LAND AT A151 / A16, SPALDING

Proposed KFC Drive-Through

Transport Assessment

Prepared on behalf of SME Group Plc.

SMGR/18/4487/TA02

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1 INTRODUCTION

1.1.1 RGP is commissioned by SME Group Plc. to provide transport planning and highway advice in respect to a proposed development to provide a KFC drive-through outlet on land at the A151 / A16, Spalding, Lincolnshire.

1.1.2 The existing site comprises a triangular plot of vacant land at the southwest corner of the A151 / A16 roundabout junction, approximately 2km from Spalding town centre. The site is currently undeveloped but is served by an existing shared access road from Fulney Lane North via the A151 to the west. The access road is also currently utilised by the adjacent tyre fitting workshop.

1.1.3 The proposals involve the provision of a KFC branded drive-through (use class A5) restaurant. A total of 42 car parking spaces would also be provided, including 2 disabled parking bays, 2 'grill bays' and 9 reserved staff parking spaces. The proposed site layout is illustrated on the plan attached at Appendix A.

1.1.4 The KFC drive-through would contain small sections of both internal and external seating for customers choosing to dine at the site. Although customer dining areas would be available, the majority of customers are expected to utilise the drive-through and then continue on an existing vehicle trip along the adjacent highway network.

1.1.5 Access to the site would be provided via the existing shared access road which forms a route across the northern site boundary. Principal access is afforded from the A151 via Fulney Lane North. A delivery bay would be provided for the KFC drive-through to accommodate all delivery and servicing activity generated by this use.

1.1.6 As background, RGP has been involved with similar consented developments, including KFC drive-through operations. As a result, RGP holds traffic and parking survey data which enables an accurate and representative assessment to be carried out within this document regarding the likely operation of the site at Spalding.

1.1.7 Furthermore, manual classified turning counts have been undertaken by an independent survey company on Thursday 4th October 2018 and Saturday 6th October 2018 to assess the existing operation of the Fulney Lane North / A151 Holbeach Road roundabout junction. This data is used in order to assess the likely impact of the proposals in relation to this junction which would afford access to the site.

1.2 Report Structure

1.2.1 The principal focus of this report is to consider the impact of the proposals with specific detailed consideration given to the anticipated trip generation, car parking requirements and the delivery and servicing arrangements for the site.

1.2.2 The remainder of this report comprises the following sections:

(i) Section 2: Transport Policy Overview – A review of relevant national, regional and local policy relevant to the proposals from a transport perspective;

(ii) Section 3: Baseline Conditions – A review of the site's location relative to the local highway network, public transport facilities and pedestrian infrastructure;

(iii) Section 4: Proposed Trip Generation – An overview of the proposed site operation and an assessment of its trip generation credentials using operator-specific survey data;

(iv) Section 5: Trip Generation Impact – An assessment of the Fulney Lane North / A151 4-arm roundabout and consideration of how the proposals would impact on its operation;

(v) Section 6: Parking Arrangements – An assessment of the anticipated car parking demand with reference to local parking standards and bespoke data;

(vi) Section 7: Access and Servicing Arrangements – Overview of the proposed access arrangements and details of the proposed delivery / servicing strategy, supported by swept path drawings; and

(vii) Section 8: Summary and Conclusions.

1.2.3 RGP has received pre-application advice from Lincolnshire County Council via email correspondence, dated 26th September 2018. As part of discussions held with the Council, the above scope to be addressed within this Transport Assessment has been agreed. It was advised that details are included within this report regarding the anticipated trip distribution and an associated assessment incorporating forecast traffic growth for 2023. For further reference, the Council's response is attached at Appendix B.

1.2.4 It is worth noting that the pre-application advice was for a potential development of up to two drive-thru units, whereas the current planning application is only for a single drive-thru facility and therefore the potential traffic impact is significantly less than was initially suggested.

2 TRANSPORT POLICY REVIEW

2.1.1 This section of the report summarises the key transport policy information at a national, regional and local level. These policies are assessed in relation to the scale and type of development proposed, as well as the site's location.

2.2 The National Policy Planning Framework (July 2018)

2.2.1 The National Planning Policy Framework (NPPF) set out the Government's planning policies for England and how these are expected to be enforced. It urges the local planning authorities to support development which facilitates the use of sustainable modes of transport.

2.2.2 Paragraph 108 outlines the basic transport requirements for developments to provide, and states that "*In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*

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

(ii) Safe and suitable access to the site can be achieved for all users; and

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

2.2.3 Paragraph 111 states that "*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.*"

2.2.4 The development complies with the above in that a Transport Assessment has been provided which fully assesses the impact of the proposed development proposals.

2.2.5 The site is located in a semi-rural area adjacent to major highway links and this Transport Assessment will therefore consider the proposals in the context if its location, whilst seeking to outline the potential for trips (particularly those made by staff) to the site to be made via sustainable modes in order to limit car dependency on journeys made.

2.2.6 Of further note, paragraph 109 of the NPPF states that "*development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.*"

2.3 National Planning Practice Guidance (March 2014)

2.3.1 The National Planning Practice Guidance (NPPG) provides additional information to support the NPPF. In relation to Travel Plans, Transport Assessments and Transport Statements it notes that:

"They support national planning policy which sets out that planning should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable."

2.3.2 This document provides an assessment of the proposed development in the context of its location and proposed use.

2.4 South Holland Local Plan (July 2006)

2.4.1 Current planning policy for Spalding and the surrounding area is contained within the saved policies of the South Holland Local Plan, adopted by South Holland District Council (SHDC) in 2006. It is noted that an emerging Local Plan is currently under public consultation, further details of which are provided below in Section 2.5 of this report.

2.4.2 In terms of inclusive access to the site, Policy SG15 requires development proposals to provide safe and convenient access to and within the site for motor vehicles, cyclists, pedestrians, the less able-bodied and people with disabilities.

2.4.3 Policy SG16 relates specifically to the application of car parking standards in the district, stating that "*development proposals will be required to provide appropriate parking and servicing arrangements in accordance with the maximum parking standards appended*". The appropriate standards pertaining to the development are defined in Appendix 2 of the Local Plan.

2.4.4 Full details regarding the proposed parking provision in relation to the Council's parking standards are provided within Section 6 of this report.

2.4.5 Within Chapter 8 of the Local Plan (Transport & Communications), Policy TC2 states that the Council will protect the existing and projected cycleways, as defined on the proposals map, and extend them as opportunities arise. Marked cycle lanes continue from the site along the A151 to the west and a shared cycle / footway is provided along the A151 to the east. These cycleways would not be impacted as a result of the proposed development.

2.4.6 It is noted that in Chapter 8 of the Local Plan that the Council would support the provision of an A151 Whaplode and Moulton Bypass, which would be located to the northeast of the site and would alleviate a proportion of traffic heading in and out of Spalding via the A151. Consideration is being progressed and as such, a route has yet to be safeguarded under this proposal.

2.5 South East Lincolnshire Local Plan (March 2017 Publication Version)

2.5.1 An emerging joint Local Plan has been drafted by the South East Lincolnshire Joint Strategic Planning Committee and is currently in the 'examination phase', with the most recent public consultation period completed on 28th August 2018. The Local Plan is set to be adopted by SHDC following the examination and consultation periods.

2.5.2 Chapter 8 of the Draft Local Plan contains policies relating to efficient and effective transport, with Policy 29 outlining a commitment to deliver improvements to the A151 / A17 junction to the northeast of the site at Holbeach. This would afford enhanced journeys towards the site from the A17 via Holbeach Road.

2.5.3 This policy also states a commitment to protect existing footpaths, cycle routes and public rights of way from new development. As highlighted above, the site would not impact the pedestrian or cycle infrastructure in the vicinity of the site, with particular consideration given to the cycle routes on the A151.

2.5.4 The new Local Plan would also include defined parking standards within Appendix 5 of the emerging document which all new development should adhere to, unless a "*high quality design can demonstrate that a lower standard of provision follows the requirements set out in 1-4 below*". The requirements (in the context of non-residential development) outlined in Policy 31 state the following:

(i) *"Parking spaces are fit for their intended use in terms of their size and design;*

(ii) *Secure, covered, convenient storage for bicycles for employees should be provided close to an entrance to the building. Changing and shower facilities should be provided where possible;*

(iii) *Secure, covered bicycle storage for visitors are located close to the main entrance to the building;*

(iv) *Where more than 50 parking spaces are provided, at least one double electric vehicle charge point will be required (2 spaces). For each additional 50 spaces, one double point should be provided up to a maximum of three (6 spaces); and*

(v) *Parking is well-integrated within the townscape or landscape, through an appropriate use of materials and landscaping".*

3 BASELINE CONDITIONS

Site Location and Description

3.1.1 The local area is characterised by a range of land uses, with several commercial properties located in the immediate vicinity of the site to the north and south, agricultural land to the east and residential areas to the west.

3.1.2 The site would be accessed from Fulney Lane North via the existing shared access road which forms a route across the site's northern boundary. This access road also serves a tyre-fitting workshop and an industrial warehouse, both of which are located immediately to the west of the site. Fulney Lane North forms the southern arm of its roundabout junction with the A151 and Camel Gate. To the north, Camel Gate provides access to a retail park. The site's location in context of the local road layout is illustrated on the extract below, whilst further details of the proposed access arrangements are provided within Section 7 of this report.



Figure 3.1. Site Location

3.1.3 Fulney Lane North continues to the south of the site, providing a gated access into the commercial estate located approximately 350m to the southwest. Principal access to the site is afforded from the A151 via its 4-arm roundabout junction with Fulney Lane North / Camel Gate.

3.1.4 The A151 provides a route into Spalding town centre, approximately 2km to the southwest and also continues to its junction with the A17 at Holbeach, 9.5km to the east. Furthermore, the A151 forms a roundabout junction with the A16, immediately to the northeast of the site.

3.1.5 The A16 continues adjacent to the site to the south, affording a route to the A15 / A47 (J20) at Dogsthorpe in the north of Peterborough. The A16 also continues to the northeast of the site, providing a route into Boston town centre.

3.1.6 The site is therefore conveniently located in terms of access from the wider strategic highway network.

Highway Safety Review

3.1.7 RGP has undertaken an investigation and review of local road accidents, particularly in consideration of the site access from Fulney Lane North as well as the A151 / A16 roundabout junction to the east, in order to identify any potential issues regarding the safety of the local highway network. This review has examined all accidents in the vicinity of the site over the latest 5 year period available (2013 – 2017 inclusive), using data provided from the Crashmap software (www.crashmap.co.uk).

3.1.8 It is evident from this assessment that there have been no reported accidents along Fulney Lane North or at its roundabout junction with the A151, from which principal access to the site is provided.

3.1.9 With regard to the A151 / A16 roundabout junction at the northeast corner of the site, a total of 12 accidents were recorded at, or on approach to the junction over the latest 5 year period. All of these accidents were reported to have resulted in 'slight' injuries, with none classified as either 'serious' or 'fatal'.

3.1.10 The 12 accidents between 2013 and 2017 represent an accident rate of 2.4 accidents per year, on average, which corresponds to a lower rate than the national average for 4-arm roundabout junctions including dual carriageway roads, which is defined as 2.7 accidents per year in the DfT guidance document *Design Manual for Roads and Bridges*.

3.1.11 It is noted that a minor concentration of accidents has occurred on the A151, approximately 400m to the east of Fulney Lane North, involving a single accident classified as a 'serious' injury and 7 accidents which resulted in a 'slight' injury (i.e. 1.6 accidents per year). However, these accidents occurred at the Spalding service station access on Holbeach Road and are not attributed to the functioning of the roundabout junction with the A16 in the vicinity of the site.

3.1.12 When considering the accident rate and severity of accidents at both the Fulney Road North / A151 and A151 / A16 junctions, this is considered to represent a good record on the adjacent highway network to the site and no further detailed investigation is required.

3.1.13 The screenshot below provides a plan illustrating the locations of these local accidents over the 5 year period between 2013 and 2017.

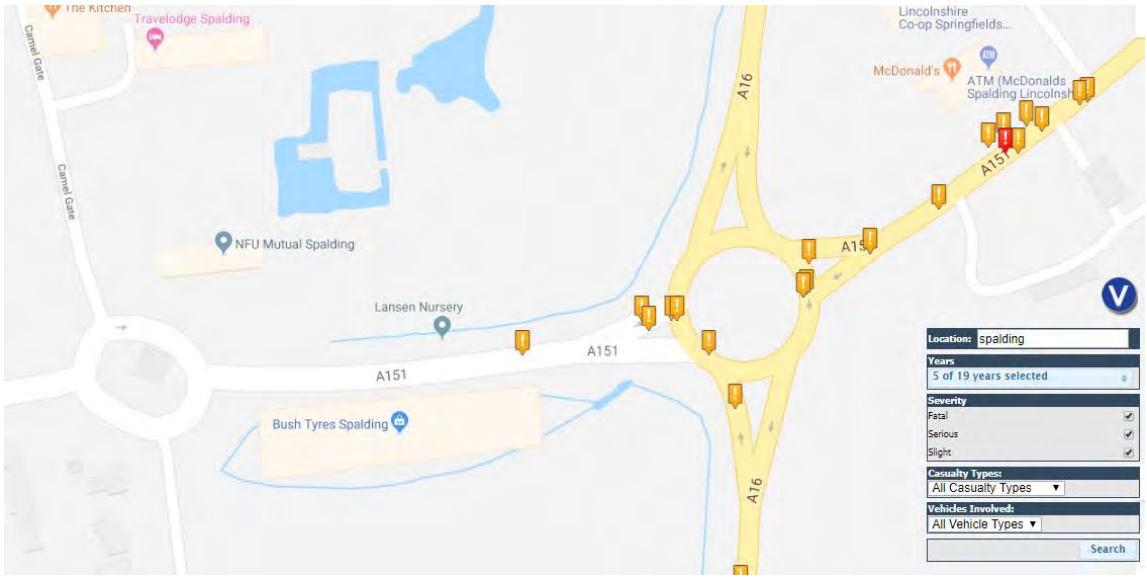


Figure 3.2. Locally Reported Road Accidents

Accessibility Credentials

3.1.14 Owing to the site's strategic location adjacent to major highway links, in addition to the nature of its proposed use to accommodate a drive-through facility, it is anticipated that the vast majority of trips to the site would be made by car.

3.1.15 Typical journeys to the site would, however, represent 'pass-by' trips whereby visitors would stop at the site as part of an existing pre-determined trip on the adjacent highway network along the A151 or A16, for example. Data analysed within Section 4 of this report indicates that 70-72% of KFC customers would represent 'pass-by' trade. These trips would therefore not necessarily comprise additional new trips on the local highway network, but would instead form part of an onward journey via these routes.

3.1.16 Notwithstanding the above, there are opportunities for visitors, and particularly staff of the site, to travel via sustainable transport modes. The remainder of this section establishes the potential to make journeys to / from the site by public transport or active modes of transport (i.e. walking and cycling).

Walking and Cycling

3.1.17 A footway is provided along the western side of Fulney Lane North which continues onto both sides and in both directions along the A151 Holbeach Road to the east and west. A footway would also be provided along the southern side of the site's shared access road, affording a pedestrian link between the site and Fulney Lane North.

3.1.18 Pedestrian crossing points with dropped kerbs, tactile paving and central refuges are provided across the A151 at its arms of the roundabout junction with Fulney Lane North. There are further high quality crossing points provided along the A151 towards Spalding.

3.1.19 The footways provided along the A151 continue into the residential area of Fulney, affording safe and convenient pedestrian routes for some staff making commuting routes who are likely to reside in such locations. Additionally, these footways provide a route towards the local bus stops and town centre.

3.1.20 There is a public bridleway located between the site's eastern boundary and the A16 which would not be impacted as a result of the site's development. This bridleway is accessed via the footway on the A16 to the south of its junction with the A151 and would be retained post-development.

3.1.21 The local area is conductive to cycling with a number of dedicated cycle routes available in close proximity to the site. There footways along the A151 are allocated as shared cycleways which are signposted at regular intervals.

3.1.22 Sections of the A151 provide marked cycle lanes, including in the vicinity of the site, enabling a safe route across the Coronation Channel. These cycle lanes continue along Queens Road to the southwest, affording excellent accessibility to the site from the residential area of Fulney.

Public Transport

3.1.23 There are opportunities for future staff of the site to make commuting journeys via local bus services. The nearest bus stops to the site are located approximately 400m (a 5 minute walk) to the west of the site on the A151, as shown on Figure 3.1 above.

3.1.24 Route number 505 calls at these stops and provides services between Spalding and Kings Lynn / Sutton Bridge with approximately 1 departure every 10-30 minutes in each direction. Full timetable information is provided at the bus stops on the A151.

3.1.25 Spalding rail station is located approximately 2.5km to the southwest and is accessible via a 10 minute cycle journey, a 6 minute drive or the local bus services. Onward rail services towards Peterborough and Lincoln are available and may be utilised by some staff making commuting trips from a further distance, or by customers making onward journeys via these rail services, albeit it is recognised this would be an infrequent occurrence.

Summary

3.1.26 As a result of the proposed drive-thru operation of the site, it is anticipated that the vast majority of trips would be made by car. However, there are realistic opportunities for future staff at the site to make regular journeys via sustainable modes of transport. It is important to note that customer trips made to the site would almost entirely represent pass-by trade associated with existing car journeys made on the adjacent highway network, as considered further within the following section of this report.

4 PROPOSED TRIP GENERATION

4.1.1 The proposed development would comprise a KFC drive-through outlet with associated car parking facilities, providing a total of 42 spaces (inclusive of the reserved disabled and staff parking bays). Access to the site would be provided via the existing access road from Fulney Lane North.

4.1.2 In order to establish the impact of the development proposals RGP have undertaken a trip generation assessment using survey data from a comparable KFC site.

4.2 KFC Drive-Thru

4.2.1 The TRICS database is considered to be the standard industry tool for calculating trip rates and the subsequent trip generation for new developments using comparable survey data. Although TRICS contains some surveyed sites of drive-through land uses, including fast food chain brands such as McDonald's and Burger King, there are none relating specifically to the KFC brand.

4.2.2 As part of RGP's involvement with similar KFC developments, brand-specific detailed survey data has been obtained and is considered appropriate to best represent the proposed operation of the drive-through at Spalding. This data was gathered by an independent survey company making detailed observations of the KFC drive-through at Hazel Grove, Stockport. These observations were recorded between the hours of 07:00 and 23:00 on Thursday 12th May 2016.

4.2.3 The KFC site at Stockport is comparable to the proposed operation at Spalding, being located in close proximity and accessed via major highway links including the A5 London Road and the A523 Macclesfield Road. The Stockport outlet contains 36 car parking spaces, which is comparable to the 42 spaces allocated to the proposed Spalding site. Additionally, the Stockport site is similarly located in a suburban area with a range of residential and commercial areas nearby. This data is therefore considered to be representative of the proposed drive-through unit.

4.2.4 The survey outlined above recorded all vehicle movements at the site, including the duration of customers' stay and whether they stopped within the on-site car park or departed the site following the collection of their food order (information which is not available on the TRICS database). The survey also identified all pedestrian movements at the KFC outlet. The full survey results are attached at Appendix C.

4.2.5 Based on this data, Figure 4.1, below, provides a summary of the survey results, giving consideration to the conventional AM (08:00-09:00) and PM (17:00-18:00) peak hours as well as the total daily traffic (07:00-23:00).

	TRAFFIC GENERATION		
	Arrivals	Departures	Two-Way
AM Peak	1	1	2
PM Peak	34	34	68
Daily	357	357	714

Figure 4.1. Proposed Trip Generation (KFC Drive-Through)

4.2.6 As summarised above, the KFC branded drive-through would likely generate in the region 2 two-way vehicle movements during the AM peak hour. These trips would likely be generated by staff arrivals at the site, as KFC drive-throughs do not typically open until 10:30 hours and do not offer breakfast menus to customers.

4.2.7 In terms of the PM peak hour, it is anticipated that in the region of 68 two-way vehicle trips would be generated by the KFC, representing the 'worst-case scenario', comprising 34 arrivals and departures between 17:00 and 18:00 hours.

4.2.8 Over the course of a typical operational weekday (between the hours of 07:00 and 23:00), a total of 714 two-way vehicle trips is anticipated to be generated by the KFC drive-through.

4.2.9 To provide a more detailed illustration of the number of two-way vehicle movements generated throughout a typical weekday, Figure 4.2, below, presents the daily profile of traffic experienced at the comparable Stockport KFC operation.

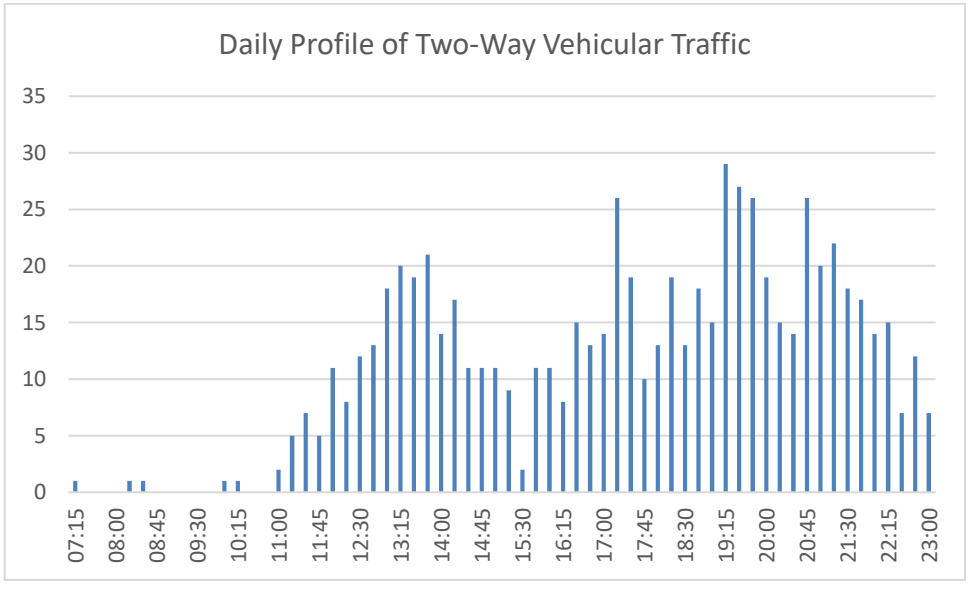


Figure 4.2. Daily Profile of Trips Generated by KFC

4.2.10 As illustrated above, the actual peak in trips generated by the KFC would occur at approximately 19:15 hours, which would not coincide with the conventional highway peak hour. It is also evident that the site would generate a smaller peak in vehicle trips over the lunchtime period, which also would not occur simultaneously with the conventional highway peak hour periods.

4.2.11 There is little research on the likely pass-by proportion associated with fast-food type restaurants however the updated TRICS research report 'Pass-by & Diverted Trips' (December 2014) considers the pass-by traffic associated with large and small scale food retail. It is suggested that small convenience retail stores have the potential to generate approximately 72% pass-by, which is considered a reasonable basis for establishing the likely pass-by associated with the KFC proposals. This is particularly relevant owing to the site's location adjacent to the strategic highway network.

4.2.12 The proposed pass-by proportion is also evidenced within KFC's "Good Neighbour Guide" which states that 'analysis shows that 70% of visits to KFC restaurants are linked trips where families are visiting nearby shops, leisure facilities or returning from employment" (see attached extract at Appendix D).

4.2.13 In order to establish the proportion of primary trips to the KFC (i.e. discounting all projected pass-by trips), the 70% of trips to KFC restaurants which have been identified as linked trips have been deducted from the trip generation assessment, as summarised in the below table.

	TRAFFIC GENERATION		
	Arrivals	Departures	Two-Way
AM Peak	1	1	2
PM Peak	10	10	20
Daily	107	107	214

Figure 4.3. KFC 'Primary' Vehicle Trips

4.2.14 As outlined above, the total proportion of trips to the KFC would be significantly reduced if considering the number of primary trips generated in isolation. A total of 20 two-way vehicle trips over the PM peak hour would be expected as a worst-case and a daily total of 214 two-way primary vehicle trips is anticipated.

4.2.15 The number of primary trips to the site, as detailed above, would have a negligible impact on the local highway network, including the functioning of the A151 junctions with Fulney Lane North and the A16. The existing access road and Fulney Lane North are both lightly trafficked, servicing a small number of industrial units which are not anticipated to generate a high frequency of vehicle trips via the A151 roundabout junction. The anticipated 20 two-way vehicle movements generated by the proposals during the PM peak hour period represent approximately 1 additional two-way movement every 3 minutes, on average, which would be comfortably accommodated by the existing access arrangements via the A151.

5 TRIP GENERATION IMPACT

5.1 Methodology and Scope of Junction Modelling

5.1.1 In order to establish the potential impact of the proposals on the local highway capacity, junction modelling has been undertaken as per the scope outlined in RGP's pre-application discussions with Lincolnshire County Council (Appendix B), using JUNCTIONS8 modelling software.

5.1.2 The baseline conditions were established through independent traffic surveys undertaken on Thursday 4th and Saturday 6th October 2018. The surveys recorded all turning movements at the A151 / Fulney Lane North roundabout junction over the following periods:

(i) Thursday AM – 07:00 to 10:00 (observed peak hour was 08:30-09:30);

(ii) Thursday PM – 16:00 to 19:00 (observed peak hour was 16:45-17:45);

(iii) Saturday – 11:00 to 17:00 (observed peak hour was 14:00-15:00);

5.1.3 These periods are considered to represent the peak hours of operation for the surrounding highway network and therefore provide a robust assessment period. The full survey results are attached hereto at Appendix E.

5.1.4 The following three scenarios were subsequently modelled using the above data for each of the identified peak periods:

(i) Baseline – Existing observed flows;

(ii) Proposed – Existing flows with KFC development flows added;

(iii) Proposed 2023 – Flows factored to the year 2023 based on TEMRPO growth factor for the area;

5.1.5 The TEMPRO growth rates from 2018 to 2023 are identified as follows:

(i) South Holland (Urban, Principal): AM growth factor – 1.0630

(ii) South Holland (Urban, Principal): PM growth factor – 1.0618

(iii) South Holland (Urban, Principal): Saturday growth factor – 1.0664;

5.1.6 The proposed turning movements for the KFC traffic was derived based on the observed existing turning movements from the traffic survey for that period (i.e. during the weekday PM peak hour 40% of vehicles were observed to arrive from the eastern arm, which has also been applied to KFC traffic when arriving in the PM peak).

5.1.7 For robustness, despite approximately 70% of vehicles representing 'pass-by' traffic, all vehicles accessing the KFC are included in the junction capacity assessment, since they would predominantly represent new turning movements at the roundabout.

5.2 Capacity Assessment Results

5.2.1 RGP's full junction modelling results are attached hereto at Appendix F, whilst Figure 5.2, below, provides a summary of the key outputs. The summary information includes the maximum queue lengths, delay (in seconds), Ratio of Flow to Capacity (RFC) and Level of Service (LOS) for each scenario.

Summary of Junction Performance					
Scenario	Period	Queue (PCU)	Delay (s)	RFC	LOS
Baseline Junction Performance	AM Peak	0.81	4.56	0.44	A
	PM Peak	0.80	5.03	0.44	A
	Saturday Peak	1.30	5.88	0.56	A
Baseline + KFC Development	AM Peak	0.81	4.57	0.44	A
	PM Peak	0.85	5.21	0.45	A
	Saturday Peak	1.39	6.17	0.58	A
2023 with KFC Development	AM Peak	0.91	4.82	0.47	A
	PM Peak	0.96	5.50	0.48	A
	Saturday Peak	1.64	6.84	0.62	A

Figure 5.1. A151 / Fulney Lane North: Roundabout Junction Performance

5.2.2 As summarised above, the existing junction is observed to operate well within capacity at all times. Following the proposed development, the junction would continue to operate well within capacity during the current and future year scenarios.

5.2.3 Under the proposed future scenario, with the KFC development, the peak RFC would be 0.62 (well below the typically accepted threshold of 0.85). There would be a maximum delay of less than 7 seconds and maximum queue lengths of up to 2 vehicles. The level of service would be classed as 'A' in all scenarios, which represents the highest achievable level of service. The proposals would therefore not impact detrimentally on the capacity of the roundabout junction.

5.2.4 As part of the surveys, arrivals and departures through the site access road were also recorded. These identified that flows through the access road are currently low, with 15 two-way vehicle movements during the AM peak hours, 8 two-way vehicle movements during the PM peak hour and 6 two-way vehicle movements during the Saturday peak. This priority junction would therefore operate well, with no capacity problems anticipated.

5.2.5 Overall the proposals would have no material impact on the operation of the surrounding highway network.

6 PARKING ARRANGEMENTS

6.1 Overview

6.1.1 As part of the proposed development, a total of 42 car parking spaces would be made available, including the provision of 2 dedicated disabled parking bays, 9 spaces reserved for the use of staff and 2 spaces marked as 'grill bays'.

6.2 Parking Policy and Standards

6.2.1 The relevant local parking policy is contained within Appendix 2 of the *South Holland Local Plan*, adopted by SHDC in 2016. However, parking standards outlined within the saved policies of the Council's current adopted local plan do not define the parking requirements specifically in relation to the development of drive-through restaurants.

6.2.2 Notwithstanding the above, RGP has reviewed the parking standards pertaining to new restaurant developments. These standards are summarised as follows:

Land Use	Maximum Standard
Restaurants / Cafes / Public Houses / Licensed Clubs	1 space per 3sqm public drinking area + 1 space per 5sqm public dining area

Figure 6.1. Summary of SHDC Parking Standards for Restaurant Uses

6.2.3 As outlined above, new restaurant developments are permitted to provide up to a maximum of 1 car parking space per 5 sqm of public dining area. However, this is not considered to provide an appropriate guideline for drive-through uses.

6.2.4 In addition to the SHDC parking standards defined above, RGP has examined the emerging policy contained within the draft issue of the South East Lincolnshire Local Plan (2017). The parking standards contained in this document do not provide specific reference to new drive-thru developments, but states that for all developments not listed within the updated parking standards table will be assessed on a site-by-site basis.

6.2.5 Unlike typical restaurants, many customers at drive-through outlets would order from such establishments with the intention to consume food and beverage away from the site, whilst driving or within their parked vehicle, rather than choosing to dine within the restaurant itself. Customers would therefore not require dedicated table service and as such, would have a shorter duration of stay, thus the 'turnover' of customers utilising the car park would be far greater. The following section of this report assesses the likely operation of the car park proposed for the drive-through outlet on-site.

6.2.6 The following assessment therefore assesses and evaluates the likely operation of the proposed car park and the parking demand associated with the proposals in order to determine an appropriate level of car parking, with consideration of the aspirations of Policy 31 of the emerging Local Plan in respect to parking.

6.3 Parking Demand

6.3.1 The following assessment has been carried out to establish the likely level of parking required to accommodate the demand generate by the proposals, to avoid overspill of parked vehicles onto the access road or to result with an overprovision of parking which would undermine transport policy aims for a sustainable approach.

6.3.2 This assessment also takes into the context that the KFC drive-through would contain a small degree of internal and external customer seating, whilst some customers would choose to park briefly to consume products within their cars.

6.3.3 The detailed survey data used to establish the KFC operation from a trip generation perspective, as detailed within Section 4 of this report, has again been used in this assessment to determine the parking demand generated post-development.

6.3.4 As derived from the operator-specific survey data (attached at Appendix C), the KFC drive-through would generate a peak demand for 20 car parking spaces, at approximately 12:30 hours. It is also noted that an evening peak in demand for 16 car parking spaces would be generated at approximately 20:00 hours.

6.3.5 It is therefore considered that the 31 guest spaces, 2 grill spaces and 9 staff spaces would comfortably accommodate all parking demand generated by the KFC outlet, even during peak periods associated with the site's proposed operation. Additionally, spare capacity would be retained on-site for periods of particularly high demand generated by the site.

6.3.6 It is not anticipated that there would be a risk of unauthorised parking, or 'parking abuse', associated with other local land. However, if this was observed to occur at the site, the operators would be likely to introduce a range of relevant parking management measures.

6.4 Cycle Parking

6.4.1 There are no minimum cycle parking standards defined for drive-through outlets in local policy, however, given the nature of the site's proposed operation and its location adjacent to major highway links such as the A16, it is anticipated that cycle parking for staff use only would necessary and appropriate to provide on-site.

6.4.2 As such, it is proposed that 4 dedicated cycle parking spaces would be provided on-site, in close proximity to the entrance to the KFC. These cycle parking spaces would be secure and well-lit, located in an area benefitting from CCTV coverage.

6.4.3 It is also noted worthy of note that a reserved motorcycle parking space would be provided within the section of parking adjacent to the servicing bay.

7 ACCESS, DELIVERY AND SERVICING ARRANGEMENTS

7.1 Site Access

7.1.1 Access to the site would be provided via an existing private access road from Fulney Lane North and would be shared with the adjacent tyre fitting workshop located to the west of the site. Fulney Lane North comprises the southern arm of its roundabout junction with the A151 Holbeach Road. Fulney Lane North continues to the south of this junction, providing access to several industrial units.

7.1.2 The shared access road facilitates two-way vehicle movements, measuring approximately 8m in width along its entirety. Access into the site would be afforded from the southern side of this road via a priority junction, enabling both in and out movements.

7.1.3 9 reserved staff parking bays would be provided along the southern side of the shared access road and would be available for the exclusive use of staff at the site. These parking bays would not obstruct vehicle movements on the access road in either direction. Additionally, a footway would be provided along this section of the access road, facilitating pedestrian movement between the site and Fulney Lane North. A crossing point with dropped kerbs and tactile paving would be provided across the access to the adjacent industrial use.

7.1.4 As part of the operation of the drive-through outlet, a one-way circulatory route would be provided, containing the customer order and collection points prior to re-entering the site's car parking area. Priority junctions would also be provided within the site's internal access route, as illustrated on the proposed site layout (Appendix A).

7.1.5 Clear markings and signage would be provided in each section of the site to sufficiently indicate to customers and delivery vehicle drivers the required vehicle routes through the site, as well as the permitted parking arrangements.

7.1.6 Zebra crossing points would be provided on-site at key access points, including a pedestrian route into the KFC restaurant. Adequate footways would be provided along the site's main internal access road, facilitating safe and convenient pedestrian movement through the site.

7.2 Deliveries and Servicing

7.2.1 It is anticipated that all delivery vehicles required by the drive-through would make journeys to / from the A16, via the A151. The site is conveniently located in terms of delivery vehicle access from the wider strategic highway network. This section reviews and assesses the specific delivery and servicing arrangements associated with the proposed drive-through outlet.

7.2.2 The KFC would provide a dedicated servicing area on-site which would be reserved for the exclusive use of scheduled delivery vehicles. This facility would accommodate 7.5t box van delivery vehicle which would represent the maximum required size in order to adequately service the KFC.

7.2.3 In order to assess the required manoeuvring of delivery vehicles through the site and into the servicing area, RGP has undertaken a swept path assessment, as illustrated on Drawing 2018/4487/001, attached.

7.2.4 This drawing demonstrates that delivery vehicles would be able to conveniently navigate the site's internal access route towards the delivery bay. Delivery vehicles would reverse into the delivery bay from the car parking area, whereby sufficient space is afforded to safely conduct all associated delivery and servicing activity within the marked bay.

7.2.5 It should be noted that delivery vehicles would be scheduled to arrive on-site outside the KFC opening hours, in order to prevent any conflict over the use of the car park for deliveries and customers.

7.2.6 Following the completion of deliveries to the KFC outlet, delivery vehicles would safely egress the site in a forward gear back onto the shared access road towards Fulney Lane North.

7.2.7 All scheduled refuse collections would also be carried out within the servicing area detailed above. Refuse vehicles would follow the same procedure as delivery vehicles in terms of accessing / egressing the site. A swept path assessment demonstrating the use of the servicing bay by refuse vehicles in shown on Drawing 2018/4487/003, attached.

7.3 Delivery Frequencies

7.3.1 Typically, 3 deliveries per week are undertaken at KFC restaurants, however this is dependent on the performance of a particular site. As a maximum, up to 6 weekly deliveries are undertaken at particularly busy sites.

7.3.2 This is not considered to represent an intensive frequency and would have a minimal impact on the local highway network. Additionally, all deliveries would be scheduled outside of the conventional highway peak hour periods.

7.3.3 It should also be noted that deliveries would be managed so as to ensure only 1 vehicle is present at a given time. Based on the above assessments, it is therefore evident that all delivery and servicing activity could be suitably accommodated on-site.

7.4 Delivery Management Measures

7.4.1 It is important to apply a range of measures to ensure efficient and safe management of delivery and servicing vehicles to sites throughout the UK. To minimise the impact of deliveries, it is anticipated that principal suppliers contracted by KFC are signed up to Transport for London's Fleet Operator Recognition Scheme (FORS), which is also relevant to sites outside of London.

7.4.2 FORS is a voluntary industry-led membership scheme which aims to raise the standard of the fleet and freight industry by improving operators' performance with regards to safety, fuel efficiency, economical operation and vehicle emissions. It seeks to provide a quality and performance benchmark for the freight industry.

7.4.3 Delivery vehicles to the on-site uses would likely continue to other KFC branded sites locally, servicing a number of locations as part of a planned delivery route. Such journeys are carefully planned, making most efficient use of each delivery vehicle and minimising the number of journeys, distances required to travel and associated CO_2 emissions.

7.4.4 In addition, a delivery schedule will be prepared by the site management in order to ensure deliveries do not overlap and hence ensure only one delivery vehicle is present on-site at any given time.

7.4.5 The bin store has been designed to be lockable and has drainage points to keep the area clean and secure. All refuse collections would be undertaken privately by a contractor offering recycling collections. Staff would also be sufficiently informed about the recycling processes in place.

8 SUMMARY AND CONCLUSIONS

8.1.1 This Transport Statement has considered the transport planning implications associated with the proposed development at land adjacent to the A151 / A16 in Spalding.

8.1.2 Extensive survey information has been consulted to determine the existing and post-development operation of the site in terms of trip generation and parking demand. The results show that the trips generated by the site would not be detrimental to the current functioning of the local highway network and the parking provision, as proposed, would be sufficient to accommodate demand.

8.1.3 RGP make the following conclusions of this Transport Statement:

(i) The development proposals are consistent with national, regional and local planning policy;

(ii) The site is considered to be well located for customer and delivery vehicle access, being located close to major highway links, including the A151, A16 and A17. The site also benefits from nearby public transport and pedestrian infrastructure which would facilitate sustainable travel to the site by staff making regular commuting trips;

(iii) The proposals are anticipated to generate in the region of 2 two-way vehicle movements during the AM peak hour period, whilst approximately 68 two-way movements would be generated during the PM peak hour, representing a 'worst-case scenario'. A total of 714 daily two-way vehicle trips would be generated over the course of a typical operational weekday;

(iv) The vast majority of the above vehicle trips would comprise 'pass-by' trips, whereby customers to the drive-through outlet would arrive as part of a diverted trip from an existing pre-determined journey on the adjacent highway network. The number of 'primary' vehicle trips generated by the site would equate to approximately 20 two-way movements during the PM peak hour as a worst-case and 214 over the course of the day;

(v) The proposals would not impact materially on the capacity of the surrounding junctions, as demonstrated through the JUNCTIONS8 assessment;

(vi) The proposed on-site parking provision would be appropriate to cater for the anticipated demand and is in accordance with local parking policy;

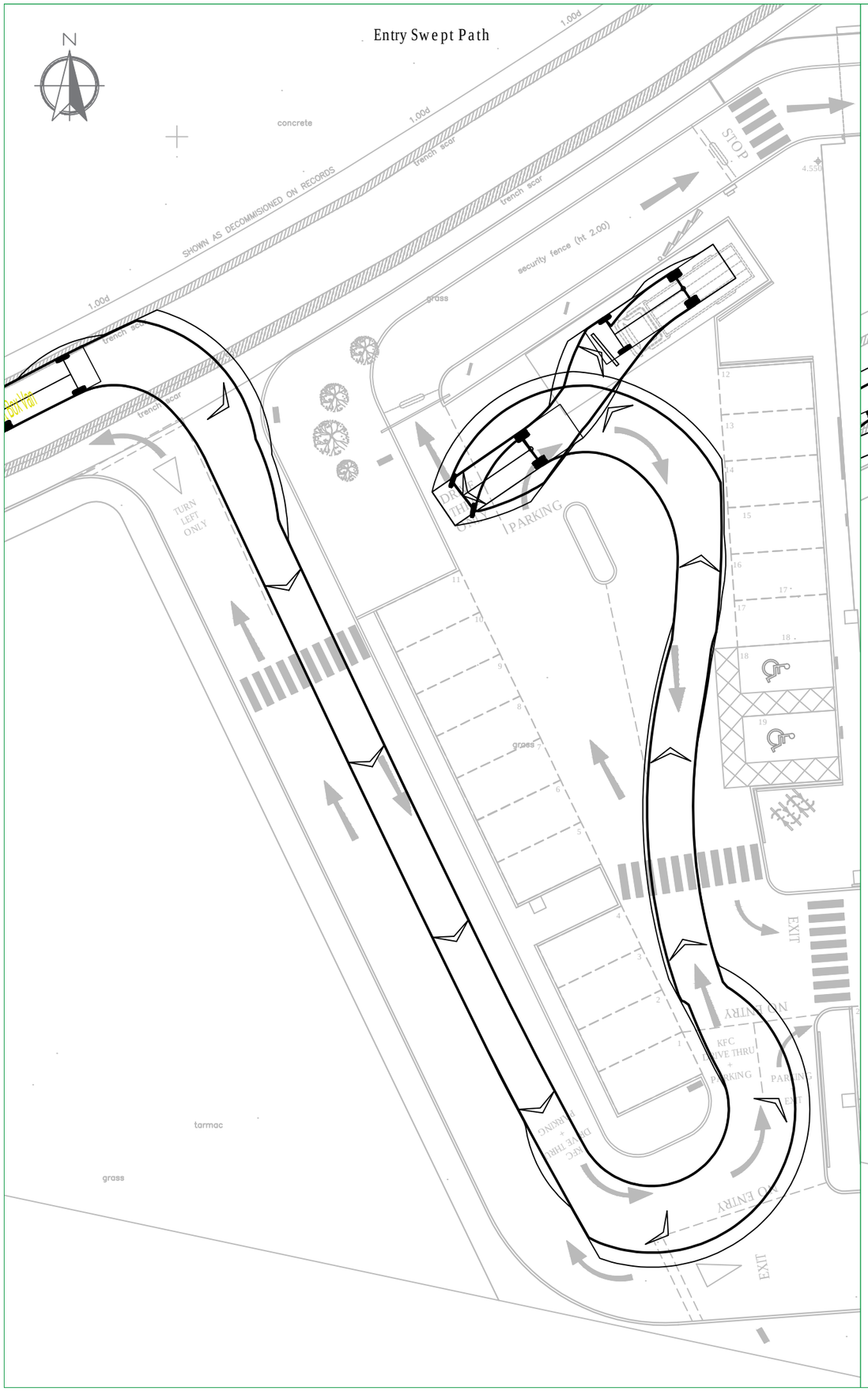
(vii) Vehicular access would be provided via a new priority junction with the existing access road at the site's northern boundary. Principal access to the site would be afforded from the A151 via its roundabout junction with Fulney Lane North;

(viii) All delivery and servicing activity would be accommodated on-site with sufficient turning space provided for the safe and convenient access and egress of delivery / refuse vehicles.

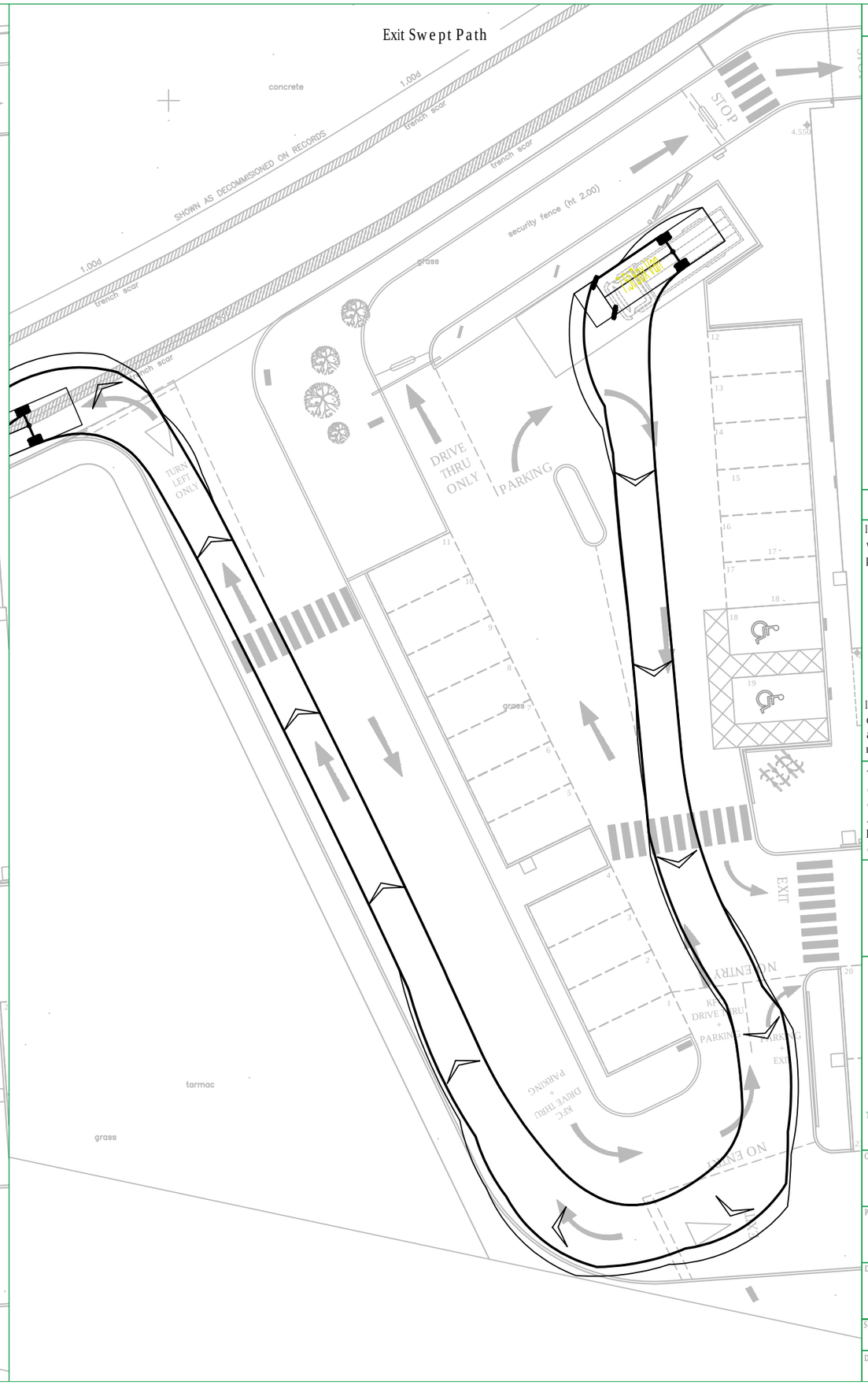
8.1.4 As a result of the data and evidence presented within this Transport Assessment, Lincolnshire County Council, as local highway authority, are respectfully requested to confirm that the proposals are satisfactory on highway grounds.

DRAWINGS

Entry Swept Path

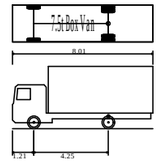


Exit Swept Path



A3

NOTES



7.5t Box Van	
Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

RESIDUAL HAZARDS

In addition to the hazards/risks normally associated with the type of work detailed on this drawing, please note the following residual hazards:

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved risk assessment and method statement.

This drawing has been prepared for the purposes of planning discussions and does not constitute a detailed design drawing, or Construction drawing. A Design Hazard Inventory has been prepared by RGP setting out the hazards which have been designed out. This is available upon request.

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Shackleford Suite, Mill Pool House, Mill Lane, Godalming, GU7 1EY
Tel: 01483 861681 Fax: 01483 861682 www.rgp.co.uk

Client
SME Group Plc

Project
Land at A151 & A6, Spalding

Drawing Title
KFC Delivery
Swept Path Analysis

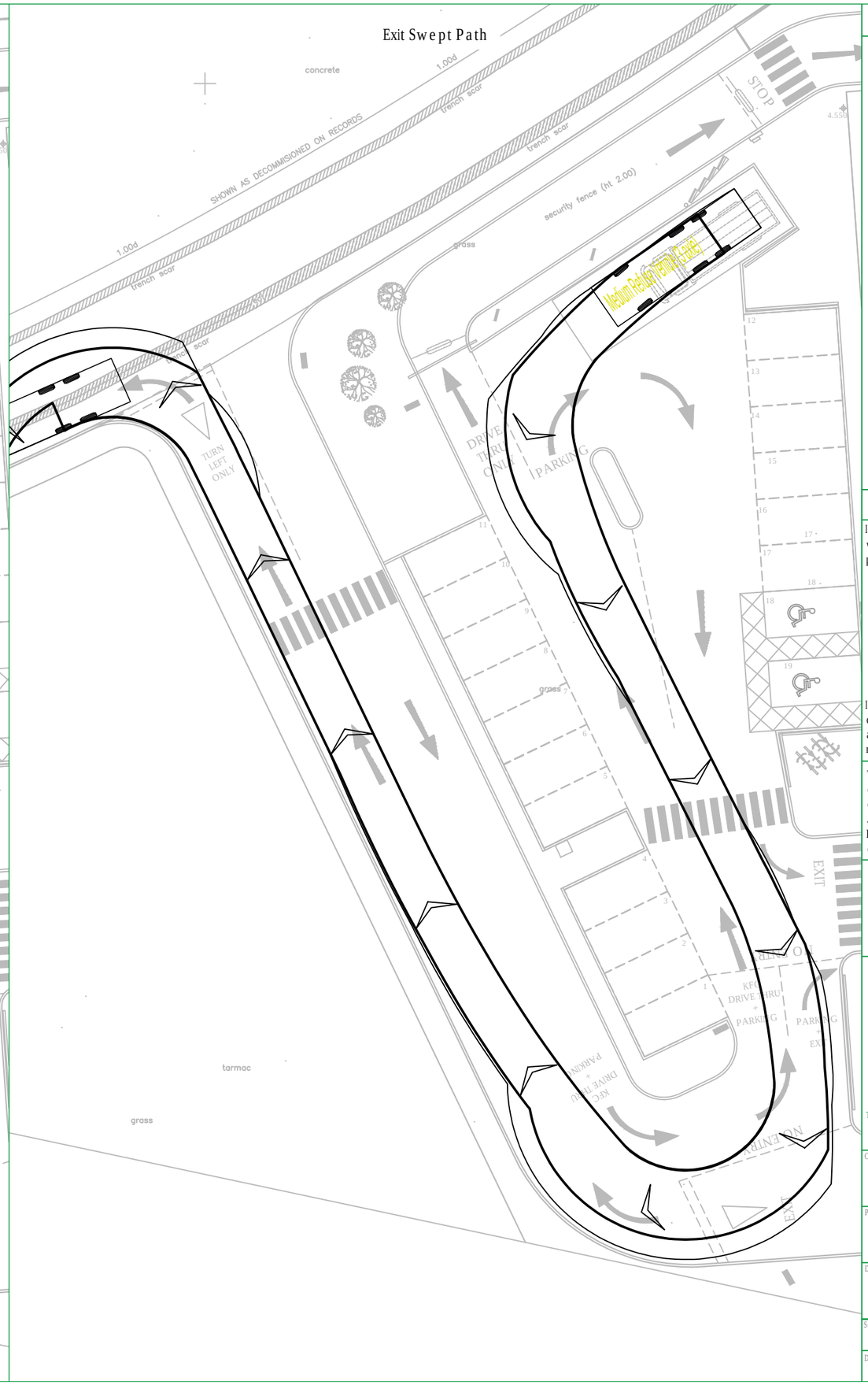
Scale	Drawn By	Checked By	Approved By
1:250	GSE	JDF	NDR

Date	Drawing No.	Rev.
October 2018	2018/4487/001	A

Entry Swept Path

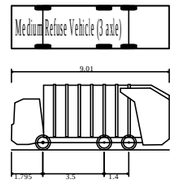


Exit Swept Path



A3

NOTES



Medium Refuse Vehicle (3 axle)	
Overall Length	9.010m
Overall Width	2.450m
Overall Body Height	3.742m
Min Body Ground Clearance	0.295m
Track Width	2.450m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	8.200m

RESIDUAL HAZARDS

In addition to the hazards/risks normally associated with the type of work detailed on this drawing, please note the following residual hazards:

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Client: SME Group Plc

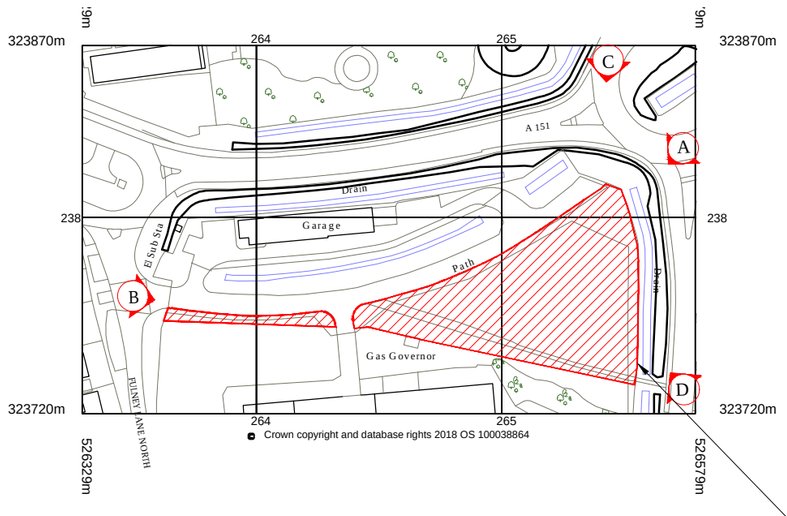
Project: Land at A151 & A6, Spalding

Drawing Title: KFC Refuse Swept Path Analysis

Scale	Drawn By	Checked By	Approved By
1:250	GSE	JDF	NDR

Date	Drawing No.	Rev.
October 2018	2018/4487/003	A

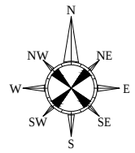
APPENDIX A



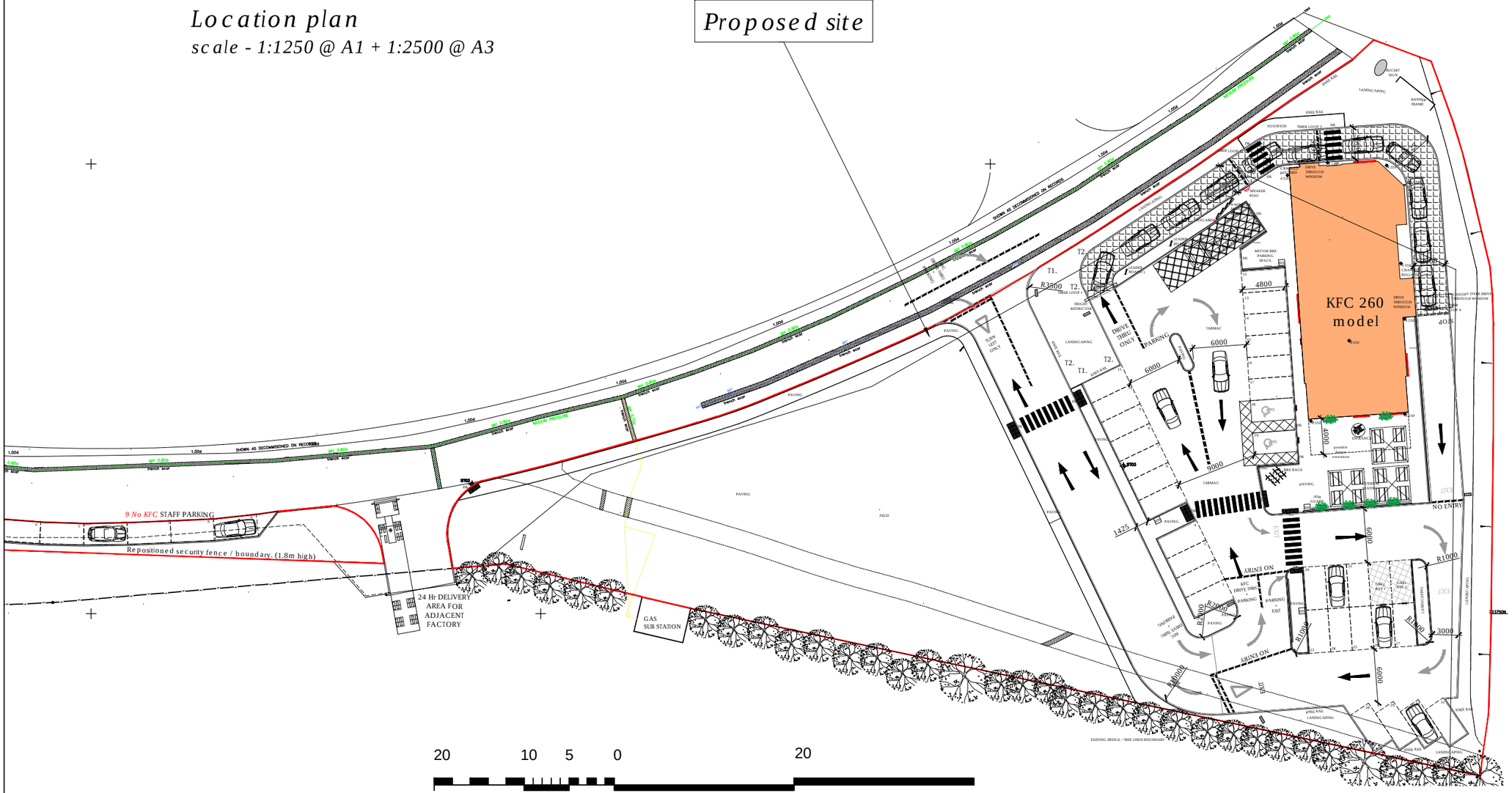
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Location plan

scale - 1:1250 @ A1 + 1:2500 @ A3



Proposed site



Site plan

scale - 1:250 @ A1 + 1:500 @ A3

FOR INFORMATION

SITE DESIGN SIGNOFF	
Name / Title	
SPM	
Signature	Date

ALL DIMENSIONS TO BE CHECKED ON SITE.

DO NOT SCALE FROM THIS DRAWING EXCEPT FOR THE PURPOSES OF LOCAL AUTHORITY PLANNING

rev	date	description
E	15.10.18	CAR PARKING NOTE UPDATED. DAO
D	8.10.18	SITE BOUNDARY UPDATED. DAO
C	1.10.18	UPDATED TO REFLECT COMMENTS FROM CLIENT AND LOCAL AUTHORITY. DAO
B	11.9.18	LAYOUT REVISED TO SHOW SINGLE LEVELS ROUND THE UNIT. DAO
A	6.9.18	LAYOUT REVISED TO SHOW SINGLE OUTLET SCHEME. DAO

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facsimile: +44 (0) 1784 247 300
website: www.therpagroup.com

NEW STORE

store address

LAND at A151/A16
SPALDING
PE12 6EP
LINCOLNSHIRE

drawing title

PROPOSED
Site location plan

drawn by	checked	date
N.O.	DAO	23.08.2018
store no.	scale	
-	as indicated @ A1	

drawing no.	revision
2005733-2018-G121	E

APPENDIX B

From: Jon Sharpe
To: Peter Batten
Subject: FW: Pre-Application Advice - Fulney Lane Spalding
Date: 26 September 2018 08:23:25
Attachments: image001.jpg
image002.png

Morning Peter.
I am advised by my Transportation colleague that your proposed scoping for this Transport Assessment is satisfactory.
He has added that we will need to agree your trip distribution methodology and you will need to provide an assessment in 2023 with traffic growth.
I am not sure if you are aware but the old line of Holbeach Road, from which your clients' proposed development would take its access, is not a Public Highway. The road having been Stopped-up under Side Road Orders when the A16 Spalding By-pass was built.
Regards,
Jon Sharpe
Principal Development Management Officer
LCC Directorate for Environment and Economy

From: Peter Batten [mailto:p.batten@rgp.co.uk]
Sent: 25 September 2018 16:18
To: DevelopmentManagement
Subject: RE: Pre-Application Advice - Fulney Lane Spalding

Dear Highways Development Management,

Please could you let me know when you may be able to review the below information and advise further?

I trust the below proposed scope of works is reasonable but if you could confirm that would be greatly appreciated.

If you have any queries then please let me know.

Many thanks,
Peter

Peter Batten
Senior Consultant

T. 020 7078 9662
E. p.batten@rgp.co.uk
W. www.rgp.co.uk

RGP

Transport Planning and Infrastructure Design Consultants

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From: DEV_PlanningEnquiries <DEV_PlanningEnquiries@lincolnshire.gov.uk>
Sent: 20 September 2018 10:23
To: DevelopmentManagement <DevelopmentManagement@lincolnshire.gov.uk>
Cc: Peter Batten <p.batten@rgp.co.uk>
Subject: Pre-Application Advice - Fulney Lane Spalding

Dear Highways Development Management,

Please see the enquiry from Mr Batten. The Minerals and Waste Planning Authority cannot progress.

Regards

Felicity Webber
Planning Officer
Planning
2nd Floor
Lancaster House
36 Orchard Street
Lincoln
LN1 1XX

Tel: 01522 782070

From: Peter Batten [mailto:p.batten@rgp.co.uk]
Sent: 20 September 2018 10:13
To: DEV_PlanningEnquiries
Subject: Pre-Application Advice - Fulney Lane Spalding

Dear sirs,

I am assisting a developer with a proposed drive-thru facility which they intend to submit a planning application for over the coming weeks. I've tried to call on a couple of occasions to discuss and gauge your feedback but haven't been able to get through to speak to the appropriate officer and hence have summarised the key points below. I would be very grateful for a return call to discuss the details and scope of the Transport Statement / Assessment further.

The scheme is for a development of either 1 or 2 drive-thru units (comprising 1 x fast food and possibly 1 x coffee unit) on land off Fulney Lane North in Spalding (a plot of land to the west of the A16 and south of the A151). Please see the following Google Maps link for the precise location: https://www.google.co.uk/maps/place/52%C2%B047'48.2%22N+0%C2%B007'29.6%22W/@52.79673,-0.1270797,418m/data=!3m2!1e3!4b1!4m6!3m5!1s0x0:0x0!7e2!8m2!3d52.7967302!4d-0.1248912). Access would be provided from the existing priority junction on to Fulney Lane North.

An initial trip generation assessment based on surveys of comparable sites indicates that the two drive-thru units (combined) are likely to attract approximately 100 two-way vehicle movements during each of the conventional AM and PM peak hours and 1,400 two-way vehicle movements over the course of a typical weekday. Although the vast majority of these will constitute 'pass-by' traffic already on the network, as opposed to new vehicle trips generation, these will largely represent new turning movements at the site access and the adjacent roundabout junction.

We are therefore proposing to undertake assessment of the priority junction on to Fulney Lane North and for the Fulney Lane North / A151 roundabout junction during the conventional weekday peak hours and a Saturday peak. To inform these, we propose to arrange for traffic flows to be recorded by way of detailed traffic surveys capturing all turning movements on a

neutral weekday between 07:00-10:00 and 16:00-19:00 and on a Saturday between 11.00-17:00. Please could you let me know whether you are agreeable with the proposed survey hours and extents of junction modelling?

As part of the planning application RGP are preparing a Transport Assessment which I anticipated will cover the following principal areas:

1. Policy – A review of the latest national, regional and local transport policy relevant to the proposals;
2. Local Highway Network and Accessibility Credentials – A review of the local highway network, including a review of accident data, and consideration of the current accessibility opportunities for the site;
3. Trip Generation Assessment – Utilising bespoke operator data and the TRICS database to understand the potential increase in vehicles trips associated with the proposed 2 no. drive thru facilities. This would need to cover both weekdays and weekends;
4. Junction Capacity Assessment – Junction modelling would be undertaken (using JUNCTIONS8 modelling software) for the priority junction onto Fulney Lane North and the adjacent roundabout junction to demonstrate there would not be a material impact on the capacity and performance of either.
5. Parking Provision – Review of parking provision relative to parking standards and the anticipated demand (derived through the bespoke data held); and
6. Access and Servicing – Consideration of access arrangements and servicing requirements, including vehicles sizes and frequencies, supported by vehicle swept path drawings to demonstrate sufficient space would be provided for access and manoeuvring.

I trust the above scope would be satisfactory but I would be grateful for you confirmation.

If you do have any queries or require clarification please feel free to get in touch.

I look forward to your response.

Kind regards,
Peter

Peter Batten
Senior Consultant

T. 020 7078 9662
E. p.batten@rgp.co.uk
W. www.rgp.co.uk

RGP

Transport Planning and Infrastructure Design Consultants

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APPENDIX C

KFC - HAZEL GROVE, STOCKPORT - MANCHESTER

THURSDAY 12TH MAY 2016

DINE IN			DRIVE THROUGH					OTHER			
TIME IN	TIME OUT	Duration	TIME IN	TIME OUT	DRIVE THRU	CAR PARK	Duration	TYPE	TIME IN	TIME OUT	DURATION
07:02	16:15	09:13	10:51	11:00	Yes	Yes	00:09	Car	08:17	18:22	10:05
08:13	08:23	00:10	11:01	11:03	Yes		00:02	Taxi	09:08	09:18	00:10
09:47	14:13	04:26	11:07	11:09	Yes		00:02	Taxi	09:12	09:21	00:09
10:02	14:09	04:07	11:19	11:21	Yes		00:02	Taxi	09:58	10:18	00:20
10:46	11:26	00:40	11:20	11:22	Yes		00:02	Taxi	10:01	13:47	03:46
11:06	11:11	00:05	11:40	11:41	Yes		00:01	Taxi	10:09	10:43	00:34
11:08	11:22	00:14	11:40	11:54	Yes	Yes	00:14	Taxi	10:28	10:36	00:08
11:42	11:58	00:16	11:47	12:21	Yes	Yes	00:34	Taxi	10:29	10:47	00:18
11:46	12:08	00:22	11:52	11:55	Yes		00:03	Taxi	10:35	10:53	00:18
11:51	12:04	00:13	11:53	12:05	Yes	Yes	00:12	Taxi	10:39	10:56	00:17
11:52	12:10	00:18	11:53	11:56	Yes		00:03	Taxi	10:43	10:54	00:11
12:08	12:40	00:32	11:57	12:00	Yes		00:03	Car	10:46	11:12	00:26
12:15	12:36	00:21	12:03	12:06	Yes		00:03	Taxi	10:47	11:08	00:21
12:18	12:36	00:18	12:20	12:24	Yes		00:04	Taxi	11:00	11:16	00:16
12:24	12:50	00:26	12:21	12:25	Yes		00:04	Taxi	11:10	11:21	00:11
12:24	13:37	01:13	12:28	12:38	Yes	Yes	00:10	Taxi	11:10	11:25	00:15
12:26	12:53	00:27	12:33	12:35	Yes		00:02	Taxi	11:14	11:17	00:03
12:28	12:34	00:06	12:39	13:17	Yes	Yes	00:38	Taxi	11:26	11:48	00:22
12:31	12:55	00:24	12:50	12:52	Yes		00:02	Taxi	11:24	11:40	00:16
12:36	12:43	00:07	12:50	13:08	Yes	Yes	00:18	Taxi	11:31	12:02	00:31
12:41	13:12	00:31	12:51	13:04	Yes	Yes	00:13	Taxi	11:33	11:46	00:13
12:47	13:18	00:31	12:52	12:57	Yes		00:05	Taxi	11:30	11:41	00:11
12:54	13:03	00:09	12:56	13:16	Yes	Yes	00:20	Taxi	11:44	11:59	00:15
13:03	13:34	00:31	12:56	13:02	Yes		00:06	Taxi	11:54	12:16	00:22
13:03	13:34	00:31	12:57	13:02	Yes		00:05	Van McD's	11:43	12:05	00:22
13:05	13:28	00:23	12:57	13:04	Yes		00:07	Car	12:05	12:51	00:46
13:08	13:10	00:02	12:58	13:20	Yes	Yes	00:22	Car	12:20	12:37	00:17
13:10	13:44	00:34	12:58	13:24	Yes	Yes	00:26	Car - McD's	12:28	12:50	00:22

APPENDIX D

sogood™

Good Neighbour Guide

Supporting Your Local Community





We make a positive impact on the communities where we work by making a substantial local investment in designing, constructing and maintaining a modern, efficient, clean and environmentally responsible restaurant. All our building contractors must be members of the Considerate Constructors Scheme, which is designed to ensure construction sites are thoughtful towards their neighbours.

Design

Each of our restaurants is designed and built to fit into the local area and meet local planning requirements:

- Our buildings are not a modular or pre-fabricated design and therefore we can have a flexible approach / design to meet local requirements and sensitivities
- Typically, the exterior appearance of our buildings can be altered to suit the local street scene identity

Traffic

We want our sites to be safe for our customers and staff so each site is designed and developed following a traffic assessment:

- In terms of traffic; KFC is at its busiest between 5pm - 7:30pm in the evening, which mirrors road peak hours
- Analysis shows that 70% of visits to KFC restaurants are 'linked trips' where families are visiting nearby shops, leisure facilities or returning from employment
- The size and layout of our car parks are designed to ensure that they are both safe and easy to use for the public and avoid any adverse impact on the highway network and our neighbours

Lighting

- We don't use neon lighting on our buildings and our car park lighting is designed at a level which minimises overspill whilst still providing a safe environment for security and safe movement for our customers



All our restaurants are regularly refurbished (every 5 years)



All our lighting levels are approved by the planning authority



Servicing

- The vast majority of our deliveries are scheduled outside of peak trading times
- We have reduced the number of deliveries to our restaurants, amalgamating some of our separate deliveries, typically meaning only 3 deliveries a week, all from one vehicle

Noise & Odours

We use innovative designs in our extraction systems to limit odour from our restaurants

- Most of our new restaurants hold their 'refuse' in a closed yard which are locked and emptied regularly
- Mechanical plant is generally located within a closed yard, where noise levels are designed within world health organisation guidelines
- Our extractors are turned off when our restaurants close, to minimise disturbance.

Safer communities

We work with local partners such as safer neighbourhood teams & other local businesses to develop joined up action plans

- Our restaurant teams are trained in conflict management to resolve issues
- We evaluate every site to understand local risks prior to design and put appropriate measures in place where required
- We work closely with the planning and police authorities and incorporate secure by design guidance



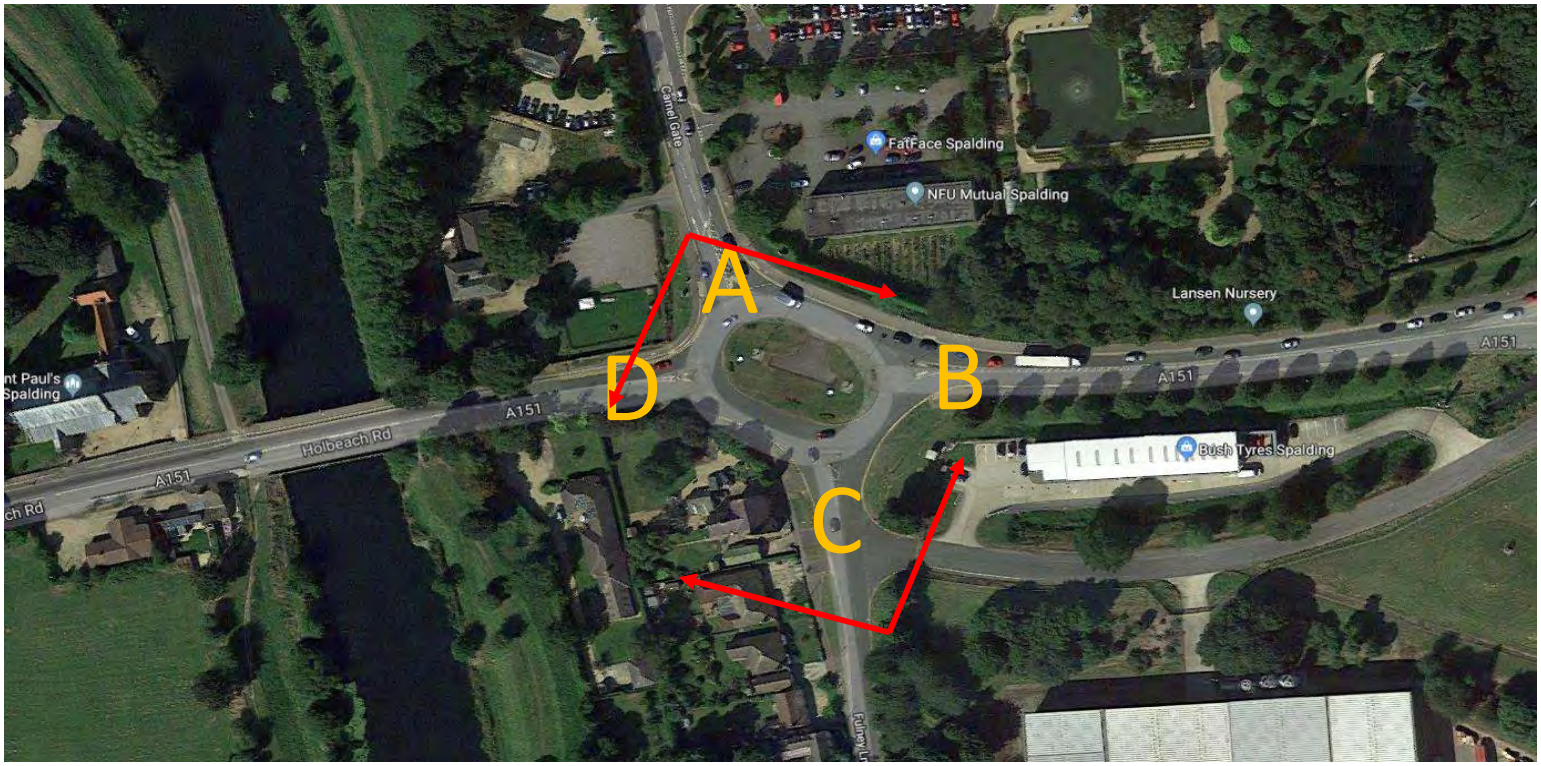
We install sound insulation and suppression systems when required

APPENDIX E

FULNEY LANE, SPALDING

MODAL

modaldata.com



FULNEY LANE, SPALDING

Thursday 4th Oct 2018

MODAL
modaldata.com

A

A-B

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	7	2	1			10
07:15	07:30	3	0	2			5
07:30	07:45	2	7	2			11
07:45	08:00	5	2	2			9
08:00	08:15	4	4	2			10
08:15	08:30	9	3	2			14
08:30	08:45	9	6	1			16
08:45	09:00	4	7	2			13
09:00	09:15	10	3	1			14
09:15	09:30	9	8	0			17
09:30	09:45	5	6	1			12
09:45	10:00	3	2	2			7
		70	50	18	0	0	138
HOUR TOTALS							
07:00	08:00	17	11	7	0	0	35
07:15	08:15	14	13	8	0	0	35
07:30	08:30	20	16	8	0	0	44
07:45	08:45	27	15	7	0	0	49
08:00	09:00	26	20	7	0	0	53
08:15	09:15	32	19	6	0	0	57
08:30	09:30	32	24	4	0	0	60
08:45	09:45	28	24	4	0	0	56
09:00	10:00	27	19	4	0	0	50

A-C

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	0	0	0			0
07:15	07:30	1	0	0			1
07:30	07:45	0	0	0			0
07:45	08:00	1	0	0			1
08:00	08:15	0	0	1			1
08:15	08:30	1	0	0			1
08:30	08:45	1	0	0			1
08:45	09:00	0	0	0			0
09:00	09:15	0	0	0			0
09:15	09:30	0	0	0			0
09:30	09:45	0	0	0			0
09:45	10:00	1	0	0			1
		5	0	1	0	0	6
HOUR TOTALS							
07:00	08:00	2	0	0	0	0	2
07:15	08:15	2	0	1	0	0	3
07:30	08:30	2	0	1	0	0	3
07:45	08:45	3	0	1	0	0	4
08:00	09:00	2	0	1	0	0	3
08:15	09:15	2	0	0	0	0	2
08:30	09:30	1	0	0	0	0	1
08:45	09:45	0	0	0	0	0	0
09:00	10:00	1	0	0	0	0	1

A-D

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	2	1	1			4
07:15	07:30	0	0	0			0
07:30	07:45	1	1	0			2
07:45	08:00	3	2	0			5
08:00	08:15	3	1	0			4
08:15	08:30	5	1	0			6
08:30	08:45	3	3	0			6
08:45	09:00	6	1	0			7
09:00	09:15	16	3	0			19
09:15	09:30	3	1	0			4
09:30	09:45	2	1	0			3
09:45	10:00	2	1	0			3
		46	16	1	0	0	63
HOUR TOTALS							
07:00	08:00	6	4	1	0	0	11
07:15	08:15	7	4	0	0	0	11
07:30	08:30	12	5	0	0	0	17
07:45	08:45	14	7	0	0	0	21
08:00	09:00	17	6	0	0	0	23
08:15	09:15	30	8	0	0	0	38
08:30	09:30	28	8	0	0	0	36
08:45	09:45	27	6	0	0	0	33
09:00	10:00	23	6	0	0	0	29

A-A

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	0	0	0			0
07:15	07:30	0	0	0			0
07:30	07:45	0	0	0			0
07:45	08:00	0	0	0			0
08:00	08:15	0	0	0			0
08:15	08:30	0	0	0			0
08:30	08:45	0	0	0			0
08:45	09:00	0	0	0			0
09:00	09:15	0	0	0			0
09:15	09:30	0	0	0			0
09:30	09:45	0	0	0			0
09:45	10:00	0	0	0			0
		0	0	0	0	0	0
HOUR TOTALS							
07:00	08:00	0	0	0	0	0	0
07:15	08:15	0	0	0	0	0	0
07:30	08:30	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0

B

B - C

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	7	0	2			9
07:15	07:30	14	1	2			17
07:30	07:45	15	2	1			18
07:45	08:00	24	0	1			25
08:00	08:15	27	2	3			32
08:15	08:30	20	1	3			24
08:30	08:45	11	7	1			19
08:45	09:00	13	4	1			18
09:00	09:15	4	3	2			9
09:15	09:30	4	1	3			8
09:30	09:45	4	3	1			8
09:45	10:00	6	1	2			9
		149	25	22	0	0	196
HOUR TOTALS							
07:00	08:00	60	3	6	0	0	69
07:15	08:15	80	5	7	0	0	92
07:30	08:30	86	5	8	0	0	99
07:45	08:45	82	10	8	0	0	100
08:00	09:00	71	14	8	0	0	93
08:15	09:15	48	15	7	0	0	70
08:30	09:30	32	15	7	0	0	54
08:45	09:45	25	11	7	0	0	43
09:00	10:00	18	8	8	0	0	34

B - D

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	22	3	0			25
07:15	07:30	46	10	1			57
07:30	07:45	49	14	2			65
07:45	08:00	70	13	0			83
08:00	08:15	75	18	3			96
08:15	08:30	94	10	0			104
08:30	08:45	82	18	0			100
08:45	09:00	100	11	0			111
09:00	09:15	89	16	0			105
09:15	09:30	69	12	0			81
09:30	09:45	59	9	1			69
09:45	10:00	80	8	0			88
		835	142	7	0	0	984
HOUR TOTALS							
07:00	08:00	187	40	3	0	0	230
07:15	08:15	240	55	6	0	0	301
07:30	08:30	288	55	5	0	0	348
07:45	08:45	321	59	3	0	0	383
08:00	09:00	351	57	3	0	0	411
08:15	09:15	365	55	0	0	0	420
08:30	09:30	340	57	0	0	0	397
08:45	09:45	317	48	1	0	0	366
09:00	10:00	297	45	1	0	0	343

B - A

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	6	3	0			9
07:15	07:30	14	4	2			20
07:30	07:45	14	5	2			21
07:45	08:00	26	6	0			32
08:00	08:15	10	9	3			22
08:15	08:30	17	5	1			23
08:30	08:45	20	4	1			25
08:45	09:00	21	3	0			24
09:00	09:15	39	6	2			47
09:15	09:30	25	5	3			33
09:30	09:45	26	2	3			31
09:45	10:00	39	3	0			42
		257	55	17	0	0	329
HOUR TOTALS							
07:00	08:00	60	18	4	0	0	82
07:15	08:15	64	24	7	0	0	95
07:30	08:30	67	25	6	0	0	98
07:45	08:45	73	24	5	0	0	102
08:00	09:00	68	21	5	0	0	94
08:15	09:15	97	18	4	0	0	119
08:30	09:30	105	18	6	0	0	129
08:45	09:45	111	16	8	0	0	135
09:00	10:00	129	16	8	0	0	153

B - B

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	0	0	0			0
07:15	07:30	0	0	0			0
07:30	07:45	1	0	0			1
07:45	08:00	1	0	0			1
08:00	08:15	0	0	0			0
08:15	08:30	0	0	0			0
08:30	08:45	1	0	0			1
08:45	09:00	0	0	0			0
09:00	09:15	1	0	0			1
09:15	09:30	1	0	0			1
09:30	09:45	0	0	0			0
09:45	10:00	1	0	0			1
		6	0	0	0	0	6
HOUR TOTALS							
07:00	08:00	2	0	0	0	0	2
07:15	08:15	2	0	0	0	0	2
07:30	08:30	2	0	0	0	0	2
07:45	08:45	3	0	0	0	0	3
08:00	09:00	2	0	0	0	0	2
08:15	09:15	3	0	0	0	0	3
08:30	09:30	2	0	0	0	0	2
08:45	09:45	2	0	0	0	0	2
09:00	10:00	3	0	0	0	0	3

C

C - D

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	3	0	1			4
07:15	07:30	0	0	0			0
07:30	07:45	1	1	0			2
07:45	08:00	1	0	0			1
08:00	08:15	3	0	0			3
08:15	08:30	2	1	0			3
08:30	08:45	3	0	0			3
08:45	09:00	1	0	0			1
09:00	09:15	1	0	0			1
09:15	09:30	4	0	0			4
09:30	09:45	0	2	0			2
09:45	10:00	3	0	0			3
		22	4	1	0	0	27
HOUR TOTALS							
07:00	08:00	5	1	1	0	0	7
07:15	08:15	5	1	0	0	0	6
07:30	08:30	7	2	0	0	0	9
07:45	08:45	9	1	0	0	0	10
08:00	09:00	9	1	0	0	0	10
08:15	09:15	7	1	0	0	0	8
08:30	09:30	9	0	0	0	0	9
08:45	09:45	6	2	0	0	0	8
09:00	10:00	8	2	0	0	0	10

C - A

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	1	0	0			1
07:15	07:30	0	0	0			0
07:30	07:45	0	0	0			0
07:45	08:00	0	0	0			0
08:00	08:15	0	0	0			0
08:15	08:30	0	0	0			0
08:30	08:45	0	1	0			1
08:45	09:00	0	0	0			0
09:00	09:15	0	0	1			1
09:15	09:30	1	1	1			3
09:30	09:45	0	0	0			0
09:45	10:00	1	2	0			3
		3	4	2	0	0	9
HOUR TOTALS							
07:00	08:00	1	0	0	0	0	1
07:15	08:15	0	0	0	0	0	0
07:30	08:30	0	0	0	0	0	0
07:45	08:45	0	1	0	0	0	1
08:00	09:00	0	1	0	0	0	1
08:15	09:15	0	1	1	0	0	2
08:30	09:30	1	1	2	0	0	4
08:45	09:45	1	1	2	0	0	4
09:00	10:00	2	3	2	0	0	7

C - B

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	2	0	2			4
07:15	07:30	1	0	1			2
07:30	07:45	2	1	1			4
07:45	08:00	3	1	0			4
08:00	08:15	0	0	1			1
08:15	08:30	3	0	0			3
08:30	08:45	2	2	7			11
08:45	09:00	2	0	2			4
09:00	09:15	1	2	2			5
09:15	09:30	3	2	3			8
09:30	09:45	1	3	2			6
09:45	10:00	0	1	0			1
		20	12	21	0	0	53
HOUR TOTALS							
07:00	08:00	8	2	4	0	0	14
07:15	08:15	6	2	3	0	0	11
07:30	08:30	8	2	2	0	0	12
07:45	08:45	8	3	8	0	0	19
08:00	09:00	7	2	10	0	0	19
08:15	09:15	8	4	11	0	0	23
08:30	09:30	8	6	14	0	0	28
08:45	09:45	7	7	9	0	0	23
09:00	10:00	5	8	7	0	0	20

C - C

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	0	0	0			0
07:15	07:30	0	0	0			0
07:30	07:45	0	0	0			0
07:45	08:00	0	0	0			0
08:00	08:15	1	0	0			1
08:15	08:30	0	0	0			0
08:30	08:45	0	0	0			0
08:45	09:00	0	0	0			0
09:00	09:15	0	0	0			0
09:15	09:30	0	0	0			0
09:30	09:45	0	0	0			0
09:45	10:00	1	0	0			1
		1	0	0	0	0	1
HOUR TOTALS							
07:00	08:00	1	0	0	0	0	1
07:15	08:15	1	0	0	0	0	1
07:30	08:30	1	0	0	0	0	1
07:45	08:45	1	0	0	0	0	1
08:00	09:00	1	0	0	0	0	1
08:15	09:15	1	0	0	0	0	1
08:30	09:30	1	0	0	0	0	1
08:45	09:45	1	0	0	0	0	1
09:00	10:00	1	0	0	0	0	1

D

D - A

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	1	0	0			1
07:15	07:30	1	0	0			1
07:30	07:45	7	1	0			8
07:45	08:00	4	2	0			6
08:00	08:15	7	1	1			9
08:15	08:30	7	2	0			9
08:30	08:45	7	1	0			8
08:45	09:00	25	2	0			27
09:00	09:15	17	2	0			19
09:15	09:30	9	1	0			10
09:30	09:45	12	0	0			12
09:45	10:00	18	2	0			20
		115	14	1	0	0	130
HOUR TOTALS							
07:00	08:00	13	3	0	0	0	16
07:15	08:15	19	4	1	0	0	24
07:30	08:30	25	6	1	0	0	32
07:45	08:45	25	6	1	0	0	32
08:00	09:00	46	6	1	0	0	53
08:15	09:15	56	7	0	0	0	63
08:30	09:30	58	6	0	0	0	64
08:45	09:45	63	5	0	0	0	68
09:00	10:00	56	5	0	0	0	61

D - B

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	45	14	4			63
07:15	07:30	45	10	2			57
07:30	07:45	65	14	1			80
07:45	08:00	36	10	0			46
08:00	08:15	48	12	1			61
08:15	08:30	34	12	0			46
08:30	08:45	53	17	2			72
08:45	09:00	41	10	3			54
09:00	09:15	45	10	0			55
09:15	09:30	51	8	0			59
09:30	09:45	54	6	2			62
09:45	10:00	51	8	2			61
		568	131	17	0	0	716
HOUR TOTALS							
07:00	08:00	191	48	7	0	0	246
07:15	08:15	194	46	4	0	0	244
07:30	08:30	183	48	2	0	0	233
07:45	08:45	171	51	3	0	0	225
08:00	09:00	176	51	6	0	0	233
08:15	09:15	173	49	5	0	0	227
08:30	09:30	190	45	5	0	0	240
08:45	09:45	191	34	5	0	0	230
09:00	10:00	201	32	4	0	0	237

D - C

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	3	0	0			3
07:15	07:30	3	0	0			3
07:30	07:45	10	0	0			10
07:45	08:00	11	2	0			13
08:00	08:15	9	0	0			9
08:15	08:30	5	0	0			5
08:30	08:45	2	0	0			2
08:45	09:00	4	2	0			6
09:00	09:15	3	2	0			5
09:15	09:30	4	0	0			4
09:30	09:45	1	0	0			1
09:45	10:00	2	0	0			2
		57	6	0	0	0	63
HOUR TOTALS							
07:00	08:00	27	2	0	0	0	29
07:15	08:15	33	2	0	0	0	35
07:30	08:30	35	2	0	0	0	37
07:45	08:45	27	2	0	0	0	29
08:00	09:00	20	2	0	0	0	22
08:15	09:15	14	4	0	0	0	18
08:30	09:30	13	4	0	0	0	17
08:45	09:45	12	4	0	0	0	16
09:00	10:00	10	2	0	0	0	12

D - D

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	07:15	0	0	0			0
07:15	07:30	0	0	0			0
07:30	07:45	0	0	0			0
07:45	08:00	0	0	0			0
08:00	08:15	0	0	0			0
08:15	08:30	0	0	0			0
08:30	08:45	0	0	0			0
08:45	09:00	0	0	0			0
09:00	09:15	0	0	0			0
09:15	09:30	0	0	0			0
09:30	09:45	0	0	0			0
09:45	10:00	0	0	0			0
		0	0	0	0	0	0
HOUR TOTALS							
07:00	08:00	0	0	0	0	0	0
07:15	08:15	0	0	0	0	0	0
07:30	08:30	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0

FULNEY LANE, SPALDING

Thursday 4th Oct 2018

MODAL
modaldata.com

A

TIME		A-B CARS	A-B LIGHT	A-B HEAVY	A-B BUSES	A-B MOTORCYCLES	A-B TOTAL MOVEMENTS	A-C CARS	A-C LIGHT	A-C HEAVY	A-C BUSES	A-C MOTORCYCLES	A-C TOTAL MOVEMENTS	A-D CARS	A-D LIGHT	A-D HEAVY	A-D BUSES	A-D MOTORCYCLES	A-D TOTAL MOVEMENTS	A-A CARS	A-A LIGHT	A-A HEAVY	A-A BUSES	A-A MOTORCYCLES	A-A TOTAL MOVEMENTS
16:00 - 16:15		59	4	3			66	0	0	0			0	12	1	0			13	0	0	0			0
16:15 - 16:30		43	7	2			52	0	0	0			0	16	2	0			18	0	0	0			0
16:30 - 16:45		45	2	3			50	1	0	0			1	22	2	0			24	0	0	0			0
16:45 - 17:00		45	2	1			48	0	0	0			0	13	1	0			14	0	0	0			0
17:00 - 17:15		57	5	2			64	0	0	0			0	26	2	0			28	0	0	0			0
17:15 - 17:30		30	3	1			34	0	0	0			0	16	2	0			18	0	0	0			0
17:30 - 17:45		46	3	0			49	1	0	0			1	20	1	0			21	0	0	0			0
17:45 - 18:00		37	1	1			39	1	0	0			1	26	0	0			26	0	0	0			0
18:00 - 18:15		42	5	1			48	0	0	0			0	24	2	0			26	1	0	0			1
18:15 - 18:30		24	3	1			28	0	0	0			0	13	1	0			14	0	0	0			0
18:30 - 18:45		30	4	1			35	0	0	0			0	12	2	0			14	0	0	0			0
18:45 - 19:00		25	0	0			25	1	0	0			1	12	0	0			12	0	0	0			0
		483	39	16	0	0	538	4	0	0	0	0	4	212	16	0	0	0	228	1	0	0	0	0	1
HOUR TOTALS																									
16:00 - 17:00		192	15	9	0	0	216	1	0	0	0	0	1	63	6	0	0	0	69	0	0	0	0	0	0
16:15 - 17:15		190	16	8	0	0	214	1	0	0	0	0	1	77	7	0	0	0	84	0	0	0	0	0	0
16:30 - 17:30		177	12	7	0	0	196	1	0	0	0	0	1	77	7	0	0	0	84	0	0	0	0	0	0
16:45 - 17:45		178	13	4	0	0	195	1	0	0	0	0	1	75	6	0	0	0	81	0	0	0	0	0	0
17:00 - 18:00		170	12	4	0	0	186	2	0	0	0	0	2	88	5	0	0	0	93	0	0	0	0	0	0
17:15 - 18:15		155	12	3	0	0	170	2	0	0	0	0	2	86	5	0	0	0	91	1	0	0	0	0	1
17:30 - 18:30		149	12	3	0	0	164	2	0	0	0	0	2	83	4	0	0	0	87	1	0	0	0	0	1
17:45 - 18:45		133	13	4	0	0	150	1	0	0	0	0	1	75	5	0	0	0	80	1	0	0	0	0	1
18:00 - 19:00		121	12	3	0	0	136	1	0	0	0	0	1	61	5	0	0	0	66	1	0	0	0	0	1

B

TIME		B - C CARS	B - C LIGHT	B - C HEAVY	B - C BUSES	B - C MOTORCYCLES	B - C TOTAL MOVEMENTS	B - D CARS	B - D LIGHT	B - D HEAVY	B - D BUSES	B - D MOTORCYCLES	B - D TOTAL MOVEMENTS	B - A CARS	B - A LIGHT	B - A HEAVY	B - A BUSES	B - A MOTORCYCLES	B - A TOTAL MOVEMENTS	B - B CARS	B - B LIGHT	B - B HEAVY	B - B BUSES	B - B MOTORCYCLES	B - B TOTAL MOVEMENTS
16:00 - 16:15		8	0	1			9	92	12	0			104	22	2	1			25	2	0	0			2
16:15 - 16:30		4	0	1			5	81	11	0			92	21	3	1			25	0	0	0			0
16:30 - 16:45		4	0	0			4	84	15	0			99	15	2	1			18	1	0	0			1
16:45 - 17:00		3	0	2			5	96	11	1			108	16	4	0			20	1	0	0			1
17:00 - 17:15		5	2	0			7	96	13	1			110	23	3	0			26	4	0	0			4
17:15 - 17:30		5	1	0			6	104	15	1			120	25	5	1			31	1	0	0			1
17:30 - 17:45		9	0	0			9	89	7	0			96	21	1	0			22	1	1	0			2
17:45 - 18:00		7	3	0			10	72	9	1			82	19	2	1			22	3	0	0			3
18:00 - 18:15		2	0	1			3	71	18	2			91	31	2	1			34	2	0	0			2
18:15 - 18:30		0	0	0			0	65	4	1			70	42	4	0			46	0	0	0			0
18:30 - 18:45		1	0	0			1	84	8	0			92	20	1	0			21	0	0	0			0
18:45 - 19:00		2	0	0			2	68	8	1			77	19	0	0			19	0	0	0			0
		50	6	5	0	0	61	1002	131	8	0	0	1141	274	29	6	0	0	309	15	1	0	0	0	16
HOUR TOTALS																									
16:00 - 17:00		19	0	4	0	0	23	353	49	1	0	0	403	74	11	3	0	0	88	4	0	0	0	0	4
16:15 - 17:15		16	2	3	0	0	21	357	50	2	0	0	409	75	12	2	0	0	89	6	0	0	0	0	6
16:30 - 17:30		17	3	2	0	0	22	380	54	3	0	0	437	79	14	2	0	0	95	7	0	0	0	0	7
16:45 - 17:45		22	3	2	0	0	27	385	46	3	0	0	434	85	13	1	0	0	99	7	1	0	0	0	8
17:00 - 18:00		26	6	0	0	0	32	361	44	3	0	0	408	88	11	2	0	0	101	9	1	0	0	0	10
17:15 - 18:15		23	4	1	0	0	28	336	49	4	0	0	389	96	10	3	0	0	109	7	1	0	0	0	8
17:30 - 18:30		18	3	1	0	0	22	297	38	4	0	0	339	113	9	2	0	0	124	6	1	0	0	0	7
17:45 - 18:45		10	3	1	0	0	14	292	39	4	0	0	335	112	9	2	0	0	123	5	0	0	0	0	5
18:00 - 19:00		5	0	1	0	0	6	288	38	4	0	0	330	112	7	1	0	0	120	2	0	0	0	0	2

C

TIME		C - D CARS	C - D LIGHT	C - D HEAVY	C - D BUSES	C - D MOTORCYCLES	C - D TOTAL MOVEMENTS	C - A CARS	C - A LIGHT	C - A HEAVY	C - A BUSES	C - A MOTORCYCLES	C - A TOTAL MOVEMENTS	C - B CARS	C - B LIGHT	C - B HEAVY	C - B BUSES	C - B MOTORCYCLES	C - B TOTAL MOVEMENTS	C - C CARS	C - C LIGHT	C - C HEAVY	C - C BUSES	C - C MOTORCYCLES	C - C TOTAL MOVEMENTS
16:00 - 16:15		19	1	1			21	1	0	0			1	19	1	2			22	0	0	0			0
16:15 - 16:30		6	0	0			6	0	1	0			1	3	0	0			3	0	0	0			0
16:30 - 16:45		5	0	0			5	1	0	0			1	5	0	1			6	0	0	0			0
16:45 - 17:00		6	1	0			7	0	0	0			0	6	0	0			6	0	0	0			0
17:00 - 17:15		13	1	0			14	2	0	0			2	11	2	2			15	0	0	0			0
17:15 - 17:30		12	0	0			12	0	0	0			0	18	0	0			18	0	0	0			0
17:30 - 17:45		3	0	0			3	0	1	0			1	8	1	2			11	0	0	0			0
17:45 - 18:00		3	0	0			3	0	0	0			0	6	0	0			6	0	0	0			0
18:00 - 18:15		15	1	0			16	3	1	0			4	17	0	0			17	0	0	0			0
18:15 - 18:30		3	0	0			3	0	0	0			0	1	1	0			2	0	0	0			0
18:30 - 18:45		5	0	0			5	0	0	0			0	2	0	0			2	0	0	0			0
18:45 - 19:00		3	0	0			3	0	0	0			0	1	1	0			2	0	0	0			0
		93	4	1	0	0	98	7	3	0	0	0	10	97	6	7	0	0	110	0	0	0	0	0	0
HOUR TOTALS																									
16:00 - 17:00		36	2	1	0	0	39	2	1	0	0	0	3	33	1	3	0	0	37	0	0	0	0	0	0
16:15 - 17:15		30	2	0	0	0	32	3	1	0	0	0	4	25	2	3	0	0	30	0	0	0	0	0	0
16:30 - 17:30		36	2	0	0	0	38	3	0	0	0	0	3	40	2	3	0	0	45	0	0	0	0	0	0
16:45 - 17:45		34	2	0	0	0	36	2	1	0	0	0	3	43	3	4	0	0	50	0	0	0	0	0	0
17:00 - 18:00		31	1	0	0	0	32	2	1	0	0	0	3	43	3	4	0	0	50	0	0	0	0	0	0
17:15 - 18:15		33	1	0	0	0	34	3	2	0	0	0	5	49	1	2	0	0	52	0	0	0	0	0	0
17:30 - 18:30		24	1	0	0	0	25	3	2	0	0	0	5	32	2	2	0	0	36	0	0	0	0	0	0
17:45 - 18:45		26	1	0	0	0	27	3	1	0	0	0	4	26	1	0	0	0	27	0	0	0	0	0	0
18:00 - 19:00		26	1	0	0	0	27	3	1	0	0	0	4	21	2	0	0	0	23	0	0	0	0	0	0

D

TIME		D - A CARS	D - A LIGHT	D - A HEAVY	D - A BUSES	D - A MOTORCYCLES	D - A TOTAL MOVEMENTS	D - B CARS	D - B LIGHT	D - B HEAVY	D - B BUSES	D - B MOTORCYCLES	D - B TOTAL MOVEMENTS	D - C CARS	D - C LIGHT	D - C HEAVY	D - C BUSES	D - C MOTORCYCLES	D - C TOTAL MOVEMENTS	D - D CARS	D - D LIGHT	D - D HEAVY	D - D BUSES	D - D MOTORCYCLES	D - D TOTAL MOVEMENTS
16:00 - 16:15		9	1	0			10	74	13	1			88	5	1	0			6	0	0	0			0
16:15 - 16:30		9	0	0			9	61	10	2			73	0	0	0			0	1	0	0			1
16:30 - 16:45		13	1	0			14	75	17	0			92	2	0	0			2	1	0	0			1
16:45 - 17:00		11	3	0			14	80	15	1			96	3	0	0			3	0	0	0			0
17:00 - 17:15		10	1	1			12	94	13	1			108	3	1	0			4	0	0	0			0
17:15 - 17:30		7	1	0			8	92	15	0			107	3	0	0			3	1	0	0			1
17:30 - 17:45		19	1	0			20	87	13	0			100	5	1	0			6	2	0	0			2
17:45 - 18:00		13	0	0			13	86	8	0			94	4	1	0			5	0	0	0			0
18:00 - 18:15		16	0	0			16	94	9	0			103	4	0	0			4	1	0	0			1
18:15 - 18:30		18	1	0			19	65	7	0			72	3	0	0			3	1	0	0			1
18:30 - 18:45		12	2	0			14	55	5	0			60	1	1	0			2	0	0	0			0
18:45 - 19:00		14	1	0			15	54	7	0			61	2	0	0			2	0	0	0			0
		151	12	1	0	0	164	917	132	5	0	0	1054	35	5	0	0	0	40	7	0	0	0	0	7
HOUR TOTALS																									
16:00 - 17:00		42	5	0	0	0	47	290	55	4	0	0	349	10	1	0	0	0	11	2	0	0	0	0	2
16:15 - 17:15		43	5	1	0	0	49	310	55	4	0	0	369	8	1	0	0	0	9	2	0	0	0	0	2
16:30 - 17:30		41	6	1	0	0	48	341	60	2	0	0	403	11	1	0	0	0	12	2	0	0	0	0	2
16:45 - 17:45		47	6	1	0	0	54	353	56	2	0	0	411	14	2	0	0	0	16	3	0	0	0	0	3
17:00 - 18:00		49	3	1	0	0	53	359	49	1	0	0	409	15	3	0	0	0	18	3	0	0	0	0	3
17:15 - 18:15		55	2	0	0	0	57	359	45	0	0	0	404	16	2	0	0	0	18	4	0	0	0	0	4
17:30 - 18:30		66	2	0	0	0	68	332	37	0	0	0	369	16	2	0	0	0	18	4	0	0	0	0	4
17:45 - 18:45		59	3	0	0	0	62	300	29	0	0	0	329	12	2	0	0	0	14	2	0	0	0	0	2
18:00 - 19:00		60	4	0	0	0	64	268	28	0	0	0	296	10	1	0	0	0	11	2	0	0	0	0	2

FULNEY LANE, SPALDING

20th Sept 2018

MODAL
modaldata.com

A

TIME		A-B CARS	A-B LIGHT	A-B HEAVY	A-B BUSES	A-B MOTORCYCLES	A-B TOTAL MOVEMENTS	A-C CARS	A-C LIGHT	A-C HEAVY	A-C BUSES	A-C MOTORCYCLES	A-C TOTAL MOVEMENTS	A-D CARS	A-D LIGHT	A-D HEAVY	A-D BUSES	A-D MOTORCYCLES	A-D TOTAL MOVEMENTS	A-A CARS	A-A LIGHT	A-A HEAVY	A-A BUSES	A-A MOTORCYCLES	A-A TOTAL MOVEMENTS
11:00 - 11:15		33	3	1			37	0	0	0			0	13	1	0			14	0	0	0			0
11:15 - 11:30		35	3	0			38	0	0	0			0	11	2	0			13	0	0	0			0
11:30 - 11:45		35	4	0			39	1	0	0			1	27	3	0			30	0	0	0			0
11:45 - 12:00		50	3	3			56	1	0	0			1	14	1	0			15	1	0	0			1
12:00 - 12:15		39	7	1			47	0	0	0			0	21	3	0			24	1	0	0			1
12:15 - 12:30		38	3	0			41	2	0	0			2	16	2	0			18	0	1	0			1
12:30 - 12:45		46	4	2			52	0	0	0			0	20	0	0			20	0	0	0			0
12:45 - 13:00		47	4	1			52	0	0	0			0	29	0	0			29	1	0	0			1
13:00 - 13:15		50	1	2			53	0	1	0			1	17	1	0			18	0	0	0			0
13:15 - 13:30		44	3	3			50	0	0	0			0	17	0	0			17	0	0	0			0
13:30 - 13:45		49	5	3			57	0	0	0			0	19	0	0			19	1	0	0			1
13:45 - 14:00		45	2	0			47	0	0	0			0	20	1	0			21	1	0	0			1
		511	42	16	0	0	569	4	1	0	0	0	5	224	14	0	0	0	238	5	1	0	0	0	6
HOUR TOTALS																									
11:00 - 12:00		153	13	4	0	0	170	2	0	0	0	0	2	65	7	0	0	0	72	1	0	0	0	0	1
11:15 - 12:15		159	17	4	0	0	180	2	0	0	0	0	2	73	9	0	0	0	82	2	0	0	0	0	2
11:30 - 12:30		162	17	4	0	0	183	4	0	0	0	0	4	78	9	0	0	0	87	2	1	0	0	0	3
11:45 - 12:45		173	17	6	0	0	196	3	0	0	0	0	3	71	6	0	0	0	77	2	1	0	0	0	3
12:00 - 13:00		170	18	4	0	0	192	2	0	0	0	0	2	86	5	0	0	0	91	2	1	0	0	0	3
12:15 - 13:15		181	12	5	0	0	198	2	1	0	0	0	3	82	3	0	0	0	85	1	1	0	0	0	2
12:30 - 13:30		187	12	8	0	0	207	0	1	0	0	0	1	83	1	0	0	0	84	1	0	0	0	0	1
12:45 - 13:45		190	13	9	0	0	212	0	1	0	0	0	1	82	1	0	0	0	83	2	0	0	0	0	2
13:00 - 14:00		188	11	8	0	0	207	0	1	0	0	0	1	73	2	0	0	0	75	2	0	0	0	0	2

B

TIME		B - C CARS	B - C LIGHT	B - C HEAVY	B - C BUSES	B - C MOTORCYCLES	B - C TOTAL MOVEMENTS	B - D CARS	B - D LIGHT	B - D HEAVY	B - D BUSES	B - D MOTORCYCLES	B - D TOTAL MOVEMENTS	B - A CARS	B - A LIGHT	B - A HEAVY	B - A BUSES	B - A MOTORCYCLES	B - A TOTAL MOVEMENTS	B - B CARS	B - B LIGHT	B - B HEAVY	B - B BUSES	B - B MOTORCYCLES	B - B TOTAL MOVEMENTS
11:00 - 11:15		4	0	0			4	107	8	1			116	48	5	1			54	2	0	0			2
11:15 - 11:30		6	2	1			9	93	11	0			104	54	7	1			62	3	0	0			3
11:30 - 11:45		6	1	0			7	89	14	0			103	48	2	2			52	0	0	0			0
11:45 - 12:00		6	0	1			7	102	10	0			112	60	5	1			66	2	0	0			2
12:00 - 12:15		1	1	0			2	79	14	1			94	55	4	3			62	2	0	0			2
12:15 - 12:30		3	0	0			3	84	5	0			89	60	6	4			70	4	0	0			4
12:30 - 12:45		1	0	0			1	96	7	0			103	72	2	0			74	0	0	0			0
12:45 - 13:00		4	0	0			4	92	7	1			100	59	3	1			63	2	0	0			2
13:00 - 13:15		4	0	0			4	95	5	0			100	56	3	1			60	0	0	0			0
13:15 - 13:30		5	0	0			5	89	4	0			93	61	3	0			64	0	0	0			0
13:30 - 13:45		7	2	0			9	86	6	1			93	63	4	1			68	1	0	0			1
13:45 - 14:00		5	0	1			6	96	4	0			100	65	2	1			68	0	0	0			0
		52	6	3	0	0	61	1108	95	4	0	0	1207	701	46	16	0	0	763	16	0	0	0	0	16
HOUR TOTALS																									
11:00 - 12:00		22	3	2	0	0	27	391	43	1	0	0	435	210	19	5	0	0	234	7	0	0	0	0	7
11:15 - 12:15		19	4	2	0	0	25	363	49	1	0	0	413	217	18	7	0	0	242	7	0	0	0	0	7
11:30 - 12:30		16	2	1	0	0	19	354	43	1	0	0	398	223	17	10	0	0	250	8	0	0	0	0	8
11:45 - 12:45		11	1	1	0	0	13	361	36	1	0	0	398	247	17	8	0	0	272	8	0	0	0	0	8
12:00 - 13:00		9	1	0	0	0	10	351	33	2	0	0	386	246	15	8	0	0	269	8	0	0	0	0	8
12:15 - 13:15		12	0	0	0	0	12	367	24	1	0	0	392	247	14	6	0	0	267	6	0	0	0	0	6
12:30 - 13:30		14	0	0	0	0	14	372	23	1	0	0	396	248	11	2	0	0	261	2	0	0	0	0	2
12:45 - 13:45		20	2	0	0	0	22	362	22	2	0	0	386	239	13	3	0	0	255	3	0	0	0	0	3
13:00 - 14:00		21	2	1	0	0	24	366	19	1	0	0	386	245	12	3	0	0	260	1	0	0	0	0	1

C

TIME		C - D CARS	C - D LIGHT	C - D HEAVY	C - D BUSES	C - D MOTORCYCLES	C - D TOTAL MOVEMENTS	C - A CARS	C - A LIGHT	C - A HEAVY	C - A BUSES	C - A MOTORCYCLES	C - A TOTAL MOVEMENTS	C - B CARS	C - B LIGHT	C - B HEAVY	C - B BUSES	C - B MOTORCYCLES	C - B TOTAL MOVEMENTS	C - C CARS	C - C LIGHT	C - C HEAVY	C - C BUSES	C - C MOTORCYCLES	C - C TOTAL MOVEMENTS
11:00 - 11:15		0	0	0			0	0	0	0			0	3	0	1			4	0	0	0			0
11:15 - 11:30		1	1	0			2	0	0	0			0	3	0	0			3	0	0	0			0
11:30 - 11:45		7	0	0			7	0	0	0			0	2	0	1			3	0	0	0			0
11:45 - 12:00		1	0	0			1	0	0	0			0	4	0	1			5	0	0	0			0
12:00 - 12:15		6	0	0			6	0	0	0			0	5	0	1			6	0	0	0			0
12:15 - 12:30		5	0	0			5	0	0	0			0	3	1	0			4	0	0	0			0
12:30 - 12:45		3	0	0			3	0	0	0			0	2	1	1			4	0	0	0			0
12:45 - 13:00		3	0	0			3	0	0	0			0	1	0	0			1	0	0	0			0
13:00 - 13:15		2	0	0			2	0	1	0			1	1	1	1			3	0	0	0			0
13:15 - 13:30		1	0	0			1	1	0	0			1	1	1	1			3	0	0	0			0
13:30 - 13:45		0	1	0			1	0	0	0			0	3	0	1			4	0	0	0			0
13:45 - 14:00		4	0	0			4	0	0	0			0	2	1	0			3	0	0	0			0
		33	2	0	0	0	35	1	1	0	0	0	2	30	5	8	0	0	43	0	0	0	0	0	0
HOUR TOTALS																									
11:00 - 12:00		9	1	0	0	0	10	0	0	0	0	0	0	12	0	3	0	0	15	0	0	0	0	0	0
11:15 - 12:15		15	1	0	0	0	16	0	0	0	0	0	0	14	0	3	0	0	17	0	0	0	0	0	0
11:30 - 12:30		19	0	0	0	0	19	0	0	0	0	0	0	14	1	3	0	0	18	0	0	0	0	0	0
11:45 - 12:45		15	0	0	0	0	15	0	0	0	0	0	0	14	2	3	0	0	19	0	0	0	0	0	0
12:00 - 13:00		17	0	0	0	0	17	0	0	0	0	0	0	11	2	2	0	0	15	0	0	0	0	0	0
12:15 - 13:15		13	0	0	0	0	13	0	1	0	0	0	1	7	3	2	0	0	12	0	0	0	0	0	0
12:30 - 13:30		9	0	0	0	0	9	1	1	0	0	0	2	5	3	3	0	0	11	0	0	0	0	0	0
12:45 - 13:45		6	1	0	0	0	7	1	1	0	0	0	2	6	2	3	0	0	11	0	0	0	0	0	0
13:00 - 14:00		7	1	0	0	0	8	1	1	0	0	0	2	7	3	3	0	0	13	0	0	0	0	0	0

D

TIME		D - A CARS	D - A LIGHT	D - A HEAVY	D - A BUSES	D - A MOTORCYCLES	D - A TOTAL MOVEMENTS	D - B CARS	D - B LIGHT	D - B HEAVY	D - B BUSES	D - B MOTORCYCLES	D - B TOTAL MOVEMENTS	D - C CARS	D - C LIGHT	D - C HEAVY	D - C BUSES	D - C MOTORCYCLES	D - C TOTAL MOVEMENTS	D - D CARS	D - D LIGHT	D - D HEAVY	D - D BUSES	D - D MOTORCYCLES	D - D TOTAL MOVEMENTS
11:00 - 11:15		18	0	0			18	68	5	1			74	1	0	0			1	1	0	0			1
11:15 - 11:30		15	2	0			17	65	14	0			79	2	1	0			3	1	0	0			1
11:30 - 11:45		20	1	0			21	67	12	0			79	6	0	0			6	1	0	0			1
11:45 - 12:00		29	1	0			30	66	11	1			78	2	0	0			2	0	0	0			0
12:00 - 12:15		29	1	0			30	85	9	0			94	1	0	0			1	1	0	0			1
12:15 - 12:30		21	0	0			21	80	6	0			86	3	1	0			4	0	0	0			0
12:30 - 12:45		26	2	0			28	78	4	0			82	1	0	0			1	2	0	0			2
12:45 - 13:00		17	0	0			17	84	4	0			88	2	0	0			2	3	0	0			3
13:00 - 13:15		14	3	0			17	59	8	0			67	2	0	0			2	2	0	0			2
13:15 - 13:30		18	3	0			21	79	9	0			88	2	0	0			2	0	0	0			0
13:30 - 13:45		24	2	0			26	78	7	0			85	6	1	0			7	1	0	0			1
13:45 - 14:00		35	0	0			35	101	10	0			111	4	0	0			4	0	0	0			0
		266	15	0	0	0	281	910	99	2	0	0	1011	32	3	0	0	0	35	12	0	0	0	0	12
HOUR TOTALS																									
11:00 - 12:00		82	4	0	0	0	86	266	42	2	0	0	310	11	1	0	0	0	12	3	0	0	0	0	3
11:15 - 12:15		93	5	0	0	0	98	283	46	1	0	0	330	11	1	0	0	0	12	3	0	0	0	0	3
11:30 - 12:30		99	3	0	0	0	102	298	38	1	0	0	337	12	1	0	0	0	13	2	0	0	0	0	2
11:45 - 12:45		105	4	0	0	0	109	309	30	1	0	0	340	7	1	0	0	0	8	3	0	0	0	0	3
12:00 - 13:00		93	3	0	0	0	96	327	23	0	0	0	350	7	1	0	0	0	8	6	0	0	0	0	6
12:15 - 13:15		78	5	0	0	0	83	301	22	0	0	0	323	8	1	0	0	0	9	7	0	0	0	0	7
12:30 - 13:30		75	8	0	0	0	83	300	25	0	0	0	325	7	0	0	0	0	7	7	0	0	0	0	7
12:45 - 13:45		73	8	0	0	0	81	300	28	0	0	0	328	12	1	0	0	0	13	6	0	0	0	0	6
13:00 - 14:00		91	8	0	0	0	99	317	34	0	0	0	351	14	1	0	0	0	15	3	0	0	0	0	3

FULNEY LANE, SPALDING

20th Sept 2018

MODAL
modaldata.com

A

A-B

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
14:00	14:15	58	6	1			65
14:15	14:30	68	3	1			72
14:30	14:45	58	1	0			59
14:45	15:00	64	5	1			70
15:00	15:15	78	3	1			82
15:15	15:30	66	4	2			72
15:30	15:45	71	3	0			74
15:45	16:00	73	3	0			76
16:00	16:15	70	2	3			75
16:15	16:30	73	2	1			76
16:30	16:45	59	1	0			60
16:45	17:00	51	3	0			54
		789	36	10	0	0	835
HOUR TOTALS							
14:00	15:00	248	15	3	0	0	266
14:15	15:15	268	12	3	0	0	283
14:30	15:30	266	13	4	0	0	283
14:45	15:45	279	15	4	0	0	298
15:00	16:00	288	13	3	0	0	304
15:15	16:15	280	12	5	0	0	297
15:30	16:30	287	10	4	0	0	301
15:45	16:45	275	8	4	0	0	287
16:00	17:00	253	8	4	0	0	265

A-C

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
0	0	1			1
0	0	1			1
0	0	0			0
0	0	0			0
0	0	0			0
1	0	0			1
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
1	0	2	0	0	3
0	0	2	0	0	2
0	0	1	0	0	1
1	0	0	0	0	1
1	0	0	0	0	1
1	0	0	0	0	1
1	0	0	0	0	1
0	0	0	0	0	0
0	0	0	0	0	0

A-D

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
12	0	0			12
23	2	0			25
21	2	0			23
26	1	0			27
17	1	0			18
30	1	1			32
17	2	0			19
20	2	0			22
26	1	0			27
27	1	0			28
21	1	0			22
18	3	0			21
258	17	1	0	0	276
82	5	0	0	0	87
87	6	0	0	0	93
94	5	1	0	0	100
90	5	1	0	0	96
84	6	1	0	0	91
93	6	1	0	0	100
90	6	0	0	0	96
94	5	0	0	0	99
92	6	0	0	0	98

A-A

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
0	0	0			0
0	0	0			0
0	0	0			0
2	0	0			2
1	0	0			1
0	0	0			0
0	0	0			0
0	0	0			0
1	0	0			1
0	0	0			0
1	0	0			1
0	0	0			0
5	0	0	0	0	5
2	0	0	0	0	2
3	0	0	0	0	3
3	0	0	0	0	3
3	0	0	0	0	3
1	0	0	0	0	1
1	0	0	0	0	1
1	0	0	0	0	1
1	0	0	0	0	1
2	0	0	0	0	2

B

B - C

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
14:00	14:15	3	0	0			3
14:15	14:30	5	8	1			14
14:30	14:45	6	1	0			7
14:45	15:00	7	1	0			8
15:00	15:15	2	0	1			3
15:15	15:30	4	0	0			4
15:30	15:45	3	0	0			3
15:45	16:00	3	0	0			3
16:00	16:15	2	0	0			2
16:15	16:30	1	0	0			1
16:30	16:45	0	0	0			0
16:45	17:00	1	0	0			1
		37	10	2	0	0	49
HOUR TOTALS							
14:00	15:00	21	10	1	0	0	32
14:15	15:15	20	10	2	0	0	32
14:30	15:30	19	2	1	0	0	22
14:45	15:45	16	1	1	0	0	18
15:00	16:00	12	0	1	0	0	13
15:15	16:15	12	0	0	0	0	12
15:30	16:30	9	0	0	0	0	9
15:45	16:45	6	0	0	0	0	6
16:00	17:00	4	0	0	0	0	4

B - D

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
107	8	1			116
93	10	0			103
92	14	0			106
101	9	0			110
85	7	1			93
89	3	0			92
91	6	0			97
79	4	0			83
71	4	0			75
69	5	0			74
74	7	0			81
71	5	0			76
1022	82	2	0	0	1106
393	41	1	0	0	435
371	40	1	0	0	412
367	33	1	0	0	401
366	25	1	0	0	392
344	20	1	0	0	365
330	17	0	0	0	347
310	19	0	0	0	329
293	20	0	0	0	313
285	21	0	0	0	306

B - A

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
55	5	2			62
54	8	1			63
52	3	2			57
62	5	2			69
41	2	1			44
33	3	0			36
45	3	0			48
34	3	0			37
25	1	1			27
22	2	0			24
22	1	0			23
19	2	0			21
464	38	9	0	0	511
223	21	7	0	0	251
209	18	6	0	0	233
188	13	5	0	0	206
181	13	3	0	0	197
153	11	1	0	0	165
137	10	1	0	0	148
126	9	1	0	0	136
103	7	1	0	0	111
88	6	1	0	0	95

B - B

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
2	0	0			2
3	0	0			3
1	0	0			1
1	0	0			1
1	0	0			1
0	0	0			0
1	0	0			1
1	0	0			1
1	0	0			1
0	0	0			0
0	0	0			0
1	0	0			1
12	0	0	0	0	12
7	0	0	0	0	7
6	0	0	0	0	6
3	0	0	0	0	3
3	0	0	0	0	3
3	0	0	0	0	3
3	0	0	0	0	3
3	0	0	0	0	3
2	0	0	0	0	2
2	0	0	0	0	2

C

C - D

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
14:00	14:15	18	0	0			18
14:15	14:30	3	0	0			3
14:30	14:45	8	0	0			8
14:45	15:00	0	0	0			0
15:00	15:15	2	0	0			2
15:15	15:30	4	0	0			4
15:30	15:45	6	0	0			6
15:45	16:00	2	0	0			2
16:00	16:15	15	0	0			15
16:15	16:30	0	0	0			0
16:30	16:45	0	0	0			0
16:45	17:00	1	0	0			1
		59	0	0	0	0	59
HOUR TOTALS							
14:00	15:00	29	0	0	0	0	29
14:15	15:15	13	0	0	0	0	13
14:30	15:30	14	0	0	0	0	14
14:45	15:45	12	0	0	0	0	12
15:00	16:00	14	0	0	0	0	14
15:15	16:15	27	0	0	0	0	27
15:30	16:30	23	0	0	0	0	23
15:45	16:45	17	0	0	0	0	17
16:00	17:00	16	0	0	0	0	16

C - A

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
1	0	0			1
2	1	1			4
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
1	1	1	0	0	3
0	0	0	0	0	0
1	0	0	0	0	1
1	1	1	0	0	3
1	1	1	0	0	3
0	1	1	0	0	2
0	0	0	0	0	0
0	0	0	0	0	0

C - B

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
5	1	0			6
4	0	0			4
1	0	2			3
1	0	0			1
1	0	0			1
1	0	0			1
2	2	2			6
1	0	0			1
12	0	0			12
0	0	0			0
0	0	0			0
0	0	0			0
28	3	4	0	0	35
11	1	2	0	0	14
7	0	2	0	0	9
4	0	2	0	0	6
5	2	2	0	0	9
5	2	2	0	0	9
16	2	2	0	0	20
15	2	2	0	0	19
13	0	0	0	0	13
12	0	0	0	0	12

C - C

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0			0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

D

D - A

TIME		CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
14:00	14:15	17	1	0			18
14:15	14:30	21	0	0			21
14:30	14:45	22	0	0			22
14:45	15:00	33	2	0			35
15:00	15:15	17	0	0			17
15:15	15:30	22	1	0			23
15:30	15:45	19	2	0			21
15:45	16:00	15	2	0			17
16:00	16:15	16	0	0			16
16:15	16:30	12	0	0			12
16:30	16:45	12	1	0			13
16:45	17:00	8	0	0			8
		214	9	0	0	0	223
HOUR TOTALS							
14:00	15:00	93	3	0	0	0	96
14:15	15:15	93	2	0	0	0	95
14:30	15:30	94	3	0	0	0	97
14:45	15:45	91	5	0	0	0	96
15:00	16:00	73	5	0	0	0	78
15:15	16:15	72	5	0	0	0	77
15:30	16:30	62	4	0	0	0	66
15:45	16:45	55	3	0	0	0	58
16:00	17:00	48	1	0	0	0	49

D - B

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
85	3	0			88
92	7	0			99
64	4	1			69
82	5	1			88
80	8	0			88
72	7	0			79
76	7	0			83
79	5	0			84
65	6	0			71
69	9	0			78
80	5	0			85
65	9	0			74
909	75	2	0	0	986
323	19	2	0	0	344
318	24	2	0	0	344
298	24	2	0	0	324
310	27	1	0	0	338
307	27	0	0	0	334
292	25	0	0	0	317
289	27	0	0	0	316
293	25	0	0	0	318
279	29	0	0	0	308

D - C

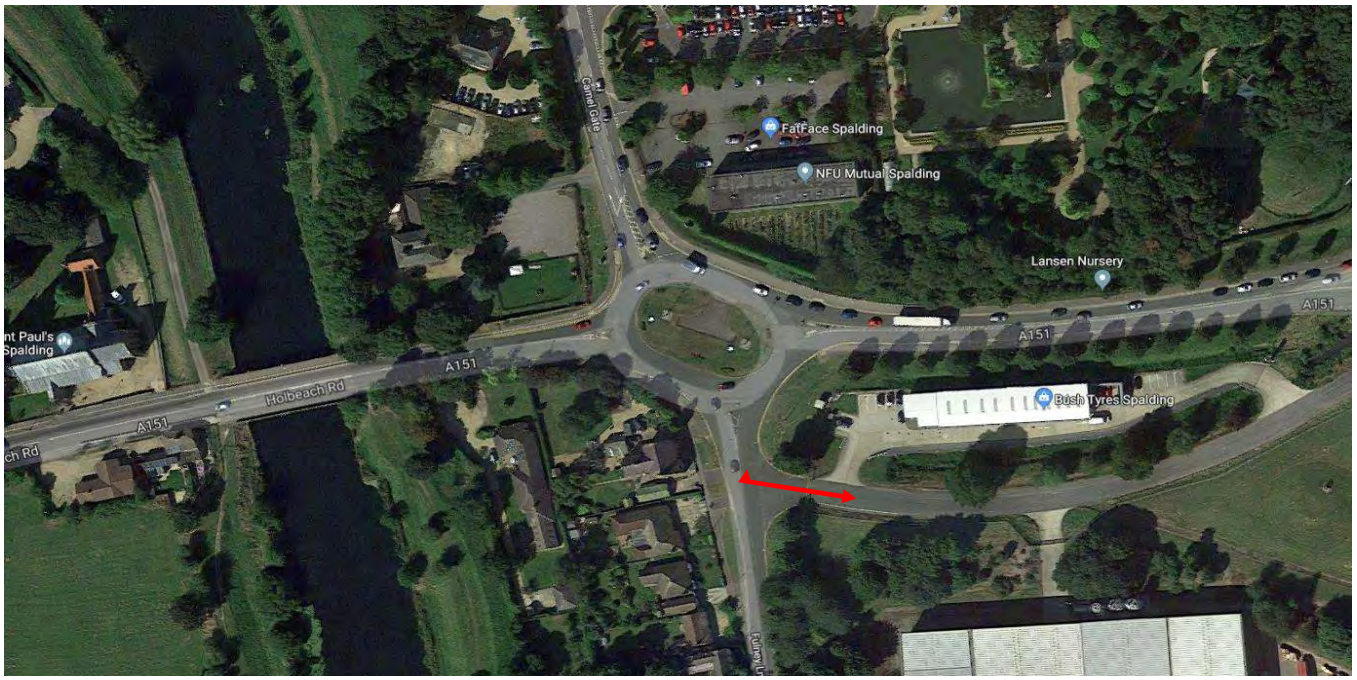
CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
2	0	0			2
0	0	0			0
1	0	0			1
2	0	0			2
1	0	0			1
2	0	0			2
6	0	0			6
8	0	0			8
1	0	0			1
0	0	0			0
0	0	0			0
0	0	0			0
23	0	0	0	0	23
5	0	0	0	0	5
4	0	0	0	0	4
6	0	0	0	0	6
11	0	0	0	0	11
17	0	0	0	0	17
17	0	0	0	0	17
15	0	0	0	0	15
9	0	0	0	0	9
1	0	0	0	0	1

D - D

CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
0	0	0			0
1	0	0			1
0	0	0			0
1	0	0			1
0	0	0			0
2	0	0			2
0	0	0			0
0	0	0			0
0	0	0			0
1	0	0			1
0	0	0			0
0	0	0			0
5	0	0	0	0	5
2	0	0	0	0	2
2	0	0	0	0	2
3	0	0	0	0	3
3	0	0	0	0	3
2	0	0	0	0	2
2	0	0	0	0	2
1	0	0	0	0	1
1	0	0	0	0	1
1	0	0	0	0	1

FULNEY LANE, SPALDING

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FULNEY LANE NORTH, SPALDING

THURSDAY 4TH OCTOBER 2018

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"BUSH TYRES" ACCESS ROAD

AM			IN						OUT					
TIME			CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS	CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
07:00	-	07:15	0	0	0	0	0	0	1	0	1	0	0	2
07:15	-	07:30	0	0	0	0	0	0	0	0	0	0	0	0
07:30	-	07:45	1	0	0	0	0	1	0	0	0	0	0	0
07:45	-	08:00	4	0	0	0	0	4	0	0	0	0	0	0
08:00	-	08:15	0	0	0	0	0	0	0	0	0	0	0	0
08:15	-	08:30	1	0	1	0	0	2	1	0	0	0	0	1
08:30	-	08:45	3	3	0	0	0	6	0	0	1	0	0	1
08:45	-	09:00	2	1	0	0	0	3	1	1	0	0	0	2
09:00	-	09:15	1	0	0	0	0	1	0	0	0	0	0	0
09:15	-	09:30	0	0	0	0	0	0	1	0	0	0	0	1
09:30	-	09:45	0	1	0	0	0	1	0	3	0	0	0	3
09:45	-	10:00	3	0	1	0	0	4	1	0	1	0	0	2
			15	5	2	0	0	22	5	4	3	0	0	12
HOUR TOTALS														
07:00	-	08:00	5	0	0	0	0	5	1	0	1	0	0	2
07:15	-	08:15	5	0	0	0	0	5	0	0	0	0	0	0
07:30	-	08:30	6	0	1	0	0	7	1	0	0	0	0	1
07:45	-	08:45	8	3	1	0	0	12	1	0	1	0	0	2
08:00	-	09:00	6	4	1	0	0	11	2	1	1	0	0	4
08:15	-	09:15	7	4	1	0	0	12	2	1	1	0	0	4
08:30	-	09:30	6	4	0	0	0	10	2	1	1	0	0	4
08:45	-	09:45	3	2	0	0	0	5	2	4	0	0	0	6
09:00	-	10:00	4	1	1	0	0	6	2	3	1	0	0	6

"BUSH TYRES" ACCESS ROAD

PM			IN						OUT					
TIME			CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS	CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
16:00	-	16:15	0	1	0	0	0	1	0	0	0	0	0	0
16:15	-	16:30	1	0	0	0	0	1	1	0	0	0	0	1
16:30	-	16:45	1	0	0	0	0	1	1	1	0	0	0	2
16:45	-	17:00	0	0	1	0	0	1	1	0	0	0	0	1
17:00	-	17:15	0	0	0	0	0	0	1	0	0	0	0	1
17:15	-	17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:30	-	17:45	0	0	0	0	0	0	1	0	1	0	0	2
17:45	-	18:00	0	1	0	0	0	1	0	0	0	0	0	0
18:00	-	18:15	0	0	0	0	0	0	3	1	0	0	0	4
18:15	-	18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:30	-	18:45	0	0	0	0	0	0	0	0	0	0	0	0
18:45	-	19:00	0	0	0	0	0	0	0	0	0	0	0	0
			2	2	1	0	0	5	8	2	1	0	0	11
HOUR TOTALS														
16:00	-	17:00	2	1	1	0	0	4	3	1	0	0	0	4
16:15	-	17:15	2	0	1	0	0	3	4	1	0	0	0	5
16:30	-	17:30	1	0	1	0	0	2	3	1	0	0	0	4
16:45	-	17:45	0	0	1	0	0	1	3	0	1	0	0	4
17:00	-	18:00	0	1	0	0	0	1	2	0	1	0	0	3
17:15	-	18:15	0	1	0	0	0	1	4	1	1	0	0	6
17:30	-	18:30	0	1	0	0	0	1	4	1	1	0	0	6
17:45	-	18:45	0	1	0	0	0	1	3	1	0	0	0	4
18:00	-	19:00	0	0	0	0	0	0	3	1	0	0	0	4

FULNEY LANE NORTH, SPALDING

SATURDAY 6TH OCTOBER 2018

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"BUSH TYRES" ACCESS ROAD

11.00 AM - 17.00 PM			IN						OUT					
TIME			CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS	CARS	LIGHT	HEAVY	BUSES	MOTORCYCLES	TOTAL MOVEMENTS
11:00	-	11:15	**2**	0	0	0	0	***2***	**1**	0	0	0	0	***1***
11:15	-	11:30	**2**	1	0	0	0	***3***	**1**	0	0	0	0	***1***
11:30	-	11:45	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
11:45	-	12:00	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
12:00	-	12:15	**0**	0	0	0	0	***0***	**3**	0	0	0	0	***3***
12:15	-	12:30	**2**	1	0	0	0	***3***	**2**	0	0	0	0	***2***
12:30	-	12:45	**0**	0	0	0	0	***0***	**2**	0	0	0	0	***2***
12:45	-	13:00	**0**	0	0	0	0	***0***	**2**	0	0	0	0	***2***
13:00	-	13:15	**1**	1	0	0	0	***2***	**0**	2	0	0	0	***2***
13:15	-	13:30	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
13:30	-	13:45	**1**	0	0	0	0	***1***	**0**	0	0	0	0	***0***
13:45	-	14:00	**4**	0	0	0	0	***4***	**1**	1	0	0	0	***2***
14:00	-	14:15	**3**	0	0	0	0	***3***	**2**	0	0	0	0	***2***
14:15	-	14:30	**3**	0	0	0	0	***3***	**2**	0	0	0	0	***2***
14:30	-	14:45	**0**	0	0	0	0	***0***	**6**	0	0	0	0	***6***
14:45	-	15:00	**0**	1	0	0	0	***1***	**0**	0	0	0	0	***0***
15:00	-	15:15	**2**	0	1	0	0	***3***	**2**	0	0	0	0	***2***
15:15	-	15:30	**0**	0	0	0	0	***0***	**0**	1	0	0	0	***1***
15:30	-	15:45	**0**	0	0	0	0	***0***	**0**	0	1	0	0	***1***
15:45	-	16:00	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
16:00	-	16:15	**0**	0	0	0	0	***0***	**2**	0	0	0	0	***2***
16:15	-	16:30	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
16:30	-	16:45	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
16:45	-	17:00	**0**	0	0	0	0	***0***	**0**	0	0	0	0	***0***
			20	**4**	**1**	**0**	**0**	**25**	**26**	**4**	**1**	**0**	**0**	**31**

APPENDIX F

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 15:13:45

« (Default Analysis Set) - Baseline, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Baseline			
Arm 1	0.10	3.50	0.09	A
Arm 2	0.81	4.56	0.44	A
Arm 3	0.03	2.57	0.03	A
Arm 4	0.33	3.39	0.25	A

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

"D1 - Baseline, AM " model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15

Run using Junctions 8.0.4.487 at 15/10/2018 15:13:45

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - Baseline, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relations
Baseline, AM	Baseline	AM		ONE HOUR	08:15	09:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				4.02	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	97.00	100.000
2	ONE HOUR	✓	583.00	100.000
3	ONE HOUR	✓	42.00	100.000
4	ONE HOUR	✓	323.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	60.000	1.000	36.000
	2	129.000	3.000	54.000	397.000
	3	5.000	28.000	0.000	9.000
	4	64.000	240.000	17.000	2.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.62	0.01	0.37
	2	0.22	0.01	0.09	0.68
	3	0.12	0.67	0.00	0.21
	4	0.20	0.74	0.05	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.09	3.50	0.10	A	89.01	133.51	7.45	3.35	0.08	7.45	3.35
2	0.44	4.56	0.81	A	534.97	802.46	54.42	4.07	0.60	54.43	4.07
3	0.03	2.57	0.03	A	38.54	57.81	2.36	2.45	0.03	2.36	2.45
4	0.25	3.39	0.33	A	296.39	444.59	23.61	3.19	0.26	23.61	3.19

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	73.03	18.26	72.77	148.51	217.62	0.00	1225.89	548.99	0.060	0.00	0.07	3.215	A
2	438.91	109.73	437.16	248.37	42.01	0.00	1466.16	1333.93	0.299	0.00	0.44	3.597	A
3	31.62	7.90	31.54	54.00	425.18	0.00	1619.68	950.76	0.020	0.00	0.02	2.334	A
4	243.17	60.79	242.37	332.96	123.76	0.00	1483.07	934.79	0.164	0.00	0.20	2.987	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	87.20	21.80	87.14	177.84	260.52	0.00	1201.12	548.98	0.073	0.07	0.08	3.327	A
2	524.11	131.03	523.57	297.36	50.31	0.00	1461.23	1333.93	0.359	0.44	0.57	3.953	A
3	37.76	9.44	37.74	64.67	509.21	0.00	1563.17	950.76	0.024	0.02	0.03	2.430	A
4	290.37	72.59	290.16	398.75	148.19	0.00	1468.60	934.79	0.198	0.20	0.25	3.146	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	106.80	26.70	106.71	217.73	319.01	0.00	1167.36	548.95	0.091	0.08	0.10	3.495	A
2	641.89	160.47	640.96	364.12	61.60	0.00	1454.51	1333.93	0.441	0.57	0.81	4.553	A
3	46.24	11.56	46.21	79.17	623.39	0.00	1486.38	950.76	0.031	0.03	0.03	2.574	A
4	355.63	88.91	355.31	488.17	181.43	0.00	1448.90	934.78	0.245	0.25	0.33	3.390	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	106.80	26.70	106.80	218.00	319.29	0.00	1167.19	548.95	0.092	0.10	0.10	3.495	A
2	641.89	160.47	641.88	364.43	61.66	0.00	1454.48	1333.93	0.441	0.81	0.81	4.562	A
3	46.24	11.56	46.24	79.27	624.27	0.00	1485.80	950.76	0.031	0.03	0.03	2.575	A
4	355.63	88.91	355.63	488.84	181.66	0.00	1448.76	934.78	0.245	0.33	0.33	3.391	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	87.20	21.80	87.29	178.27	260.98	0.00	1200.85	548.98	0.073	0.10	0.08	3.331	A
2	524.11	131.03	525.03	297.88	50.40	0.00	1461.18	1333.93	0.359	0.81	0.58	3.966	A
3	37.76	9.44	37.79	64.83	510.59	0.00	1562.24	950.76	0.024	0.03	0.03	2.433	A
4	290.37	72.59	290.69	399.82	148.56	0.00	1468.38	934.79	0.198	0.33	0.25	3.151	A

Main results: (09:30-09:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	73.03	18.26	73.09	149.23	218.51	0.00	1225.37	548.99	0.060	0.08	0.07	3.219	A
2	438.91	109.73	439.46	249.40	42.20	0.00	1466.05	1333.93	0.299	0.58	0.44	3.615	A
3	31.62	7.90	31.64	54.27	427.39	0.00	1618.19	950.76	0.020	0.03	0.02	2.336	A
4	243.17	60.79	243.38	334.67	124.36	0.00	1482.72	934.79	0.164	0.25	0.20	2.994	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	0.96	0.06	3.215	A	A
2	6.41	0.43	3.597	A	A
3	0.30	0.02	2.334	A	A
4	2.96	0.20	2.987	A	A

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.19	0.08	3.327	A	A
2	8.43	0.56	3.953	A	A
3	0.38	0.03	2.430	A	A
4	3.74	0.25	3.146	A	A

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.53	0.10	3.495	A	A
2	11.82	0.79	4.553	A	A
3	0.49	0.03	2.574	A	A
4	4.93	0.33	3.390	A	A

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.55	0.10	3.495	A	A
2	12.13	0.81	4.562	A	A
3	0.50	0.03	2.575	A	A
4	5.01	0.33	3.391	A	A

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.23	0.08	3.331	A	A
2	8.88	0.59	3.966	A	A
3	0.39	0.03	2.433	A	A
4	3.88	0.26	3.151	A	A

Queueing Delay results: (09:30-09:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	0.99	0.07	3.219	A	A
2	6.75	0.45	3.615	A	A
3	0.31	0.02	2.336	A	A
4	3.08	0.21	2.994	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 15:14:10

« (Default Analysis Set) - Baseline, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Baseline			
Arm 1	0.42	5.03	0.29	A
Arm 2	0.80	4.64	0.44	A
Arm 3	0.07	2.76	0.07	A
Arm 4	0.60	4.03	0.37	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM " model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15

Run using Junctions 8.0.4.487 at 15/10/2018 15:14:09

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - Baseline, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relations
Baseline, PM	Baseline	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				4.39	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	277.00	100.000
2	ONE HOUR	✓	568.00	100.000
3	ONE HOUR	✓	89.00	100.000
4	ONE HOUR	✓	484.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	195.000	1.000	81.000
	2	99.000	8.000	27.000	434.000
	3	3.000	50.000	0.000	36.000
	4	54.000	411.000	16.000	3.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.70	0.00	0.29
	2	0.17	0.01	0.05	0.76
	3	0.03	0.56	0.00	0.40
	4	0.11	0.85	0.03	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.29	5.03	0.42	A	254.18	381.27	28.55	4.49	0.32	28.55	4.49
2	0.44	4.64	0.80	A	521.21	781.81	53.70	4.12	0.60	53.70	4.12
3	0.07	2.76	0.07	A	81.67	122.50	5.30	2.60	0.06	5.30	2.60
4	0.37	4.03	0.60	A	444.13	666.19	40.65	3.66	0.45	40.65	3.66

Main Results for each time segment

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	208.54	52.14	207.62	116.99	366.08	0.00	1140.19	489.07	0.183	0.00	0.23	3.972	A
2	427.62	106.91	425.90	497.99	75.71	0.00	1446.12	1379.91	0.296	0.00	0.43	3.628	A
3	67.00	16.75	66.82	33.00	468.62	0.00	1590.46	921.11	0.042	0.00	0.05	2.433	A
4	364.38	91.10	363.05	415.42	120.02	0.00	1485.29	1077.34	0.245	0.00	0.33	3.299	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	249.02	62.25	248.73	140.10	438.32	0.00	1098.48	489.04	0.227	0.23	0.30	4.363	A
2	510.62	127.66	510.09	596.36	90.70	0.00	1437.21	1379.91	0.355	0.43	0.56	3.998	A
3	80.01	20.00	79.96	39.52	561.27	0.00	1528.16	921.11	0.052	0.05	0.06	2.560	A
4	435.11	108.78	434.72	497.52	143.71	0.00	1471.25	1077.34	0.296	0.33	0.43	3.577	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	304.98	76.25	304.49	171.52	536.67	0.00	1041.71	489.04	0.293	0.30	0.42	5.026	A
2	625.38	156.34	624.44	730.12	111.03	0.00	1425.12	1379.91	0.439	0.56	0.80	4.625	A
3	97.99	24.50	97.92	48.38	687.10	0.00	1443.54	921.11	0.068	0.06	0.07	2.755	A
4	532.89	133.22	532.24	609.07	175.94	0.00	1452.15	1077.34	0.367	0.43	0.59	4.028	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	304.98	76.25	304.98	171.76	537.29	0.00	1041.35	489.04	0.293	0.42	0.42	5.035	A
2	625.38	156.34	625.37	731.06	111.20	0.00	1425.02	1379.91	0.439	0.80	0.80	4.636	A
3	97.99	24.50	97.99	48.44	688.12	0.00	1442.86	921.11	0.068	0.07	0.07	2.756	A
4	532.89	133.22	532.89	609.95	176.16	0.00	1452.02	1077.34	0.367	0.59	0.60	4.033	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	249.02	62.25	249.50	140.48	439.32	0.00	1097.91	489.04	0.227	0.42	0.30	4.372	A
2	510.62	127.66	511.54	597.86	90.97	0.00	1437.05	1379.91	0.355	0.80	0.57	4.011	A
3	80.01	20.00	80.08	39.62	562.89	0.00	1527.07	921.11	0.052	0.07	0.06	2.562	A
4	435.11	108.78	435.75	498.91	144.05	0.00	1471.05	1077.34	0.296	0.60	0.44	3.582	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	208.54	52.14	208.83	117.59	367.78	0.00	1139.21	489.07	0.183	0.30	0.23	3.988	A
2	427.62	106.91	428.17	500.47	76.14	0.00	1445.87	1379.91	0.296	0.57	0.44	3.644	A
3	67.00	16.75	67.05	33.17	471.14	0.00	1588.77	921.11	0.042	0.06	0.05	2.438	A
4	364.38	91.10	364.77	417.60	120.59	0.00	1484.95	1077.34	0.245	0.44	0.34	3.313	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.36	0.22	3.972	A	A
2	6.30	0.42	3.628	A	A
3	0.67	0.04	2.433	A	A
4	4.90	0.33	3.299	A	A

Queueing Delay results: (16:45-17:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.42	0.30	4.363	A	A
2	8.30	0.55	3.998	A	A
3	0.84	0.06	2.560	A	A
4	6.35	0.42	3.577	A	A

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.21	0.41	5.026	A	A
2	11.69	0.78	4.625	A	A
3	1.11	0.07	2.755	A	A
4	8.72	0.58	4.028	A	A

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.36	0.42	5.035	A	A
2	12.01	0.80	4.636	A	A
3	1.12	0.07	2.756	A	A
4	8.91	0.59	4.033	A	A

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.65	0.31	4.372	A	A
2	8.76	0.58	4.011	A	A
3	0.87	0.06	2.562	A	A
4	6.64	0.44	3.582	A	A

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.54	0.24	3.988	A	A
2	6.64	0.44	3.644	A	A
3	0.69	0.05	2.438	A	A
4	5.12	0.34	3.313	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 15:14:45

« (Default Analysis Set) - Baseline, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Baseline			
Arm 1	0.55	5.12	0.35	A
Arm 2	1.30	5.88	0.56	A
Arm 3	0.04	2.90	0.04	A
Arm 4	0.57	4.18	0.36	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday " model duration: 13:45 - 15:15

Run using Junctions 8.0.4.487 at 15/10/2018 15:14:44

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - Baseline, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relatic
Baseline, Saturday	Baseline	Saturday		ONE HOUR	13:45	15:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				5.14	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	355.00	100.000
2	ONE HOUR	✓	725.00	100.000
3	ONE HOUR	✓	43.00	100.000
4	ONE HOUR	✓	447.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	266.000	2.000	87.000
	2	251.000	7.000	32.000	435.000
	3	0.000	14.000	0.000	29.000
	4	96.000	344.000	5.000	2.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.75	0.01	0.25
	2	0.35	0.01	0.04	0.60
	3	0.00	0.33	0.00	0.67
	4	0.21	0.77	0.01	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.35	5.12	0.55	A	325.75	488.63	37.06	4.55	0.41	37.06	4.55
2	0.56	5.88	1.30	A	665.27	997.91	82.29	4.95	0.91	82.30	4.95
3	0.04	2.90	0.04	A	39.46	59.19	2.67	2.70	0.03	2.67	2.70
4	0.36	4.18	0.57	A	410.18	615.26	38.63	3.77	0.43	38.63	3.77

Main Results for each time segment

Main results: (13:45-14:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	267.26	66.82	266.08	260.11	279.02	0.00	1190.44	679.40	0.225	0.00	0.30	4.006	A
2	545.82	136.45	543.34	473.14	71.96	0.00	1448.35	1379.70	0.377	0.00	0.62	4.087	A
3	32.37	8.09	32.28	29.23	586.07	0.00	1511.48	903.50	0.021	0.00	0.02	2.506	A
4	336.53	84.13	335.27	414.49	203.87	0.00	1435.61	1091.16	0.234	0.00	0.31	3.367	A

Main results: (14:00-14:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	319.14	79.78	318.77	311.55	334.11	0.00	1158.64	679.40	0.275	0.30	0.39	4.413	A
2	651.76	162.94	650.86	566.67	86.20	0.00	1439.88	1379.70	0.453	0.62	0.84	4.695	A
3	38.66	9.66	38.63	35.01	702.05	0.00	1433.49	903.50	0.027	0.02	0.03	2.657	A
4	401.84	100.46	401.47	496.49	244.19	0.00	1411.71	1091.16	0.285	0.31	0.41	3.670	A

Main results: (14:15-14:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	390.86	97.72	390.21	381.30	409.05	0.00	1115.38	679.40	0.350	0.39	0.55	5.109	A
2	798.24	199.56	796.47	693.74	105.53	0.00	1428.39	1379.70	0.559	0.84	1.29	5.851	A
3	47.34	11.84	47.31	42.85	859.15	0.00	1327.85	903.50	0.036	0.03	0.04	2.895	A
4	492.16	123.04	491.52	607.62	298.84	0.00	1379.33	1091.16	0.357	0.41	0.57	4.174	A

Main results: (14:30-14:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	390.86	97.72	390.85	382.04	409.57	0.00	1115.08	679.40	0.351	0.55	0.55	5.119	A
2	798.24	199.56	798.20	694.73	105.70	0.00	1428.29	1379.70	0.559	1.29	1.30	5.884	A
3	47.34	11.84	47.34	42.94	860.96	0.00	1326.63	903.50	0.036	0.04	0.04	2.897	A
4	492.16	123.04	492.15	608.84	299.46	0.00	1378.96	1091.16	0.357	0.57	0.57	4.181	A

Main results: (14:45-15:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	319.14	79.78	319.77	312.68	334.94	0.00	1158.16	679.40	0.276	0.55	0.39	4.425	A
2	651.76	162.94	653.50	568.25	86.47	0.00	1439.72	1379.70	0.453	1.30	0.86	4.726	A
3	38.66	9.66	38.69	35.15	704.83	0.00	1431.62	903.50	0.027	0.04	0.03	2.661	A
4	401.84	100.46	402.47	498.36	245.15	0.00	1411.14	1091.16	0.285	0.57	0.41	3.677	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	267.26	66.82	267.64	261.64	280.38	0.00	1189.66	679.40	0.225	0.39	0.30	4.022	A
2	545.82	136.45	546.75	475.64	72.37	0.00	1448.11	1379.70	0.377	0.86	0.63	4.117	A
3	32.37	8.09	32.40	29.41	589.71	0.00	1509.03	903.50	0.021	0.03	0.02	2.512	A
4	336.53	84.13	336.91	417.00	205.11	0.00	1434.87	1091.16	0.235	0.41	0.32	3.377	A

Queueing Delay Results for each time segment

Queueing Delay results: (13:45-14:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.34	0.29	4.006	A	A
2	9.02	0.60	4.087	A	A
3	0.33	0.02	2.506	A	A
4	4.61	0.31	3.367	A	A

Queueing Delay results: (14:00-14:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	5.73	0.38	4.413	A	A
2	12.36	0.82	4.695	A	A
3	0.42	0.03	2.657	A	A
4	6.02	0.40	3.670	A	A

Queueing Delay results: (14:15-14:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	8.08	0.54	5.109	A	A
2	18.65	1.24	5.851	A	A
3	0.56	0.04	2.895	A	A
4	8.34	0.56	4.174	A	A

Queueing Delay results: (14:30-14:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	8.29	0.55	5.119	A	A
2	19.38	1.29	5.884	A	A
3	0.57	0.04	2.897	A	A
4	8.53	0.57	4.181	A	A

Queueing Delay results: (14:45-15:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.04	0.40	4.425	A	A
2	13.26	0.88	4.726	A	A
3	0.43	0.03	2.661	A	A
4	6.30	0.42	3.677	A	A

Queueing Delay results: (15:00-15:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.58	0.31	4.022	A	A
2	9.62	0.64	4.117	A	A
3	0.34	0.02	2.512	A	A
4	4.83	0.32	3.377	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 15:20:04

« (Default Analysis Set) - With KFC, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - With KFC			
Arm 1	0.10	3.50	0.09	A
Arm 2	0.81	4.57	0.44	A
Arm 3	0.03	2.58	0.03	A
Arm 4	0.33	3.39	0.25	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15
"D4 - With KFC, AM " model duration: 08:15 - 09:45

Run using Junctions 8.0.4.487 at 15/10/2018 15:20:04

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - With KFC, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
With KFC, AM	With KFC	AM		ONE HOUR	08:15	09:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				4.02	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	97.00	100.000
2	ONE HOUR	✓	584.00	100.000
3	ONE HOUR	✓	43.00	100.000
4	ONE HOUR	✓	323.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	60.000	1.000	36.000
	2	129.000	3.000	55.000	397.000
	3	5.000	28.000	0.000	10.000
	4	64.000	240.000	17.000	2.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.62	0.01	0.37
	2	0.22	0.01	0.09	0.68
	3	0.12	0.65	0.00	0.23
	4	0.20	0.74	0.05	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.09	3.50	0.10	A	89.01	133.51	7.45	3.35	0.08	7.45	3.35
2	0.44	4.57	0.81	A	535.89	803.83	54.57	4.07	0.61	54.58	4.07
3	0.03	2.58	0.03	A	39.46	59.19	2.42	2.46	0.03	2.42	2.46
4	0.25	3.39	0.33	A	296.39	444.59	23.61	3.19	0.26	23.61	3.19

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	73.03	18.26	72.77	148.51	217.62	0.00	1225.89	552.32	0.060	0.00	0.07	3.215	A
2	439.67	109.92	437.91	248.37	42.01	0.00	1466.16	1332.81	0.300	0.00	0.44	3.600	A
3	32.37	8.09	32.29	54.75	425.18	0.00	1619.68	951.96	0.020	0.00	0.02	2.335	A
4	243.17	60.79	242.37	333.71	123.76	0.00	1483.07	944.99	0.164	0.00	0.20	2.987	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	87.20	21.80	87.14	177.84	260.52	0.00	1201.12	552.32	0.073	0.07	0.08	3.327	A
2	525.00	131.25	524.46	297.36	50.31	0.00	1461.23	1332.81	0.359	0.44	0.57	3.957	A
3	38.66	9.66	38.64	65.56	509.21	0.00	1563.17	951.96	0.025	0.02	0.03	2.431	A
4	290.37	72.59	290.16	399.65	148.19	0.00	1468.60	944.99	0.198	0.20	0.25	3.146	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	106.80	26.70	106.71	217.73	319.01	0.00	1167.36	552.30	0.091	0.08	0.10	3.495	A
2	643.00	160.75	642.06	364.12	61.60	0.00	1454.51	1332.82	0.442	0.57	0.81	4.560	A
3	47.34	11.84	47.31	80.27	623.39	0.00	1486.38	951.96	0.032	0.03	0.03	2.576	A
4	355.63	88.91	355.31	489.27	181.43	0.00	1448.90	944.99	0.245	0.25	0.33	3.390	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	106.80	26.70	106.80	218.00	319.29	0.00	1167.19	552.30	0.092	0.10	0.10	3.495	A
2	643.00	160.75	642.98	364.43	61.66	0.00	1454.48	1332.82	0.442	0.81	0.81	4.569	A
3	47.34	11.84	47.34	80.37	624.27	0.00	1485.80	951.96	0.032	0.03	0.03	2.577	A
4	355.63	88.91	355.63	489.94	181.66	0.00	1448.76	944.99	0.245	0.33	0.33	3.391	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	87.20	21.80	87.29	178.27	260.98	0.00	1200.85	552.32	0.073	0.10	0.08	3.329	A
2	525.00	131.25	525.93	297.88	50.40	0.00	1461.18	1332.81	0.359	0.81	0.58	3.968	A
3	38.66	9.66	38.69	65.73	510.59	0.00	1562.24	951.96	0.025	0.03	0.03	2.435	A
4	290.37	72.59	290.69	400.72	148.56	0.00	1468.38	944.99	0.198	0.33	0.25	3.148	A

Main results: (09:30-09:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	73.03	18.26	73.09	149.23	218.51	0.00	1225.37	552.32	0.060	0.08	0.07	3.219	A
2	439.67	109.92	440.22	249.40	42.20	0.00	1466.05	1332.81	0.300	0.58	0.44	3.618	A
3	32.37	8.09	32.39	55.02	427.39	0.00	1618.19	951.96	0.020	0.03	0.02	2.337	A
4	243.17	60.79	243.38	335.42	124.36	0.00	1482.72	944.99	0.164	0.25	0.20	2.991	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	0.96	0.06	3.215	A	A
2	6.43	0.43	3.600	A	A
3	0.31	0.02	2.335	A	A
4	2.96	0.20	2.987	A	A

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.19	0.08	3.327	A	A
2	8.45	0.56	3.957	A	A
3	0.39	0.03	2.431	A	A
4	3.74	0.25	3.146	A	A

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.53	0.10	3.495	A	A
2	11.85	0.79	4.560	A	A
3	0.50	0.03	2.576	A	A
4	4.93	0.33	3.390	A	A

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.55	0.10	3.495	A	A
2	12.17	0.81	4.569	A	A
3	0.51	0.03	2.577	A	A
4	5.01	0.33	3.391	A	A

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.23	0.08	3.329	A	A
2	8.91	0.59	3.968	A	A
3	0.40	0.03	2.435	A	A
4	3.88	0.26	3.148	A	A

Queueing Delay results: (09:30-09:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	0.99	0.07	3.219	A	A
2	6.77	0.45	3.618	A	A
3	0.32	0.02	2.337	A	A
4	3.08	0.21	2.991	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 15:24:29

« (Default Analysis Set) - With KFC, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - With KFC			
Arm 1	0.45	5.21	0.30	A
Arm 2	0.85	4.80	0.45	A
Arm 3	0.11	2.83	0.09	A
Arm 4	0.63	4.15	0.38	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15
"D4 - With KFC, AM" model duration: 08:15 - 09:45
"D5 - With KFC, PM " model duration: 16:30 - 18:00

Run using Junctions 8.0.4.487 at 15/10/2018 15:24:28

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - With KFC, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
With KFC, PM	With KFC	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				4.50	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	283.00	100.000
2	ONE HOUR	✓	582.00	100.000
3	ONE HOUR	✓	122.00	100.000
4	ONE HOUR	✓	496.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	195.000	7.000	81.000
	2	99.000	8.000	41.000	434.000
	3	7.000	66.000	0.000	49.000
	4	54.000	411.000	28.000	3.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.69	0.02	0.29
	2	0.17	0.01	0.07	0.75
	3	0.06	0.54	0.00	0.40
	4	0.11	0.83	0.06	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.30	5.21	0.45	A	259.69	389.53	29.95	4.61	0.33	29.95	4.61
2	0.45	4.80	0.85	A	534.05	801.08	56.53	4.23	0.63	56.53	4.23
3	0.09	2.83	0.11	A	111.95	167.92	7.43	2.65	0.08	7.43	2.65
4	0.38	4.15	0.63	A	455.14	682.71	42.63	3.75	0.47	42.63	3.75

Main Results for each time segment

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	213.06	53.26	212.10	119.99	387.07	0.00	1128.07	492.11	0.189	0.00	0.24	4.044	A
2	438.16	109.54	436.37	509.97	89.21	0.00	1438.10	1360.41	0.305	0.00	0.45	3.695	A
3	91.85	22.96	91.60	56.99	468.58	0.00	1590.49	956.15	0.058	0.00	0.06	2.473	A
4	373.41	93.35	372.03	425.15	135.03	0.00	1476.39	1069.19	0.253	0.00	0.35	3.353	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	254.41	63.60	254.11	143.69	463.46	0.00	1083.97	492.11	0.235	0.24	0.31	4.467	A
2	523.21	130.80	522.63	610.71	106.86	0.00	1427.60	1360.41	0.366	0.45	0.59	4.094	A
3	109.68	27.42	109.61	68.25	561.24	0.00	1528.18	956.15	0.072	0.06	0.08	2.613	A
4	445.89	111.47	445.48	509.18	161.67	0.00	1460.61	1069.19	0.305	0.35	0.45	3.650	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	311.59	77.90	311.06	175.91	567.43	0.00	1023.95	492.11	0.304	0.31	0.45	5.198	A
2	640.79	160.20	639.78	747.68	130.81	0.00	1413.36	1360.41	0.453	0.59	0.85	4.787	A
3	134.32	33.58	134.22	83.55	687.03	0.00	1443.59	956.15	0.093	0.08	0.11	2.831	A
4	546.11	136.53	545.41	623.32	197.93	0.00	1439.12	1069.19	0.379	0.45	0.63	4.145	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	311.59	77.90	311.58	176.16	568.12	0.00	1023.56	492.11	0.304	0.45	0.45	5.207	A
2	640.79	160.20	640.78	748.68	131.02	0.00	1413.23	1360.41	0.453	0.85	0.85	4.799	A
3	134.32	33.58	134.32	83.68	688.12	0.00	1442.86	956.15	0.093	0.11	0.11	2.833	A
4	546.11	136.53	546.10	624.26	198.18	0.00	1438.98	1069.19	0.380	0.63	0.63	4.152	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	254.41	63.60	254.93	144.09	464.56	0.00	1083.34	492.11	0.235	0.45	0.32	4.478	A
2	523.21	130.80	524.21	612.31	107.18	0.00	1427.41	1360.41	0.367	0.85	0.60	4.109	A
3	109.68	27.42	109.78	68.44	562.95	0.00	1527.03	956.15	0.072	0.11	0.08	2.618	A
4	445.89	111.47	446.58	510.66	162.06	0.00	1460.38	1069.19	0.305	0.63	0.46	3.661	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	213.06	53.26	213.36	120.61	388.89	0.00	1127.02	492.11	0.189	0.32	0.24	4.059	A
2	438.16	109.54	438.74	512.54	89.71	0.00	1437.80	1360.41	0.305	0.60	0.45	3.715	A
3	91.85	22.96	91.91	57.29	471.17	0.00	1588.75	956.15	0.058	0.08	0.06	2.476	A
4	373.41	93.35	373.83	427.42	135.66	0.00	1476.02	1069.19	0.253	0.46	0.35	3.367	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.50	0.23	4.044	A	A
2	6.57	0.44	3.695	A	A
3	0.93	0.06	2.473	A	A
4	5.10	0.34	3.353	A	A

Queueing Delay results: (16:45-17:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.63	0.31	4.467	A	A
2	8.71	0.58	4.094	A	A
3	1.18	0.08	2.613	A	A
4	6.64	0.44	3.650	A	A

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.55	0.44	5.198	A	A
2	12.38	0.83	4.787	A	A
3	1.56	0.10	2.831	A	A
4	9.19	0.61	4.145	A	A

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.72	0.45	5.207	A	A
2	12.73	0.85	4.799	A	A
3	1.58	0.11	2.833	A	A
4	9.40	0.63	4.152	A	A

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.87	0.32	4.478	A	A
2	9.20	0.61	4.109	A	A
3	1.21	0.08	2.618	A	A
4	6.96	0.46	3.661	A	A

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.68	0.25	4.059	A	A
2	6.93	0.46	3.715	A	A
3	0.96	0.06	2.476	A	A
4	5.34	0.36	3.367	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 15:26:16

« (Default Analysis Set) - With KFC, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - With KFC			
Arm 1	0.59	5.29	0.36	A
Arm 2	1.39	6.17	0.58	A
Arm 3	0.06	2.96	0.05	A
Arm 4	0.60	4.30	0.37	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15
"D4 - With KFC, AM" model duration: 08:15 - 09:45
"D5 - With KFC, PM" model duration: 16:30 - 18:00
"D6 - With KFC, Saturday " model duration: 13:45 - 15:15

Run using Junctions 8.0.4.487 at 15/10/2018 15:26:15

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - With KFC, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relatio
With KFC, Saturday	With KFC	Saturday		ONE HOUR	13:45	15:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				5.32	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	363.00	100.000
2	ONE HOUR	✓	741.00	100.000
3	ONE HOUR	✓	66.00	100.000
4	ONE HOUR	✓	457.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	266.000	10.000	87.000
	2	251.000	7.000	48.000	435.000
	3	7.000	28.000	0.000	31.000
	4	96.000	344.000	15.000	2.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.73	0.03	0.24
	2	0.34	0.01	0.06	0.59
	3	0.11	0.42	0.00	0.47
	4	0.21	0.75	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.36	5.29	0.59	A	333.10	499.64	38.91	4.67	0.43	38.91	4.67
2	0.58	6.17	1.39	A	679.95	1019.93	87.18	5.13	0.97	87.19	5.13
3	0.05	2.96	0.06	A	60.56	90.84	4.16	2.75	0.05	4.16	2.75
4	0.37	4.30	0.60	A	419.35	629.03	40.38	3.85	0.45	40.39	3.85

Main Results for each time segment

Main results: (13:45-14:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	273.29	68.32	272.05	265.35	297.02	0.00	1180.05	667.34	0.232	0.00	0.31	4.079	A
2	557.86	139.47	555.28	483.62	85.45	0.00	1440.33	1363.42	0.387	0.00	0.65	4.178	A
3	49.69	12.42	49.55	54.71	586.01	0.00	1511.52	937.70	0.033	0.00	0.03	2.536	A
4	344.05	86.01	342.75	415.95	219.61	0.00	1426.28	980.46	0.241	0.00	0.33	3.417	A

Main results: (14:00-14:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	326.33	81.58	325.94	317.82	355.66	0.00	1146.20	667.34	0.285	0.31	0.41	4.518	A
2	666.14	166.54	665.17	579.23	102.36	0.00	1430.27	1363.42	0.466	0.65	0.89	4.840	A
3	59.33	14.83	59.29	65.54	702.00	0.00	1433.53	937.70	0.041	0.03	0.04	2.697	A
4	410.83	102.71	410.44	498.25	263.04	0.00	1400.54	980.46	0.293	0.33	0.43	3.742	A

Main results: (14:15-14:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	399.67	99.92	398.97	388.95	435.42	0.00	1100.16	667.34	0.363	0.41	0.58	5.282	A
2	815.86	203.96	813.90	709.08	125.30	0.00	1416.63	1363.42	0.576	0.89	1.38	6.132	A
3	72.67	18.17	72.61	80.21	859.00	0.00	1327.95	937.70	0.055	0.04	0.06	2.953	A
4	503.17	125.79	502.48	609.72	321.89	0.00	1365.67	980.46	0.368	0.43	0.60	4.292	A

Main results: (14:30-14:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	399.67	99.92	399.66	389.74	436.00	0.00	1099.83	667.34	0.363	0.58	0.59	5.295	A
2	815.86	203.96	815.81	710.14	125.51	0.00	1416.51	1363.42	0.576	1.38	1.39	6.172	A
3	72.67	18.17	72.67	80.37	860.96	0.00	1326.63	937.70	0.055	0.06	0.06	2.956	A
4	503.17	125.79	503.16	611.04	322.58	0.00	1365.26	980.46	0.369	0.60	0.60	4.300	A

Main results: (14:45-15:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	326.33	81.58	327.02	319.04	356.57	0.00	1145.67	667.34	0.285	0.59	0.41	4.532	A
2	666.14	166.54	668.07	580.90	102.69	0.00	1430.08	1363.42	0.466	1.39	0.91	4.877	A
3	59.33	14.83	59.39	65.79	704.97	0.00	1431.53	937.70	0.041	0.06	0.04	2.701	A
4	410.83	102.71	411.51	500.26	264.10	0.00	1399.91	980.46	0.293	0.60	0.43	3.753	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	273.29	68.32	273.69	266.94	298.47	0.00	1179.21	667.34	0.232	0.41	0.31	4.098	A
2	557.86	139.47	558.87	486.21	85.95	0.00	1440.04	1363.42	0.387	0.91	0.66	4.212	A
3	49.69	12.42	49.73	55.05	589.77	0.00	1509.00	937.70	0.033	0.04	0.04	2.540	A
4	344.05	86.01	344.46	418.54	220.96	0.00	1425.48	980.46	0.241	0.43	0.33	3.430	A

Queueing Delay Results for each time segment

Queueing Delay results: (13:45-14:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.52	0.30	4.079	A	A
2	9.42	0.63	4.178	A	A
3	0.52	0.03	2.536	A	A
4	4.78	0.32	3.417	A	A

Queueing Delay results: (14:00-14:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	5.99	0.40	4.518	A	A
2	13.01	0.87	4.840	A	A
3	0.66	0.04	2.697	A	A
4	6.27	0.42	3.742	A	A

Queueing Delay results: (14:15-14:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	8.53	0.57	5.282	A	A
2	19.92	1.33	6.132	A	A
3	0.88	0.06	2.953	A	A
4	8.76	0.58	4.292	A	A

Queueing Delay results: (14:30-14:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	8.76	0.58	5.295	A	A
2	20.76	1.38	6.172	A	A
3	0.89	0.06	2.956	A	A
4	8.97	0.60	4.300	A	A

Queueing Delay results: (14:45-15:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.33	0.42	4.532	A	A
2	14.01	0.93	4.877	A	A
3	0.68	0.05	2.701	A	A
4	6.58	0.44	3.753	A	A

Queueing Delay results: (15:00-15:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.77	0.32	4.098	A	A
2	10.06	0.67	4.212	A	A
3	0.53	0.04	2.540	A	A
4	5.02	0.33	3.430	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 16:30:13

« (Default Analysis Set) - 2023 With KFC, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 With KFC			
Arm 1	0.11	3.56	0.10	A
Arm 2	0.91	4.82	0.47	A
Arm 3	0.04	2.63	0.03	A
Arm 4	0.36	3.48	0.26	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15
"D4 - With KFC, AM" model duration: 08:15 - 09:45
"D5 - With KFC, PM" model duration: 16:30 - 18:00
"D6 - With KFC, Saturday" model duration: 13:45 - 15:15
"D7 - 2023 With KFC, AM " model duration: 08:15 - 09:45

Run using Junctions 8.0.4.487 at 15/10/2018 16:30:12

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2023 With KFC, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2023 With KFC, AM	2023 With KFC	AM		ONE HOUR	08:15	09:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				4.20	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	103.00	100.000
2	ONE HOUR	✓	620.00	100.000
3	ONE HOUR	✓	46.00	100.000
4	ONE HOUR	✓	343.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	64.000	1.000	38.000
	2	137.000	3.000	58.000	422.000
	3	5.000	30.000	0.000	11.000
	4	68.000	255.000	18.000	2.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.62	0.01	0.37
	2	0.22	0.00	0.09	0.68
	3	0.11	0.65	0.00	0.24
	4	0.20	0.74	0.05	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.10	3.56	0.11	A	94.51	141.77	8.03	3.40	0.09	8.03	3.40
2	0.47	4.82	0.91	A	568.92	853.38	60.36	4.24	0.67	60.37	4.24
3	0.03	2.63	0.04	A	42.21	63.32	2.64	2.50	0.03	2.64	2.50
4	0.26	3.48	0.36	A	314.74	472.11	25.61	3.25	0.28	25.61	3.25

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	77.54	19.39	77.26	157.49	231.11	0.00	1218.10	550.35	0.064	0.00	0.07	3.250	A
2	466.77	116.69	464.85	264.12	44.26	0.00	1464.82	1334.34	0.319	0.00	0.48	3.702	A
3	34.63	8.66	34.54	57.74	451.37	0.00	1602.06	951.98	0.022	0.00	0.02	2.365	A
4	258.23	64.56	257.36	354.67	131.25	0.00	1478.64	948.66	0.175	0.00	0.22	3.035	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	92.59	23.15	92.53	188.60	276.69	0.00	1191.79	550.34	0.078	0.07	0.09	3.372	A
2	557.37	139.34	556.76	316.21	53.00	0.00	1459.63	1334.34	0.382	0.48	0.63	4.104	A
3	41.35	10.34	41.33	69.15	540.61	0.00	1542.05	951.98	0.027	0.02	0.03	2.470	A
4	308.35	77.09	308.12	424.77	157.17	0.00	1463.28	948.66	0.211	0.22	0.27	3.209	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	113.41	28.35	113.30	230.90	338.80	0.00	1155.93	550.32	0.098	0.09	0.11	3.555	A
2	682.63	170.66	681.54	387.20	64.90	0.00	1452.55	1334.34	0.470	0.63	0.90	4.802	A
3	50.65	12.66	50.61	84.66	661.79	0.00	1460.56	951.99	0.035	0.03	0.04	2.629	A
4	377.65	94.41	377.29	519.99	192.41	0.00	1442.40	948.66	0.262	0.27	0.36	3.481	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	113.41	28.35	113.40	231.21	339.11	0.00	1155.75	550.32	0.098	0.11	0.11	3.556	A
2	682.63	170.66	682.62	387.56	64.96	0.00	1452.52	1334.34	0.470	0.90	0.91	4.815	A
3	50.65	12.66	50.65	84.78	662.80	0.00	1459.88	951.99	0.035	0.04	0.04	2.630	A
4	377.65	94.41	377.65	520.77	192.67	0.00	1442.24	948.66	0.262	0.36	0.36	3.482	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	92.59	23.15	92.69	189.10	277.20	0.00	1191.50	550.34	0.078	0.11	0.09	3.376	A
2	557.37	139.34	558.44	316.79	53.10	0.00	1459.57	1334.34	0.382	0.91	0.64	4.121	A
3	41.35	10.34	41.39	69.34	542.20	0.00	1540.99	951.98	0.027	0.04	0.03	2.474	A
4	308.35	77.09	308.70	425.99	157.59	0.00	1463.03	948.66	0.211	0.36	0.28	3.215	A

Main results: (09:30-09:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	77.54	19.39	77.61	158.29	232.08	0.00	1217.54	550.35	0.064	0.09	0.07	3.254	A
2	466.77	116.69	467.39	265.23	44.46	0.00	1464.71	1334.34	0.319	0.64	0.48	3.719	A
3	34.63	8.66	34.65	58.04	453.81	0.00	1600.42	951.98	0.022	0.03	0.02	2.367	A
4	258.23	64.56	258.46	356.56	131.91	0.00	1478.25	948.66	0.175	0.28	0.22	3.042	A

Queueing Delay Results for each time segment

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.03	0.07	3.250	A	A
2	7.01	0.47	3.702	A	A
3	0.34	0.02	2.365	A	A
4	3.20	0.21	3.035	A	A

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.28	0.09	3.372	A	A
2	9.30	0.62	4.104	A	A
3	0.42	0.03	2.470	A	A
4	4.05	0.27	3.209	A	A

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.65	0.11	3.555	A	A
2	13.22	0.88	4.802	A	A
3	0.55	0.04	2.629	A	A
4	5.37	0.36	3.481	A	A

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.68	0.11	3.556	A	A
2	13.61	0.91	4.815	A	A
3	0.55	0.04	2.630	A	A
4	5.46	0.36	3.482	A	A

Queueing Delay results: (09:15-09:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.32	0.09	3.376	A	A
2	9.83	0.66	4.121	A	A
3	0.43	0.03	2.474	A	A
4	4.21	0.28	3.215	A	A

Queueing Delay results: (09:30-09:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1.07	0.07	3.254	A	A
2	7.40	0.49	3.719	A	A
3	0.35	0.02	2.367	A	A
4	3.33	0.22	3.042	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 16:32:27

« (Default Analysis Set) - 2023 With KFC, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 With KFC			
Arm 1	0.50	5.50	0.33	A
Arm 2	0.96	5.09	0.48	A
Arm 3	0.11	2.91	0.10	A
Arm 4	0.70	4.34	0.40	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15
"D4 - With KFC, AM" model duration: 08:15 - 09:45
"D5 - With KFC, PM" model duration: 16:30 - 18:00
"D6 - With KFC, Saturday" model duration: 13:45 - 15:15
"D7 - 2023 With KFC, AM" model duration: 08:15 - 09:45
"D8 - 2023 With KFC, PM " model duration: 16:30 - 18:00

Run using Junctions 8.0.4.487 at 15/10/2018 16:32:26

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2023 With KFC, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2023 With KFC, PM	2023 With KFC	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				4.74	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	300.00	100.000
2	ONE HOUR	✓	618.00	100.000
3	ONE HOUR	✓	129.00	100.000
4	ONE HOUR	✓	526.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	207.000	7.000	86.000
	2	105.000	8.000	44.000	461.000
	3	7.000	70.000	0.000	52.000
	4	57.000	436.000	30.000	3.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.69	0.02	0.29
	2	0.17	0.01	0.07	0.75
	3	0.05	0.54	0.00	0.40
	4	0.11	0.83	0.06	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.33	5.50	0.50	A	275.29	412.93	33.15	4.82	0.37	33.15	4.82
2	0.48	5.09	0.96	A	567.09	850.63	62.83	4.43	0.70	62.83	4.43
3	0.10	2.91	0.11	A	118.37	177.56	8.03	2.71	0.09	8.03	2.71
4	0.40	4.34	0.70	A	482.67	724.00	46.85	3.88	0.52	46.85	3.88

Main Results for each time segment

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	225.86	56.46	224.81	126.72	410.29	0.00	1114.66	490.58	0.203	0.00	0.26	4.163	A
2	465.26	116.32	463.30	540.67	94.44	0.00	1434.98	1360.78	0.324	0.00	0.49	3.807	A
3	97.12	24.28	96.85	60.73	497.01	0.00	1571.37	957.00	0.062	0.00	0.07	2.514	A
4	396.00	99.00	394.49	451.34	142.52	0.00	1471.96	1070.48	0.269	0.00	0.38	3.437	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	269.69	67.42	269.35	151.76	491.28	0.00	1067.91	490.58	0.253	0.26	0.35	4.641	A
2	555.57	138.89	554.92	647.50	113.14	0.00	1423.87	1360.78	0.390	0.49	0.65	4.265	A
3	115.97	28.99	115.90	72.74	595.32	0.00	1505.26	957.00	0.077	0.07	0.09	2.668	A
4	472.86	118.22	472.40	540.57	170.64	0.00	1455.29	1070.48	0.325	0.38	0.49	3.770	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	330.31	82.58	329.69	185.78	601.46	0.00	1004.31	490.58	0.329	0.35	0.50	5.492	A
2	680.43	170.11	679.24	792.67	138.49	0.00	1408.79	1360.78	0.483	0.65	0.95	5.074	A
3	142.03	35.51	141.92	89.04	728.69	0.00	1415.58	957.00	0.100	0.09	0.11	2.910	A
4	579.14	144.78	578.33	661.70	208.91	0.00	1432.62	1070.48	0.404	0.49	0.69	4.337	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	330.31	82.58	330.30	186.07	602.25	0.00	1003.86	490.58	0.329	0.50	0.50	5.504	A
2	680.43	170.11	680.41	793.82	138.72	0.00	1408.65	1360.78	0.483	0.95	0.96	5.091	A
3	142.03	35.51	142.03	89.18	729.95	0.00	1414.72	957.00	0.100	0.11	0.11	2.912	A
4	579.14	144.78	579.13	662.80	209.19	0.00	1432.45	1070.48	0.404	0.69	0.70	4.345	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	269.69	67.42	270.30	152.22	492.52	0.00	1067.20	490.58	0.253	0.50	0.35	4.658	A
2	555.57	138.89	556.74	649.31	113.51	0.00	1423.65	1360.78	0.390	0.96	0.66	4.284	A
3	115.97	28.99	116.08	72.96	597.29	0.00	1503.94	957.00	0.077	0.11	0.09	2.673	A
4	472.86	118.22	473.65	542.28	171.09	0.00	1455.03	1070.48	0.325	0.70	0.50	3.783	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	225.86	56.46	226.20	127.40	412.28	0.00	1113.52	490.58	0.203	0.35	0.26	4.181	A
2	465.26	116.32	465.93	543.49	95.00	0.00	1434.65	1360.78	0.324	0.66	0.50	3.829	A
3	97.12	24.28	97.19	61.06	499.86	0.00	1569.45	957.00	0.062	0.09	0.07	2.518	A
4	396.00	99.00	396.47	453.85	143.21	0.00	1471.55	1070.48	0.269	0.50	0.38	3.449	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	3.81	0.25	4.163	A	A
2	7.18	0.48	3.807	A	A
3	1.00	0.07	2.514	A	A
4	5.53	0.37	3.437	A	A

Queueing Delay results: (16:45-17:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	5.09	0.34	4.641	A	A
2	9.62	0.64	4.265	A	A
3	1.27	0.08	2.668	A	A
4	7.27	0.48	3.770	A	A

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	7.33	0.49	5.492	A	A
2	13.90	0.93	5.074	A	A
3	1.70	0.11	2.910	A	A
4	10.18	0.68	4.337	A	A

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	7.53	0.50	5.504	A	A
2	14.33	0.96	5.091	A	A
3	1.72	0.11	2.912	A	A
4	10.43	0.70	4.345	A	A

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	5.37	0.36	4.658	A	A
2	10.20	0.68	4.284	A	A
3	1.31	0.09	2.673	A	A
4	7.63	0.51	3.783	A	A

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.02	0.27	4.181	A	A
2	7.60	0.51	3.829	A	A
3	1.03	0.07	2.518	A	A
4	5.81	0.39	3.449	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: JUNCTIONS - Spalding.arc8
Path: P:\RGP\2018 Projects (4401-4500)\4487 Land at A151A6, Spalding\Technical Assessments\Junction Modelling
Report generation date: 15/10/2018 16:34:28

« (Default Analysis Set) - 2023 With KFC, Saturday
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2023 With KFC			
Arm 1	0.66	5.64	0.39	A
Arm 2	1.64	6.84	0.62	A
Arm 3	0.07	3.06	0.06	A
Arm 4	0.67	4.54	0.40	A

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

"D1 - Baseline, AM" model duration: 08:15 - 09:45
"D2 - Baseline, PM" model duration: 16:30 - 18:00
"D3 - Baseline, Saturday" model duration: 13:45 - 15:15
"D4 - With KFC, AM" model duration: 08:15 - 09:45
"D5 - With KFC, PM" model duration: 16:30 - 18:00
"D6 - With KFC, Saturday" model duration: 13:45 - 15:15
"D7 - 2023 With KFC, AM" model duration: 08:15 - 09:45
"D8 - 2023 With KFC, PM" model duration: 16:30 - 18:00
"D9 - 2023 With KFC, Saturday " model duration: 13:45 - 15:15

Run using Junctions 8.0.4.487 at 15/10/2018 16:34:28

File summary

Title	(untitled)
Location	
Site Number	
Date	15/10/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	remotepc
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2023 With KFC, Saturday

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relatio
2023 With KFC, Saturday	2023 With KFC	Saturday		ONE HOUR	13:45	15:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				5.78	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	Camel Gate	
2	2	A151 (E)	
3	3	Fulney Ln N	
4	4	A151 (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	5.50	10.00	30.00	40.00	30.00	
2	4.00	5.50	10.00	30.00	40.00	40.00	
3	5.00	7.00	20.00	20.00	40.00	40.00	
4	4.50	6.00	10.00	15.00	40.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.577	1351.510
2		(calculated)	(calculated)	0.595	1491.143
3		(calculated)	(calculated)	0.672	1905.590
4		(calculated)	(calculated)	0.593	1556.409

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
				HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	387.00	100.000
2	ONE HOUR	✓	790.00	100.000
3	ONE HOUR	✓	70.00	100.000
4	ONE HOUR	✓	487.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	283.000	11.000	93.000
	2	268.000	7.000	51.000	464.000
	3	7.000	30.000	0.000	33.000
	4	102.000	367.000	16.000	2.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.73	0.03	0.24
	2	0.34	0.01	0.06	0.59
	3	0.10	0.43	0.00	0.47
	4	0.21	0.75	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.030	1.030	1.030	1.030
	2	1.030	1.030	1.030	1.030
	3	1.030	1.030	1.030	1.030
	4	1.030	1.030	1.030	1.030

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	3.0	3.0	3.0	3.0
	2	3.0	3.0	3.0	3.0
	3	3.0	3.0	3.0	3.0
	4	3.0	3.0	3.0	3.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.39	5.64	0.66	A	355.12	532.68	43.57	4.91	0.48	43.57	4.91
2	0.62	6.84	1.64	A	724.92	1087.38	100.37	5.54	1.12	100.38	5.54
3	0.06	3.06	0.07	A	64.23	96.35	4.54	2.83	0.05	4.54	2.83
4	0.40	4.54	0.67	A	446.88	670.32	44.90	4.02	0.50	44.90	4.02

Main Results for each time segment

Main results: (13:45-14:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	291.35	72.84	289.99	282.53	316.48	0.00	1168.82	664.62	0.249	0.00	0.34	4.213	A
2	594.75	148.69	591.87	515.05	91.43	0.00	1436.78	1363.37	0.414	0.00	0.72	4.374	A
3	52.70	13.17	52.55	58.45	624.85	0.00	1485.41	937.85	0.035	0.00	0.04	2.587	A
4	366.64	91.66	365.21	443.59	233.81	0.00	1417.87	981.44	0.259	0.00	0.36	3.518	A

Main results: (14:00-14:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	347.91	86.98	347.45	338.42	378.98	0.00	1132.74	664.62	0.307	0.34	0.45	4.720	A
2	710.19	177.55	709.04	616.90	109.54	0.00	1426.01	1363.37	0.498	0.72	1.01	5.163	A
3	62.93	15.73	62.89	70.02	748.56	0.00	1402.22	937.85	0.045	0.04	0.05	2.768	A
4	437.80	109.45	437.35	531.39	280.06	0.00	1390.46	981.44	0.315	0.36	0.47	3.888	A

Main results: (14:15-14:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	426.09	106.52	425.26	414.08	463.95	0.00	1083.69	664.62	0.393	0.45	0.66	5.624	A
2	869.81	217.45	867.36	755.14	134.07	0.00	1411.42	1363.37	0.616	1.01	1.62	6.783	A
3	77.07	19.27	77.00	85.67	915.76	0.00	1289.78	937.85	0.060	0.05	0.07	3.056	A
4	536.20	134.05	535.40	650.13	342.63	0.00	1353.38	981.44	0.396	0.47	0.67	4.528	A

Main results: (14:30-14:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	426.09	106.52	426.08	415.06	464.62	0.00	1083.30	664.62	0.393	0.66	0.66	5.641	A
2	869.81	217.45	869.74	756.38	134.32	0.00	1411.27	1363.37	0.616	1.62	1.64	6.844	A
3	77.07	19.27	77.07	85.87	918.19	0.00	1288.14	937.85	0.060	0.07	0.07	3.061	A
4	536.20	134.05	536.18	651.76	343.50	0.00	1352.87	981.44	0.396	0.67	0.67	4.540	A

Main results: (14:45-15:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	347.91	86.98	348.72	339.91	380.04	0.00	1132.13	664.62	0.307	0.66	0.46	4.737	A
2	710.19	177.55	712.61	618.84	109.92	0.00	1425.78	1363.37	0.498	1.64	1.03	5.218	A
3	62.93	15.73	63.00	70.33	752.21	0.00	1399.76	937.85	0.045	0.07	0.05	2.773	A
4	437.80	109.45	438.59	533.85	281.36	0.00	1389.69	981.44	0.315	0.67	0.48	3.901	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	291.35	72.84	291.82	284.33	318.10	0.00	1167.88	664.62	0.249	0.46	0.34	4.236	A
2	594.75	148.69	595.95	517.92	91.99	0.00	1436.44	1363.37	0.414	1.03	0.73	4.419	A
3	52.70	13.17	52.74	58.83	629.11	0.00	1482.54	937.85	0.036	0.05	0.04	2.592	A
4	366.64	91.66	367.10	446.53	235.33	0.00	1416.96	981.44	0.259	0.48	0.36	3.532	A

Queueing Delay Results for each time segment

Queueing Delay results: (13:45-14:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	4.97	0.33	4.213	A	A
2	10.49	0.70	4.374	A	A
3	0.56	0.04	2.587	A	A
4	5.24	0.35	3.518	A	A

Queueing Delay results: (14:00-14:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.67	0.44	4.720	A	A
2	14.76	0.98	5.163	A	A
3	0.72	0.05	2.768	A	A
4	6.94	0.46	3.888	A	A

Queueing Delay results: (14:15-14:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	9.65	0.64	5.624	A	A
2	23.34	1.56	6.783	A	A
3	0.97	0.06	3.056	A	A
4	9.83	0.66	4.528	A	A

Queueing Delay results: (14:30-14:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	9.94	0.66	5.641	A	A
2	24.49	1.63	6.844	A	A
3	0.98	0.07	3.061	A	A
4	10.08	0.67	4.540	A	A

Queueing Delay results: (14:45-15:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	7.07	0.47	4.737	A	A
2	16.02	1.07	5.218	A	A
3	0.74	0.05	2.773	A	A
4	7.29	0.49	3.901	A	A

Queueing Delay results: (15:00-15:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	5.26	0.35	4.236	A	A
2	11.27	0.75	4.419	A	A
3	0.58	0.04	2.592	A	A
4	5.51	0.37	3.532	A	A