



Litton Properties Limited

**PROPOSED FOODSTORE, LAND AT MARKET
STREET, HOYLAND, SOUTH YORKSHIRE**

Transport Assessment

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Contents

1	INTRODUCTION	3
1.1	Introduction	3
2	EXISTING SITE	4
2.1	Site Location	4
2.2	Existing Development	4
2.3	Existing Site Access	5
2.4	Existing Highway Provision	5
2.5	Existing Trip Attraction	6
2.6	Accessibility by Non Car Modes	7
2.7	Pedestrian Facilities	7
2.8	Cycling Facilities	8
2.9	Public Transport – Bus	9
2.10	Public Transport – Rail	10
2.11	Committed Developments	10
2.12	Conclusions of the Consideration of the Existing Site	10
3	PROPOSED DEVELOPMENT	12
3.1	Built Development Proposals	12
3.2	Access Proposals	12
4	TRANSPORT ASSESSMENT	13
4.1	Introduction	13
4.2	Proposed Multi-Modal Trip Generation	13
4.3	Existing Traffic	14
4.4	Assessment Years	14
4.5	Trip Distribution	15
4.6	Existing Site Traffic	15
4.7	Development Trip Generation	15
4.8	Assessment Flows	17
5	JUNCTION ASSESSMENT	19
5.1	Site Access Junction	19
5.2	Wombwell Rd/Market St	20
5.3	Operational Assessment Summary	24
6	INTERNAL LAYOUT	25
6.1	Introduction	25
6.2	Internal Layout	25
6.3	Parking Standards	25
6.4	Servicing	26
7	TRAVEL PLAN	27
7.1	Introduction	27
7.2	Travel Plan	27
8	CONCLUSIONS	28



Contents

Plan 1	Site Location
Plan 2	Site Location (Local Context)
Plan 3	Existing Site Plan
Plan 4	2km Pedestrian Catchment
Plan 5	5km Cycle Catchment
Plan 6	Bus Plan
Plan 7	Proposed Site Layout
Plan 8	<i>Vehicular Tracking for Service Vehicles</i>
Plan 9	Proposed Mini-Roundabout – Wombwell Rd/Market St
Appendix 1	Traffic Survey Data
Appendix 2	Multi-Modal Trip Rates - Foodstore
Appendix 3	TRICS Output - Foodstore
Appendix 4	PICADY Outputs – Proposed Site Access Junction
Appendix 5	PICADY Outputs – Wombwell Road/Market Street
Appendix 6	ARCADY Outputs – Proposed Improvements to Wombwell Rd/Market St
Appendix 7	Draft Travel Plan



1 INTRODUCTION

1.1 Introduction

- 1.1.1 Savell Bird & Axon have been commissioned by Litton Properties Limited to produce a Transport Assessment to support the development of a foodstore, on the former Market Street Infant and Primary School on land at Market Street, Hoyland South Yorkshire.
- 1.1.2 The proposed development will consist of the construction of a retail foodstore (Use Class A1) with associated access, servicing, car parking and landscaping.
- 1.1.3 The proposed foodstore will have a gross floor area of 2,594m² (27,922ft²) with parking provision for 192 car parking spaces including disabled bays.
- 1.1.4 It is proposed to provide an improved site access junction off Wombwell Road for both customers and servicing. The proposed site access junction will be priority controlled with a right turning ghost island facility.
- 1.1.5 Pedestrian access to the proposed site will be afforded at several locations surrounding the site and will be discussed in further detail later in this report.
- 1.1.6 **Plan 1** sets out the strategic location of the site, whilst **Plan 2** shows the location of the site in a more local context. **Plan 3** identifies the existing site layout.
- 1.1.7 Following this introduction section 2 will review the existing site layout and conditions. Section 3 will confirm the details of the proposed development. Section 4 will consider the traffic generation of the development.
- 1.1.8 Section 5 provides details of the operational highway impact assessments of the development.
- 1.1.9 Section 6 provides details relating to the internal layout, while Section 7 sets out the principle heads of terms for an employee travel plan, and finally Section 8 presents the conclusions to this Transport Assessment. All figures plans and appendices are included at the rear of the document.

2 EXISTING SITE

2.1 Site Location

- 2.1.1 The application site is located to the north of Hoyland Town Centre and to the south of Barnsley Town Centre and was previously occupied by Market Street Infant and Primary School. The existing site layout can be seen on **Plan 3** along with an extract identified on Figure A.

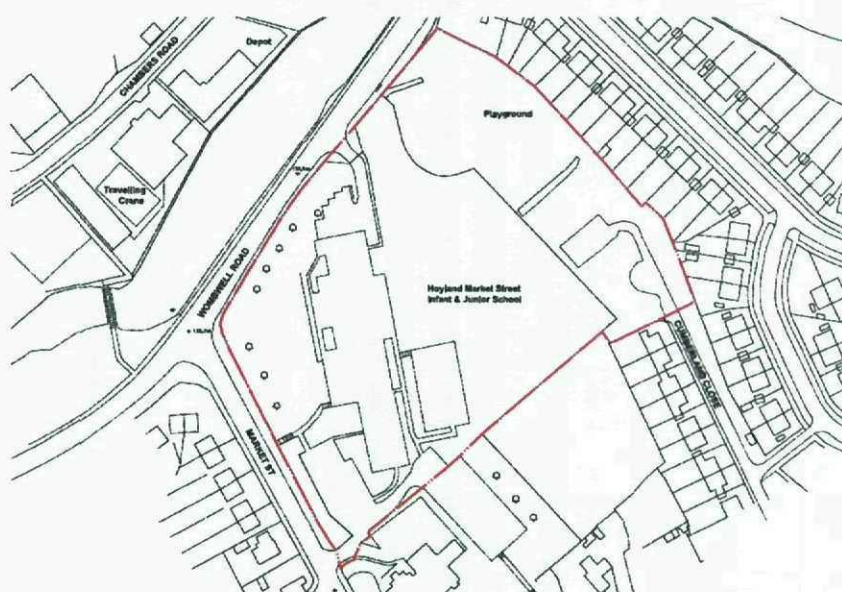


Figure A

- 2.1.2 The site is bounded to the north by Wombwell Road, to the east by residential properties off Cumberland Close, to the south by landscaped areas and to the west by Market Street.

2.2 Existing Development

- 2.2.1 The existing site was previously occupied by Market Street Infant and Primary School, however, this facility has now been demolished and the site is currently vacant.
- 2.2.2 The existing site access was previously located off Wombwell Road and was priority controlled.

2.3 Existing Site Access

- 2.3.1 There is currently one vehicular access point to the site which is located off Wombwell Road, this junction is priority controlled and is currently gated off as the site is now vacant. The existing site access junction is identified on Figure B below:



Figure B

2.4 Existing Highway Provision

- 2.4.1 As previously detailed Wombwell Road runs along the northern boundary of the site and provides a connection between the A6195 Dearne Valley Parkway and the A6135 Sheffield Road. Wombwell Road in the vicinity of the site has an approximate carriageway width of 7.3 metres with footways provided to either side. Wombwell Road is subject to a 30 mph speed restriction with street lighting provided and no parking restrictions.
- 2.4.2 To the west of the site Market Street runs along the boundary of the site, Market Street provides a connection from Wombwell Road to Hoyland Town Centre. The carriageway has an approximate carriageway width of 7.3 metres with footways to either side in the vicinity of the site. Market Street is also subject to a 30 mph speed restriction and there are no parking restrictions present.
- 2.4.3 To the north west of the site Wombwell Road and Market Street form a three arm priority controlled junction which is identified as Figure C.



Figure C

- 2.4.4 Bus stop facilities are located in close proximity to the site along Market Street and these stops are shown on Figure D. The public transport facilities are discussed in greater detail in a later section of this report.



Figure D

- 2.4.5 Market Street provides a direct connection between the proposed site and Hoyland Town Centre. Market Street has footways of around 2 metres provided to either side with the town centre located just less than 800 metres away which would equate to a walk time of approximately 10 minutes.

2.5 Existing Trip Attraction

- 2.5.1 In order to assist in the preparation of appropriate traffic forecasts to consider the materiality of any impact from the proposed development, traffic surveys have been undertaken at the priority junction with Wombwell Road and Market Street. These surveys have been undertaken for a weekday PM and Saturday peak periods as agreed with the local highway authority Barnsley Council.



2.5.2 Analysis of the traffic data confirmed that the weekday PM peak is between 1630 to 1730 hours and the Saturday peak is between 1200 and 1300 hours

2.5.3 **Figure 1** provides the weekday PM peak hour surveyed traffic flows in PCU's and **Figure 2** identifies the Saturday peak hour surveyed flows. The raw surveyed traffic data is included in **Appendix 1**.

2.6 Accessibility by Non Car Modes

2.6.1 In order to accord with the aspirations of Planning Policy Guidance (PPG) Note 13, entitled 'Transport', any new development should offer a realistic choice of access by public transport, walking and cycling.

2.6.2 New proposals should attempt to influence the mode of travel to the development in terms of gaining a shift in modal split towards non-car modes, thus assisting in meeting the aspirations of current national and local planning policy.

2.6.3 The accessibility of the proposed development by the following modes of transport has, therefore been considered:

- Accessibility on foot.
- Accessibility by cycle.
- Accessibility by bus.
- Accessibility by rail.

2.7 Pedestrian Facilities

2.7.1 It is important to create a choice of direct, safe and attractive routes between where people live and where they need to travel in their day-to-day life. This philosophy clearly encourages the opportunity to walk whatever the journey purpose and also to help to create more active streets and a more vibrant neighbourhood.

2.7.2 The application site will have pedestrian access afforded from Wombwell Road at the proposed site access junction along with a pedestrian connection to Market Street to the southern end of the site.



- 2.7.3 This pedestrian access will allow a direct connection between the bus services on Market Street and the foodstore pedestrian entrance. This pedestrian link will also provide a connection to Hoyland Town Centre utilising the existing footway network along Market Street.
- 2.7.4 Guidance by the Institution of Highways and Transportation suggests acceptable non commuting walking distances to supermarkets of 1.2 kilometres. Within the 1.2km catchment area there are substantial existing residential areas which demonstrating potential accessibility on foot for staff and customers.
- 2.7.5 Within the Institution of Highways and Transportation (IHT) document, entitled "Guidelines for Providing for Journeys on Foot", a distance of 2 kilometres is defined as a preferred maximum for commuting.
- 2.7.6 As such, a pedestrian accessibility plan for 2 kilometres from the site is presented in **Plan 4**. The plan shows the areas that can be reached such as the whole of Hoyland, Jump and the majority of Elsecar.
- 2.7.7 Hoyland Town Centre is located within 800 metres to the south of the site and provides a wide range of facilities including health care, newsagents, hardware store, butchers, grocers, banks and many other facilities.
- 2.7.8 In conclusion, the proposed development site can be considered as accessible by foot.

2.8 Cycling Facilities

- 2.8.1 An alternative mode of travel to the site could be achieved by bicycle. Cycling can substitute some car journeys in particular those up to 5 kilometres. Cycling can be appropriate for customer or employee trips to and from a store. As part of the development proposals there will be cycle parking facilities provided, which will be sheltered, secure and well lit.
- 2.8.2 PPG13 states that cycling has the 'potential to replace short car journeys, particularly those under 5 kilometres.'



2.8.3 **Plan 5** displays a 5 kilometre cycle catchment from the site. This would equate to a journey of around 25 minutes using a leisurely cycle speed of 12 kilometres per hour. As can be seen from the plan the 5 kilometre catchment encompasses a number of areas such as Tankersley, Birdwell, Worsbrough Bridge, Wombwell, Wentworth, Brampton and Ardsley.

2.8.4 As such the site can be considered as being accessible by cycle.

2.9 Public Transport – Bus

2.9.1 There are existing bus stop facilities directly outside the site along Market Street with Elsecar Rail Station located around 1.5 kilometres to the south east of the site off Hill Street.

2.9.2 When considering how accessible a site is to bus services it is generally accepted that 400 metres is a suitable walking distance to a bus stop. This distance has been taken from the IHT Guidelines on Planning for Public Transport for Development.

2.9.3 Table 2.1 provides a summary of the bus services and frequencies that operate within 400 metres of the site along Market Street and Wombwell Road.

Serv.	Route	Frequency/Hour					
		Mon-Fri				Sat	Sun
		AM Peak	Mid	PM Peak	Eve		
7/7A	Barnsley-Hoyland-Blacker Hill (Circular)	1	0.5	0.5	0.5	0.5	0.5
67	Barnsley-Wombwell	1	1	1	0	1	0
227	Barnsley-Hoyland-Rotherham	1	1	1	1	1	1

Table 2.1 – Bus Routes and Frequencies in the Vicinity of the Site



2.9.4 **Plan 6** identifies the service routes which serve the proposed store which would stop immediately adjacent to the store. As can be seen from Table 2.1 there are up to 3 buses per hour that operate in close proximity of the site along Market Street and Wombwell Road which provide frequent connections to many of the surrounding centres of population, such as Hoyland, Barnsley and Rotherham during the peak hour periods. These buses will provide valuable services to facilitate access to the store for both staff and customers.

2.9.5 Given the number and coverage of the existing bus service network, it can properly be concluded that the site is very accessible by bus.

2.10 Public Transport – Rail

2.10.1 Elsecar Railway Station is located around 1.5 kilometres to the south east of the site along Hill Street with adequate pedestrian connection to and from the proposed site.

2.10.2 The station is served during off-peak times by an hourly train operating between Sheffield and Leeds. Additional trains provide a half hourly service towards Sheffield in the morning peak and a half hourly service from Sheffield in the evening peak, these extra services also operate to and from Huddersfield Town Centre.

2.11 Committed Developments

2.11.1 From Discussions with the local highway authority SBA have been advised that there are no committed developments that are required to be considered as part of this assessment.

2.12 Conclusions of the Consideration of the Existing Site

2.12.1 An analysis has been completed that demonstrates the accessibility of the existing site by walking, cycling and public transport.

2.12.2 The site is accessible by foot with a network of pedestrian facilities surrounding the site and providing connections to the surrounding retail, employment and residential areas and the town centre.

2.12.3 The site is well located to facilitate journeys by cycle.



- 2.12.4 The site is serviced by frequent bus services along Market Street and Wombwell Road located within a short walk from the site.
- 2.12.5 The site is also well located to Elsecar Railway Station by being around 1.5 kilometres from the site which equates to a walk time of around 20 minutes with services providing a wide range of destination with frequent services, particularly for staff.
- 2.12.6 In conclusion, the proposed development can be considered to be accessible for pedestrians, cyclists and public transport users.



3 PROPOSED DEVELOPMENT

3.1 Built Development Proposals

- 3.1.1 The planning application consists of a foodstore with a floor area of 2,594m² (27,922ft²) along with a car parking provision of 192 car parking spaces including 11 disabled and 8 parent & child spaces.
- 3.1.2 In addition, there will be a segregated service area located to the north eastern end of the site which will allow for large articulated vehicles to safely manoeuvre within the site to serve the foodstore.
- 3.1.3 The proposed internal site layout can be seen on **Plan 7**.

3.2 Access Proposals

- 3.2.1 In order to access the proposed foodstore it is proposed to provide a priority controlled *site access junction off Wombwell Road*. This access will be located in the same location as the previous school access and a right turning ghost island will also be provided to improve both safety and capacity.
- 3.2.2 This access will cater for both customer traffic and service vehicles along its initial length where the access road will split into two, with the main line continuing into the car park for customers and the other link providing access to the service area.
- 3.2.3 In order to demonstrate that large service vehicles can access the site via the proposed *site access junction and access the service yard* a vehicular tracking exercise has been undertaken.
- 3.2.4 The AutoTRACK software program has been used to assess goods vehicle manoeuvres in and out of the service area and at the proposed site access junction. The track plot for a large articulated vehicle is shown in **Plan 8**. It can be seen from **Plan 8** that the *proposed store service area can adequately cater for the turning manoeuvres of large heavy goods vehicles*.



4 TRANSPORT ASSESSMENT

4.1 Introduction

4.1.1 This section will examine the assessment periods and potential trip generation of the proposed foodstore development.

4.2 Proposed Multi-Modal Trip Generation

4.2.1 In order to assess the modal split of trips generated by the proposed store the TRICS database was utilised for pedestrians, cyclists and public transport users. The multi modal trip rates for the proposed foodstore are contained within **Appendix 2**.

4.2.2 The modal split figures for the weekday peak hour in the respect of the foodstore are shown within Table 4.1.

Mode	Trip Rates			Trip Generation		
	Arr	Dep	2-way	Arr	Dep	2-way
Pedestrian	3.139	3.019	6.158	81	78	159
Cyclist	0.057	0.114	0.171	1	3	4
PT User	0.136	0.210	0.346	4	5	9

Table 4.1 - Weekday Peak Hour Multi – Modal Trip Generation for Foodstore

4.2.3 The resultant modal split figures for the Saturday peak hour in the respect of the proposed store are shown within Table 4.2.

Mode	Trip Rates			Trip Generation		
	Arr	Dep	2-way	Arr	Dep	2-way
Pedestrian	1.658	1.534	3.192	43	40	83
Cyclist	0.101	0.116	0.217	3	3	6
PT User	0.186	0.181	0.367	5	5	10

Table 4.2 - Saturday Peak Hour Multi – Modal Trip Generation for Foodstore

4.2.4 Based on the above the proportional modal split for both peak hour periods is shown within Table 4.3.



Mode	Peak Hour	
	Weekday	Saturday
Pedestrian	93%	84%
Cyclist	2%	6%
Public Transport	5%	10%
Total	100%	100%

Table 4.3 - Proportional Modal Split for Proposed M&S Store

- 4.2.5 As can be seen from Table 4.3 walking and public transport are forecast to be the most popular modes of non-car transport for travelling to or from the proposed foodstore. It is concluded that the sites existing and proposed footway network and the existing public transport facilities can adequately cater for the proposed foodstore demand.

4.3 Existing Traffic

- 4.3.1 In order to establish the existing highway network traffic flows in the vicinity of the site, traffic surveys have been undertaken at the existing priority junction with Wombwell Road and Market Street for a weekday PM peak and Saturday peak periods.

- 4.3.2 The raw survey data has been included within **Appendix 1**.

- 4.3.3 The weekday PM peak hour flows are identified on **Figure 1** and the Saturday peak hour flows are identified on **Figure 2**. These flows are displayed in Passenger Car Units (PCUs) for the purpose of this assessment.

4.4 Assessment Years

- 4.4.1 It has been assumed for the purpose of this analysis that the development will be completed in the year 2013. In addition to the year of opening assessment a 5 years post opening assessment has also been undertaken.

- 4.4.2 To establish the 2013 and 2018 flows on which to apply the proposed trip attractions the National Transport Model 2008 (NTM) medium growth factors have been utilised.



4.4.3 The resultant growthed flows are shown in **Figures 3** and **4** for the 2013 weekday PM and Saturday peaks hours.

4.4.4 Similarly, the resultant growthed flows are shown in **Figures 5** and **6** for the 2018 weekday PM and Saturday peaks hours.

4.5 Trip Distribution

4.5.1 Further to discussions with the local highways officer at Barnsley MBC it was agreed that *the majority of the proposed development traffic would originate from Market Street/Hoyland Town Centre and Wombwell Road to the west*. As such, in order to provide the Council with a robust analysis of the potential traffic impact it has been assumed that 40% originate from Market Street, 40% from Wombwell Road to the west and 20% from Wombwell Road to the east.

4.5.2 The distribution has been identified on **Figures 7** and **8** for the weekday PM and Saturday peak hour periods.

4.6 Existing Site Traffic

4.6.1 As previously detailed the existing site was previously occupied by Market Street Infant and Primary School, but has been since demolished and the site is currently vacant. No allowance of any existing site traffic has been made to offset against the proposed development trips, this will ensure a robust analysis will be provided.

4.7 Development Trip Generation

4.7.1 As previously stated it is proposed to provide a new foodstore with a floor area of 2,594m² (27,922ft²).

4.7.2 In order to calculate the potential traffic generation for the foodstore an interrogation of the TRICS database has been undertaken for sites of a similar nature. The full TRICS outputs can be seen within **Appendix 3** and the potential proposed traffic generation can be seen in Table 4.4.



Time Period	Proposed Foodstore (2,594m ²)					
	Trip Rates/100m ²			Traffic Flows		
	Arr	Dep	2-Way	Arr	Dep	2-Way
Weekday PM Peak	8.104	8.485	16.589	210	220	430
Saturday Peak	7.966	8.243	16.209	207	214	421

Table 4.4 – Traffic Generation for Proposed Foodstore

- 4.7.3 As can be seen from Table 4.4 the proposed foodstore will generate approximately 430 two-way trips during the weekday PM peak hour and 421 two-way trips during the Saturday peak hour.
- 4.7.4 The trip attractions presented in Table 4.4 are unlikely to be entirely new trips on the highway network. Visitors to the foodstore will be existing shoppers to another store who decide to change their shopping location.
- 4.7.5 However, in order to provide a worst case scenario for consideration the following trip types have been assumed.

Trip Types	Weekday Peak Hour	Saturday Peak Hour
Transferred Primary	70%	70%
Diverted/Pass-by	30%	30%

Table 4.5 - Trip Type Proportions

- 4.7.6 The transferred primary trip type relates to traffic which is already on the network travelling to other stores but which will transfer to the proposed foodstore.
- 4.7.7 The diverted/pass-by element has been applied to the main routes passing the site. Whilst 30% has been used for a weekday peak hour periods it is generally accepted that the diverted/pass-by content during the peak hour on main roads can be significantly higher.



Transferred Trips

- 4.7.8 The Retail Assessment will demonstrate that the proposed store will result in trade being diverted from a wide range of other foodstores in the local area.
- 4.7.9 Even though it is highly unlikely that all of the transferred trips will be entirely new to the highway network, for the purpose of this particular assessment these trips have been assumed to be new trips on the highway network ensuring a robustness analysis.
- 4.7.10 The proposed transferred primary and diverted/pass-by trips for the proposed foodstore have been identified in Table 4.6.

Time Period	Primary Trips			Pass-by Trips			Total Trips		
	Arr	Dep	2Way	Arr	Dep	2Way	Arr	Dep	2Way
Weekday PM Peak	147	154	301	63	66	129	210	220	430
Saturday Peak	145	150	295	62	64	126	207	214	421

Table 4.6 – Proposed Development Trip Types

- 4.7.11 **Figures 9 and 10** identify the new trips associated with the proposed foodstore for the weekday PM and Saturday peak hours.
- 4.7.12 **Figures 11 and 12** identify the pass-by trips associated with the proposed foodstore for the weekday PM and Saturday peak hours.
- 4.7.13 The total new and pass-by trips have been added together and the resultant total development trips are identified on **Figures 13 and 14** for the weekday PM and Saturday peak hour periods.

4.8 Assessment Flows

- 4.8.1 To establish the assessment flows, the total proposed foodstore development flows, have been added to the baseline scenario flows.
- 4.8.2 The resultant 2013 Assessment Flows are identified on **Figures 15 and 16** for the weekday PM and Saturday peak hours.



- 4.8.3 Similarly, the resultant 2018 Assessment Flows are identified on **Figures 17** and **18** for the weekday PM and Saturday peak hours.
- 4.8.4 The percentage net impact has been calculated by dividing the proposed development trips by the baseline scenario and has been identified on **Figures 19** and **20** for the weekday PM and Saturday peak hours.
- 4.8.5 As agreed with the Local Highway Authority the following junctions have been analysed in detail:
- Site Access off Wombwell Road.
 - Existing Priority Junction with Wombwell Road and Market Street.



5 JUNCTION ASSESSMENT

5.1 Site Access Junction

- 5.1.1 As previously stated it is proposed to provide a priority controlled site access off Wombwell Road with a right turning ghost island provided. The improved site access junction will be in a similar location to the previous access to the former school.
- 5.1.2 In order to assess the operational characteristics of the proposed site access junction the computer program PICADY has been utilised. The 2013 and 2018 'with' development flows have been used in order to establish that the proposed junction can cater for the development proposals.
- 5.1.3 Tables 5.1 and 5.2 summarise the PICADY results for the 2013 and 2018 Assessment scenarios with the full outputs contained within **Appendix 4**.

Arm	2013 Assessment Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Proposed Site Access Left Out	0.308	0.44	0.277	0.38
Proposed Site Access Right Out	0.390	0.63	0.334	0.49
Wombwell Road (W) Right In	0.375	0.59	0.247	0.53

Table 5.1 – PICADY Results for Proposed Site Access off Wombwell Rd (2013 Assessment Flows)



Arm	2018 Assessment Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Proposed Site Access Left Out	0.317	0.46	0.282	0.39
Proposed Site Access Right Out	0.414	0.69	0.349	0.53
Wombwell Road (W) Right In	0.383	0.61	0.352	0.54

Table 5.2 – PICADY Results for Proposed Site Access off Wombwell Rd (2018 Assessment Flows)

5.1.4 As can be seen from Tables 5.1 and 5.2 the proposed site access junction operates with substantial spare capacity based on the proposed traffic flows with the development in place.

5.2 Wombwell Rd/Market St

5.2.1 As agreed with the local highway authority the existing priority junction with Wombwell Road and Market Street has been analysed in detail.

5.2.2 The existing junction has been assessed using the computer program PICADY for the 2013 and 2018 'with' and 'without' development traffic flow scenarios. The 'without' and 'with' development flows have been used in order to provide a comparison of the existing situation and the impact of the development proposals.

5.2.3 Tables 5.3 to 5.4 summarise the PICADY results for the 2013 'without' and 'with' developments whilst the full outputs are contained within **Appendix 5**.



Arm	2013 Baseline Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Market Street Left Out	0.226	0.29	0.294	0.41
Market Street Right Out	0.590	1.39	0.595	1.43
Wombwell Road (W) Ahead and Right	0.307	0.51	0.194	0.26

**Table 5.3 – PICADY Results for Existing Priority Junction
(2013 Baseline Flows)**

Arm	2013 Assessment Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Market Street Left Out	0.571	1.20	0.611	1.43
Market Street Right Out	0.872	5.19	0.863	5.04
Wombwell Road (W) Ahead and Right	0.328	0.59	0.207	0.29

**Table 5.4 – PICADY Results for Existing Priority Junction
(2013 Assessment Flows)**

- 5.2.4 As can be seen from Tables 5.3 and 5.4 the existing priority controlled junction demonstrates acceptable operational performance during the opening year weekday PM peak and Saturday peak hour periods without the proposed development traffic on the local highway network.
- 5.2.5 The PICADY computer program predicts capacities, queues and delays at priority controlled junctions. The performance of a priority controlled junction is indicated by the ratio of flow to capacity (RFC) on each approach arm to the junction. A priority junction is at capacity when the RFC of any arm reaches 1.000. Values over 0.850 are typically regarded as suffering from some traffic congestion, with queues of vehicles beginning to form.



- 5.2.6 The existing junction will slightly exceeds its theoretical capacity with the proposed foodstore traffic on the highway network with slight delays to traffic turning right out of Market Street as the Market Street approach arms RFC in above 0.850.
- 5.2.7 Tables 5.5 to 5.6 summarise the PICADY results for the future assessment year of 2018 'without' and 'with' developments whilst the full outputs are contained within **Appendix 5**.

Arm	2018 Baseline Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Market Street Left Out	0.272	0.37	0.343	0.51
Market Street Right Out	0.659	1.84	0.655	1.82
Wombwell Road (W) Ahead and Right	0.333	0.58	0.211	0.29

Table 5.5 – PICADY Results for Existing Priority Junction (2018 Baseline Flows)

Arm	2018 Assessment Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Market Street Left Out	0.856	3.03	0.950	5.23
Market Street Right Out	0.920	7.05	0.954	8.99
Wombwell Road (W) Ahead and Right	0.356	0.55	0.225	0.33

Table 5.6 – PICADY Results for Existing Priority Junction (2018 Assessment Flows)



- 5.2.8 As can be seen from Tables 5.5 and 5.6 the existing priority controlled junction demonstrates acceptable operational performance during the future year weekday PM peak and Saturday peak hour periods without the proposed development traffic on the local highway network. Again, the junction will slightly exceeds a RFC of over 0.850 with the proposed foodstore traffic on the highway network based on the future design year with slight delays to traffic turning both right and left out of Market Street.
- 5.2.9 In order to mitigate any potential impact as a result of the development proposals it is *proposed to provide a junction improvement at the junction with Wombwell Road and Market Street*. It is proposed to provide a mini-roundabout design which can be seen on **Plan 9**, this will improve the capacity at this junction and enable vehicles to exit Market Street, and this arrangement will also provide a form of traffic calming along Wombwell Road and reduce the speeds in both an eastbound and westbound direction. During the *public consultation period, local residents expressed concerns regarding the operation of the junction especially with respect to exiting Market Street*. Therefore, it is considered that the highway improves proposed also address the concerns of the local residents.
- 5.2.10 The proposed junction has been assessed using the computer program ARCADY for the 2013 and 2018 'with' development traffic flow scenarios.
- 5.2.11 Tables 5.7 to 5.8 summarise the ARCADY results for the 2013 and 2018 'with' developments whilst the full outputs are contained within **Appendix 6**.

Arm	2013 Assessment Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Wombwell Road (E)	0.813	4.1	0.651	1.8
Market Street	0.640	1.7	0.668	2.0
Wombwell Road (W)	0.650	1.8	0.552	1.2

**Table 5.7 – ARCADY Results for Proposed Mini-Roundabout
(2013 Assessment Flows)**



Arm	2018 Assessment Flows			
	PM Peak		Sat Peak	
	Max RFC	Max Q	Max RFC	Max Q
Wombwell Road (E)	0.832	4.6	0.686	2.1
Market Street	0.692	2.2	0.713	2.4
Wombwell Road (W)	0.692	2.2	0.590	1.4

**Table 5.8 – ARCADY Results for Proposed Mini-Roundabout
(2018 Assessment Flows)**

- 5.2.12 As can be seen from Tables 5.7 and 5.8 the proposed mini-roundabout will improve the junction substantially with Wombwell Road and Market Street in terms of both capacity and highway safety.

5.3 Operational Assessment Summary

- 5.3.1 The conclusion of the consideration of transport impact is that there will be an increase in pedestrian, cycle and vehicle flows at the site, which can be accommodated on the local highway network with the improvements proposed. There will be an increase in demand for local bus services, which can be accommodated by current service provision and infrastructure within Hoyland.
- 5.3.2 The proposed site access arrangement off Wombwell Road can adequately cater for the proposed development trips with a minimal impact to the operation of traffic travelling along the local highway network.
- 5.3.3 The proposed highway improvements to Wombwell Road and Market Street will not only mitigate the potential proposed development traffic it will also potentially improve the highway safety and reduce vehicular speeds along Wombwell Road, thus providing a notable improvement for local residents.



6 INTERNAL LAYOUT

6.1 Introduction

- 6.1.1 This section of the report will address the internal car parking arrangements, the internal highway layout and servicing.

6.2 Internal Layout

- 6.2.1 The internal layout of the proposed foodstore can be seen on **Plan 6**, the proposed site access will be located off Wombwell Road in a similar location to the existing site access junction. As part of the proposed site access a right turning ghost island will be provided *in order to facilitate the safe movement of right turning vehicles into the site.*
- 6.2.2 Pedestrian access to the proposed site will be afforded at the proposed site access junction off Wombwell Road along with a pedestrian link from the site to Market Street at the southern end of the site.

6.3 Parking Standards

Car Parking

- 6.3.1 As part of the internal layout it is proposed to provide a total of 192 car parking spaces which will include 11 disabled and 8 parent & child spaces.
- 6.3.2 Barnsley MBC car parking standards state that disabled parking should amount to at least 4% of the total car parking provision. As such, a minimum of 8 disabled spaces should be provided, given that the proposals are providing 11 disabled spaces, this fully accords with Barnsley MBC's disabled standards.

Cycle Parking

- 6.3.3 Cycle parking for both staff and customers will be provided in accordance with the Barnsley MBC cycle parking standards.



6.4 Servicing

- 6.4.1 As previously detailed the service access road will be located off the internal access road which will provide access to the self contained service yard. Within the service yard there is the provision of three loading docks along with a 26 metre turning circle.
- 6.4.2 In order to demonstrate that the proposed servicing arrangement can accommodate the turning manoeuvres of a large articulated vehicle, **Plan 7** identifies the vehicular tracking of a 16.5m articulated vehicle servicing the foodstore at the proposed site access and within the service area.
- 6.4.3 It can be seen from **Plan 7** the proposed foodstore service area can adequately cater for the turning manoeuvres of large heavy goods vehicles.



7 TRAVEL PLAN

7.1 Introduction

- 7.1.1 In order to encourage employees at the proposed development to travel to the site by non-car modes the applicant proposes a Travel Plan which can be secured by an appropriate condition.

7.2 Travel Plan

- 7.2.1 A Framework Travel Plan is enclosed within **Appendix 7** of this report. The objective of the Travel Plan is the delivery of the objectives of National Planning Policy, i.e. to encourage staff to travel to work by non-car modes of travel. The Travel Plan outlines physical and management measures that are designed to achieve this objective.
- 7.2.2 The effectiveness of Travel Plans in assisting the use of non-car modes for journeys to work is intrinsically linked to the accessibility of a given site by means other than the private car.
- 7.2.3 The proposed site has been demonstrated to benefit from excellent non-car accessibility and it should, therefore, be expected that the adoption of a Travel Plan would be particularly effective.



8 CONCLUSIONS

- 8.1.1 This report has considered the transport and highways issues pertaining to the proposed development of a new foodstore off Wombwell Road to the north of Hoyland Town Centre in Barnsley.
- 8.1.2 The proposed development supports the aims and objectives of both national and local planning policy by providing convenient links with the adjacent residential, retail and employment areas and being located adjacent to an existing public transport corridor.
- 8.1.3 The proposed site access arrangement off Wombwell Road can adequately cater for the proposed development trips with a minimal impact to the operation of traffic travelling along the local highway network.
- 8.1.4 It has also been demonstrated that the adjacent junction of Wombwell Road and Market Street can also cater for the proposed development traffic with the proposed highway improvement scheme.
- 8.1.5 An assessment of the existing pedestrian, cycle and public transport facilities demonstrate that the site is very accessible by non-car modes.
- 8.1.6 A Travel Plan will be provided for the proposed foodstore in order to reduce the reliance on the private car and reduce the number of vehicular trips to the site.
- 8.1.7 In conclusion, it has been demonstrated that there are no highways and transportation reason which would prevent the grant of planning consent.

PLANS



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Litton Properties Limited

Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

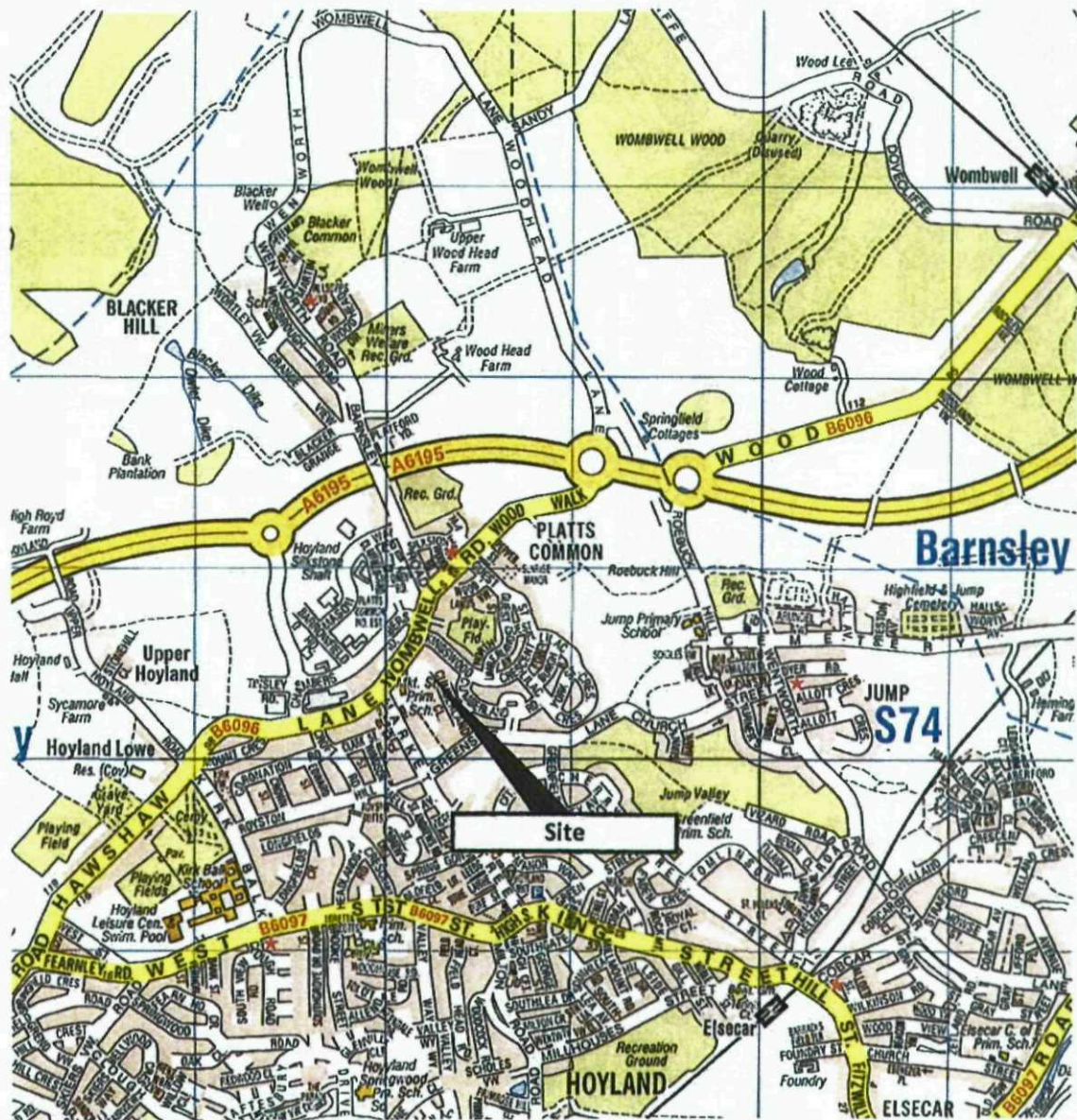
Site Location

Savell Bird & Axon
part of the WYG group



Croley House 14 Lloyd Street Manchester M2 5ND
t: 0161 835 2400 f: 0161 835 3400 e: sba@sba.co.uk

DRAWN:	DATE:	CHECKED:	DATE:	SCALE:	DRAWING NUMBER:	REVISION:
SP	Jan 2011	DL	Jan 2011	1:50000	N01919/01	.



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Litton Properties Limited

Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

Site Location (Local Context)

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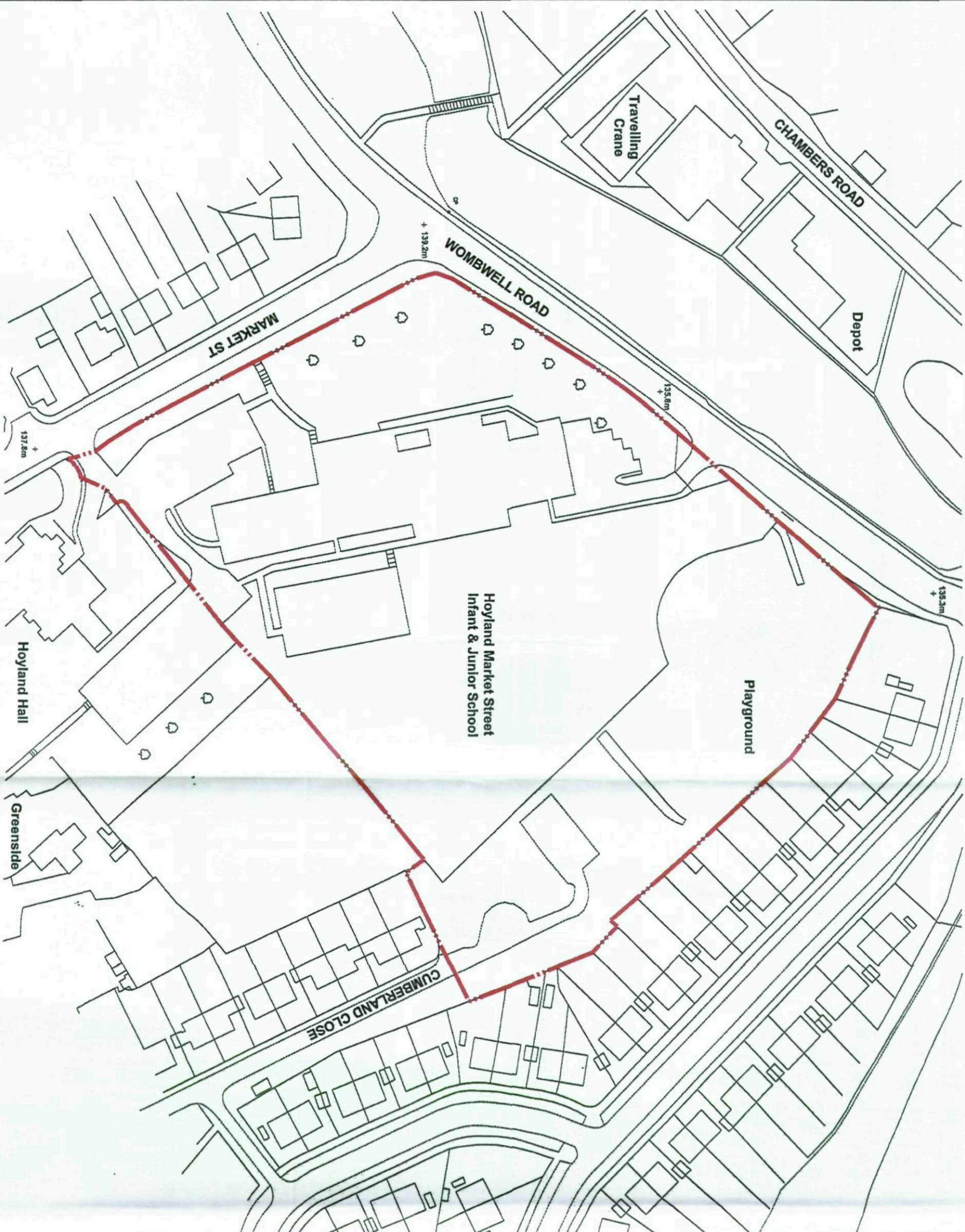


Croxtley House 14 Lloyd Street Manchester M2 5ND
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PLAN 3



REV.	DETAILS	DRAWN	CHECKED	DATE
1				

CLIENT:

Litton Properties Limited

PROJECT:
 Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

DRAWING TITLE:

Existing Site Plan

SCALE:

1:1000 @ A3

DRAWN:

SP CHECKED: DL DATE: Jan 2011

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N01919/03

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REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Litton Properties Limited

PROJECT:
Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

DRAWING TITLE:

2km Pedestrian Catchment

SCALE:

1:25000 @ A3

DRAWN	SP	CHECKED	DL	DATE

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DRAWING NUMBER: N01919/04

REVISION:



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PLAN 5



REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Litton Properties Limited

PROJECT:

Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

DRAWING TITLE:

5km Cycle Catchment

SCALE:

1:50000 @ A3

DRAWN	SP	CHECKED	DL	DATE
				Jan 2011

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Coxley House 14 Lloyd Street, Manchester M2 5ND
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DRAWING NUMBER: N01919/05

REVISION:

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PLAN 6



REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Litton Properties Limited

PROJECT:
Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

DRAWING TITLE:

Bus Catchment Plan

SCALE:

1:50000

DRAWN	HS	CHECKED	DL	DATE
				Mar 10

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Crookley House, 14 Lloyd Street, Manchester M2 5ND
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DRAWING NUMBER: N01919/06

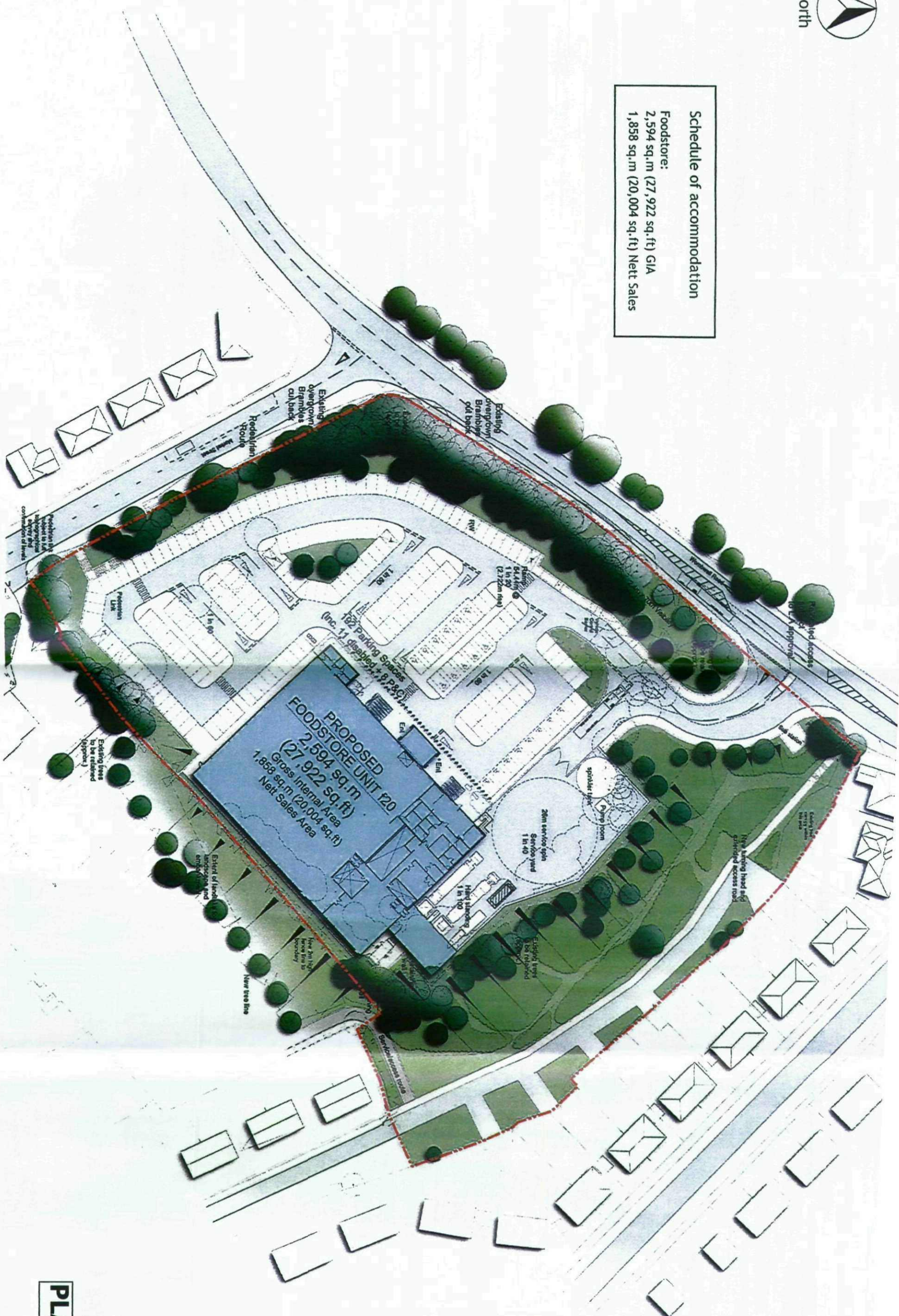
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Schedule of accommodation

Foodstore:
2,594 sq.m (27,922 sq.ft) GIA
1,858 sq.m (20,004 sq.ft) Nett Sales



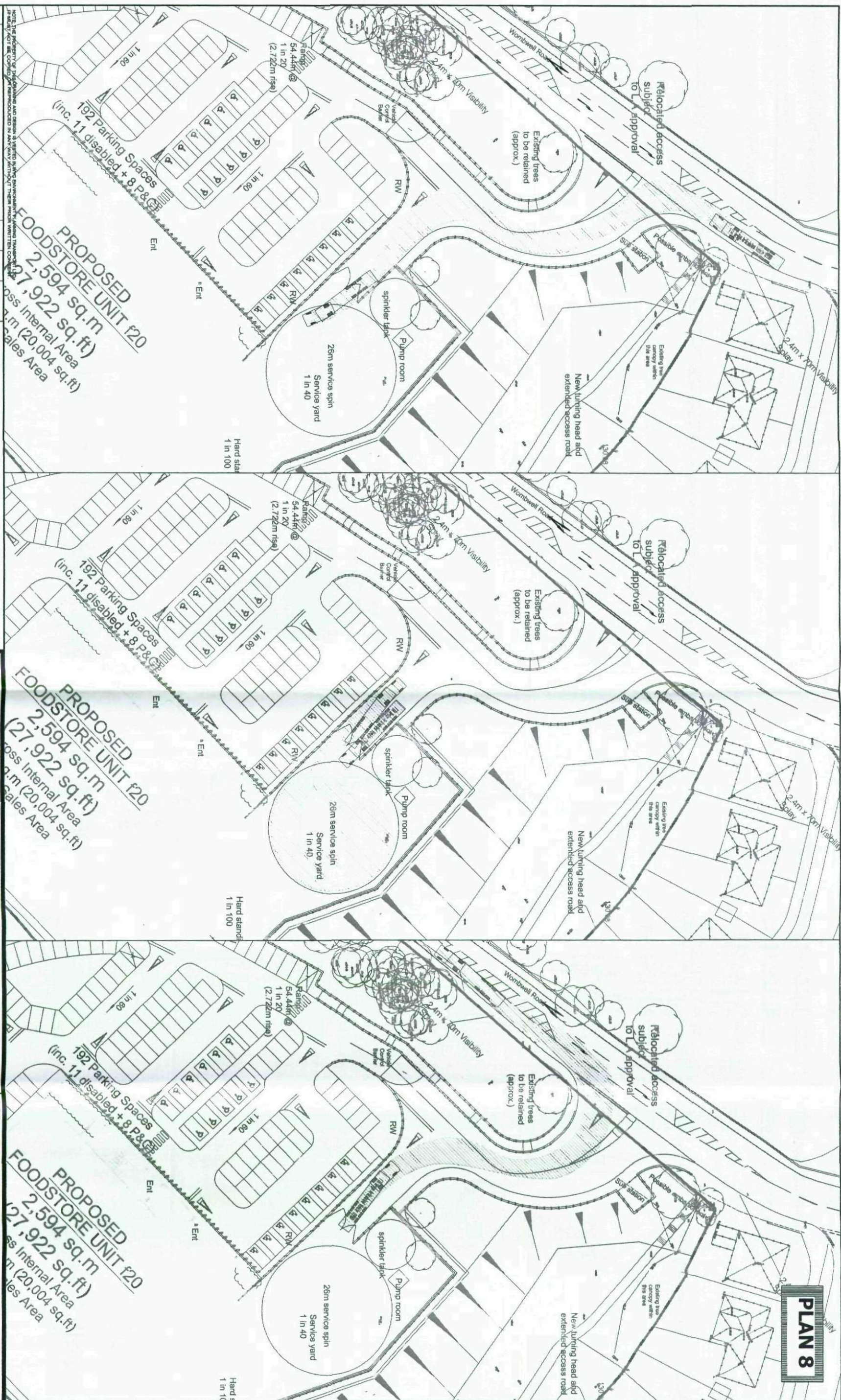
PLAN 7

LITTON PROPERTIES LIMITED

Proposed Development - Market Street, Wombwell Road, Hoyland

Client: Litton Properties Limited
Date: 18/11/10
Job/Dwg: 10842-CGI-02B
Scale: NTS@A3

THE
HARRIS
PARTNERSHIP



REV.	DETAILS	DRAWN	CHECKED	DATE

Notes:
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PROJECT:
Litton Properties Limited
Drawing Title:
Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

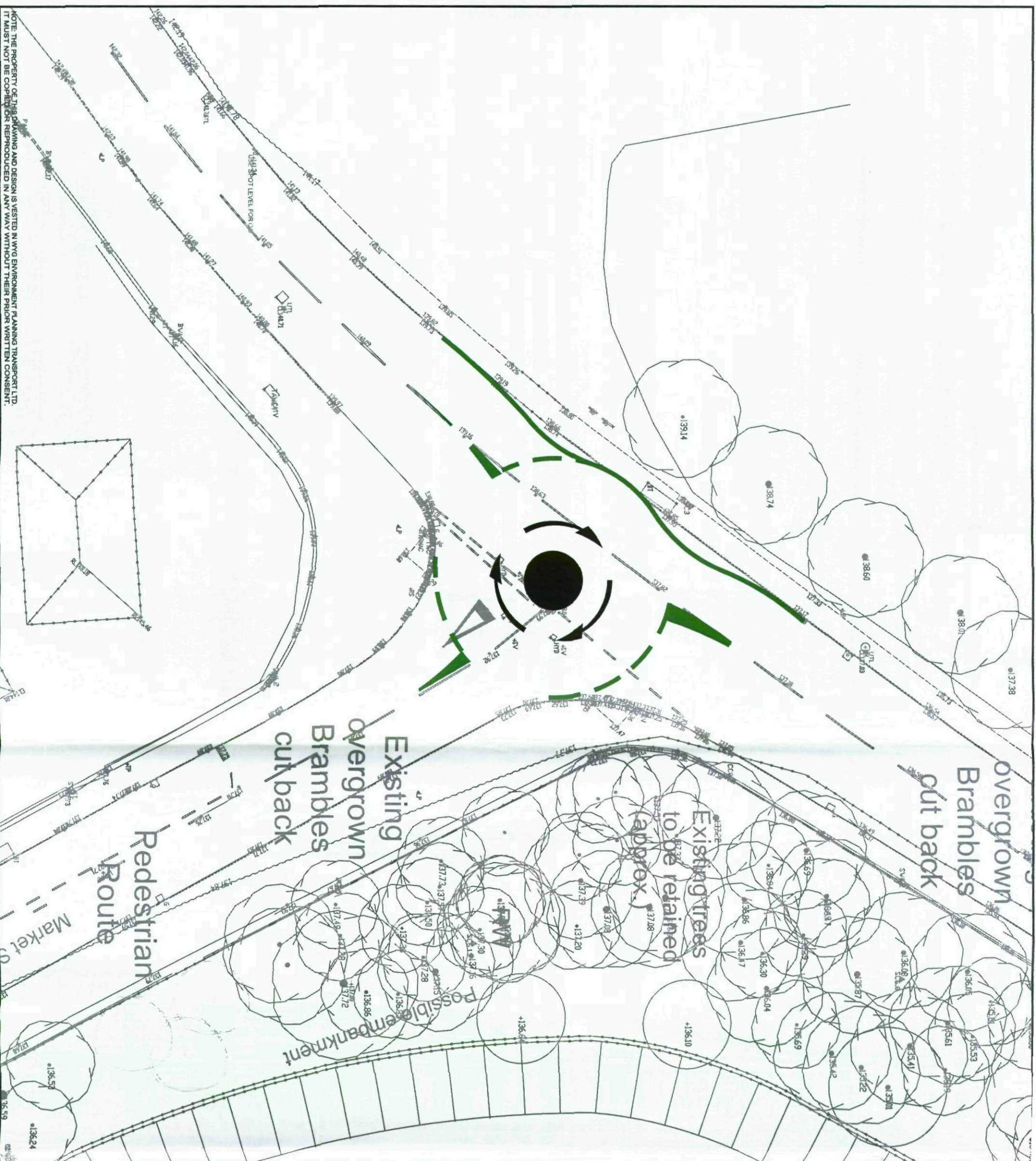
DRAWING NUMBER:	NO1919/07
REVISION:	
SCALE:	1:500
DATE:	Jan 11
CHECKED:	DL
DRAWN:	CP

PROPOSED
FOODSTORE UNIT f20
2,594 sq.m
(27,922 sq.ft)
Internal Area
(20,004 sq.ft)
Paving Area

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PLAN 9



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REV.	DETAILS	DRAWN	CHECKED	DATE
1				

CLIENT:

Litton Properties Limited

PROJECT:

Proposed Foodstore, Land at
Market
Street, Hoyland, South Yorkshire

DRAWING TITLE:

Proposed Mini-Roundabout
Wombwell Rd/Market St

SCALE:

1:250

DRAWN: CP CHECKER: DL DATE: Feb 11

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N01919/08

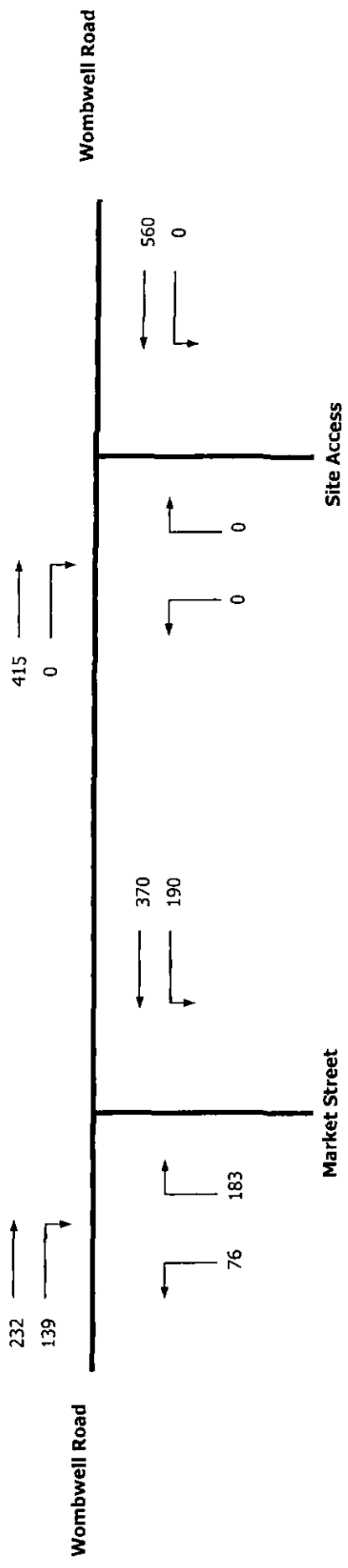
REVISION:

FIGURES

N01919 MARKET STREET, HOYLAND

TRAFFIC FIGURES - JANUARY 2011

FIGURE	TITLE	TIME	CALC
FIGURE 1	2011 SURVEYED FLOWS	PM PEAK	
FIGURE 2	2011 SURVEYED FLOWS	SAT PEAK	
FIGURE 3	2013 BASELINE FLOWS	PM PEAK	1xG
FIGURE 4	2013 BASELINE FLOWS	SAT PEAK	2xG
FIGURE 5	2018 BASELINE FLOWS	PM PEAK	1xG
FIGURE 6	2018 BASELINE FLOWS	SAT PEAK	2xG
FIGURE 7	DISTRIBUTION	PM PEAK	
FIGURE 8	DISTRIBUTION	SAT PEAK	
FIGURE 9	PROPOSED FOODSTORE TRIPS (70% NEW)	PM PEAK	
FIGURE 10	PROPOSED FOODSTORE TRIPS (70% NEW)	SAT PEAK	
FIGURE 11	PROPOSED FOODSTORE TRIPS (30% PASS-BY)	PM PEAK	
FIGURE 12	PROPOSED FOODSTORE TRIPS (30% PASS-BY)	SAT PEAK	
FIGURE 13	TOTAL PROPOSED FOODSTORE TRIPS	PM PEAK	9+11
FIGURE 14	TOTAL PROPOSED FOODSTORE TRIPS	SAT PEAK	10+12
FIGURE 15	2013 ASSESSMENT FLOWS	PM PEAK	3+13
FIGURE 16	2013 ASSESSMENT FLOWS	SAT PEAK	4+14
FIGURE 17	2018 ASSESSMENT FLOWS	PM PEAK	5+13
FIGURE 18	2018 ASSESSMENT FLOWS	SAT PEAK	6+14
FIGURE 19	PERCENTAGE NET IMPACT	PM PEAK	(13/3)x100
FIGURE 20	PERCENTAGE NET IMPACT	SAT PEAK	(14/4)x100



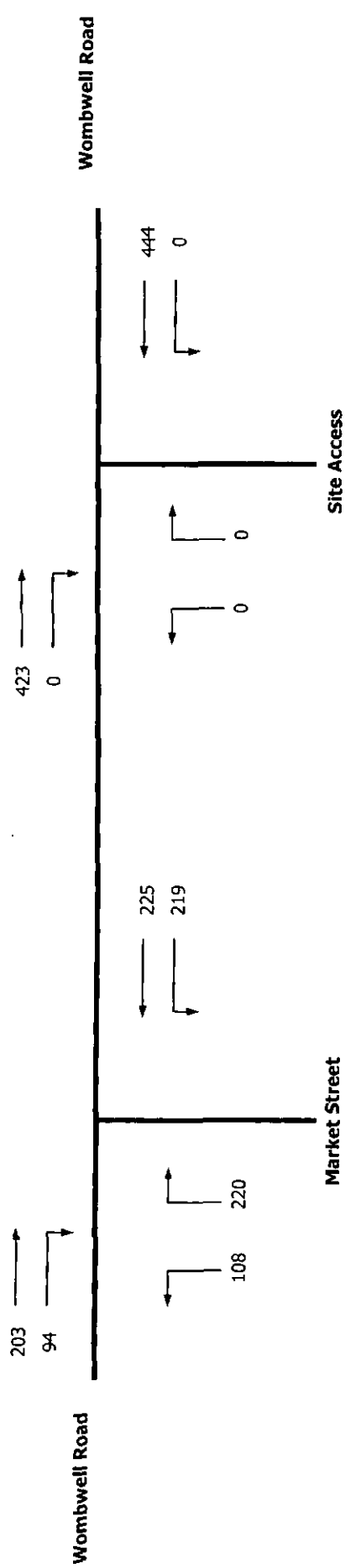
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Figure 1 2011 Surveyed Flows (Weekday PM Peak Hour 1630-1730 hrs)



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Figure 2 2011 Surveyed Flows (Saturday Peak Hour 1200-1300 hrs)

238
143

426
0

Wombwell Road

Wombwell Road

78
188

380
195

0
0

575
0

Market Street

Site Access

NTM Medium Growth Factor 2011 to 2013 = 1.026
PCUs

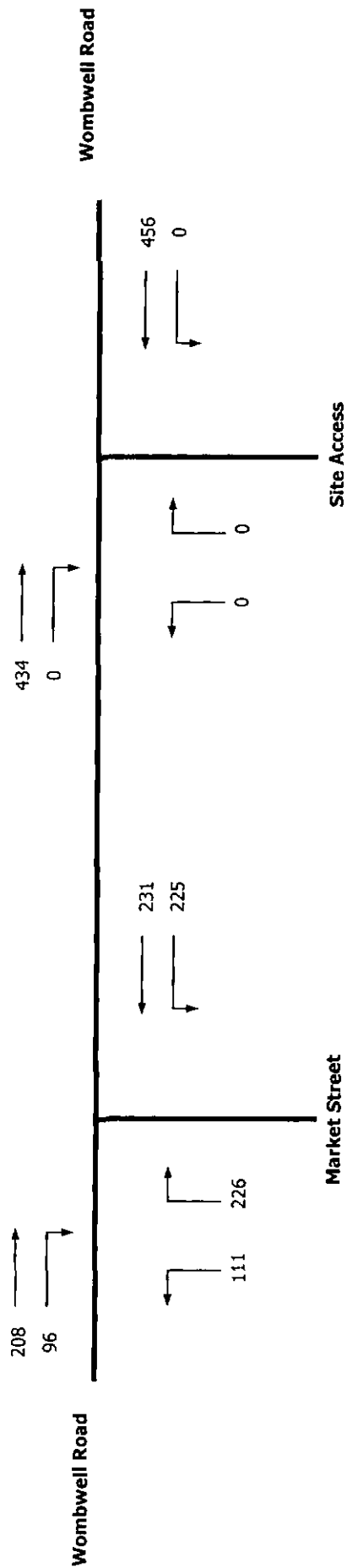
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Figure 3 2013 Baseline Flows (Weekday PM Peak Hour 1630-1730 hrs)



NTM Medium Growth Factor 2011 to 2013 = 1.026
PCUs

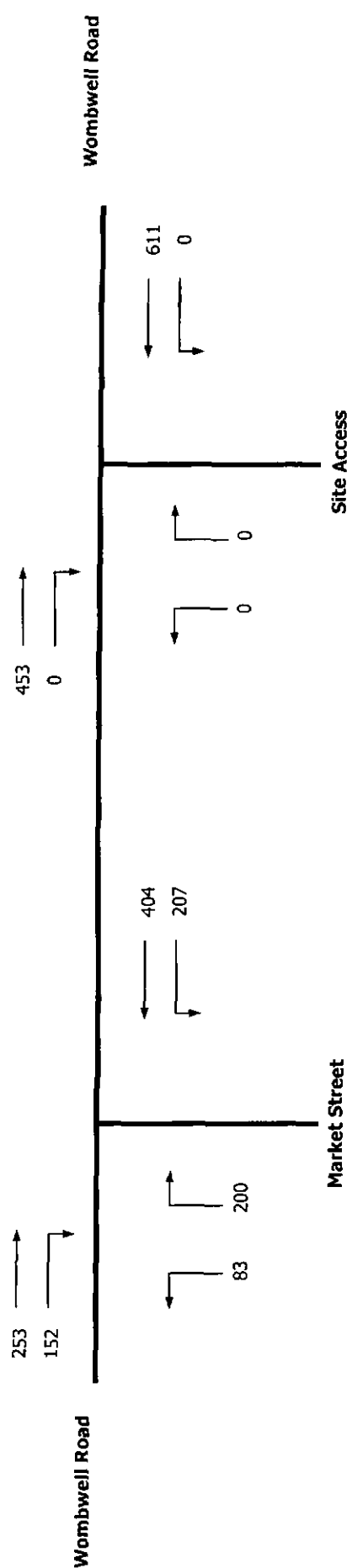
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Figure 4 2013 Baseline Flows (Saturday Peak Hour 1200-1300 hrs)



NTM Medium Growth Factor 2011 to 2018 = 1.091
PCUs

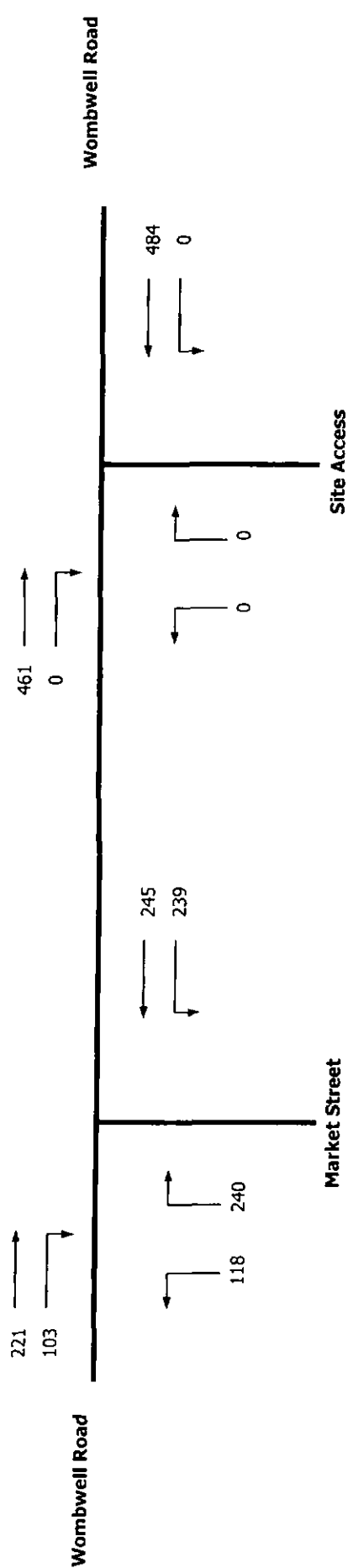
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Figure 5 2018 Baseline Flows (Weekday PM Peak Hour 1630-1730 hrs)



NTM Medium Growth Factor 2011 to 2018 = 1.091
PCUs

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Figure 6 2018 Baseline Flows (Saturday Peak Hour 1200-1300 hrs)



PCUs

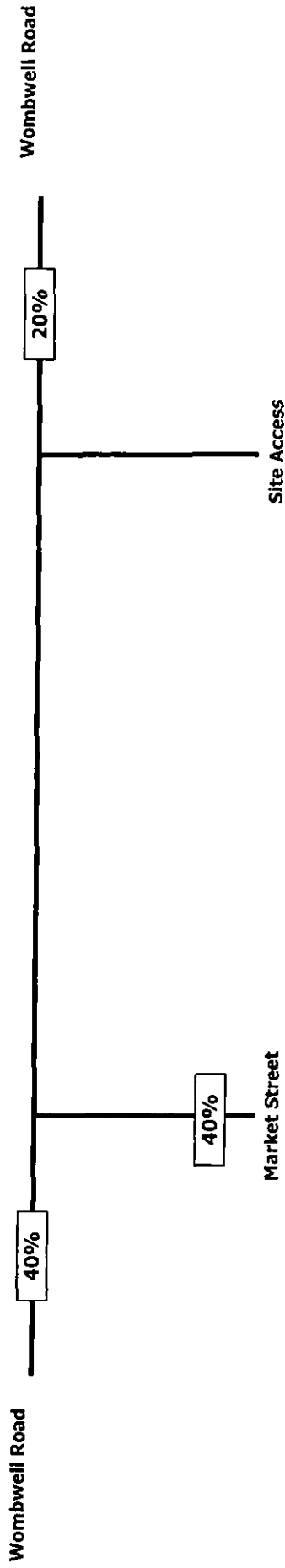
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Figure 7 Distribution (Weekday PM Peak Hour 1630-1730 hrs)



PCUs

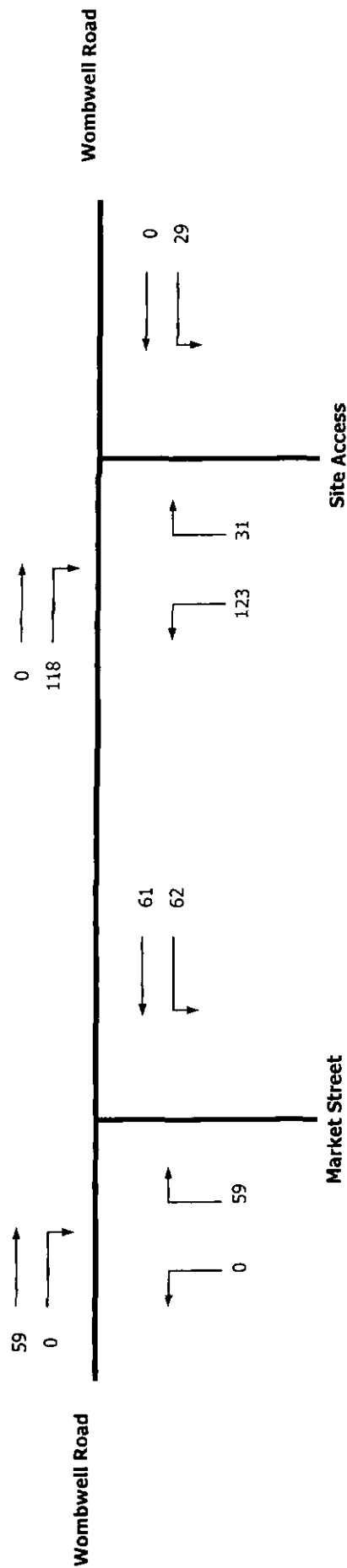
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Figure 8 Distribution (Saturday Peak Hour 1200-1300 hrs)



PCUs

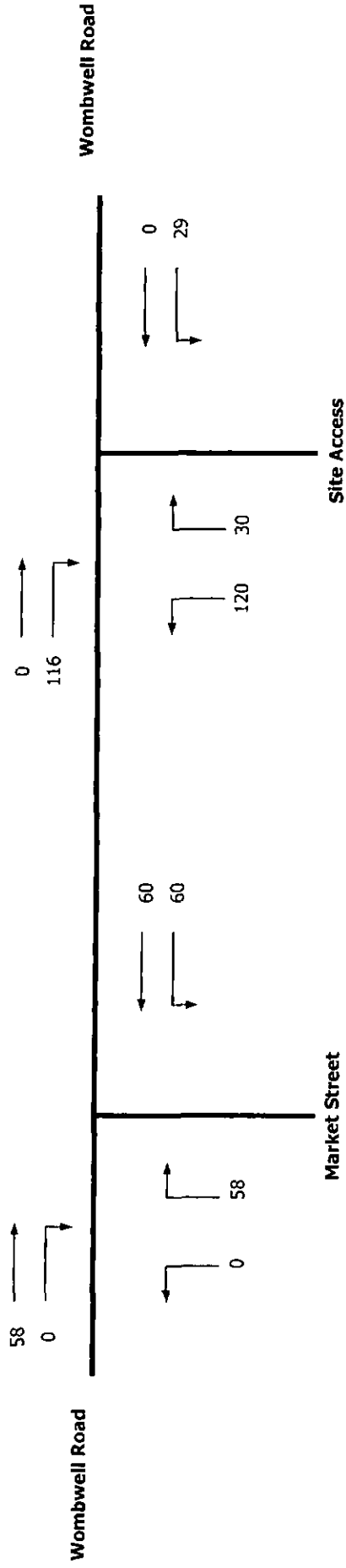
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Figure 9 Proposed Foodstore Trips (70% New) (Weekday PM Peak Hour 1630-1730 hrs)



PCUs

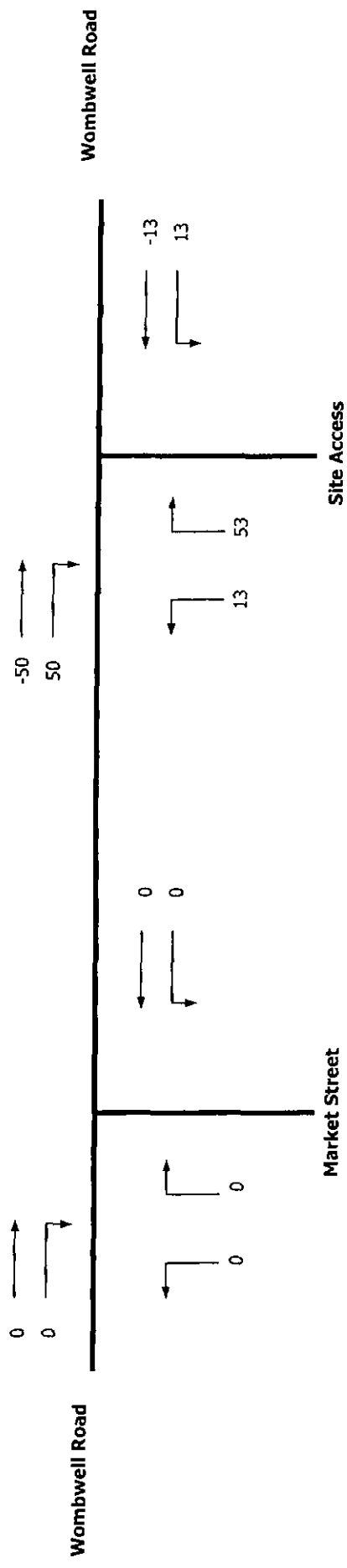
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e: sba@sbax-man.co.uk

Figure 10 Proposed Foodstore Trips (70% New) (Saturday Peak Hour 1200-1300 hrs)



PCUs

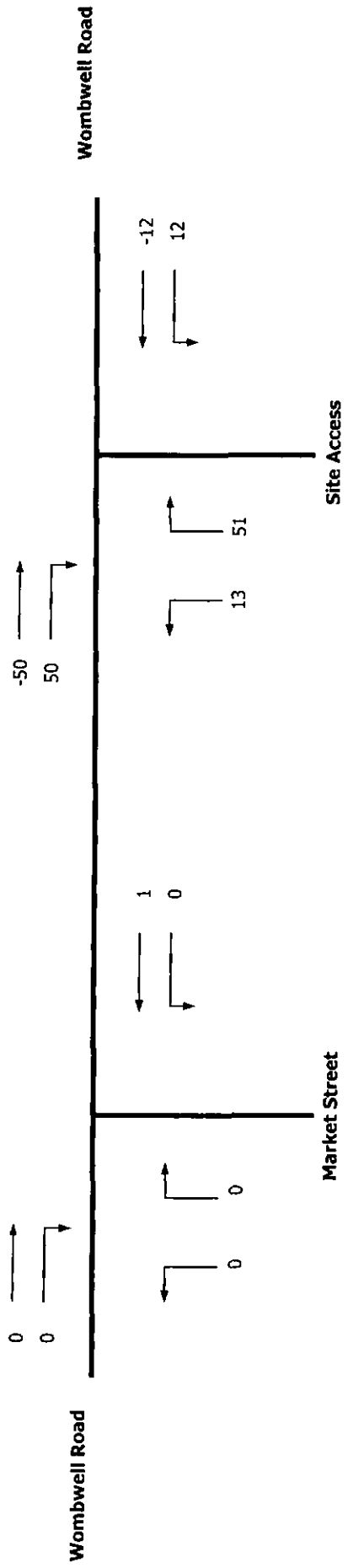
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Figure 11 Proposed Foodstore Trips (30% Pass-by) (Weekday PM Peak Hour 1630-1730 hrs)



PCUs

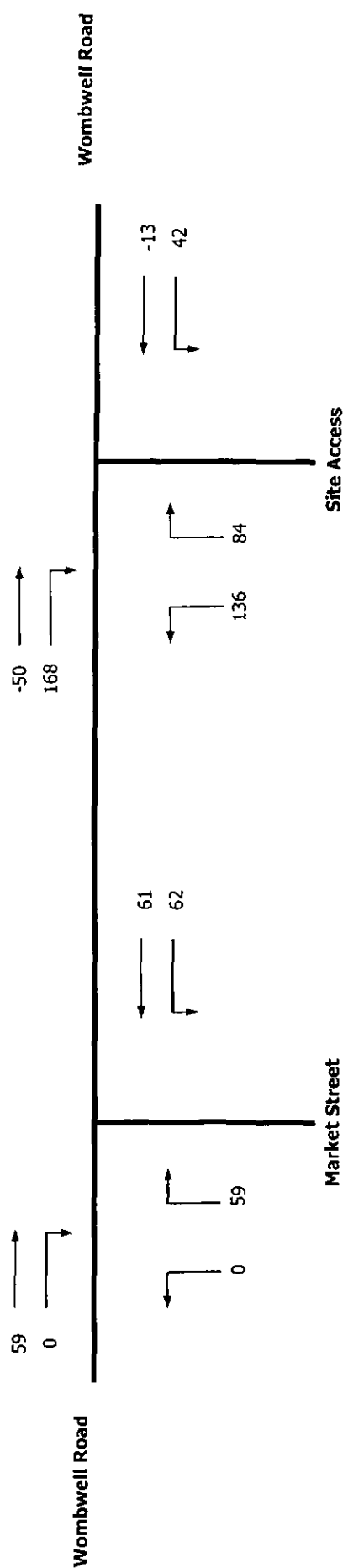
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Figure 12 Proposed Foodstore Trips (30% Pass-by) (Saturday Peak Hour 1200-1300 hrs)



PCUs

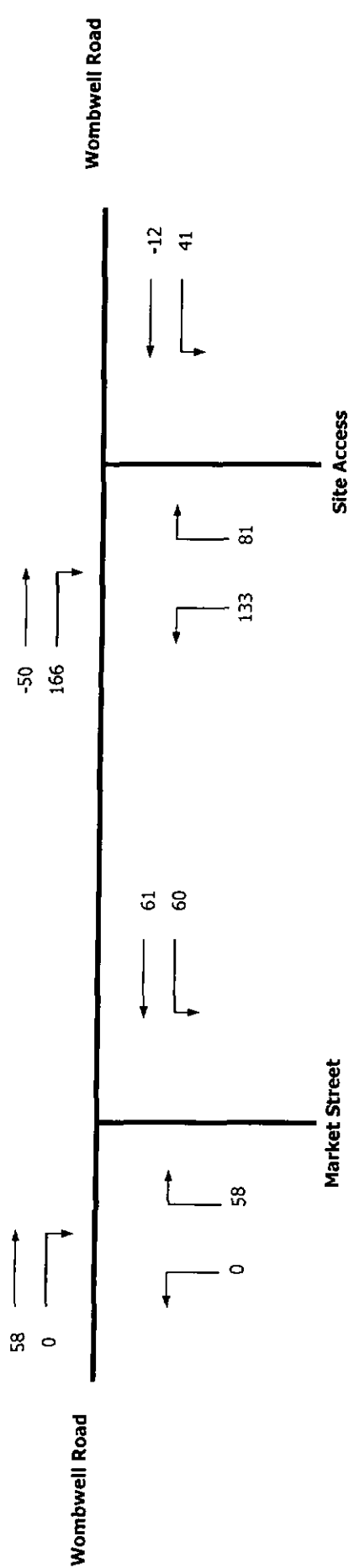
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 t: 0161 835 2400
 e: sba@sbax-man.co.uk

Figure 13 Total Foodstore Trips (Weekday PM Peak Hour 1630-1730 hrs)



PCUs

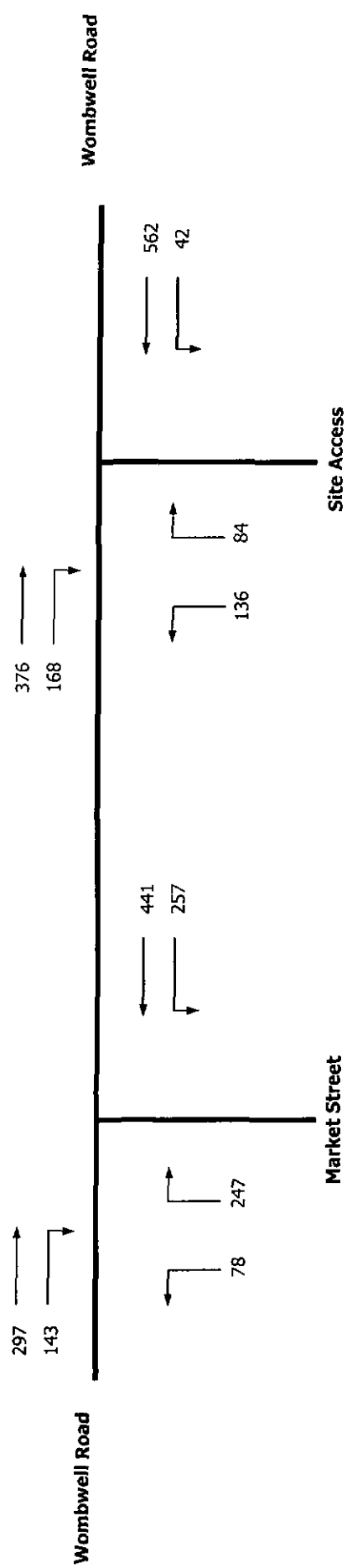
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 14 Lloyd Street, Manchester, M2 5ND
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Figure 14 Total Foodstore Trips (Saturday Peak Hour 1200-1300 hrs)



Savell Bird & Axon

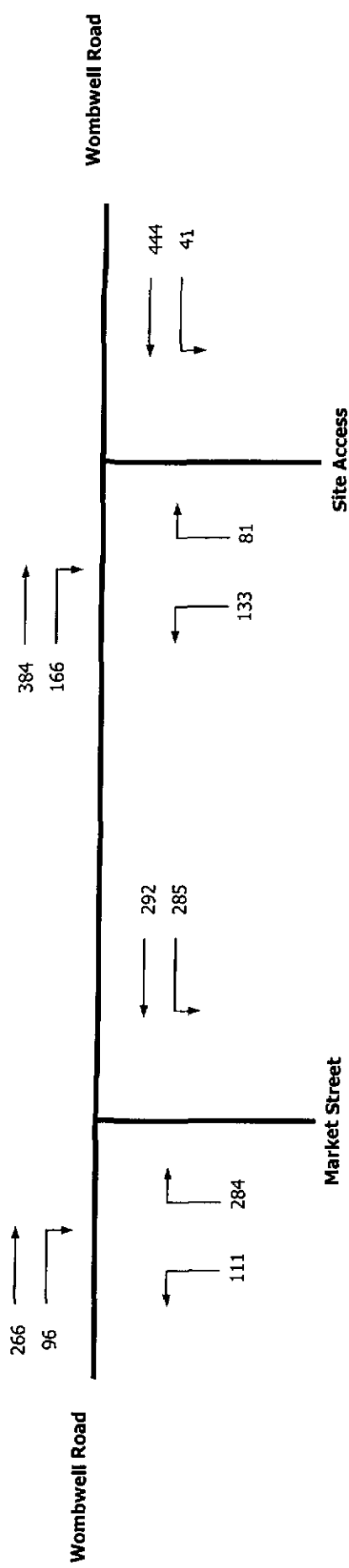
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Figure 15

2013 Assessment Flows (Weekday PM Peak Hour 1630-1730 hrs)



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14 Lloyd Street, Manchester, M2 5ND
t: 0161 835 2400
e: sba@sbax-man.co.uk



PCUs

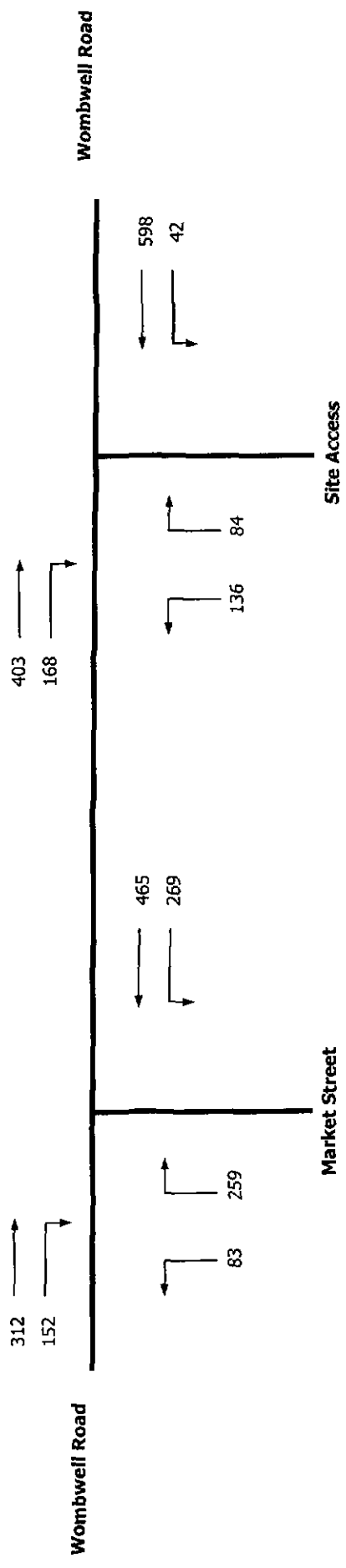
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14 Lloyd Street, Manchester, M2 5ND
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Figure 16 2013 Assessment Flows (Saturday Peak Hour 1200-1300 hrs)



PCUs

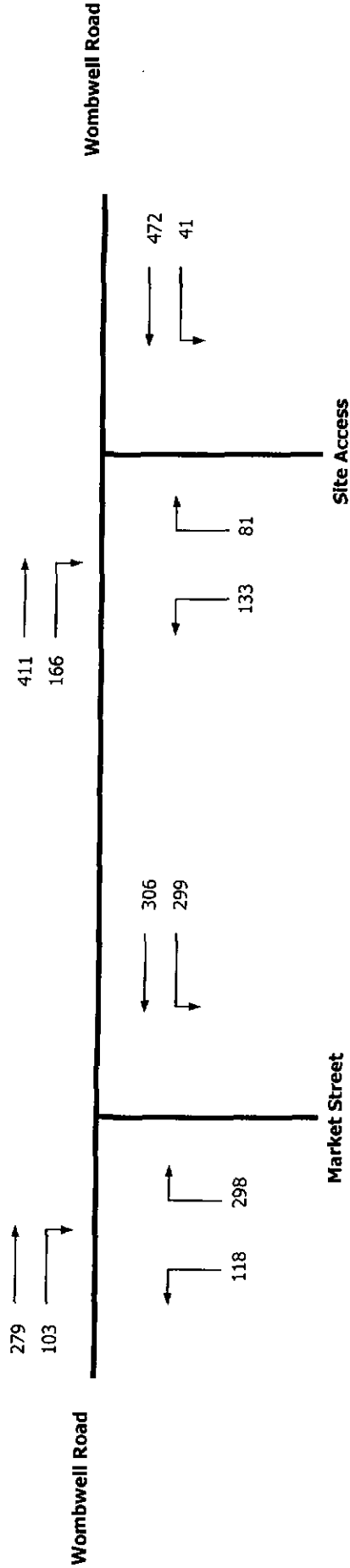
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Transport Planning Specialists
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 14 Lloyd Street, Manchester, M2 5ND
 t: 0161 835 2400
 e: sba@sbax-man.co.uk

Figure 17 2018 Assessment Flows (Weekday PM Peak Hour 1630-1730 hrs)



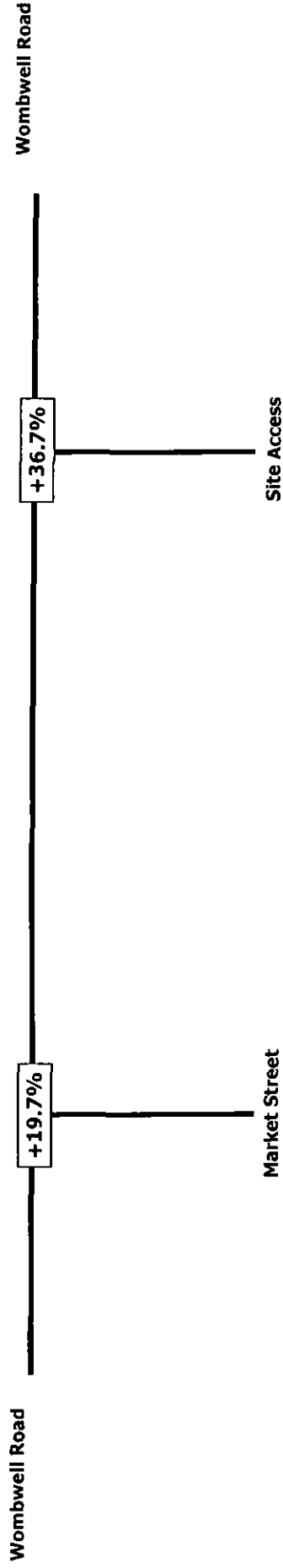
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 4th Floor, Croxley House,
 14 Lloyd Street, Manchester, M2 5ND
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 e: sba@sbax-man.co.uk

Figure 18 2018 Assessment Flows (Saturday Peak Hour 1200-1300 hrs)



PCUs

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part of the WYG group



Transport Planning Specialists
 4th Floor, Croxley House,
 14 Lloyd Street, Manchester, M2 5ND
 t: 0161 835 2400
 e: sba@sbax-man.co.uk

Figure 19 Percentage Net Impact (Weekday PM Peak Hour 1630-1730 hrs)

Wombwell Road

+21.6%

Market Street

+40.3%

Site Access

Wombwell Road

PCUs

Savell Bird & Axon

part of the WYG group



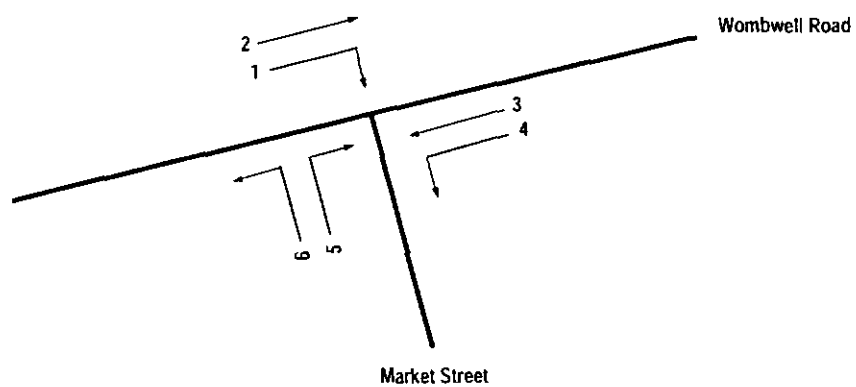
Transport Planning Specialists
4th Floor, Croxley House,
14 Lloyd Street, Manchester, M2 5ND
t: 0161 835 2400
e: sba@sbax-man.co.uk

Figure 20 Percentage Net Impact (Saturday Peak Hour 1200-1300 hrs)

APPENDICES

Appendix 1

Traffic Survey Data



DRAWING TITLE				signal surveys Traffic Counts and Car Park Surveys Parkway House, Palatine Road, Northenden, Manchester, M22 4DB Tel 0161 998 4226 Fax 0161 998 1189
TRAFFIC MOVEMENT REFERENCE				
JOB TITLE				
2011.019 BARNSELY				
DRAWN BY	DATE	SCALE	REF	
DC	JAN 2011	NTS	FIGURE 1	

Wombwell Road/Market Street - Saturday 15th January 2011												
Time Beginning	1		2		3		4		5		6	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1100	31	0	52	1	52	1	50	0	64	0	24	0
1115	15	0	31	2	34	1	45	0	46	0	21	0
1130	24	0	50	1	61	1	47	3	54	0	19	0
1145	14	0	54	1	51	1	36	1	39	2	21	0
1200	30	0	54	2	71	4	58	1	65	0	22	0
1215	25	0	48	0	51	1	62	0	49	1	29	0
1230	21	0	40	0	55	2	46	2	41	0	27	0
1245	18	0	55	1	62	1	47	0	61	1	28	1
1300	24	0	50	1	68	2	59	0	44	0	26	0
1315	13	0	43	1	62	2	41	0	45	1	27	0
1330	18	0	65	1	49	0	35	1	54	0	12	0
1345	16	0	57	1	52	1	37	1	50	1	16	0
1400	19	0	54	1	57	0	35	0	46	1	17	0
1415	20	1	53	0	65	0	47	1	47	0	14	0
1430	16	0	46	0	54	0	45	1	39	0	17	0
1445	11	0	44	0	44	0	49	0	36	1	17	0
1500	22	0	56	1	56	1	56	0	46	0	17	0
1515	12	0	27	0	47	1	38	0	30	0	17	0
1530	17	0	39	2	51	1	40	1	45	1	13	0
1545	22	0	32	1	49	2	39	0	34	1	10	0

Wombwell Road/Market Street - Tuesday 18th January 2011												
Time Beginning	1		2		3		4		5		6	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	35	0	59	2	89	2	47	0	49	3	16	0
1645	27	0	59	1	84	2	52	1	35	1	21	0
1700	33	1	53	0	107	2	56	0	50	1	23	0
1715	40	1	47	4	74	2	33	0	35	2	16	0
1730	29	1	41	2	70	2	54	1	46	0	12	0
1745	31	0	46	0	66	1	44	0	32	0	15	0
1800	24	0	52	1	82	0	37	1	42	1	27	0
1815	19	0	39	0	43	0	30	0	26	1	17	0

Appendix 2

Multi-Modal Trip Rates - Foodstore



TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL

Category : A - FOOD SUPERSTORE

MULTI-MODAL PEDESTRIANSSelected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
10	WALES	
	CF CARDIFF	1 days
	IA ISLE OF ANGLESEY	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 1700 to 5000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Monday 1 days
Friday 4 days

Selected survey types:

Manual count 5 days
Directional ATC Count 0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre) 3
Edge of Town 2

Selected Location Sub Categories:

Residential Zone 4
Built-Up Zone 1

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	5	3517	0.205	5	3517	0.125	5	3517	0.330
08:00 - 09:00	5	3517	0.898	5	3517	0.745	5	3517	1.643
09:00 - 10:00	5	3517	1.171	5	3517	0.904	5	3517	2.075
10:00 - 11:00	5	3517	1.854	5	3517	1.495	5	3517	3.349
11:00 - 12:00	5	3517	1.700	5	3517	1.501	5	3517	3.201
12:00 - 13:00	5	3517	3.139	5	3517	3.019	5	3517	6.158
13:00 - 14:00	5	3517	1.882	5	3517	2.229	5	3517	4.111
14:00 - 15:00	5	3517	1.205	5	3517	1.092	5	3517	2.297
15:00 - 16:00	5	3517	1.677	5	3517	1.666	5	3517	3.343
16:00 - 17:00	5	3517	1.643	5	3517	1.501	5	3517	3.144
17:00 - 18:00	5	3517	1.461	5	3517	1.296	5	3517	2.757
18:00 - 19:00	5	3517	1.205	5	3517	1.342	5	3517	2.547
19:00 - 20:00	5	3517	0.807	5	3517	1.046	5	3517	1.853
20:00 - 21:00	5	3517	0.392	5	3517	0.517	5	3517	0.909
21:00 - 22:00	5	3517	0.239	5	3517	0.256	5	3517	0.495
22:00 - 23:00	1	4212	0.000	1	4212	0.119	1	4212	0.119
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			19.478						38.331

Parameter summary

Trip rate parameter range selected: 1700 - 5000 (units: sqm)
 Survey date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
 Category : A - FOOD SUPERSTORE

MULTI-MODAL PEDESTRIANSSelected regions and areas:

02 SOUTH EAST	
EX ESSEX	1 days
HF HERTFORDSHIRE	1 days
03 SOUTH WEST	
GS GLOUCESTERSHIRE	1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
NY NORTH YORKSHIRE	4 days
08 NORTH WEST	
CH CHESHIRE	1 days
GM GREATER MANCHESTER	1 days
09 NORTH	
DH DURHAM	1 days
10 WALES	
CF CARDIFF	1 days
MM MONMOUTHSHIRE	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 800 to 4550 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Saturday 12 days

Selected survey types:

Manual count 12 days
 Directional ATC Count 0 days

Selected Locations:

Edge of Town Centre 2
 Suburban Area (PPS6 Out of Centre) 6
 Edge of Town 4

Selected Location Sub Categories:

Residential Zone 6
 Retail Zone 1
 Built-Up Zone 1
 High Street 1
 No Sub Category 3

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	1	1825	0.000	1	1825	0.000	1	1825	0.000
07:00 - 08:00	12	3313	0.272	12	3313	0.101	12	3313	0.373
08:00 - 09:00	12	3313	0.634	12	3313	0.518	12	3313	1.152
09:00 - 10:00	12	3313	1.107	12	3313	1.112	12	3313	2.219
10:00 - 11:00	12	3313	1.658	12	3313	1.534	12	3313	3.192
11:00 - 12:00	12	3313	1.436	12	3313	1.517	12	3313	2.953
12:00 - 13:00	12	3313	1.487	12	3313	1.542	12	3313	3.029
13:00 - 14:00	12	3313	1.436	12	3313	1.499	12	3313	2.935
14:00 - 15:00	12	3313	1.326	12	3313	1.283	12	3313	2.609
15:00 - 16:00	12	3313	1.376	12	3313	1.497	12	3313	2.873
16:00 - 17:00	12	3313	1.202	12	3313	1.152	12	3313	2.354
17:00 - 18:00	12	3313	1.217	12	3313	1.222	12	3313	2.439
18:00 - 19:00	12	3313	0.971	12	3313	1.240	12	3313	2.211
19:00 - 20:00	12	3313	0.762	12	3313	0.830	12	3313	1.592
20:00 - 21:00	11	3448	0.453	11	3448	0.554	11	3448	1.007
21:00 - 22:00	7	3093	0.383	7	3093	0.462	7	3093	0.845
22:00 - 23:00	2	2300	0.000	2	2300	0.130	2	2300	0.130
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			15.720				16.193	31.913	

Parameter summary

Trip rate parameter range selected: 800 - 4550 (units: sqm)
 Survey date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 12
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : A - FOOD SUPERSTORE

MULTI-MODAL CYCLISTSSelected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
10	WALES	
	CF CARDIFF	1 days
	IA ISLE OF ANGLESEY	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 1700 to 5000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Monday	1 days
Friday	4 days

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	2

Selected Location Sub Categories:

Residential Zone	4
Built-Up Zone	1

OFF-LINE VERSION SBA Lloyd Street Manchester

Licence No: 705118

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	5	3517	0.028	5	3517	0.023	5	3517	0.051
08:00 - 09:00	5	3517	0.045	5	3517	0.040	5	3517	0.085
09:00 - 10:00	5	3517	0.028	5	3517	0.023	5	3517	0.051
10:00 - 11:00	5	3517	0.034	5	3517	0.028	5	3517	0.062
11:00 - 12:00	5	3517	0.068	5	3517	0.045	5	3517	0.113
12:00 - 13:00	5	3517	0.057	5	3517	0.114	5	3517	0.171
13:00 - 14:00	5	3517	0.057	5	3517	0.040	5	3517	0.097
14:00 - 15:00	5	3517	0.017	5	3517	0.017	5	3517	0.034
15:00 - 16:00	5	3517	0.057	5	3517	0.063	5	3517	0.120
16:00 - 17:00	5	3517	0.068	5	3517	0.051	5	3517	0.119
17:00 - 18:00	5	3517	0.045	5	3517	0.068	5	3517	0.113
18:00 - 19:00	5	3517	0.034	5	3517	0.045	5	3517	0.079
19:00 - 20:00	5	3517	0.045	5	3517	0.034	5	3517	0.079
20:00 - 21:00	5	3517	0.011	5	3517	0.017	5	3517	0.028
21:00 - 22:00	5	3517	0.028	5	3517	0.028	5	3517	0.056
22:00 - 23:00	1	4212	0.000	1	4212	0.000	1	4212	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			0.622			0.636			1.258

Parameter summary

Trip rate parameter range selected: 1700 - 5000 (units: sqm)
 Survey date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
 Category : A - FOOD SUPERSTORE

MULTI-MODAL CYCLISTSSelected regions and areas:

02 SOUTH EAST	
EX ESSEX	1 days
HF HERTFORDSHIRE	1 days
03 SOUTH WEST	
GS GLOUCESTERSHIRE	1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
NY NORTH YORKSHIRE	4 days
08 NORTH WEST	
CH CHESHIRE	1 days
GM GREATER MANCHESTER	1 days
09 NORTH	
DH DURHAM	1 days
10 WALES	
CF CARDIFF	1 days
MM MONMOUTHSHIRE	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 800 to 4550 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Saturday 12 days

Selected survey types:

Manual count 12 days
 Directional ATC Count 0 days

Selected Locations:

Edge of Town Centre 2
 Suburban Area (PPS6 Out of Centre) 6
 Edge of Town 4

Selected Location Sub Categories:

Residential Zone 6
 Retail Zone 1
 Built-Up Zone 1
 High Street 1
 No Sub Category 3

OFF-LINE VERSION SBA Lloyd Street Manchester

Licence No: 705118

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	1	1825	0.000	1	1825	0.000	1	1825	0.000
07:00 - 08:00	12	3313	0.063	12	3313	0.053	12	3313	0.116
08:00 - 09:00	12	3313	0.088	12	3313	0.073	12	3313	0.161
09:00 - 10:00	12	3313	0.075	12	3313	0.050	12	3313	0.125
10:00 - 11:00	12	3313	0.055	12	3313	0.060	12	3313	0.115
11:00 - 12:00	12	3313	0.096	12	3313	0.060	12	3313	0.156
12:00 - 13:00	12	3313	0.065	12	3313	0.098	12	3313	0.163
13:00 - 14:00	12	3313	0.116	12	3313	0.091	12	3313	0.207
14:00 - 15:00	12	3313	0.070	12	3313	0.088	12	3313	0.158
15:00 - 16:00	12	3313	0.078	12	3313	0.078	12	3313	0.156
16:00 - 17:00	12	3313	0.101	12	3313	0.116	12	3313	0.217
17:00 - 18:00	12	3313	0.063	12	3313	0.070	12	3313	0.133
18:00 - 19:00	12	3313	0.060	12	3313	0.073	12	3313	0.133
19:00 - 20:00	12	3313	0.030	12	3313	0.040	12	3313	0.070
20:00 - 21:00	11	3448	0.037	11	3448	0.050	11	3448	0.087
21:00 - 22:00	7	3093	0.023	7	3093	0.028	7	3093	0.051
22:00 - 23:00	2	2300	0.000	2	2300	0.022	2	2300	0.022
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.020			1.050			2.070

Parameter summary

Trip rate parameter range selected: 800 - 4550 (units: sqm)
 Survey date date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 12
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL

Category : A - FOOD SUPERSTORE

MULTI-MODAL PUBLIC TRANSPORT USERSSelected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
10	WALES	
	CF CARDIFF	1 days
	IA ISLE OF ANGLESEY	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 1700 to 5000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Monday 1 days
 Friday 4 days

Selected survey types:

Manual count 5 days
 Directional ATC Count 0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre) 3
 Edge of Town 2

Selected Location Sub Categories:

Residential Zone 4
 Built-Up Zone 1

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	5	3517	0.034	5	3517	0.045	5	3517	0.079
08:00 - 09:00	5	3517	0.085	5	3517	0.085	5	3517	0.170
09:00 - 10:00	5	3517	0.108	5	3517	0.108	5	3517	0.216
10:00 - 11:00	5	3517	0.091	5	3517	0.131	5	3517	0.222
11:00 - 12:00	5	3517	0.148	5	3517	0.182	5	3517	0.330
12:00 - 13:00	5	3517	0.136	5	3517	0.210	5	3517	0.346
13:00 - 14:00	5	3517	0.074	5	3517	0.142	5	3517	0.216
14:00 - 15:00	5	3517	0.114	5	3517	0.125	5	3517	0.239
15:00 - 16:00	5	3517	0.136	5	3517	0.131	5	3517	0.267
16:00 - 17:00	5	3517	0.063	5	3517	0.142	5	3517	0.205
17:00 - 18:00	5	3517	0.057	5	3517	0.142	5	3517	0.199
18:00 - 19:00	5	3517	0.125	5	3517	0.142	5	3517	0.267
19:00 - 20:00	5	3517	0.057	5	3517	0.119	5	3517	0.176
20:00 - 21:00	5	3517	0.051	5	3517	0.091	5	3517	0.142
21:00 - 22:00	5	3517	0.006	5	3517	0.040	5	3517	0.046
22:00 - 23:00	1	4212	0.000	1	4212	0.000	1	4212	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.285			1.835			3.120

Parameter summary

Trip rate parameter range selected: 1700 - 5000 (units: sqm)
 Survey date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL

Category : A - FOOD SUPERSTORE

MULTI-MODAL PUBLIC TRANSPORT USERSSelected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	HF HERTFORDSHIRE	1 days
03	SOUTH WEST	
	GS GLOUCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	4 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	GM GREATER MANCHESTER	1 days
09	NORTH	
	DH DURHAM	1 days
10	WALES	
	CF CARDIFF	1 days
	MM MONMOUTHSHIRE	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 800 to 4550 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Saturday 12 days

Selected survey types:

Manual count 12 days
 Directional ATC Count 0 days

Selected Locations:

Edge of Town Centre 2
 Suburban Area (PPS6 Out of Centre) 6
 Edge of Town 4

Selected Location Sub Categories:

Residential Zone 6
 Retail Zone 1
 Built-Up Zone 1
 High Street 1
 No Sub Category 3

OFF-LINE VERSION SBA Lloyd Street Manchester

Licence No: 705118

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	1	1825	0.000	1	1825	0.000	1	1825	0.000
07:00 - 08:00	12	3313	0.018	12	3313	0.013	12	3313	0.031
08:00 - 09:00	12	3313	0.053	12	3313	0.043	12	3313	0.096
09:00 - 10:00	12	3313	0.106	12	3313	0.093	12	3313	0.199
10:00 - 11:00	12	3313	0.186	12	3313	0.181	12	3313	0.367
11:00 - 12:00	12	3313	0.141	12	3313	0.176	12	3313	0.317
12:00 - 13:00	12	3313	0.126	12	3313	0.204	12	3313	0.330
13:00 - 14:00	12	3313	0.141	12	3313	0.146	12	3313	0.287
14:00 - 15:00	12	3313	0.118	12	3313	0.106	12	3313	0.224
15:00 - 16:00	12	3313	0.103	12	3313	0.121	12	3313	0.224
16:00 - 17:00	12	3313	0.133	12	3313	0.091	12	3313	0.224
17:00 - 18:00	12	3313	0.093	12	3313	0.103	12	3313	0.196
18:00 - 19:00	12	3313	0.169	12	3313	0.093	12	3313	0.262
19:00 - 20:00	12	3313	0.048	12	3313	0.088	12	3313	0.136
20:00 - 21:00	11	3448	0.024	11	3448	0.037	11	3448	0.061
21:00 - 22:00	7	3093	0.014	7	3093	0.023	7	3093	0.037
22:00 - 23:00	2	2300	0.000	2	2300	0.000	2	2300	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.473				1.518	2.991	

Parameter summary

Trip rate parameter range selected: 800 - 4550 (units: sqm)
 Survey date date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 12
 Number of Sundays: 0
 Surveys manually removed from selection: 0

Appendix 3

TRICS Output - Foodstore

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
 Category : A - FOOD SUPERSTORE

VEHICLES

Selected regions and areas:

02 SOUTH EAST	
KC KENT	1 days
WS WEST SUSSEX	1 days
03 SOUTH WEST	
DC DORSET	1 days
DV DEVON	1 days
05 EAST MIDLANDS	
LE LEICESTERSHIRE	1 days
09 NORTH	
CB CUMBRIA	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 1700 to 5000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Thursday	1 days
Friday	5 days

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	1

Selected Location Sub Categories:

Residential Zone	3
Retail Zone	1
Village	1
No Sub Category	1

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

VEHICLES**Calculation factor: 100 sqm****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	1	4830	0.890	1	4830	0.248	1	4830	1.138
07:00 - 08:00	6	3498	1.749	6	3498	0.886	6	3498	2.635
08:00 - 09:00	6	3498	4.269	6	3498	2.940	6	3498	7.209
09:00 - 10:00	6	3498	6.608	6	3498	4.936	6	3498	11.544
10:00 - 11:00	6	3498	7.428	6	3498	6.408	6	3498	13.836
11:00 - 12:00	6	3498	7.485	6	3498	7.533	6	3498	15.018
12:00 - 13:00	6	3498	7.585	6	3498	7.780	6	3498	15.365
13:00 - 14:00	6	3498	7.285	6	3498	7.328	6	3498	14.613
14:00 - 15:00	6	3498	7.337	6	3498	7.409	6	3498	14.746
15:00 - 16:00	6	3498	6.908	6	3498	7.285	6	3498	14.193
16:00 - 17:00	6	3498	7.385	6	3498	6.980	6	3498	14.365
17:00 - 18:00	6	3498	8.104	6	3498	8.485	6	3498	16.589
18:00 - 19:00	6	3498	6.437	6	3498	7.852	6	3498	14.289
19:00 - 20:00	6	3498	4.736	6	3498	5.798	6	3498	10.534
20:00 - 21:00	5	3779	2.419	5	3779	3.482	5	3779	5.901
21:00 - 22:00	4	4095	1.233	4	4095	2.112	4	4095	3.345
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			87.858			87.462			175.320

Parameter summary

Trip rate parameter range selected: 1700 - 5000 (units: sqm)
 Survey date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 6
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
 Category : A - FOOD SUPERSTORE

VEHICLESSelected regions and areas:

02 SOUTH EAST	
EX ESSEX	1 days
HF HERTFORDSHIRE	1 days
KC KENT	1 days
WS WEST SUSSEX	1 days
03 SOUTH WEST	
DC DORSET	1 days
GS GLOUCESTERSHIRE	1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
NY NORTH YORKSHIRE	4 days
08 NORTH WEST	
CH CHESHIRE	1 days
GM GREATER MANCHESTER	1 days
09 NORTH	
DH DURHAM	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 800 to 4830 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 08/07/10

Selected survey days:

Saturday 13 days

Selected survey types:

Manual count 13 days
 Directional ATC Count 0 days

Selected Locations:

Edge of Town Centre 3
 Suburban Area (PPS6 Out of Centre) 5
 Edge of Town 4
 Neighbourhood Centre (PPS6 Local Centre) 1

Selected Location Sub Categories:

Residential Zone 5
 Retail Zone 2
 Built-Up Zone 1
 Village 1
 High Street 1
 No Sub Category 3

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	2	3328	0.601	2	3328	0.165	2	3328	0.766
07:00 - 08:00	12	3171	1.306	12	3171	0.767	12	3171	2.073
08:00 - 09:00	13	3088	3.769	13	3088	2.526	13	3088	6.295
09:00 - 10:00	13	3088	5.976	13	3088	4.887	13	3088	10.863
10:00 - 11:00	13	3088	7.832	13	3088	6.524	13	3088	14.356
11:00 - 12:00	13	3088	8.258	13	3088	7.891	13	3088	16.149
12:00 - 13:00	13	3088	7.966	13	3088	8.243	13	3088	16.209
13:00 - 14:00	13	3088	7.229	13	3088	7.239	13	3088	14.468
14:00 - 15:00	13	3088	7.069	13	3088	6.932	13	3088	14.001
15:00 - 16:00	13	3088	6.883	13	3088	6.925	13	3088	13.808
16:00 - 17:00	13	3088	6.736	13	3088	7.206	13	3088	13.942
17:00 - 18:00	13	3088	6.477	13	3088	7.313	13	3088	13.790
18:00 - 19:00	13	3088	4.872	13	3088	6.001	13	3088	10.873
19:00 - 20:00	13	3088	2.822	13	3088	3.841	13	3088	6.663
20:00 - 21:00	11	3293	1.193	11	3293	1.930	11	3293	3.123
21:00 - 22:00	7	3140	0.678	7	3140	0.974	7	3140	1.652
22:00 - 23:00	2	2300	0.087	2	2300	0.174	2	2300	0.261
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			79.754				79.538	159.292	

Parameter summary

Trip rate parameter range selected: 800 - 4830 (units: sqm)
 Survey date range: 01/01/02 - 08/07/10
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 13
 Number of Sundays: 0
 Surveys manually removed from selection: 0

Appendix 4

PICADY Outputs – Proposed Site Access

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\OD-TAB Proposed Site Access\2013 Assessment PM.vpi"
(drive-on-the-left) at 16:03:32 on Friday, 21 January 2011.

.RUN INFORMATION

RUN TITLE: Proposed Site Access off Wombwell Rd - 2013 Assessment PM Peak
LOCATION: Hoyland
DATE: 20/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Proposed Site Access
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	{ W } 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	{ WCR } 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	{ WC-B } 3.00 M.	I
I	- VISIBILITY	I	{ VC-B } 65.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	{ VB-C } 36.0 M.	I
I	- VISIBILITY TO RIGHT	I	{ VB-A } 27.0 M.	I
I	- LANE 1 WIDTH	I	{ WB-C } -	I
I	- LANE 2 WIDTH	I	{ WB-A } -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	8.50 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	6.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	5.00 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	4.00 M.	I
I	- LENGTH OF FLARED SECTION	I	3 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For Slope For Opposing Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	589.60	0.23	0.09	I

I	Intercept For Slope For Opposing Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	462.27	0.21	0.08	0.13	0.30	I

I	Intercept For Slope For Opposing Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	664.86	0.26	0.26	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Proposed Site Access off Wombwell Rd - 2013 Assessment PM Peak

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I FLOW STARTS	I TOP OF PEAK	I FLOW STOPS		I BEFORE	I AT TOP	I AFTER	
I	I	I TO RISE	I IS REACHED	I FALLING	I	I PEAK	I OF PEAK	I PEAK	I
I ARM A	I	15.00	I 45.00	I 75.00	I	7.55	I 11.33	I 7.55	I
I ARM B	I	15.00	I 45.00	I 75.00	I	2.75	I 4.13	I 2.75	I
I ARM C	I	15.00	I 45.00	I 75.00	I	6.80	I 10.20	I 6.80	I

I	I	TURNING PROPORTIONS				I
I	I	TURNING COUNTS {VEH/HR}				I
I	I	{PERCENTAGE OF H.V.S}				I
I	I	-----				I
I	TIME	I FROM/TO	I ARM A	I ARM B	I ARM C	I
I	16.15 - 17.45	I	I	I	I	I
I		I ARM A	I 0.000	I 0.070	I 0.930	I
I		I	I 0.0	I 42.0	I 562.0	I
I		I	I { 0.0}	I { 0.0}	I { 0.0}	I
I		I	I	I	I	I
I		I ARM B	I 0.382	I 0.000	I 0.618	I
I		I	I 84.0	I 0.0	I 136.0	I
I		I	I { 0.0}	I { 0.0}	I { 0.0}	I
I		I	I	I	I	I
I		I ARM C	I 0.691	I 0.309	I 0.000	I
I		I	I 376.0	I 168.0	I 0.0	I
I		I	I { 0.0}	I { 0.0}	I { 0.0}	I
I		I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.15-16.30									
I	B-C	1.71	9.49	0.180		0.00	0.22	3.1		0.13
I	B-A	1.05	5.41	0.195		0.00	0.24	3.4		0.23
I	C-A	4.72								
I	C-B	2.11	9.13	0.231		0.00	0.30	4.3		0.14
I	A-B	0.53								
I	A-C	7.05								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.30-16.45									
I	B-C	2.04	8.94	0.228		0.22	0.29	4.3		0.14
I	B-A	1.26	4.80	0.262		0.24	0.35	5.0		0.28
I	C-A	5.63								
I	C-B	2.52	8.75	0.288		0.30	0.40	5.8		0.16
I	A-B	0.63								
I	A-C	8.42								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)			
16.45-17.00									
B-C	2.50	8.11	0.308		0.29	0.44	6.3		0.18
B-A	1.54	3.95	0.390		0.35	0.61	8.6		0.41
C-A	6.90								
C-B	3.08	8.23	0.375		0.40	0.59	8.5		0.19
A-B	0.77								
A-C	10.31								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)			
17.00-17.15									
B-C	2.50	8.10	0.308		0.44	0.44	6.6		0.18
B-A	1.54	3.95	0.390		0.61	0.63	9.3		0.41
C-A	6.90								
C-B	3.08	8.23	0.375		0.59	0.59	8.9		0.19
A-B	0.77								
A-C	10.31								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
(VEH/MIN)	(VEH/MIN)	(VEH/MIN)	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)			
17.15-17.30									
B-C	2.04	8.93	0.228		0.44	0.30	4.6		0.15
B-A	1.26	4.79	0.263		0.63	0.36	5.8		0.29
C-A	5.63								
C-B	2.52	8.75	0.288		0.59	0.41	6.4		0.16
A-B	0.63								
A-C	8.42								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	17.30-17.45									
I	B-C	1.71	9.48	0.180		0.30	0.22	3.4		0.13
I	B-A	1.05	5.41	0.195		0.36	0.25	3.9		0.23
I	C-A	4.72								
I	C-B	2.11	9.13	0.231		0.41	0.30	4.7		0.14
I	A-B	0.53								
I	A-C	7.05								
I										
I										

 QUEUE FOR STREAM B-C

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.4
17.15	0.4
17.30	0.3
17.45	0.2

 QUEUE FOR STREAM B-A

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.6 *
17.15	0.6 *
17.30	0.4
17.45	0.2

 QUEUE FOR STREAM C-B

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.30	0.3
16.45	0.4
17.00	0.6 *
17.15	0.6 *
17.30	0.4
17.45	0.3

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I
I		I	(VEH)	I	(MIN)	I	(MIN)	I
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-C	I	187.2	I	28.4	I	28.4	I
I	B-A	I	115.6	I	35.9	I	35.9	I
I	C-A	I	517.5	I		I		I
I	C-B	I	231.2	I	38.5	I	38.5	I
I	A-B	I	57.8	I		I		I
I	A-C	I	773.6	I		I		I
I	ALL	I	1883.0	I	102.7	I	102.7	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

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RELEASE 3.0 (JUNE 2006)

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TRL SOFTWARE BUREAU
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EMAIL: SoftwareBureau@trl.co.uk

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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\OD-TAB Proposed Site Access\2013 Assessment SAT.vpi"
(drive-on-the-left) at 16:04:12 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Proposed Site Access off Wombwell Rd - 2013 Assessment SAT Peak
LOCATION: Hoyland
DATE: 20/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Proposed Site Access
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I { W }	6.00 M.	I
I	CENTRAL RESERVE WIDTH	I {WCR }	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I {WC-B}	3.00 M.	I
I	- VISIBILITY	I {VC-B}	65.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I {VB-C}	36.0 M.	I
I	- VISIBILITY TO RIGHT	I {VB-A}	27.0 M.	I
I	- LANE 1 WIDTH	I {WB-C}	-	I
I	- LANE 2 WIDTH	I {WB-A}	-	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	8.50 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	6.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	5.00 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	4.00 M.	I
I	- LENGTH OF FLARED SECTION	I	3 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity
will be adjusted)

I	Intercept For Slope For Opposing Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	589.60	0.23	0.09	I

I	Intercept For Slope For Opposing Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	462.27	0.21	0.08	0.13	0.30	I

I	Intercept For Slope For Opposing Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	664.86	0.26	0.26	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Proposed Site Access off Wombwell Rd - 2013 Assessment PM Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		ARM	FLOW STARTS	TOP OF PEAK		BEFORE	AT TOP	AFTER	
I	I	I	TO RISE	IS REACHED	I	PEAK	OF PEAK	PEAK	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	6.06
I	ARM B	I	15.00	I	45.00	I	75.00	I	2.67
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.88

I	I	TURNING PROPORTIONS				I
I	I	TURNING COUNTS (VEH/HR)				I
I	I	(PERCENTAGE OF H.V.S)				I
I	TIME	I FROM/TO	I ARM A	I ARM B	I ARM C	I
I	11.45 - 13.15	I	I	I	I	I
I		I ARM A	I 0.000	I 0.085	I 0.915	I
I		I	I 0.0	I 41.0	I 444.0	I
I		I	I (0.0)	I (0.0)	I (0.0)	I
I		I	I	I	I	I
I		I ARM B	I 0.379	I 0.000	I 0.621	I
I		I	I 81.0	I 0.0	I 133.0	I
I		I	I (0.0)	I (0.0)	I (0.0)	I
I		I	I	I	I	I
I		I ARM C	I 0.698	I 0.302	I 0.000	I
I		I	I 384.0	I 166.0	I 0.0	I
I		I	I (0.0)	I (0.0)	I (0.0)	I
I		I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I	I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00									
I	B-C	1.67	9.94	0.168		0.00	0.20	2.9		0.12
I	B-A	1.02	5.75	0.177		0.00	0.21	3.0		0.21
I	C-A	4.82								
I	C-B	2.08	9.51	0.219		0.00	0.28	4.0		0.13
I	A-B	0.51								
I	A-C	5.57								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I	I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.00-12.15									
I	B-C	1.99	9.49	0.210		0.20	0.26	3.8		0.13
I	B-A	1.21	5.21	0.233		0.21	0.30	4.3		0.25
I	C-A	5.75								
I	C-B	2.49	9.21	0.270		0.28	0.37	5.3		0.15
I	A-B	0.61								
I	A-C	6.65								

1

1

[illegible]

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	13.00-13.15									
I	B-C	1.67	9.93	0.168		0.27	0.20	3.1		0.12
I	B-A	1.02	5.75	0.177		0.31	0.22	3.4		0.21
I	C-A	4.82								
I	C-B	2.08	9.51	0.219		0.37	0.28	4.4		0.13
I	A-B	0.51								
I	A-C	5.57								

 QUEUE FOR STREAM B-C

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
12.00	0.2
12.15	0.3
12.30	0.4
12.45	0.4
13.00	0.3
13.15	0.2

 QUEUE FOR STREAM B-A

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
12.00	0.2
12.15	0.3
12.30	0.5
12.45	0.5
13.00	0.3
13.15	0.2

 QUEUE FOR STREAM C-B

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
12.00	0.3
12.15	0.4
12.30	0.5 *
12.45	0.5 *
13.00	0.4
13.15	0.3

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I	(VEH)	I	(MIN)	I	(MIN)	I
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-C	I	183.1	I	25.2	I	25.2	I
I	B-A	I	111.5	I	29.8	I	29.8	I
I	C-A	I	528.5	I		I		I
I	C-B	I	228.5	I	34.9	I	34.9	I
I	A-B	I	56.4	I		I		I
I	A-C	I	611.1	I		I		I
I	ALL	I	1719.2	I	89.9	I	89.9	I

- * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\OD-TAB Proposed Site Access\2018 Assessment PM.vpi"
(drive-on-the-left) at 16:04:54 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Proposed Site Access off Wombwell Rd - 2018 Assessment PM Peak
LOCATION: Hoyland
DATE: 20/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Proposed Site Access
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 3.00 M.	I
I	- VISIBILITY	I	(VC-B) 65.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 36.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 27.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	8.50 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	6.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	5.00 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	4.00 M.	I
I	- LENGTH OF FLARED SECTION	I	3 VEHS	I

SLOPES AND INTERCEPT

{NB:Streams may be combined, in which case capacity
will be adjusted }

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	589.60	0.23	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	462.27	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	664.86	0.26	0.26	I

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Proposed Site Access off Wombwell Rd - 2013 Assessment PM Peak

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I					
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	8.00	I	12.00	I	8.00	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	2.75	I	4.13	I	2.75	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	7.14	I	10.71	I	7.14	I

		I	TURNING PROPORTIONS				I			
I		I	TURNING COUNTS (VEH/HR)				I			
I		I	{PERCENTAGE OF H.V.S}				I			
I		I					I			
I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	16.15 - 17.45	I		I		I		I		I
I		I	ARM A	I	0.000	I	0.066	I	0.934	I
I		I		I	0.0	I	42.0	I	598.0	I
I		I		I	{ 0.0}	I	{ 0.0}	I	{ 0.0}	I
I		I		I		I		I		I
I		I	ARM B	I	0.382	I	0.000	I	0.618	I
I		I		I	84.0	I	0.0	I	136.0	I
I		I		I	{ 0.0}	I	{ 0.0}	I	{ 0.0}	I
I		I		I		I		I		I
I		I	ARM C	I	0.706	I	0.294	I	0.000	I
I		I		I	403.0	I	168.0	I	0.0	I
I		I		I	{ 0.0}	I	{ 0.0}	I	{ 0.0}	I
I		I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.15-16.30									
I	B-C	1.71	9.35	0.182		0.00	0.22	3.2		0.13
I	B-A	1.05	5.26	0.200		0.00	0.25	3.5		0.24
I	C-A	5.06								
I	C-B	2.11	9.01	0.234		0.00	0.30	4.3		0.14
I	A-B	0.53								
I	A-C	7.50								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.30-16.45									
I	B-C	2.04	8.77	0.232		0.22	0.30	4.4		0.15
I	B-A	1.26	4.61	0.273		0.25	0.37	5.2		0.30
I	C-A	6.04								
I	C-B	2.52	8.61	0.292		0.30	0.41	5.9		0.16
I	A-B	0.63								
I	A-C	8.96								

J	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	17.30-17.45									
I	B-C	1.71	9.34	0.183		0.31	0.23	3.5		0.13
I	B-A	1.05	5.25	0.201		0.39	0.26	4.0		0.24
I	C-A	5.06								
I	C-B	2.11	9.01	0.234		0.42	0.31	4.8		0.15
I	A-B	0.53								
I	A-C	7.50								

 QUEUE FOR STREAM B-C

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.5
17.15	0.5
17.30	0.3
17.45	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.30	0.2
16.45	0.4
17.00	0.7 *
17.15	0.7 *
17.30	0.4
17.45	0.3

QUEUE FOR STREAM C-B

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.30	0.3
16.45	0.4
17.00	0.6 *
17.15	0.6 *
17.30	0.4
17.45	0.3

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I
I		I	(VEH)	I	(MIN)	I	(MIN)	I
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-C	I	187.2	I	29.2	I	29.2	I
I	B-A	I	115.6	I	38.5	I	38.5	I
I	C-A	I	554.7	I		I		I
I	C-B	I	231.2	I	39.5	I	39.5	I
I	A-B	I	57.8	I		I		I
I	A-C	I	823.1	I	1	I		I
I	ALL	I	1969.7	I	107.2	I	107.2	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

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END OF JOB

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Run with file:-

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(drive-on-the-left) at 16:05:37 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Proposed Site Access off Wombwell Rd - 2018 Assessment SAT Peak
LOCATION: Hoyland
DATE: 20/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
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I
I
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MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Proposed Site Access
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	6.00 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	3.00 M.	I
I	- VISIBILITY	I (VC-B)	65.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	36.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	27.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	-	I
I	- LANE 2 WIDTH	I (WB-A)	-	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	8.50 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	6.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	5.00 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	4.00 M.	I
I	- LENGTH OF FLARED SECTION	I	3 VEHS	I

SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	589.60	0.23	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	462.27	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	664.86	0.26	0.26	I

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Proposed Site Access off Wombwell Rd - 2013 Assessment PM Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

0

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	13.00-13.15									
I	B-C	1.67	9.82	0.170		0.27	0.21	3.2		0.12
I	B-A	1.02	5.61	0.181		0.32	0.22	3.5		0.22
I	C-A	5.16								
I	C-B	2.08	9.42	0.221		0.38	0.29	4.4		0.14
I	A-B	0.51								
I	A-C	5.92								

 QUEUE FOR STREAM B-C

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
12.00	0.2
12.15	0.3
12.30	0.4
12.45	0.4
13.00	0.3
13.15	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
12.00	0.2
12.15	0.3
12.30	0.5 *
12.45	0.5 *
13.00	0.3
13.15	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
12.00	0.3
12.15	0.4
12.30	0.5 *
12.45	0.5 *
13.00	0.4
13.15	0.3

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(MIN)	I	(MIN)	I
I	I	I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-C	I	183.1	I	122.0	I	25.7	I
I	B-A	I	111.5	I	74.3	I	31.3	I
I	C-A	I	565.7	I	377.1	I		I
I	C-B	I	228.5	I	152.3	I	35.5	I
I	A-B	I	56.4	I	37.6	I	0.16	I
I	A-C	I	649.7	I	433.1	I	35.6	I
I	ALL	I	1794.9	I	1196.6	I	92.6	I
							0.05	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

Appendix 5

PICADY Outputs – Wombwell Rd/Market St



TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

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IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2013 Baseline PM.vpi"
(drive-on-the-left) at 15:11:58 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.30 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 90.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 32.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

		TURNING PROPORTIONS					
		TURNING COUNTS (VEH/HR)					
		(PERCENTAGE OF H.V.S.)					
TIME		FROM/TO	ARM A	ARM B	ARM C		
16.30 - 18.00	ARM A	0.000	0.339	0.661			
		0.0	195.0	380.0			
		(0.0)	(0.0)	(0.0)			
	ARM B	0.707	0.000	0.293			
		188.0	0.0	78.0			
		(0.0)	(0.0)	(0.0)			
	ARM C	0.625	0.375	0.000			
		236.0	143.0	0.0			
		(0.0)	(0.0)	(0.0)			

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
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17.00-17.15

B-C	1.43	6.41	0.223		0.17	0.28	4.1		0.20
B-A	3.45	5.85	0.590		0.72	1.35	18.5		0.40
C-AB	2.62	8.54	0.307		0.34	0.50	7.5		0.17
A-B	3.58								
A-C	6.97								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
------	--------	----------	---------------------	--------------------	----------------	--------------	-------------------------------------	---	--

17.15-17.30

B-C	1.43	6.34	0.226		0.28	0.29	4.3		0.20
B-A	3.45	5.84	0.590		1.35	1.39	20.7		0.42
C-AB	2.62	8.54	0.307		0.50	0.51	7.7		0.17
A-B	3.58								
A-C	6.97								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
------	--------	----------	---------------------	--------------------	----------------	--------------	-------------------------------------	---	--

17.30-17.45

B-C	1.17	7.83	0.149		0.29	0.18	2.8		0.15
B-A	2.82	6.60	0.427		1.39	0.77	12.3		0.27
C-AB	2.14	9.01	0.238		0.51	0.35	5.2		0.15
A-B	2.92								
A-C	5.69								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
------	--------	----------	---------------------	--------------------	----------------	--------------	-------------------------------------	---	--

17.45-18.00

B-C	0.98	8.63	0.113		0.18	0.13	2.0		0.13
-----	------	------	-------	--	------	------	-----	--	------

I	B-A	2.36	7.13	0.331	0.77	0.50	7.9	0.21
I								
I	C-AB	1.79	9.35	0.192	0.35	0.26	3.8	0.13
I								
I	A-B	2.45						
I								
I	A-C	4.77						
I								
I								

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.3
17.30	0.3
17.45	0.2
18.00	0.1

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.5	
17.00	0.7	*
17.15	1.4	*
17.30	1.4	*
17.45	0.8	*
18.00	0.5	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.2	
17.00	0.3	
17.15	0.5	*
17.30	0.5	*
17.45	0.3	
18.00	0.3	

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(MIN)	I	(MIN)	I
I	I	I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-C	I	107.4	I	71.6	I	17.5	I
I	B-A	I	258.8	I	172.5	I	76.6	I
I	C-AB	I	196.8	I	131.2	I	33.0	I
I	A-B	I	268.4	I	178.9	I		I
I	A-C	I	523.0	I	348.7	I		I
I	ALL	I	1682.0	I	1121.3	I	127.0	I

- * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

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EMAIL: SoftwareBureau@trl.co.uk

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Run with file:-

"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2013 Baseline SAT.vpi"
(drive-on-the-left) at 15:12:27 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2013 Baseline Flows Saturday Peak

LOCATION: Hoyland

DATE: 19/01/11

CLIENT: Litton Properties

ENUMERATOR:

JOB NUMBER: N01919

STATUS:

DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)

ARM B IS Market Street

ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	7.30 M.	I
J	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	2.20 M.	I
I	- VISIBILITY	I (VC-B)	160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	90.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	32.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	-	I
I	- LANE 2 WIDTH	I (WB-A)	-	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHs	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity
will be adjusted)

I	Intercept For Stream B-C	Slope For Stream A-C	Opposing Stream A-B	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09		I

I	Intercept For Stream B-A	Slope For Stream A-C	Opposing Stream A-B	Slope For Opposing Stream C-A	Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Stream A-C	Opposing Stream A-B	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24		I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I	I	I		I	I	I	
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	5.70
I	ARM B	I	15.00	I	45.00	I	75.00	I	4.21
I	ARM C	I	15.00	I	45.00	I	75.00	I	3.80

I		I	TURNING PROPORTIONS				I			
I		I	TURNING COUNTS (VEH/HR)				I			
I		I	(PERCENTAGE OF H.V.S.)				I			
I		I	-----				I			
I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	11.45 - 13.15	I		I		I		I		I
I		I	ARM A	I	0.000	I	0.493	I	0.507	I
I		I		I	0.0	I	225.0	I	231.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I		I		I		I
I		I	ARM B	I	0.671	I	0.000	I	0.329	I
I		I		I	226.0	I	0.0	I	111.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I		I		I		I
I		I	ARM C	I	0.684	I	0.316	I	0.000	I
I		I		I	208.0	I	96.0	I	0.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I	I	I	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00	I		I		I		I		I
I	B-C	1.39	9.04	0.154		0.00	0.18	2.6		0.13
I	B-A	2.84	8.04	0.353		0.00	0.53	7.6		0.19
I	C-AB	1.20	9.72	0.124		0.00	0.14	2.2		0.12
I	A-B	2.82								
I	A-C	2.90								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I	I	I	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.00-12.15	I		I		I		I		I
I	B-C	1.66	8.31	0.200		0.18	0.25	3.6		0.15
I	B-A	3.39	7.62	0.445		0.53	0.78	11.2		0.23
I	C-AB	1.44	9.45	0.152		0.14	0.19	2.8		0.12
I	A-B	3.37								
I	A-C	3.46								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.15-12.30									
B-C	2.04	6.98	0.292		0.25	0.40	5.8		0.20
B-A	4.15	6.98	0.594		0.78	1.39	19.2		0.34
C-AB	1.76	9.07	0.194		0.19	0.26	3.9		0.14
A-B	4.13								
A-C	4.24								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.30-12.45									
B-C	2.04	6.93	0.294		0.40	0.41	6.1		0.20
B-A	4.15	6.97	0.595		1.39	1.43	21.2		0.35
C-AB	1.76	9.07	0.194		0.26	0.26	3.9		0.14
A-B	4.13								
A-C	4.24								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-C	1.66	8.26	0.201		0.41	0.26	4.0		0.15
B-A	3.39	7.61	0.445		1.43	0.82	13.1		0.24
C-AB	1.44	9.45	0.152		0.26	0.19	2.9		0.12
A-B	3.37								
A-C	3.46								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-C	1.39	9.00	0.155		0.26	0.18	2.9		0.13

I	B-A	2.84	8.04	0.353	0.82	0.56	8.7	0.19
I								
I	C-AB	1.20	9.72	0.124	0.19	0.15	2.2	0.12
I								
I	A-B	2.82						
I								
I	A-C	2.90						
I								
I								

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.2
12.15	0.2
12.30	0.4
12.45	0.4
13.00	0.3
13.15	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.5	*
12.15	0.8	*
12.30	1.4	*
12.45	1.4	*
13.00	0.8	*
13.15	0.6	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.1
12.15	0.2
12.30	0.3
12.45	0.3
13.00	0.2
13.15	0.1

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	I	(VEH) (VEH/H)	I	(MIN) (MIN/VEH)	I	(MIN) (MIN/VEH)	I
I	B-C	I	152.8 I 101.9	I	25.0 I 0.16	I	25.0 I 0.16	I
I	B-A	I	311.1 I 207.4	I	81.0 I 0.26	I	81.0 I 0.26	I
I	C-AB	I	132.1 I 88.1	I	17.8 I 0.13	I	17.8 I 0.13	I
I	A-B	I	309.7 I 206.5	I	I	I	I	I
I	A-C	I	318.0 I 212.0	I	I	I	I	I
I	ALL	I	1509.9 I 1006.6	I	123.8 I 0.08	I	123.8 I 0.08	I

- * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2018 Baseline PM.vpi"
(drive-on-the-left) at 15:12:58 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2018 Baseline Flows Weekday PM Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	{ W } 7.30 M.	I
I	CENTRAL RESERVE WIDTH	I	{ WCR } 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	{ WC-B } 2.20 M.	I
I	- VISIBILITY	I	{ VC-B } 160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	{ VB-C } 90.0 M.	I
I	- VISIBILITY TO RIGHT	I	{ VB-A } 32.0 M.	I
I	- LANE 1 WIDTH	I	{ WB-C } -	I
I	- LANE 2 WIDTH	I	{ WB-A } -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHS	I

.SLOPES AND INTERCEPT

{NB:Streams may be combined, in which case capacity
will be adjusted }

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	1.52	5.71	0.267		0.20	0.36	5.1		0.24
B-A	3.67	5.58	0.658		0.85	1.76	23.6		0.49
C-AB	2.79	8.38	0.333		0.38	0.58	8.6		0.18
A-B	3.80								
A-C	7.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	1.52	5.60	0.272		0.36	0.37	5.5		0.25
B-A	3.67	5.57	0.659		1.76	1.84	27.1		0.52
C-AB	2.79	8.38	0.333		0.58	0.58	8.9		0.18
A-B	3.80								
A-C	7.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	1.24	7.44	0.167		0.37	0.20	3.2		0.16
B-A	3.00	6.39	0.469		1.84	0.92	14.9		0.31
C-AB	2.28	8.88	0.256		0.58	0.39	5.9		0.15
A-B	3.10								
A-C	6.05								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	1.04	8.39	0.124		0.20	0.14	2.2		0.14

I	B-A	2.51	6.96	0.361	0.92	0.58	9.1	0.23
I	C-AB	1.91	9.24	0.206	0.39	0.28	4.2	0.14
I	A-B	2.60						
I	A-C	5.07						
I								
I								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.4
17.30	0.4
17.45	0.2
18.00	0.1

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.45	0.6	*
17.00	0.9	*
17.15	1.8	**
17.30	1.8	**
17.45	0.9	*
18.00	0.6	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.3
17.00	0.4
17.15	0.6
17.30	0.6
17.45	0.4
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-C	I	114.2	I	76.2	I	20.8	I	0.18
I	B-A	I	275.3	I	183.5	I	94.4	I	0.34
I	C-AB	I	209.2	I	139.5	I	37.3	I	0.18
I	A-B	I	284.9	I	189.9	I	I	I	I
I	A-C	I	556.1	I	370.7	I	I	I	I
I	ALL	I	1788.0	I	1192.0	I	152.5	I	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2018 Baseline SAT.vpi"
(drive-on-the-left) at 15:13:10 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2018 Baseline Flows Saturday Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	7.30 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	2.20 M.	I
I	- VISIBILITY	I (VC-B)	160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	90.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	32.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	-	I
I	- LANE 2 WIDTH	I (WB-A)	-	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHS	I

SLOPES AND INTERCEPT

{NB:Streams may be combined, in which case capacity will be adjusted }

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I	I	I		I	I	I	
I	ARM	FLOW STARTS	TOP OF PEAK	FLOW STOPS	BEFORE	AT TOP	AFTER		
I	I	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK	I	I
I	ARM A	I 15.00	I 45.00	I 75.00	I 6.05	I 9.08	I 6.05	I	I
I	ARM B	I 15.00	I 45.00	I 75.00	I 4.47	I 6.71	I 4.47	I	I
I	ARM C	I 15.00	I 45.00	I 75.00	I 4.05	I 6.08	I 4.05	I	I

I I I I I	TIME	TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)				
		FROM/TO	ARM A	ARM B	ARM C	
I	11.45 - 13.15	I	I	I	I	I
I		I	ARM A	I 0.000	I 0.494	I 0.506
I		I	I	I 0.0	I 239.0	I 245.0
I		I	I (0.0)	I (0.0)	I (0.0)	I
I		I	I	I	I	I
I		I	ARM B	I 0.670	I 0.000	I 0.330
I		I	I	I 240.0	I 0.0	I 118.0
I		I	I (0.0)	I (0.0)	I (0.0)	I
I		I	I	I	I	I
I		I	ARM C	I 0.682	I 0.318	I 0.000
I		I	I	I 221.0	I 103.0	I 0.0
I		I	I (0.0)	I (0.0)	I (0.0)	I
I		I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00									
I	B-C	1.48	8.83	0.168		0.00	0.20	2.9		0.14
I	B-A	3.01	7.91	0.381		0.00	0.60	8.5		0.20
I	C-AB	1.29	9.63	0.134		0.00	0.16	2.4		0.12
I	A-B	3.00								
I	A-C	3.07								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.00-12.15									
I	B-C	1.77	7.99	0.221		0.20	0.28	4.1		0.16
I	B-A	3.60	7.44	0.483		0.60	0.91	12.9		0.26
I	C-AB	1.54	9.34	0.165		0.16	0.21	3.1		0.13
I	A-B	3.58								
I	A-C	3.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.15-12.30									
B-C	2.17	6.39	0.339		0.28	0.50	7.1		0.24
B-A	4.40	6.74	0.654		0.91	1.76	23.8		0.41
C-AB	1.89	8.95	0.211		0.21	0.29	4.3		0.14
A-B	4.39								
A-C	4.50								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.30-12.45									
B-C	2.17	6.31	0.343		0.50	0.51	7.7		0.24
B-A	4.40	6.73	0.655		1.76	1.82	26.9		0.43
C-AB	1.89	8.95	0.211		0.29	0.29	4.4		0.14
A-B	4.39								
A-C	4.50								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-C	1.77	7.91	0.224		0.51	0.29	4.6		0.16
B-A	3.60	7.43	0.484		1.82	0.97	15.6		0.27
C-AB	1.54	9.34	0.165		0.29	0.21	3.2		0.13
A-B	3.58								
A-C	3.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-C	1.48	8.78	0.169		0.29	0.20	3.2		0.14

I	B-A	3.01	7.90	0.381	0.97	0.63	9.9	0.21
I	C-AB	1.29	9.63	0.134	0.21	0.16	2.4	0.12
I	A-B	3.00						
I	A-C	3.07						
I								
I								

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.2
12.15	0.3
12.30	0.5 *
12.45	0.5 *
13.00	0.3
13.15	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.6 *
12.15	0.9 *
12.30	1.8 **
12.45	1.8 **
13.00	1.0 *
13.15	0.6 *

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.2
12.15	0.2
12.30	0.3
12.45	0.3
13.00	0.2
13.15	0.2

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)
I	B-C	I	162.4	I	108.3	I	29.5	I	0.18
I	B-A	I	330.3	I	220.2	I	97.6	I	0.30
I	C-AB	I	141.8	I	94.5	I	19.8	I	0.14
I	A-B	I	329.0	I	219.3	I	I	I	I
I	A-C	I	337.2	I	224.8	I	I	I	I
I	ALL	I	1604.9	I	1069.9	I	146.9	I	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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TEL: CROWTHORNE (01344) 770758, FAX: 770864
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IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2013 Assessment PM.vpi"
(drive-on-the-left) at 15:13:25 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2013 Assessment Flows Weekday PM Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.30 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 90.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 32.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity
will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I FLOW STARTS	I TOP OF PEAK	I FLOW STOPS		I BEFORE	I AT TOP	I AFTER	
I	I	I TO RISE	I IS REACHED	I FALLING	I	I PEAK	I OF PEAK	I PEAK	I
I	ARM A	I 15.00	I 45.00	I 75.00	I	I 8.73	I 13.09	I 8.73	I
I	ARM B	I 15.00	I 45.00	I 75.00	I	I 4.06	I 6.09	I 4.06	I
I	ARM C	I 15.00	I 45.00	I 75.00	I	I 5.50	I 8.25	I 5.50	I

I		I	TURNING PROPORTIONS				I			
I		I	TURNING COUNTS (VEH/HR)				I			
I		I	(PERCENTAGE OF H.V.S)				I			
I		I					I			
I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	16.30 - 18.00	I	I	I	I	I	I	I	I	I
I		I	ARM A	I	0.000	I	0.368	I	0.632	I
I		I	I	I	0.0	I	257.0	I	441.0	I
I		I	I	I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	I	I	I	I	I	I	I	I
I		I	ARM B	I	0.760	I	0.000	I	0.240	I
I		I	I	I	247.0	I	0.0	I	78.0	I
I		I	I	I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	I	I	I	I	I	I	I	I
I		I	ARM C	I	0.675	I	0.325	I	0.000	I
I		I	I	I	297.0	I	143.0	I	0.0	I
I		I	I	I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	I	I	I	I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RPC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.30-16.45									
I	B-C	0.98	7.59	0.129		0.00	0.15	2.1		0.15
I	B-A	3.10	6.77	0.458		0.00	0.82	11.3		0.26
I	C-AB	1.79	8.98	0.200		0.00	0.27	3.9		0.14
I	A-B	3.22								
I	A-C	5.53								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RPC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.45-17.00									
I	B-C	1.17	6.19	0.189		0.15	0.23	3.3		0.20
I	B-A	3.70	6.14	0.602		0.82	1.43	19.6		0.40
I	C-AB	2.14	8.56	0.250		0.27	0.37	5.6		0.16
I	A-B	3.85								
I	A-C	6.61								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	1.43	3.05	0.470		0.23	0.82	11.0		0.59
B-A	4.53	5.23	0.867		1.43	4.39	51.7		0.96
C-AB	2.62	7.99	0.328		0.37	0.58	8.7		0.19
A-B	4.72								
A-C	8.09								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	1.43	2.51	0.571		0.82	1.20	16.3		0.88
B-A	4.53	5.20	0.872		4.39	5.19	72.7		1.24
C-AB	2.62	7.99	0.328		0.58	0.59	9.0		0.19
A-B	4.72								
A-C	8.08								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	1.17	5.73	0.204		1.20	0.26	4.3		0.23
B-A	3.70	6.12	0.605		5.19	1.64	30.7		0.50
C-AB	2.14	8.56	0.250		0.59	0.38	5.8		0.16
A-B	3.85								
A-C	6.61								

TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	0.98	7.48	0.131		0.26	0.15	2.4		0.15

I	B-A	3.10	6.76	0.459	1.64	0.87	14.1	0.28
I								
I	C-AB	1.79	8.98	0.200	0.38	0.27	4.1	0.14
I								
I	A-B	3.22						
I								
I	A-C	5.53						
I								
I								

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.8 *
17.30	1.2 *
17.45	0.3
18.00	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.8 *
17.00	1.4 *
17.15	4.4 ****
17.30	5.2 *****
17.45	1.6 **
18.00	0.9 *

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.45	0.3
17.00	0.4
17.15	0.6 *
17.30	0.6 *
17.45	0.4
18.00	0.3

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I
I		I		I		I	(MIN/VEH)	I
I		I		I		I	(MIN)	I
I		I		I		I	(MIN/VEH)	I
I	B-C	I	107.4	I	71.6	I	39.4	I
I		I		I		I	0.37	I
I	B-A	I	340.0	I	226.7	I	200.0	I
I		I		I		I	0.59	I
I	C-AB	I	196.8	I	131.2	I	37.1	I
I		I		I		I	0.19	I
I	A-B	I	353.7	I	235.8	I		I
I		I		I		I		I
I	A-C	I	607.0	I	404.7	I		I
I		I		I		I		I
I	ALL	I	2013.7	I	1342.5	I	276.5	I
I		I		I		I	0.14	I
I		I		I		I	276.6	I
I		I		I		I	0.14	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2013 Assessment SAT.vpi"
(drive-on-the-left) at 15:13:36 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2013 Assessment Flows Saturday Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.30 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 90.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 32.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHs	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity
will be adjusted)

I	Intercept For Stream B-C	Slope For Stream A-C	For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Stream A-C	For Opposing Stream A-B	Slope For Opposing Stream C-A	For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Stream A-C	For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I FLOW STARTS	I TOP OF PEAK	I FLOW STOPS		I BEFORE	I AT TOP	I AFTER	
I	I	I TO RISE	I IS REACHED	I FALLING	I	I PEAK	I OF PEAK	I PEAK	I
I	ARM A	I 15.00	I 45.00	I 75.00	I	I 7.21	I 10.82	I 7.21	I
I	ARM B	I 15.00	I 45.00	I 75.00	I	I 4.94	I 7.41	I 4.94	I
I	ARM C	I 15.00	I 45.00	I 75.00	I	I 4.53	I 6.79	I 4.53	I

I		I	TURNING PROPORTIONS				I			
I		I	TURNING COUNTS (VEH/HR)				I			
I		I	(PERCENTAGE OF H.V.S)				I			
I		I	-----				I			
I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	11.45 - 13.15	I		I		I		I		I
I		I	ARM A	I	0.000	I	0.494	I	0.506	I
I		I		I	0.0	I	285.0	I	292.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I		I		I		I
I		I	ARM B	I	0.719	I	0.000	I	0.281	I
I		I		I	284.0	I	0.0	I	111.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I		I		I		I
I		I	ARM C	I	0.735	I	0.265	I	0.000	I
I		I		I	266.0	I	96.0	I	0.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00									
I	B-C	1.39	7.90	0.176		0.00	0.21	3.0		0.15
I	B-A	3.56	7.41	0.481		0.00	0.90	12.4		0.25
I	C-AB	1.20	9.35	0.129		0.00	0.15	2.3		0.12
I	A-B	3.58								
I	A-C	3.66								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.00-12.15									
I	B-C	1.66	6.55	0.254		0.21	0.33	4.8		0.20
I	B-A	4.26	6.89	0.617		0.90	1.52	21.0		0.37
I	C-AB	1.44	9.00	0.160		0.15	0.20	3.0		0.13
I	A-B	4.27								
I	A-C	4.38								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.15-12.30									
I	B-C	2.04	3.78	0.539		0.33	1.09	14.4		0.54
I	B-A	5.21	6.08	0.857		1.52	4.34	52.1		0.83
I	C-AB	1.76	8.53	0.207		0.20	0.29	4.3		0.15
I	A-B	5.23								
I	A-C	5.36								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.30-12.45									
I	B-C	2.04	3.33	0.611		1.09	1.43	19.9		0.74
I	B-A	5.21	6.04	0.863		4.34	5.04	71.2		1.04
I	C-AB	1.76	8.53	0.207		0.29	0.29	4.4		0.15
I	A-B	5.23								
I	A-C	5.36								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.45-13.00									
I	B-C	1.66	6.15	0.271		1.43	0.38	6.2		0.23
I	B-A	4.26	6.86	0.621		5.04	1.74	31.6		0.45
I	C-AB	1.44	9.00	0.160		0.29	0.21	3.1		0.13
I	A-B	4.27								
I	A-C	4.38								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	13.00-13.15									
I	B-C	1.39	7.78	0.179		0.38	0.22	3.4		0.16

I	B-A	3.56	7.40	0.481	1.74	0.96	15.4	0.27
I								
I	C-AB	1.20	9.35	0.129	0.21	0.16	2.3	0.12
I								
I	A-B	3.58						
I								
I	A-C	3.66						
I								
I								

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.2	
12.15	0.3	
12.30	1.1	*
12.45	1.4	*
13.00	0.4	
13.15	0.2	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.9	*
12.15	1.5	**
12.30	4.3	****
12.45	5.0	*****
13.00	1.7	**
13.15	1.0	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.2
12.15	0.2
12.30	0.3
12.45	0.3
13.00	0.2
13.15	0.2

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)
I	B-C	I	152.8	I	101.9	I	51.8	I	0.34
I	B-A	I	390.9	I	260.6	I	203.7	I	0.52
I	C-AB	I	132.1	I	88.1	I	19.4	I	0.15
I	A-B	I	392.3	I	261.5	I		I	
I	A-C	I	401.9	I	267.9	I		I	
I	ALL	I	1836.2	I	1224.1	I	274.9	I	0.15

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2018 Assessment PM.vpi"
(drive-on-the-left) at 15:13:46 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2018 Assessment Flows Weekday PM Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.30 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 160.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 90.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 32.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	4 VEHS	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity
will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN					I	RATE OF FLOW (VEH/MIN)			I			
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	9.18	I	13.76	I	9.18	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	4.28	I	6.41	I	4.28	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	5.80	I	8.70	I	5.80	I

I		I	TURNING PROPORTIONS				I			
I		I	TURNING COUNTS (VEH/HR)				I			
I		I	{PERCENTAGE OF H.V.S}				I			
I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	16.30 - 18.00	I		I		I		I		I
I		I	ARM A	I	0.000	I	0.366	I	0.634	I
I		I		I	0.0	I	269.0	I	465.0	I
I		I		I	{ 0.0}	I	{ 0.0}	I	{ 0.0}	I
I		I		I		I		I		I
I		I	ARM B	I	0.757	I	0.000	I	0.243	I
I		I		I	259.0	I	0.0	I	83.0	I
I		I		I	{ 0.0}	I	{ 0.0}	I	{ 0.0}	I
I		I		I		I		I		I
I		I	ARM C	I	0.672	I	0.328	I	0.000	I
I		I		I	312.0	I	152.0	I	0.0	I
I		I		I	{ 0.0}	I	{ 0.0}	I	{ 0.0}	I
I		I		I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I	I	I	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.30-16.45									
I	B-C	1.04	8.04	0.130		0.00	0.15	2.1		0.14
I	B-A	3.25	6.64	0.489		0.00	0.92	12.7		0.28
I	C-A	3.91								
I	C-B	1.91	8.87	0.215		0.00	0.27	3.9		0.14
I	A-B	3.38								
I	A-C	5.83								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I	I	I	I	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	16.45-17.00									
I	B-C	1.24	7.02	0.177		0.15	0.21	3.1		0.17
I	B-A	3.88	6.02	0.644		0.92	1.68	22.8		0.45
I	C-A	4.67								
I	C-B	2.28	8.43	0.270		0.27	0.36	5.3		0.16
I	A-B	4.03								
I	A-C	6.97								

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I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	17.45-18.00									
I	B-C	1.04	7.97	0.131		0.24	0.15	2.4		0.14
I	B-A	3.25	6.63	0.490		1.98	1.00	16.2		0.31
I	C-A	3.91								
I	C-B	1.91	8.87	0.215		0.38	0.28	4.3		0.14
I	A-B	3.38								
I	A-C	5.83								
I										
I										
I										

QUEUE FOR STREAM B-C

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.45	0.1
17.00	0.2
17.15	0.9 *
17.30	3.0 ***
17.45	0.2
18.00	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.45	0.9 *
17.00	1.7 **
17.15	5.7 *****
17.30	7.0 *****
17.45	2.0 **
18.00	1.0 *

QUEUE FOR STREAM C-B

TIME SEGMENT	NO. OF
ENDING	VEHICLES
	IN QUEUE
16.45	0.3
17.00	0.4
17.15	0.5 *
17.30	0.5 *
17.45	0.4
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I
I		I	(VEH)	I	(MIN)	I	(MIN)	I
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-C	I	114.2	I	58.0	I	58.0	I
I	B-A	I	356.5	I	253.3	I	253.4	I
I	C-A	I	429.4	I		I		I
I	C-B	I	209.2	I	35.3	I	35.3	I
I	A-B	I	370.3	I		I		I
I	A-C	I	640.0	I		I		I
I	ALL	I	2119.7	I	346.6	I	346.7	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

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Run with file:-
"J:\2010\N01919 Market Street, Hoyland\Picady\Ex Wombwell Rd-Market Street\2018 Assessment SAT.vpi"
(drive-on-the-left) at 15:13:57 on Friday, 21 January 2011

.RUN INFORMATION

RUN TITLE: Existing Wombwell Rd/Market St - 2018 Assessment Flows Saturday Peak
LOCATION: Hoyland
DATE: 19/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Wombwell Road (E)
ARM B IS Market Street
ARM C IS Wombwell Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 7.30 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 160.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 90.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 32.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	- WIDTH AT 0 M FROM JUNC.	I	10.00 M.	I
I	- WIDTH AT 5 M FROM JUNC.	I	6.00 M.	I
I	- WIDTH AT 10 M FROM JUNC.	I	4.20 M.	I
I	- WIDTH AT 15 M FROM JUNC.	I	3.80 M.	I
I	- WIDTH AT 20 M FROM JUNC.	I	3.70 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHs	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity
will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	592.49	0.22	0.09	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	480.70	0.21	0.08	0.13	0.30	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	666.62	0.24	0.24	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE(%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Existing Wombwell Rd/Market St - 2013 Baseline Flows Weekday PM Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I	I	I		I	I	I	
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.56
I	ARM B	I	15.00	I	45.00	I	75.00	I	5.20
I	ARM C	I	15.00	I	45.00	I	75.00	I	4.78

I I I I I I	I	TURNING PROPORTIONS						I		
		TURNING COUNTS (VEH/HR)							I	
		(PERCENTAGE OF H.V.S)								
TIME		FROM/TO	ARM A	ARM B	ARM C					
I	11.45 - 13.15	I	I	I	I	I	I			
I		I	ARM A	I	0.000	I	0.494	I	0.506	I
I		I		I	0.0	I	299.0	I	306.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I	I	I	I	I	I	I
I		I	ARM B	I	0.716	I	0.000	I	0.284	I
I		I		I	298.0	I	0.0	I	118.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I	I	I	I	I	I	I
I		I	ARM C	I	0.730	I	0.270	I	0.000	I
I		I		I	279.0	I	103.0	I	0.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I		I	I	I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00									
I	B-C	1.48	7.62	0.194		0.00	0.24	3.4		0.16
I	B-A	3.74	7.27	0.514		0.00	1.02	14.0		0.27
I	C-AB	1.29	9.26	0.140		0.00	0.17	2.5		0.13
I	A-B	3.75								
I	A-C	3.84								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.00-12.15									
I	B-C	1.77	6.05	0.292		0.24	0.40	5.8		0.23
I	B-A	4.46	6.71	0.666		1.02	1.84	25.1		0.43
I	C-AB	1.54	8.90	0.173		0.17	0.22	3.4		0.14
I	A-B	4.48								
I	A-C	4.58								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.15~12.30									
I	B-C	2.17	2.69	0.804		0.40	2.79	31.8		1.26
I	B-A	5.47	5.80	0.942		1.84	6.71	73.9		1.16
I	C-AB	1.89	8.41	0.225		0.22	0.32	4.9		0.15
I	A-B	5.49								
I	A-C	5.62								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.30~12.45									
I	B-C	2.17	2.28	0.950		2.79	5.23	62.6		2.43
I	B-A	5.47	5.73	0.954		6.71	8.99	119.3		1.74
I	C-AB	1.89	8.41	0.225		0.32	0.33	4.9		0.15
I	A-B	5.49								
I	A-C	5.62								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	12.45~13.00									
I	B-C	1.77	5.15	0.343		5.23	0.54	12.9		0.36
I	B-A	4.46	6.57	0.679		8.99	2.34	52.5		0.71
I	C-AB	1.54	8.90	0.173		0.33	0.23	3.5		0.14
I	A-B	4.48								
I	A-C	4.58								

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	13.00~13.15									
I	B-C	1.48	7.44	0.199		0.54	0.25	4.0		0.17

I	B-A	3.74	7.26	0.515	2.34	1.10	18.0	0.30
I								
I	C-AB	1.29	9.26	0.140	0.23	0.17	2.6	0.13
I								
I	A-B	3.75						
I								
I	A-C	3.84						
I								
I								

 QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.2	
12.15	0.4	
12.30	2.8	***
12.45	5.2	*****
13.00	0.5	*
13.15	0.3	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	1.0	*
12.15	1.8	**
12.30	6.7	*****
12.45	9.0	*****
13.00	2.3	**
13.15	1.1	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.2
12.15	0.2
12.30	0.3
12.45	0.3
13.00	0.2
13.15	0.2

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	162.4	I	108.3	I	120.4	I
I	B-A	I	410.2	I	273.4	I	302.8	I
I	C-AB	I	141.8	I	94.5	I	21.7	I
I	A-B	I	411.6	I	274.4	I		I
I	A-C	I	421.2	I	280.8	I		I
I	ALL	I	1931.1	I	1287.4	I	444.9	I
							0.23	
							445.0	
							0.23	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

Appendix 6

ARCADY Outputs – Proposed Highway Improvements to Wombwell Rd/Market St



A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Nine Mile Ride	Email: softwarebureau@trl.co.uk
Wokingham, Berks.	Web: www.trlsoftware.co.uk
RG40 3GA, UK	

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\2010\N01919 Market Street, Hoyland\Arcady\2013 Assessment PM.vai"
(drive-on-the-left) at 15:00:31 on Friday, 21 January 2011

FILE PROPERTIES

RUN TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2013 Assessment PM
LOCATION: Hoyland
DATE: 21/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Wombwell Road (E)
ARM B - Market Street
ARM C - Wombwell Road (W)

MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I	ARM	I	V (m)	I	E (m)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I
INTERCEPT I																		
I		I		I		I		I		I		I		I		I		I
(PCU/MIN) I																		

I	ARM A	I	3.50	I	5.50	I	9.00	I	3.50	I	12.50	I	10.00	I	0.00	I	0.591	I
17.245 I																		
I	ARM B	I	3.70	I	4.50	I	3.00	I	3.70	I	11.50	I	7.00	I	0.00	I	0.561	I
13.801 I																		
I	ARM C	I	3.70	I	4.50	I	3.00	I	3.70	I	15.00	I	13.00	I	0.00	I	0.578	I
14.983 I																		

V = approach half-width
E = entry width

Lm = effective flare length
Vm = minimum approach half-width

A = distance between arms
K = entry corner kerb line
G = gradient over 50m

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

I ARM I FLOW SCALE(%) I

I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	17.00-17.15								
I	ARM A	10.42	15.99	0.652		1.1	1.8	25.7	0.18
I	ARM B	4.85	10.12	0.479		0.6	0.9	12.9	0.19
I	ARM C	6.57	12.86	0.511		0.7	1.0	14.7	0.16

I									
I									
I									
I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	17.15-17.30								
I	ARM A	12.76	15.71	0.812		1.8	3.9	51.9	0.31
I	ARM B	5.94	9.33	0.637		0.9	1.7	23.1	0.29
I	ARM C	8.04	12.40	0.649		1.0	1.8	24.9	0.22
I									
I									
I									
I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	17.30-17.45								
I	ARM A	12.76	15.70	0.813		3.9	4.1	60.4	0.34
I	ARM B	5.94	9.28	0.640		1.7	1.7	25.6	0.30
I	ARM C	8.04	12.38	0.650		1.8	1.8	27.0	0.23
I									
I									
I									
I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	17.45-18.00								
I	ARM A	10.42	15.97	0.652		4.1	1.9	31.4	0.19
I	ARM B	4.85	10.05	0.482		1.7	1.0	15.2	0.20
I	ARM C	6.57	12.83	0.512		1.8	1.1	16.9	0.16
I									
I									
I									
I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	18.00-18.15								
I	ARM A	8.73	16.18	0.539		1.9	1.2	18.7	0.14
I	ARM B	4.06	10.69	0.380		1.0	0.6	9.7	0.15
I	ARM C	5.50	13.19	0.417		1.1	0.7	11.3	0.13
I									
I									
I									

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	1.1 *
17.15	1.8 **
17.30	3.9 ****
17.45	4.1 ****
18.00	1.9 **
18.15	1.2 *

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.6 *
17.15	0.9 *
17.30	1.7 **
17.45	1.7 **
18.00	1.0 *
18.15	0.6 *

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.7 *
17.15	1.0 *
17.30	1.8 **
17.45	1.8 **
18.00	1.1 *
18.15	0.7 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	A	I	957.1	I	638.1	I	204.4	I	0.21
I	B	I	445.6	I	297.1	I	95.1	I	0.21
I	C	I	603.3	I	402.2	I	104.8	I	0.17
I	ALL	I	2006.1	I	1337.4	I	404.2	I	0.20

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Wokingham, Berks.	Web: www.trlsoftware.co.uk
RG40 3GA, UK	

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Run with file:-
"j:\2010\N01919 Market Street, Hoyland\Arcady\2013 Assessment SAT.vai"
(drive-on-the-left) at 15:00:41 on Friday, 21 January 2011

.FILE PROPERTIES *****

RUN TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2013 Assessment SAT
LOCATION: Hoyland
DATE: 21/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.INPUT DATA *****

ARM A - Wombwell Road (E)
ARM B - Market Street
ARM C - Wombwell Road (W)

.MINI-ROUNDABOUT GEOMETRIC DATA -----

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I	ARM	I	V (m)	I	E (m)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I
INTERCEPT	I																	
(PCU/MIN)	I																	

I	ARM A	I	3.50	I	5.50	I	9.00	I	3.50	I	12.50	I	10.00	I	0.00	I	0.591	I
17.245	I																	
I	ARM B	I	3.70	I	4.50	I	3.00	I	3.70	I	11.50	I	7.00	I	0.00	I	0.561	I
13.801	I																	
I	ARM C	I	3.70	I	4.50	I	3.00	I	3.70	I	15.00	I	13.00	I	0.00	I	0.578	I
14.983	I																	

V = approach half-width
E = entry width

Lm = effective flare length
Vm = minimum approach half-width

A = distance between arms
K = entry corner kerb line
G = gradient over 50m

.TRAFFIC DEMAND DATA -----

(Only sets included in the current run are shown)

I	ARM	I	FLOW SCALE(%)	I
---	-----	---	---------------	---

I A	I	100	I
I B	I	100	I
I C	I	100	I

.TIME PERIOD BEGINS 11.45 AND ENDS 13.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
.LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2013 Baseline PM

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	ARM	I FLOW STARTS I TOP OF PEAK I FLOW STOPS	I	BEFORE I AT TOP I AFTER	I
I	I	I TO RISE I IS REACHED IF FALLING	I	PEAK I OF PEAK I PEAK	I
I	ARM A	I 15.00 I 45.00 I 75.00	I	7.21 I 10.82 I 7.21	I
I	ARM B	I 15.00 I 45.00 I 75.00	I	4.94 I 7.41 I 4.94	I
I	ARM C	I 15.00 I 45.00 I 75.00	I	4.53 I 6.79 I 4.53	I

DEMAND SET TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2013 Baseline PM

I	I	TURNING PROPORTIONS	I
I	I	TURNING COUNTS (VEH/HR)	I
I	I	(PERCENTAGE OF H.V.S)	I
I	TIME	I FROM/TO I ARM A I ARM B I ARM C	I
I	11.45 - 13.15	I I I I I	I
I		I ARM A I 0.000 I 0.494 I 0.506	I
I		I I 0.0 I 285.0 I 292.0	I
I		I (0.0)I (0.0)I (0.0)I	I
I		I I I I I	I
I		I ARM B I 0.719 I 0.000 I 0.281	I
I		I I 284.0 I 0.0 I 111.0	I
I		I (0.0)I (0.0)I (0.0)I	I
I		I I I I I	I
I		I ARM C I 0.735 I 0.265 I 0.000	I
I		I I 266.0 I 96.0 I 0.0	I
I		I (0.0)I (0.0)I (0.0)I	I
I		I I I I I	I

.QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00								
I	ARM A	7.21	16.54	0.436		0.0	0.8	11.0	0.11
I	ARM B	4.94	11.77	0.420		0.0	0.7	10.1	0.14
I	ARM C	4.53	12.95	0.349		0.0	0.5	7.6	0.12

I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I				(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	12.00-12.15								
I	ARM A	8.61	16.40	0.525		0.8	1.1	15.7	0.13
I	ARM B	5.90	11.36	0.519		0.7	1.1	15.1	0.18
I	ARM C	5.40	12.54	0.431		0.5	0.7	10.8	0.14

```

I
I
-----
I TIME      DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY      AVERAGE DELAY
I          (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/  PER ARRIVING
I                                     (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT) VEHICLE (MIN)
I
I 12.15-12.30
I
I ARM A      10.55    16.21    0.651          1.1    1.8     25.5          0.17
I
I ARM B       7.22    10.82    0.667          1.1    1.9     26.4          0.27
I
I ARM C       6.62    12.01    0.551          0.7    1.2     17.1          0.18
I
I
I
-----

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I TIME      DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY      AVERAGE DELAY
I          (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/  PER ARRIVING
I                                     (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT) VEHICLE (MIN)
I
I 12.30-12.45
I
I ARM A      10.55    16.21    0.651          1.8    1.8     27.3          0.18
I
I ARM B       7.22    10.80    0.668          1.9    2.0     29.1          0.28
I
I ARM C       6.62    11.98    0.552          1.2    1.2     18.1          0.19
I
I
I
-----

```

```

I TIME      DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY      AVERAGE DELAY
I          (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/  PER ARRIVING
I                                     (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT) VEHICLE (MIN)
I
I 12.45-13.00
I
I ARM A       8.61    16.39    0.525          1.8    1.1     17.7          0.13
I
I ARM B       5.90    11.34    0.520          2.0    1.1     17.6          0.19
I
I ARM C       5.40    12.51    0.432          1.2    0.8     12.1          0.14
I
I
I
-----

```

```

I TIME      DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY      AVERAGE DELAY
I          (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/  PER ARRIVING
I                                     (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT) VEHICLE (MIN)
I
I 13.00-13.15
I
I ARM A       7.21    16.53    0.436          1.1    0.8     12.1          0.11
I
I ARM B       4.94    11.75    0.420          1.1    0.7     11.5          0.15
I
I ARM C       4.53    12.92    0.350          0.8    0.5      8.4          0.12
I
I
I
-----

```

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.8 *
12.15	1.1 *
12.30	1.8 **
12.45	1.8 **
13.00	1.1 *
13.15	0.8 *

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.7 *
12.15	1.1 *
12.30	1.9 **
12.45	2.0 **
13.00	1.1 *
13.15	0.7 *

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.5 *
12.15	0.7 *
12.30	1.2 *
12.45	1.2 *
13.00	0.8 *
13.15	0.5 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND		* QUEUEING *		* INCLUSIVE QUEUEING *		I
			I	I	I	I	I	I	
I		I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	I
I	A	I	791.2	527.5	109.4	0.14	109.4	0.14	I
I	B	I	541.6	361.1	109.9	0.20	109.9	0.20	I
I	C	I	496.4	330.9	74.1	0.15	74.1	0.15	I
I	ALL	I	1829.2	1219.5	293.4	0.16	293.4	0.16	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

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RG40 3GA, UK	

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\2010\N01919 Market Street, Hoyland\Arcady\2018 Assessment PM.vai"
(drive-on-the-left) at 15:00:53 on Friday, 21 January 2011

.FILE PROPERTIES

RUN TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street ~ 2018 Assessment PM
LOCATION: Hoyland
DATE: 21/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Wombwell Road (E)
ARM B - Market Street
ARM C - Wombwell Road (W)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I	ARM	I	V (m)	I	E (m)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I
INTERCEPT	I																	
I	I			I		I		I		I		I		I		I		
(PCU/MIN)	I																	
I	ARM A	I	3.50	I	6.00	I	9.00	I	3.50	I	12.50	I	10.00	I	0.00	I	0.599	I
17.789	I																	
I	ARM B	I	3.70	I	4.50	I	3.00	I	3.70	I	11.50	I	7.00	I	0.00	I	0.561	I
13.801	I																	
I	ARM C	I	3.70	I	4.50	I	3.00	I	3.70	I	15.00	I	13.00	I	0.00	I	0.578	I
14.983	I																	

V = approach half-width
E = entry width

Lm = effective flare length
Vm = minimum approach half-width

A = distance between arms
K = entry corner kerb line
G = gradient over 50m

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

I ARM I FLOW SCALE(%) I

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15								
ARM A	10.96	16.44	0.667		1.2	1.9	27.3	0.18
ARM B	5.10	9.92	0.514		0.7	1.0	14.7	0.21
ARM C	6.93	12.76	0.543		0.8	1.2	16.6	0.17

```

I
I
-----
I TIME          DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY          AVERAGE DELAY
I              (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/      PER ARRIVING
I                                  (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT)  VEHICLE (MIN)
I
I 17.15-17.30
I
I ARM A      13.42    16.14    0.831          1.9    4.4    57.4          0.33
I
I ARM B      6.25     9.09    0.688          1.0    2.1    28.1          0.34
I
I ARM C      8.48    12.28    0.691          1.2    2.1    29.4          0.26
I
I
-----
I TIME          DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY          AVERAGE DELAY
I              (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/      PER ARRIVING
I                                  (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT)  VEHICLE (MIN)
I
I 17.30-17.45
I
I ARM A      13.42    16.13    0.832          4.4    4.6    68.0          0.36
I
I ARM B      6.25     9.04    0.692          2.1    2.2    31.8          0.36
I
I ARM C      8.48    12.25    0.692          2.1    2.2    32.4          0.26
I
I
-----
I TIME          DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY          AVERAGE DELAY
I              (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/      PER ARRIVING
I                                  (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT)  VEHICLE (MIN)
I
I 17.45-18.00
I
I ARM A      10.96    16.42    0.667          4.6    2.1    34.0          0.19
I
I ARM B      5.10     9.84    0.519          2.2    1.1    17.7          0.22
I
I ARM C      6.93    12.72    0.545          2.2    1.2    19.5          0.18
I
I
-----
I TIME          DEMAND  CAPACITY  DEMAND/  CROSSING  START  END      DELAY          AVERAGE DELAY
I              (VEH/MIN) (VEH/MIN) CAPACITY  USE      QUEUE  QUEUE    (VEH.MIN/      PER ARRIVING
I                                  (RFC)    PER MIN (VEHS) (VEHS)  TIME SEGMENT)  VEHICLE (MIN)
I
I 18.00-18.15
I
I ARM A      9.18     16.65    0.551          2.1    1.3    19.7          0.14
I
I ARM B      4.28    10.52    0.406          1.1    0.7    10.9          0.16
I
I ARM C      5.80    13.10    0.443          1.2    0.8    12.6          0.14
I
I
-----
.QUEUE AT ARM A
-----

```

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	1.2 *
17.15	1.9 **
17.30	4.4 ****
17.45	4.6 *****
18.00	2.1 **
18.15	1.3 *

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.7 *
17.15	1.0 *
17.30	2.1 **
17.45	2.2 **
18.00	1.1 *
18.15	0.7 *

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.8 *
17.15	1.2 **
17.30	2.1 **
17.45	2.2 **
18.00	1.2 *
18.15	0.8 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	A	I	1006.5	I	671.0	I	223.4	I	0.22
I	B	I	469.0	I	312.6	I	112.7	I	0.24
I	C	I	636.2	I	424.2	I	121.6	I	0.19
I	ALL	I	2111.7	I	1407.8	I	457.7	I	0.22

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\2010\N01919 Market Street, Hoyland\Arcady\2018 Assessment SAT.vai"
(drive-on-the-left) at 15:01:03 on Friday, 21 January 2011

.FILE PROPERTIES

RUN TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2018 Assessment SAT
LOCATION: Hoyland
DATE: 21/01/11
CLIENT: Litton Properties
ENUMERATOR:
JOB NUMBER: N01919
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Wombwell Road (E)
ARM B - Market Street
ARM C - Wombwell Road (W)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I	ARM	I	V (m)	I	E (m)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I
INTERCEPT	I																	
I	I			I				I		I				I				
(PCU/MIN)	I																	
I ARM A	I	3.50		I	5.50		9.00		3.50		12.50		10.00		0.00		0.591	I
17.245	I																	
I ARM B	I	3.70		I	4.50		3.00		3.70		11.50		7.00		0.00		0.561	I
13.801	I																	
I ARM C	I	3.70		I	4.50		3.00		3.70		15.00		13.00		0.00		0.578	I
14.983	I																	

V = approach half-width
E = entry width

Lm = effective flare length
Vm = minimum approach half-width

A = distance between arms
K = entry corner kerb line
G = gradient over 50m

.TRAFFIC DEMAND DATA

{Only sets included in the current run are shown}

I ARM I FLOW SCALE(%) I

I A	I	100	I
I B	I	100	I
I C	I	100	I

.TIME PERIOD BEGINS 11.45 AND ENDS 13.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
.LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2013 Baseline PM

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	ARM	FLOW STARTS	TOP OF PEAK	FLOW STOPS	BEFORE
I	I	TO RISE	IS REACHED	FALLING	PEAK
I	I	I	I	I	I
I	ARM A	15.00	45.00	75.00	7.56
I	ARM B	15.00	45.00	75.00	5.20
I	ARM C	15.00	45.00	75.00	4.78

DEMAND SET TITLE: Proposed Mini-Roundabout Wombwell Rd/Market Street - 2013 Baseline PM

I	I	TURNING PROPORTIONS	I
I	I	TURNING COUNTS (VEH/HR)	I
I	I	(PERCENTAGE OF H.V.S)	I
I	I	I	I
I	TIME	FROM/TO	ARM A
I	I	I	ARM B
I	I	I	ARM C
I	11.45 - 13.15	I	I
I	I	ARM A	0.000
I	I	I	0.494
I	I	I	0.506
I	I	I	0.0
I	I	I	299.0
I	I	I	306.0
I	I	I	0.0
I	I	I	0.0
I	I	I	0.0
I	I	ARM B	0.716
I	I	I	0.000
I	I	I	0.284
I	I	I	298.0
I	I	I	0.0
I	I	I	118.0
I	I	I	0.0
I	I	I	0.0
I	I	ARM C	0.730
I	I	I	0.270
I	I	I	0.000
I	I	I	279.0
I	I	I	103.0
I	I	I	0.0
I	I	I	0.0
I	I	I	0.0

.QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

I	TIME	DEMAND	CAPACITY	DEMAND/	CROSSING	START	END	DELAY	AVERAGE DELAY
I	I	(VEH/MIN)	(VEH/MIN)	CAPACITY	USE	QUEUE	QUEUE	(VEH.MIN/	PER ARRIVING
I	I	I	I	(RFC)	PER MIN	(VEHS)	(VEHS)	TIME SEGMENT)	VEHICLE (MIN)
I	11.45-12.00								
I	I	ARM A	7.56	16.49	0.459	0.0	0.8	12.0	0.11
I	I	ARM B	5.20	11.67	0.446	0.0	0.8	11.2	0.15
I	I	ARM C	4.78	12.85	0.372	0.0	0.6	8.4	0.12
I	I								
I	I								
I	I								
I	12.00-12.15								
I	I	ARM A	9.03	16.34	0.553	0.8	1.2	17.5	0.14
I	I	ARM B	6.21	11.24	0.552	0.8	1.2	17.1	0.20
I	I	ARM C	5.70	12.42	0.459	0.6	0.8	12.1	0.15
I	I								

I
I

I TIME DEMAND CAPACITY DEMAND/ CROSSING START END DELAY AVERAGE DELAY
I (VEH/MIN) (VEH/MIN) CAPACITY USE QUEUE QUEUE (VEH.MIN/ PER ARRIVING
I (RFC) PER MIN (VEHS) (VEHS) TIME SEGMENT) VEHICLE (MIN)
I 12.15-12.30
I
I ARM A 11.06 16.14 0.685 1.2 2.1 29.4 0.19
I
I ARM B 7.60 10.68 0.712 1.2 2.3 31.6 0.31
I
I ARM C 6.98 11.87 0.589 0.8 1.4 19.6 0.20
I
I
I

I TIME DEMAND CAPACITY DEMAND/ CROSSING START END DELAY AVERAGE DELAY
I (VEH/MIN) (VEH/MIN) CAPACITY USE QUEUE QUEUE (VEH.MIN/ PER ARRIVING
I (RFC) PER MIN (VEHS) (VEHS) TIME SEGMENT) VEHICLE (MIN)
I 12.30-12.45
I
I ARM A 11.06 16.13 0.686 2.1 2.1 31.8 0.20
I
I ARM B 7.60 10.66 0.713 2.3 2.4 35.5 0.32
I
I ARM C 6.98 11.84 0.590 1.4 1.4 21.1 0.21
I
I
I

I TIME DEMAND CAPACITY DEMAND/ CROSSING START END DELAY AVERAGE DELAY
I (VEH/MIN) (VEH/MIN) CAPACITY USE QUEUE QUEUE (VEH.MIN/ PER ARRIVING
I (RFC) PER MIN (VEHS) (VEHS) TIME SEGMENT) VEHICLE (MIN)
I 12.45-13.00
I
I ARM A 9.03 16.33 0.553 2.1 1.3 19.9 0.14
I
I ARM B 6.21 11.22 0.553 2.4 1.3 20.4 0.21
I
I ARM C 5.70 12.38 0.461 1.4 0.9 13.6 0.15
I
I
I

I TIME DEMAND CAPACITY DEMAND/ CROSSING START END DELAY AVERAGE DELAY
I (VEH/MIN) (VEH/MIN) CAPACITY USE QUEUE QUEUE (VEH.MIN/ PER ARRIVING
I (RFC) PER MIN (VEHS) (VEHS) TIME SEGMENT) VEHICLE (MIN)
I 13.00-13.15
I
I ARM A 7.56 16.48 0.459 1.3 0.9 13.3 0.11
I
I ARM B 5.20 11.65 0.446 1.3 0.8 12.9 0.16
I
I ARM C 4.78 12.82 0.373 0.9 0.6 9.3 0.13
I
I
I

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.8 *
12.15	1.2 *
12.30	2.1 **
12.45	2.1 **
13.00	1.3 *
13.15	0.9 *

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.8 *
12.15	1.2 *
12.30	2.3 **
12.45	2.4 **
13.00	1.3 *
13.15	0.8 *

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.6 *
12.15	0.8 *
12.30	1.4 *
12.45	1.4 *
13.00	0.9 *
13.15	0.6 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I		I		I		I
I		I	(VEH) (VEH/H)	I	(MIN) (MIN/VEH)	I	(MIN) (MIN/VEH)	I
I	A	I	829.6 I 553.1	I	123.9 I 0.15	I	123.9 I 0.15	I
I	B	I	570.4 I 380.3	I	128.6 I 0.23	I	128.6 I 0.23	I
I	C	I	523.8 I 349.2	I	84.1 I 0.16	I	84.1 I 0.16	I
I	ALL	I	1923.8 I 1282.5	I	336.6 I 0.17	I	336.6 I 0.17	I

- * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
- * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
- * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

Appendix 7

Draft Travel Plan



Litton Properties Limited

PROPOSED FOODSTORE, LAND AT MARKET STREET, HOYLAND, SOUTH YORKSHIRE

Travel Plan

N01919

March 2011

Transport Planning Specialists

REPORT CONTROL

Document: Travel Plan

Project: Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

Client: Litton Properties Limited

Job Number: N01802

File Origin: J:\2010\N01919 Market Street, Hoyland\Docs\Reports\Hoyland TP-03.doc

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2			
3			
4			



Contents

1	TRAVEL PLAN	1
1.1	Introduction.....	1
1.2	Development Proposals	1
1.3	The Travel Plan	2
1.4	Plan Administration	3
2	TRAVEL AUDIT	5
2.1	Introduction.....	5
2.2	Accessibility on Foot	5
2.3	Accessibility by Cycle.....	5
2.4	Accessibility by Bus.....	6
2.5	Accessibility by Rail	7
2.6	Travel Audit Conclusions	8
3	MANAGEMENT MEASURES	9
4	TARGET SETTING	12
4.1	Introduction.....	12
4.2	Travel Targets	12
4.3	Potential Targets	12
4.4	Customer/Visitor targets.....	13
4.5	Travel Plan Framework	13
4.6	Plan Monitoring and Assessment.....	14

PLANS

Plan 1	Pedestrian Catchment Plan
Plan 2	Cycle Catchment Plan
Plan 3	Bus Catchment Plan



1 TRAVEL PLAN

1.1 Introduction

- 1.1.1 This document sets out a framework for a workplace Travel Plan to be submitted to supplement the forthcoming planning application for a new foodstore off Wombwell Road in Hoyland, Barnsley.
- 1.1.2 The preparation and adoption of a Travel Plan is an important element of managing the demand for travel to all modern developments. The Department for Transport issued a guide on the preparation of such Travel Plans in April 2009 in a document entitled 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process'.
- 1.1.3 It should be noted that this is a working document and is recognised as being the first stage in the Travel Plan process. This is primarily because, as the site is yet to be constructed and the food store occupied, it is not desirable to simply list a series of policies to be implemented once the site is fully occupied. Instead, it is preferable to provide a more detailed Travel Plan that takes into account the residential locations of staff and their modes of travel to work.
- 1.1.4 Whilst consideration will be given to promoting sustainable modes to customers, this Travel Plan essentially sets out a framework for staff who will be employed at the foodstore.

1.2 Development Proposals

- 1.2.1 The proposed development consists of the construction of a retail foodstore (Use Class A1) with associated access, servicing, car parking and landscaping.
- 1.2.2 The foodstore will have a floor area of 2,594m² (27,922ft²) along with a car parking provision of 192 car parking spaces including 11 disabled and 8 parent & child spaces.
- 1.2.3 In addition, there will be a segregated service area located to the north eastern end of the site which will allow for large articulated vehicles to safely manoeuvre within the site to serve the foodstore.



- 1.2.4 As part of the proposed development it is intended to provide cycle parking stands for both customers and staff to a quantum that is in accordance with local authority guidance. This provision would be located in a safe and secure location.

1.3 The Travel Plan

- 1.3.1 The foodstore Travel Plan is a long-term strategy for reducing the dependence of staff and customers on travel by private car.

- 1.3.2 The aims of the strategy are:

- To encourage staff and customers to use alternatives to the private car;
- To increase the awareness of the advantages and potential for travel by more environmentally friendly modes, and
- To introduce a package of management measures that will facilitate travel by modes of transport other than the private car.

- 1.3.3 The principle strands of the plan are set out as follows;

Management Measures

- Appointment of a Travel Plan Co-ordinator and creation of Travel Plan action group.
- Ensuring travel awareness.
- Creation of a travel database.
- Ensuring the availability of travel information.
- The establishment of a car sharing scheme.
- The creation of a Cycle User Group.

- 1.3.4 The Travel Plan will form part of the terms of the lease of the unit and as such any future occupier will be aware in advance that they are required to adopt a Travel Plan in accordance with this framework.



- 1.3.5 In addition the management of staff travel represents an important element in pursuing the overall aims of the latest national guidance included within the DfT's Best Practice Guide; guidance is also contained within PPG13.
- 1.3.6 The sustainable transport objectives are summarised in paragraph 88 of PPG 13, which include:
- Reductions in car usage (particularly single occupancy journeys) and increased use of public transport, walking and cycling;
 - Reduced traffic speeds and improved road safety and personal security particularly for pedestrians and cyclists; and
 - More environmentally friendly delivery and freight movements, including home delivery services.
- 1.3.7 This document provides a framework for the preparation of a Travel Plan, which will be submitted to and agreed with the City of Barnsley Metropolitan Borough Council within 6 months of the occupation of the foodstore. The Travel Plan will demonstrate the strategy that the occupier is taking to assist the wider aims of sustainable transport.
- 1.3.8 PPG13 states that Travel Plans should be submitted alongside planning applications that are likely to have significant transport implications.
- 1.3.9 A Travel Plan is effectively a combination of information, proposals and incentives designed to use most effectively the different means of travel available to staff and customers.

1.4 Plan Administration

- 1.4.1 The foodstore occupier will be required to designate a Travel Plan Co-ordinator for the development. Essentially this Co-ordinator will provide a liaison in implementing the plan with the local authority.
- 1.4.2 Details of the nominated Travel Plan Co-ordinator will be submitted to the Planning and Highway Authority and the appropriate local bus companies. Similarly, the Co-ordinator will be advised of appropriate contact personnel at the development.



- 1.4.3 The Travel Plan Co-ordinator will be the first point of contact for staff and other outside organisations in all matters regarding travel. He/she will maintain an up-to-date file containing all correspondence to and from staff relating to the Travel Plan.



2 TRAVEL AUDIT

2.1 Introduction

2.1.1 In order to accord with the aspirations of Planning Policy Guidance (PPG) Note 13, entitled 'Transport', any new proposals should extend the choice in transport and secure mobility in a way that supports sustainable development.

2.1.2 This section therefore provides a travel audit of the existing travel infrastructure and facilities provided in the vicinity of the store, including by pedestrian, cycle, and public transport amenities.

2.2 Accessibility on Foot

2.2.1 It is important to create a choice of direct, safe and attractive routes between where people live and where they need to travel in their day-to-day life. This philosophy clearly encourages the opportunity to walk whatever the journey purpose and also to help to create more active streets and a more vibrant neighbourhood.

2.2.2 The application site will have pedestrian access afforded from Wombwell Road at the proposed site access junction along with a pedestrian connection to Market Street to the southern end of the site.

2.2.3 This pedestrian access will allow a direct connection between the bus services on Market Street and the foodstore pedestrian entrance. This pedestrian link will also provide a connection to Hoyland Town Centre utilising the existing footway network along Market Street.

2.2.4 Guidance by the Institution of Highways and Transportation suggests acceptable non commuting walking distances to supermarkets of 1.2 kilometres. Within the 1.2km catchment area there are substantial existing residential areas which demonstrating potential accessibility on foot for staff and customers.

2.2.5 Within the Institution of Highways and Transportation (IHT) document, entitled "Guidelines for Providing for Journeys on Foot", a distance of 2 kilometres is defined as a preferred maximum for commuting.



2.2.6 As such, a pedestrian accessibility plan for 2 kilometres from the site is presented in **Plan 1**. The plan shows the areas that can be reached such as the whole of Hoyland, Jump and the majority of Elsecar.

2.2.7 Hoyland Town Centre is located within 800 metres to the south of the site and provides a wide range of facilities including health care, newsagents, hardware store, butchers, grocers, banks and many other facilities.

2.2.8 In conclusion, the proposed development site can be considered as accessible by foot.

2.3 Accessibility by Cycle

2.3.1 An alternative mode of travel to the site could be achieved by bicycle. Cycling can substitute some car journeys in particular those up to 5 kilometres. Cycling can be appropriate for customer or employee trips to and from a store. As part of the development proposals there will be cycle parking facilities provided, which will be sheltered, secure and well lit.

2.3.2 PPG13 states that cycling has the 'potential to replace short car journeys, particularly those under 5 kilometres.'

2.3.3 **Plan 2** displays a 5 kilometre cycle catchment from the site. This would equate to a journey of around 25 minutes using a leisurely cycle speed of 12 kilometres per hour. As can be seen from the plan the 5 kilometre catchment encompasses a number of areas such as Tankersley, Birdwell, Worsbrough Bridge, Wombwell, Wentworth, Brampton and Ardsley.

2.3.4 As such the site can be considered as being accessible by cycle.

2.4 Accessibility by Bus

2.4.1 There are existing bus stop facilities directly outside the site along Market Street with Elsecar Rail Station located around 1.5 kilometres to the south east of the site off Hill Street.

2.4.2 When considering how accessible a site is to bus services it is generally accepted that 400 metres is a suitable walking distance to a bus stop. This distance has been taken from the IHT Guidelines on Planning for Public Transport for Development.



- 2.4.3 Table 2.1 provides a summary of the bus services and frequencies that operate within 400 metres of the site along Market Street and Wombwell Road.

Serv.	Route	Frequency/Hour					
		Mon-Fri				Sat	Sun
		AM Peak	Mid	PM Peak	Eve		
7/7A	Barnsley-Hoyland-Blacker Hill (Circular)	1	0.5	0.5	0.5	0.5	0.5
67	Barnsley-Wombwell	1	1	1	0	1	0
227	Barnsley-Hoyland-Rotherham	1	1	1	1	1	1

Table 2.1 – Bus Routes and Frequencies in the Vicinity of the Site

- 2.4.4 **Plan 3** identifies the service routes which serve the proposed store which would stop immediately adjacent to the store. As can be seen from Table 2.1 there are up to 3 buses per hour that operate in close proximity of the site along Market Street and Wombwell Road which provide frequent connections to many of the surrounding centres of population, such as Hoyland, Barnsley and Rotherham during the peak hour periods. These buses will provide valuable services to facilitate access to the store for both staff and customers.

- 2.4.5 Given the number and coverage of the existing bus service network, it can properly be concluded that the site is very accessible by bus.

2.5 Accessibility by Rail

- 2.5.1 Elsecar Railway Station is located around 1.5 kilometres to the south east of the site along Hill Street with adequate pedestrian connection to and from the proposed site.
- 2.5.2 The station is served during off-peak times by an hourly train operating between Sheffield and Leeds. Additional trains provide a half hourly service towards Sheffield in the morning peak and a half hourly service from Sheffield in the evening peak, these extra services also operate to and from Huddersfield Town Centre.



2.6 Travel Audit Conclusions

- 2.6.1 It can therefore be concluded from this travel audit that the development site is accessible by a range of sustainable modes of transport, including walking, cycling and public transport.



3 MANAGEMENT MEASURES

3.1.1 The following measures will be delivered through the Travel Plan by the Travel Plan Co-ordinator:

- i) Appointment of a Travel Plan Co-ordinator and creation of Travel Plan Action Group.
- ii) Travel awareness.
- iii) Baseline Data.
- iv) Travel information.
- v) Personal Journey Plans.
- vi) Car sharing scheme.
- vii) Cycle User Group.
- viii) New Staff "Welcome Pack".

Travel Plan Co-ordinator and Travel Plan Action Group

3.1.2 A Travel Plan Co-ordinator will be appointed prior to the proposed development commencing operation.

3.1.3 Once the site is fully operational an Action Group will be created which involves the Travel Plan Co-ordinator for the foodstore, other staff as appropriate, relevant authorities and special interest groups.

Travel Awareness

3.1.4 Staff will be made aware of the existence of the Travel Plan and a copy will be made available to the Barnsley Metropolitan Borough Council.

3.1.5 Welcome Packs/Starter Packs will be given to new staff when they start work at the development.



- 3.1.6 Targets for achieving a lower mode share by car and reducing the level of car usage by a given extent over a certain period will be established. These targets will be set upon occupation of the store following results of the staff travel survey.

- 3.1.7 Customers and visitors will be informed of alternative modes of travel to the site by the siting of notice boards within the store and the provision of promotional and public transport information leaflets will be made available to customers and visitors for future visits. While on a first visit this may not help to promote non-car use, but will be a useful mechanism to encourage habitual visitors to use an alternative mode of travel.

Baseline Data

- 3.1.8 In order to establish the existing travel patterns of staff, a travel survey will be carried out and will form the basis of the final Travel Plan document. This will survey, amongst other issues, current staff travel patterns to and from work and business travel trips undertaken during the course of the day.

- 3.1.9 The availability of this data will assist in more accurately defining travel requirements and the specific measures to be implemented to maximise the success of the plan.

Travel Information

- 3.1.10 Travel Information for staff and customers could be provided for in numerous ways, such as websites, newsletters and cycle and walking maps for the surrounding areas. Staff could also be provided with personalised journey planners.

Personal Journey Plans

- 3.1.11 In order to encourage the adoption of sustainable travel habits by employees of the store, the foodstore will provide Personal Journey Plans (PJPs). A PJP will outline individual's journey from home to work using public transport to help build confidence for those using public transport for the first time or undertaking a new journey.

Car Sharing Scheme

- 3.1.12 The Travel Plan Co-ordinator will promote the use of car sharing scheme and staff will be encouraged to join the Barnsley MBC's Car Share Scheme (www.southyorkshire.liftshare.com).



- 3.1.13 Regular leaflets will be distributed to staff to allow potential car sharers to register an interest. The Travel Plan Co-ordinator will be required to maintain a database of staff that register an interest in car sharing and will be required to facilitate success of the scheme.

Cycle User Group

- 3.1.14 The Travel Plan Co-ordinator will establish contacts with the cycling officers of the Barnsley MBC.

New Staff 'Welcome Pack'

- 3.1.15 A 'Welcome Pack' will be provided to staff starting work at the site. The pack will include information contained within the Accessibility section of this Travel Plan.
- 3.1.16 The 'Welcome Pack' will include details on the intentions of the Travel Plan and why the Travel Plan has been produced, as well as contacts for the Travel Plan Co-ordinator. The packs will include current information on walking and cycling routes in the area and information on current bus/rail services i.e. timetables.
- 3.1.17 In addition, staff will be offered personalised journey planners as an on-going part of the monitoring process the 'Welcome Pack' will be reviewed and updated annually. Information regarding any changes to the bus services in the area will be passed to staff via leaflets or a company website.



4 TARGET SETTING

4.1 Introduction

4.1.1 This section of the Travel Plan will provide details of the targets against which the success of the Plan in achieving its objectives will be measured.

4.1.2 The targets are designed to be quantifiable, be relevant to both measures and objectives identified in the Plan and to include a timescale.

4.2 Travel Targets

4.2.1 In order to set the targets further information may have to be obtained in order to establish against which to set the targets. This information will be related to existing patterns of movement (i.e. the proportion of staff who travel to their workplace by non-car mode) and may be obtained from sources such as the National Travel Survey and the National Census.

4.2.2 The main source of baseline information would however come from the staff travel survey, which will be completed 6 months post full occupation of the store and will be completed every two years thereafter.

4.2.3 Suitable targets for reducing the need to travel by private car will be set and agreed with the Barnsley MBC's Travel Plan Officer at a more advanced stage in the planning process.

4.3 Potential Targets

4.3.1 Targets which may potentially be included in the Travel Plan include the following:

- Certain %age of staff to travel to work by non-car mode. This is to be achieved within a 5 year timeframe of the development commencing operation and continue at the same level thereafter.
- Certain %age modal shift of staff on the proposed development away from the public car to non-car modes. To be achieved within the 5 year timeframe discussed below.
- Certain %age decrease in the number of single occupancy journeys to and from the site by staff.



- Certain %age increase in the number of staff joining and participating in the car share scheme. This will be reviewed and re-evaluated annually to promote the objectives of the Travel Plan.

4.4 Customer/Visitor targets

- 4.4.1 As mentioned previously, customers and visitors of the foodstore could be informed of sustainable options of travel to the site. Public transport information and leaflets will be provided within the store to promote sustainable transport to the proposed development.
- 4.4.2 As the store is not presently operational specific targets for visitors and customers of the development can not be identified. These targets will be agreed at the more detailed stage of the planning process in accordance with the guidance provided by Barnsley MBC.

4.5 Travel Plan Framework

- 4.5.1 Table 4.1 below provides a framework and guidance as to timescales for the Travel Plan.

Before occupation.	Appoint Travel Plan Coordinator.
0-6 Months	Organise Travel Plan Action Group Complete staff travel surveys. Establish modal user groups (such as car share clubs, bike user clubs, taxi share clubs) Sign up to the Council's Car Sharing Scheme.
6-12 Months	Submission of Full Travel Plan and Modal Split Targets to Barnsley Council Continuous updating of Travel Plan database Continuous updating of all public transport information.
12+ Months	Update and monitor travel questionnaire annually. The Travel Plan will be in place for the life of the development.

Table 4.1 - Travel Plan Framework Timescales



4.6 Plan Monitoring and Assessment

- 4.6.1 The Travel Plan Co-ordinator will be responsible for on-going monitoring and regular staff travel surveys. These will assess the travel habits of staff and visitors to the site and thus enable the success of the Travel Plan.
- 4.6.2 Provisionally travel surveys will be completed annually over a 5 year period to provide ongoing information on the success of the Travel Plan. Each survey will result in a monitoring report which will present results and progress. Any problems will be identified and specific actions noted and carried forward to the next annual report.
- 4.6.3 The agreed timescale for Travel Plan reviews and repeat travel surveys will be included within the final Travel Plan.
- 4.6.4 The ongoing monitoring of the Travel Plan will also include items such as feedback from bus operators to establish demand for local bus services.
- 4.6.5 Information gathered as part of the continuous monitoring process will be made available to the local authority to assist the assessment of ongoing modal split.
- 4.6.6 Future strategies for further delivering plan objectives can be considered in partnership between occupiers and the Local Planning and Highway Authority.
- 4.6.7 The monitoring and assessment of the Travel Plan will include the submission of annual progress reports detailing the results of the travel surveys with regards to targets, budgets, general effectiveness and current initiatives. An annual report is to be submitted to the local authority no later than one month following the anniversary of the approval of the Travel Plan.
- 4.6.8 This will allow effective measures to be promoted and increased while ineffective measures can be revised and rectified. New initiatives for the coming year will also be contained within the report and submitted to officers at Barnsley MBC.

Notes:
1. This is not a construction drawing and is intended for illustrative purposes only.
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PLAN 1



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REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Litton Properties Limited
Proposed Foodstore, Land at Market Street, Hoyland, South Yorkshire

DRAWING TITLE:

2km Pedestrian Catchment

SCALE:

1:25000 @ A3

DRAWN:

SP

CHECKED:

DL

DATE:

Jan 2011

Savell Bird & Axon

part of the WYG group

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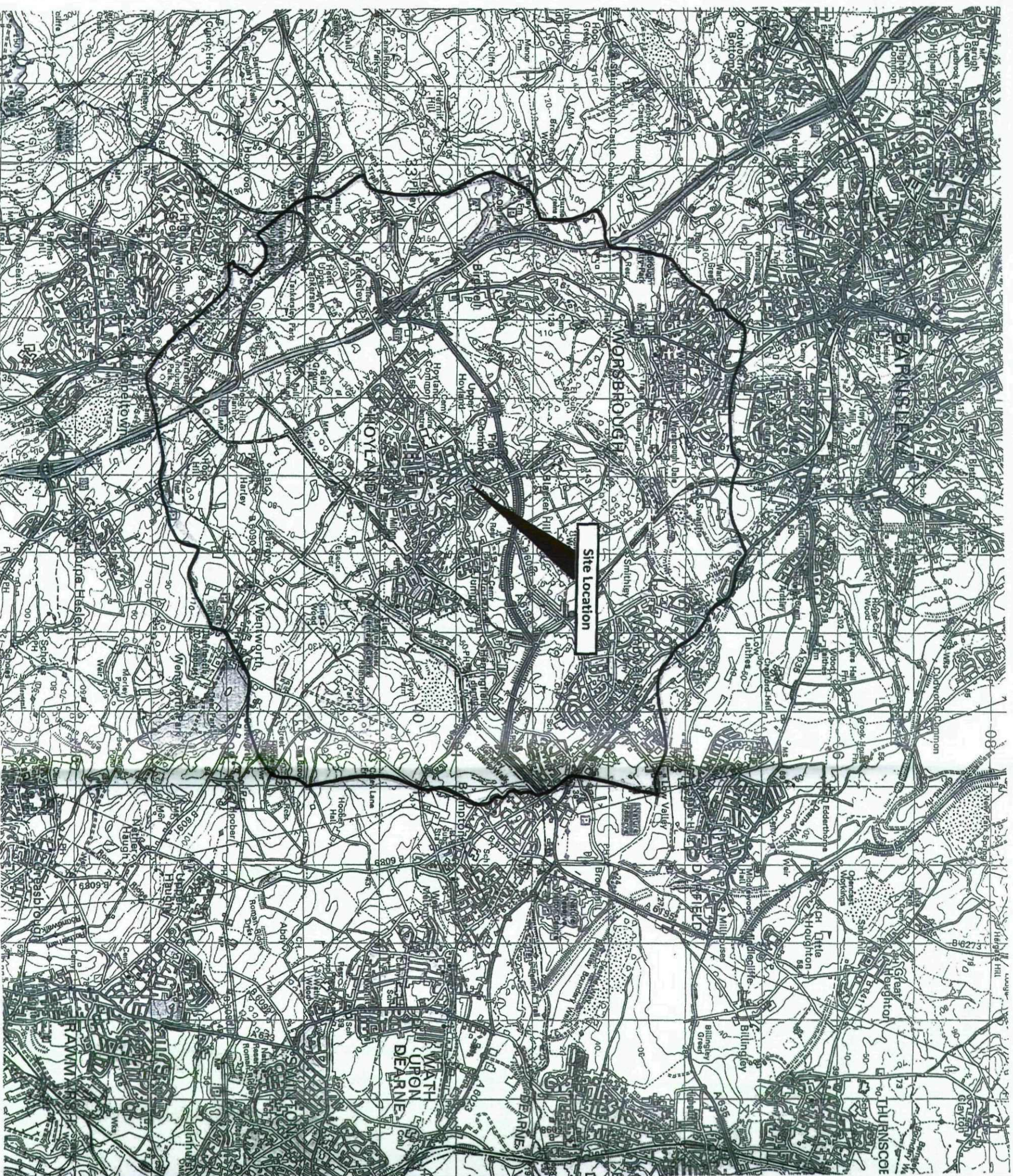
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PLAN 2



REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Litton Properties Limited

PROJECT:
Proposed Foodstore, Land at Market
Street, Hoyland, South Yorkshire

DRAWING TITLE:

5km Cycle Catchment

SCALE:

1:50000 @ A3

DRAWN:

SP CHECKED: DL DATE: Jan 2011

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DRAWING NUMBER:

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PLAN 3



REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

Litton Properties Limited
Proposed Foodstore, Land at Market
Street, Hoyland, South Yorkshire

DRAWING TITLE:

Bus Catchment Plan

SCALE:

1:50000

DRAWN:

HS

CHECKED:

DL

DATE:

Mar 10

Savell Bird & Axon

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