58.8%	-	-	-	0.9	21.6	0.9

Basic Results Summary

8/1	Ahead	U	C4:A		1	68	-	711	1900	1092	65.1%	-	-	-	3.3	16.8	13.1
8/2	Ahead	U	C4:A		1	68	-	601	1900	1092	55.0%	-	-	-	2.9	17.4	13.3
8/3	Right Ahead	U	C4:A		1	68	-	756	1900	1092	69.2%	-	-	-	4.8	22.9	20.9

C1	PRC for Signalled Lanes (%): 2.4	Total Delay for Signalled Lanes (pcuHr): 29.74	Cycle Time (s): 120
C2	PRC for Signalled Lanes (%): 23.4	Total Delay for Signalled Lanes (pcuHr): 12.33	Cycle Time (s): 120
C3	PRC for Signalled Lanes (%): 6.1	Total Delay for Signalled Lanes (pcuHr): 11.43	Cycle Time (s): 120
C4	PRC for Signalled Lanes (%): 9.6	Total Delay for Signalled Lanes (pcuHr): 28.45	Cycle Time (s): 120
	PRC Over All Lanes (%): 2.4	Total Delay Over All Lanes(pcuHr): 81.95	

Basic Results Summary
Scenario 4: '2026 with Dev PM' (FG4: '2026 with Dev PM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

Basic Results Summary
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	88.8%	0	0	0	108.8	-	-
M40 J9	-	-	-		-	-	-	-	-	-	88.8%	0	0	0	108.8	-	-
1/1	A41 Left	U	C1:B		1	38	-	347	1913	622	55.8%	-	-	-	3.8	39.9	10.1
1/2+1/3	A41 Ahead	U	C1:B		1	38	-	995	2155:2155	700+700	69.0 : 73.1%	-	-	-	11.0	40.0	16.3
2/2+2/1	M40 northbound off-slip Ahead Left	U	C2:B		1	31	-	696	2003:1859	407+377	88.8 : 88.8%	-	-	-	11.3	58.5	17.0
2/3	M40 northbound off-slip Ahead	U	C2:B		1	31	-	320	1965	524	61.1%	-	-	-	4.2	47.3	10.1
3/1	A34 Left	U	C3:B		1	93	-	1100	1900	1488	73.9%	-	-	-	3.5	11.3	20.0
3/2	A34 Left	U	C3:B		1	93	-	1203	2047	1603	75.0%	-	-	-	3.8	11.3	22.5
3/3+3/4	A34 Ahead	U	C3:B		1	93	-	1479	2135:2135	1452+497	75.9 : 75.9%	-	-	-	3.7	9.0	17.8
4/1	M40 southbound off-slip Ahead Left	U	C4:B		1	60	-	732	2060	1047	69.9%	-	-	-	5.7	28.2	19.7
4/2+4/3	M40 southbound off-slip Ahead	U	C4:B		1	60	-	1605	2080:2080	933+905	87.3 : 87.3%	-	-	-	13.9	31.1	25.3
5/1	Right Ahead	U	C1:A		1	71	-	776	1900	1140	68.1%	-	-	-	2.8	13.0	21.4
5/2	Right	U	C1:A		1	71	-	815	1900	1140	71.5%	-	-	-	1.5	6.6	21.9
5/3	Right	U	C1:A		1	71	-	790	1900	1140	69.3%	-	-	-	1.3	6.1	20.4
6/1	Ahead	U	C2:A		1	78	-	1103	1900	1251	88.2%	-	-	-	6.9	22.4	24.7
6/2	Right Ahead	U	C2:A		1	78	-	1044	1900	1251	83.5%	-	-	-	4.0	13.8	12.0
6/3	Right Ahead	U	C2:A		1	78	-	1073	1900	1251	85.8%	-	-	-	4.6	15.6	14.1
7/1	Ahead	U	C3:A		1	16	-	0	1900	269	0.0%	-	-	-	0.0	0.0	0.0
7/2	Right Ahead	U	C3:A		1	16	-	214	1900	269	79.5%	-	-	-	4.6	76.9	8.4
7/3	Right	U	C3:A		1	16	-	210	1900	269	78.0%	-	-	-	5.2	88.8	8.7

Basic Results Summary

8/1	Ahead	U	C4:A		1	49	-	618	1900	792	78.1%	-	-	-	6.3	36.8	15.1
8/2	Ahead	U	C4:A		1	49	-	600	1900	792	75.8%	-	-	-	5.6	33.7	16.5
8/3	Right Ahead	U	C4:A		1	49	-	587	1900	792	74.1%	-	-	-	5.1	31.3	19.1

C1	PRC for Signalled Lanes (%):	23.1	Total Delay for Signalled Lanes (pcuHr):	20.51	Cycle Time (s): 120
C2	PRC for Signalled Lanes (%):	1.4	Total Delay for Signalled Lanes (pcuHr):	31.01	Cycle Time (s): 120
C3	PRC for Signalled Lanes (%):	13.2	Total Delay for Signalled Lanes (pcuHr):	20.68	Cycle Time (s): 120
C4	PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	36.64	Cycle Time (s): 120
	PRC Over All Lanes (%):	1.4	Total Delay Over All Lanes(pcuHr):	108.83	

M40 Junction 10 – Southern Roundabout

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: Junction 10 - J10 Southern Roundabout.j9
Path: L:\Projects\gwbice 1803047\Analysis\Modelling\Junction 10 - J10 Southern Roundabout
Report generation date: 11/10/2019 08:01:17

»2026, AM
»2026, PM
»2026 with Dev, AM
»2026 with Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2026								
Arm 1	1.2	5.58	0.53	A	1.2	7.39	0.55	A
Arm 2	1.8	4.62	0.64	A	1.0	3.24	0.48	A
Arm 3	3.9	11.94	0.78	B	87.1	141.20	1.08	F
2026 with Dev								
Arm 1	1.2	5.71	0.54	A	1.4	7.79	0.58	A
Arm 2	1.9	4.71	0.65	A	1.0	3.29	0.49	A
Arm 3	4.0	12.15	0.79	B	89.7	145.25	1.08	F

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

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	09/10/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTION\klewis
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026	AM	ONE HOUR	08:00	09:30	15
D2	2026	PM	ONE HOUR	17:00	18:30	15
D3	2026 with Dev	AM	ONE HOUR	08:00	09:30	15
D4	2026 with Dev	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3	7.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	B430	
2	A43	
3	M40 (northbound)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.07	9.24	39.0	19.9	71.5	38.0	
2	7.29	8.78	4.0	30.0	71.5	37.0	
3	7.00	7.20	2.0	52.3	71.5	38.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.556	2111
2	0.605	2396
3	0.573	2172

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	695	100.000
2		✓	1313	100.000
3		✓	1104	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	484	211
	2	984	0	329
	3	4	1100	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	3	7
	2	1	0	14
	3	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.53	5.58	1.2	A
2	0.64	4.62	1.8	A
3	0.78	11.94	3.9	B

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	523	824	1652	0.317	521	0.5	3.311	A
2	988	158	2300	0.430	985	0.8	2.840	A
3	831	738	1749	0.475	827	1.0	4.352	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	625	986	1562	0.400	624	0.7	3.996	A
2	1180	189	2281	0.518	1179	1.1	3.392	A
3	992	884	1666	0.596	990	1.6	5.943	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	765	1202	1442	0.531	763	1.2	5.514	A
2	1446	232	2255	0.641	1443	1.8	4.590	A
3	1216	1081	1553	0.783	1207	3.8	11.377	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	765	1211	1437	0.533	765	1.2	5.582	A
2	1446	232	2255	0.641	1446	1.8	4.624	A
3	1216	1083	1551	0.784	1215	3.9	11.944	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	625	998	1555	0.402	627	0.7	4.048	A
2	1180	190	2280	0.518	1183	1.1	3.419	A
3	992	887	1664	0.596	1001	1.7	6.162	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	523	831	1648	0.317	524	0.5	3.337	A
2	988	159	2299	0.430	990	0.8	2.863	A
3	831	742	1747	0.476	834	1.0	4.425	A

2026, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3	78.20	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2026	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	552	100.000
2		✓	988	100.000
3		✓	1796	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	338	214
	2	542	0	446
	3	10	1786	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	2	0
	2	1	0	10
	3	0	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.55	7.39	1.2	A
2	0.48	3.24	1.0	A
3	1.08	141.20	87.1	F

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	416	1335	1368	0.304	414	0.4	3.813	A
2	744	160	2298	0.324	742	0.5	2.422	A
3	1352	407	1939	0.697	1342	2.5	6.473	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	496	1592	1225	0.405	495	0.7	4.990	A
2	888	192	2279	0.390	888	0.7	2.711	A
3	1615	487	1893	0.853	1601	5.8	12.881	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	608	1794	1112	0.546	606	1.2	7.163	A
2	1088	235	2253	0.483	1087	1.0	3.233	A
3	1977	596	1831	1.080	1804	49.1	64.526	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	608	1815	1101	0.552	608	1.2	7.386	A
2	1088	236	2253	0.483	1088	1.0	3.239	A
3	1977	597	1830	1.080	1826	87.1	141.200	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	496	1859	1076	0.461	498	0.9	6.313	A
2	888	193	2279	0.390	889	0.7	2.721	A
3	1615	488	1893	0.853	1869	23.4	110.047	F

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	416	1428	1316	0.316	417	0.5	4.059	A
2	744	162	2298	0.324	744	0.5	2.431	A
3	1352	408	1938	0.698	1435	2.6	9.137	A

2026 with Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3	7.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2026 with Dev	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	710	100.000
2		✓	1322	100.000
3		✓	1104	100.000

Origin-Destination Data

Demand (PCU/hr)

From\To	1	2	3
1	0	491	219
2	993	0	329
3	4	1100	0

Vehicle Mix

Heavy Vehicle Percentages

From\To	1	2	3
1	0	3	6
2	1	0	14
3	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.54	5.71	1.2	A
2	0.65	4.71	1.9	A
3	0.79	12.15	4.0	B

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	535	824	1652	0.324	533	0.5	3.336	A
2	995	164	2296	0.433	992	0.8	2.862	A
3	831	745	1745	0.476	827	1.0	4.371	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	638	986	1562	0.409	637	0.7	4.044	A
2	1188	197	2277	0.522	1187	1.1	3.430	A
3	992	892	1661	0.597	990	1.6	5.981	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	782	1202	1442	0.542	780	1.2	5.634	A
2	1456	241	2250	0.647	1453	1.9	4.675	A
3	1216	1091	1547	0.786	1207	3.9	11.547	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	782	1211	1437	0.544	782	1.2	5.708	A
2	1456	241	2250	0.647	1455	1.9	4.712	A
3	1216	1093	1546	0.786	1215	4.0	12.147	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	638	998	1555	0.410	640	0.7	4.096	A
2	1188	197	2276	0.522	1191	1.1	3.461	A
3	992	895	1659	0.598	1002	1.7	6.213	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	535	831	1648	0.324	535	0.5	3.365	A
2	995	165	2296	0.434	997	0.8	2.883	A
3	831	749	1743	0.477	834	1.0	4.446	A

2026 with Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3	79.69	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2026 with Dev	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	578	100.000
2		✓	997	100.000
3		✓	1796	100.000

Origin-Destination Data

Demand (PCU/hr)

From \ To	1	2	3
1	0	350	228
2	551	0	446
3	10	1786	0

Vehicle Mix

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	2	0
2	1	0	10
3	0	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.58	7.79	1.4	A
2	0.49	3.29	1.0	A
3	1.08	145.25	89.7	F

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	435	1335	1368	0.318	433	0.5	3.890	A
2	751	171	2292	0.327	749	0.5	2.442	A
3	1352	414	1935	0.699	1342	2.5	6.515	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	520	1592	1225	0.424	519	0.7	5.152	A
2	896	205	2272	0.395	896	0.7	2.741	A
3	1615	495	1889	0.855	1601	5.8	13.060	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	636	1789	1115	0.571	634	1.3	7.540	A
2	1098	250	2244	0.489	1096	1.0	3.286	A
3	1977	606	1825	1.084	1799	50.3	65.960	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	636	1810	1103	0.577	636	1.4	7.793	A
2	1098	251	2244	0.489	1098	1.0	3.292	A
3	1977	607	1825	1.084	1820	89.7	145.245	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	520	1855	1079	0.482	521	1.0	6.555	A
2	896	206	2271	0.395	898	0.7	2.751	A
3	1615	496	1888	0.855	1865	27.0	115.891	F

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	435	1442	1308	0.333	437	0.5	4.189	A
2	751	172	2291	0.328	751	0.5	2.453	A
3	1352	415	1934	0.699	1450	2.6	9.813	A