

PROPOSED RABBIT INGS REGENERATION, ROYSTON, BARNLEY, SOUTH YORKSHIRE

Transport Assessment

White Young Green
Executive Park
Avalon Way
Anstey
Leicester
LE7 7GR

Tel No: 0116 234 8000

Fax No: 0116 234 8001

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PREPARED BY	MM	MM				
CHECKED BY	PG	PG				
APPROVED BY						

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1. INTRODUCTION

- 1.1 White Young Green (WYG) has been instructed, in conjunction with Carillion plc, by a partnership comprising of the City of Wakefield Metropolitan District Council, and Yorkshire Forward to prepare a Transport Assessment (TA) in support of a *planning application for the Rabbit Ings Regeneration Scheme, Royston, Barnsley, South Yorkshire*. The regeneration proposals will include both informal and formal leisure and recreational facilities with car parking.
- 1.2 This report should be read in conjunction with the accompanying Travel Plan (RT39273-02) and Traffic Routeing Scheme (RT39273-03).
- 1.3 The Rabbit Ings site covers an area of approximately 65.9 hectares (ha), located to the east of the B6428 Lund Hill Lane. There are three distinct areas of land which make up the Rabbit Ings site, which can be broken down as follows.
- The former Rabbit Ings spoil tip, covering an area of approximately 50.9 ha;
 - The former Royston Drift Mine, covering an area of approximately 6.5 ha; and
 - The Royston and Carlton Community Partnership recreation ground with adjoining land, covering an area of approximately 8.5 ha.
- 1.4 The Rabbit Ings site is located adjacent to open agricultural fields, which lie to the north, south and east of the site. The Monckton Coke and Chemical Works is also located to the west side of the B6428 Lund Hill Lane, whilst an existing industrial / manufacturing works is located on the east side of Lund Hill Road, forming a boundary with the Rabbit Ings site. A railway line runs north-south to the west of the proposed development site, beyond which the village of Royston is located. A site location plan is included as **Figure 1**.
- 1.5 Primary vehicular access to the proposed site will be created along the B6248 Lund Hill Lane. The new site access junction, which will serve the sports and changing facilities, will take the form of a T-junction. A number of other access point will be provided to the proposed development to enable pedestrians, cyclists,

people on horseback and maintenance vehicles to access the site at a variety of locations, increasing the permeability of the site.

- 1.6 Included as part of the development proposals is the importation of approximately 129,000m³ of soils, formerly materials. The site already has an existing planning permission for the importation 95,000m³ of soils and 17,000m³ of soils is already stockpiled on an area of the site which is outside the importation boundary. Therefore a further 17,000m³ of soils making materials are proposed as part of this application.
- 1.7 This Transport Assessment investigates the highways and transportation issues associated with the proposed development. The layout of the study is as follows:-
- **Section 2** describes the existing site, development proposals and parking issues;
 - The policy context is reviewed with **Section 3**;
 - **Section 4** investigates the sustainable transport facilities available within the vicinity of the development site;
 - **Section 5** describes the existing highway network and analyses the study area's recent accident history;
 - The proposed trip generation levels and distribution of development generated traffic are examined in **Section 6**;
 - **Section 7** assesses the impacts of the proposed development's traffic generation on the local highway network; and
 - **Section 8** outlines the conclusions.

2. EXISTING SITE AND DEVELOPMENT PROPOSALS

2.1 EXISTING SITE

2.1.1 The Rabbit Ings site is located to the east of the village of Royston and approximately 4.5 kilometres to the north-east of Barnsley. The development site covers an area of approximately 65.9 hectares (ha) and is located to the east of the B6428 Lund Hill Lane and to the west of Sandybridge Lane, as shown within **Figure 1**. Lund Hill Lane is subject to a 30mph speed limit in the vicinity of the site.

2.1.2 The site was primarily formally used as a colliery spoil heap and drift mine but the majority of the site now lies vacant following its former use, although some unauthorised activities are undertaken on the land, such as off road motor biking and 4x4 use. The former sports pitches located within the southern section of the site are in poor condition and appear to be used infrequently.

2.2 DEVELOPMENT PROPOSALS

2.2.1 It is proposed to regenerate the 65.9 ha Rabbit Ings site through reclamation, regrading, landscaping and ecological enhancement. The proposal will provide an open space area for informal recreational use and increase public access to the whole site. Formal recreational use is also proposed on the site in the form of a junior football pitch area, two senior pitches and associated two team changing facilities for the pitches. Informal recreation will include an enhanced network of footpaths, including a DDA route, and cycletracks. An indicative masterplan is included as **Appendix A**.

2.2.2 Vehicular access for the proposed sports pitches will be gained from the B6428 Lund Hill Lane. A priority controlled T-junction will be created within the south western corner of the site which will provide access to the on-site car park for users of the sports pitches. This new access will be gated and locked outside periods of normal sports pitch usage. Pedestrian footways will also be created alongside the junction to provide pedestrian access at the same location. A secondary access point which will allow access to a smaller car park (with 8

spaces) will also be provided along B6428 Lund Hill Lane, located in the north western corner of the site. The proposed access points are shown by the indicative masterplan (**Appendix A**).

- 2.2.3 The principle vehicular access at the proposed location for access to the sports pitches will enable a visibility splay of approximately 120 metres to the west, and approximately 100 metres to the east to be achieved, from the a distance 4.5 metres back from the proposed give-way line, which is comfortable within the national and local guidance. Photographs of the visibility achievable from the proposed location of the site access point along the B6428 Lund Hill Lane are included as **Appendix B**.
- 2.2.4 Alternative access points will be provided to the site along the B6428 Lund Hill Lane, located to the north of the main sports pitch vehicular access point, and along Sandybridge Lane, on the eastern side of the site. A small additional car park will be provided at the additional Lund Hill Lane site access point. These access points will increase the site's permeability level for pedestrians, cyclists, and maintenance vehicles. Lockable gates will also be used at the alternative access points.
- 2.2.5 During the construction phase of the proposed development inert soils, formerly materials, will need to be transported to the site. Planning permission has been granted for the importation and temporary stoarge of 95,000m³ of soil making materials on the former drift mine part of the site. A further 17,000m³ of soils are currently stockpiled and available on the Rabbit Ings site. As part of the main Rabbit Ings Regeneration Scheme it will be necessary to import a further 17,000m³ of soil making materials. These soils will be transported to the site by HGVs with a 20 tonnes capacity.
- 2.2.6 During the construction period traffic will use the existing site access point to the former Royston Drift Mine site on the B6428 Lund Hill Lane, directly opposite to the existing Monckton Coke and Chemical Works access. The existing access was designed to provide adequate carriageway widths and turning radii to enable a large number of HGVs to access the site. The existing site access provides a

carriageway width of 10 metres and has a visibility splay of approximately 120 metres in both directions from a point 2.4 metres back from the give-way line.

2.3 PARKING

- 2.3.1 The proposed development will provide a total of 102 car parking spaces, 94 of which will be accessed via the proposed vehicular access junction along the B6428 Lund Hill Lane and will be available for users of the sports pitches, whilst 8 will be accessed via the retained access point to the north and available for formal and/or informal users of the Rabbit Ings site. A total of 6 spaces will be reserved for mobility impaired people.
- 2.3.2 Barnsley Metropolitan Borough Council (BMBC) released Supplementary Planning Document 32 (SPG) in March 2005 to supplement the adopted Barnsley Unitary Development Plan. The SPG contains specific standards parking provision for new developments. However, no standards are provided within the SPG for an informal and formal leisure facility, such as the one proposed at the Rabbit Ings site. The Trip Rate Information Computer System (TRICS) database has been interrogated for similar sites, within Great Britain but excluding Greater London, the output of which is provided with **Appendix C**. On the basis of the arrival and departure profiles gained from the TRICS sites a car parking accumulation exercise has been carried out for the proposed scheme, contained within **Appendix D**. The peak period of use occurs during a Sunday in which a maximum of 109 vehicles are predicted to park at the site. The provision of 102 car parking spaces is viewed as been adequate for the proposed development as the accompanying travel plan document will work towards reducing the number of vehicular trips generated at the site.
- 2.3.3 The SPG document states that 4% of all car parking space should be provided to mobility standards (minimum width 3.6 metres). The proposed scheme is proposing to provide 6 parking bays for the mobility impair which is in line with the guidance.

- 2.3.4 No cycle parking standards are provided within the SPG for this type of regeneration. It is suggested that a minimum of 5 'Sheffield' type stands are provided within the vicinity of the car park, providing enough space for 10 bicycles to be securely parked at any one time. As part of the travel plan cycle usage will be monitored and further cycle parking facilities provided if deemed necessary.
- 2.3.5 The SPG states that the provision of Powered Two Wheelers (PTWs) 'should be provided on a scale of 1 space per 20 car parking spaces with an absolute minimum provision of one space'. On this basis the proposed scheme should provide a total of between 5 PTW spaces from the outset of the development, with usage monitored to ensure that the number of spaces meets demand levels. The PTW spaces should be situated in a safe and secure location within the main car park.

3. POLICY CONTEXT

3.1 INTRODUCTION

3.1.1 In order to assess the development in terms of transport, relevant national and local transport policy documents that have implications have been reviewed. These policy documents include the Planning Policy Guidance 13 (PPG13) on transport, Barnsley's Unitary Development Plan (UDP), the South Yorkshire Local transport Plan (LTP) and the Regional Spatial Strategy for the Yorkshire and Humber Region.

3.2 NATIONAL POLICY GUIDANCE

3.2.1 PPG13 provides national guidance on transport issues. The document has 3 overarching objectives which should be adhered to by all developments.

- Promote more sustainable transport choices for both people and freight movement;
- Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and,
- Reduce the need to travel, especially by car.

3.2.2 These objectives can be achieved through the use of planning policies, managing travel demand and the implementation of transport schemes, such as new public transport services and green travel plans.

3.3 BARNSELEY'S UNITARY DEVELOPMENT PLAN

3.3.1 The existing Barnsley Unitary Development Plan (UDP) was adopted in December 2000. The UDP was produced in accordance with national and regional policy in order to provide a constant basis upon which to view planning applications within the area.

3.3.2 The Local Plan was due to run until 2007 and then be replaced by the Local Development Framework (LDF). However, the LDF is still under preparation, so in the mean time, and under direction from the secretary of state, many of the UDP policies will be saved.

3.3.3 From a transportation perspective the UDP sets out a number of objectives aimed at improving accessibility within the Barnsley area. These objectives include:

- To improve transport provision and services to areas of poor accessibility and job creation as an integral part of a coherent regeneration strategy.
- To improve and protect the environment.
- To improve the safety and efficiency of the transport network.
- To provide genuine choices of travel mode as alternatives to the private car by assisting public transport operation, retention and development of the network, and development of facilities for cyclists and pedestrians.
- To meet the needs of the physically and socially disadvantaged.

3.4 SOUTH YORKSHIRE LOCAL TRANSPORT PLAN

3.4.1 The South Yorkshire Local Transport Plan (LTP) 2006-2011 sets down the long term transport strategy for the sub-region together with a 5-year plan of schemes and initiatives to support it. The LTP will improve accessibility by:

- Bringing accessibility into the mainstream of partners' decision making on where and how services are provided, leveraging additional funds where possible;
- Providing local infrastructure and facilities improvements that improve access to the Key Routes network for communities in disadvantaged areas or improve access locally to goods and services;
- Developing collaboration with communities through the Local Strategic Partnerships (LSPs), Local Area Agreements (LAAs) and regeneration processes to address access issues and opportunities;
- Continuing to support rural bus services and pursuing innovative solutions with other transport suppliers and service delivery organisations (such as the county-wide implementation of the 'Wheels to Work' initiative);

- Engaging with partners' local planning processes to ensure new developments are planned with sustainable access principles at the outset;
- Supporting physical regeneration, incorporating access and transport to help deliver truly sustainable communities;
- *Continuing to improve the facilities and services on our network for people with disabilities, but going beyond the requirements of the Disability Discrimination Act 2000 where possible.*

3.4.2 The LTP has a number of action plans aimed at delivering the main objectives of the plan. These action plans develop strategies aimed at the following issues:

- The Role of Public Transport
- Walking, Cycling and 'Smarter Choices'
- Tackling Congestion
- Improving Accessibility
- Better Road Safety
- Air Quality and Quality of Life Issues

3.5 REGIONAL SPATIAL STRATEGY FOR THE YORKSHIRE AND HUMBER REGION

3.5.1 The current Regional Spatial Strategy (RSS) for the Yorkshire and Humber Region was approved in May 2008. The RSS has been developed to guide development within the region until 2026, influencing the economy, housing development, transport network and the built and natural environment.

3.5.2 The RSS document, through its regional transport strategy, aims to:

- Reduce travel by both positive interventions, such as improved public transport, or by demand restraint, and promote modal shift from the car;
- Seek a consistent approach to parking strategies and improved public transport;
- Promote the movement of goods by water and rail and support increased use of its ports and waterways and improve surface access to them;

- Improve access to services in rural areas by improving transport provision; and
- Improve surface access to its airports by public transport.

3.6 SUMMARY

- 3.6.1 The proposed development is in line with the policy objectives set out within the various national, regional and local policy documentation. The development will help to increase accessibility to leisure and recreational resources, providing environmental improvement and encouraging a healthier lifestyle for the local population. The proposed development will also be utilising a plot of previously developed land which is in line with policies aimed at producing environmentally and socially responsible development.
- 3.6.2 The availability of parking designated for mobility impaired persons at the proposed development will help to encourage social inclusion and improve access for a broad range of society. The provision of a Travel Plan aimed at encouraging sustainable transport initiatives will also help to address environmental issues surrounding single occupancy transport by private car.

4. SUSTAINABLE TRANSPORT

4.1 PEDESTRIANS

- 4.1.1 The Institution of Highways and Transportation in their document 'Guidelines for Providing for Journeys on Foot' state that "walking accounts for over a quarter of all journeys and four fifths of journeys less than one mile". PPG13 'A Guide to Better Practice' (2001) states that people are prepared to walk up to 2km. **Figure 2** displays a 2km isochrone from the scheme, which includes Royston, to the west, and Shafton, to the east. Both locations contain a number of residential areas from which visitors would be likely to travel from.
- 4.1.2 On the western side of the site, a pavement exists along the south side of the B6428 Lund Hill Lane providing a link between the proposed development site's main access point and Royston. Street lighting exists throughout the length of the footway. The footway is approximately 1 metre wide adjacent to the proposed site's vehicular access point.
- 4.1.3 On the eastern side of the site, a footway also exists on the western side of Sandybridge Lane, which runs down into the village of Shafton. The footway, approximately 1.2 metres wide adjacent the development site, will link into the proposed pedestrian access points on the eastern side of the site, providing a link between the site and the village.
- 4.1.4 Pedestrian access is also provided onto the site via a public footpath which enters the site from the agricultural land to the south.
- 4.1.5 The Institute of Highways and Transportation's (IHT) 'Planning for Public Transport in Developments' states that 'new developments should be located so that public transport trips involve a walking distance of less than 400m from the nearest bus stop'.

4.1.6 The nearest bus stopping facilities to the proposed vehicular site access are located along the B6428 Lund Hill Lane, to the west of the railway bridges. These stops are located approximately 180 metres from the site. The stop on the southern side of the carriageway provides a shelter, seating and timetable information, whilst the stop on the northern side of the road provides nothing other than a flag attached to a lighting column. Bus stops are also located on both sides of Lund Hill Lane, adjacent to the Monckton Coke and Chemical Works and the industrial / manufacturing works. These stops are located within 250 metres of the main site access point and provide facilities such as shelters and timetable information. The bus stop located on the south side of the road also provides seating. The footways along Lund Hill Lane enable continuous pedestrian linkage between the bus stops and the site access point.

4.1.7 Bus stops are also located along Sandybridge Lane, within Shafton, on the eastern side of the development site. These stops are located within 400 metres of the Rabbit Ings site. The bus stop on the west side of Sandybridge Lane provides a pole, flag and timetable information, whilst the bus stop on the eastern side of the road provides a shelter, seating and timetable information.

4.2 CYCLISTS

4.2.1 The DfT in their Transport Statistics on Cycling in Great Britain state that the average length of a cycle journey is 3.84km (2.4 miles). PPG13 "A Guide to Better Practice" (2001) identifies that people are prepared to cycle up to 8km (5 miles). The DfT's 'Cycle Infrastructure Design' (July 2007) states that 'in common with other modes, many utility cycle journeys are over short distances under three miles (4.8km)'.

4.2.2 It is therefore considered that a distance of 4km (2.5 miles) represents a reasonable cycling distance to and that 8km (5 miles) is a maximum realistic range for cycle trips, although due to the recreational nature of the development some cycle trips may originate from destinations beyond 8km. A 4km cycling isochrone plan is included as **Figure 2**, which also indicates the cycle routes available within the area.

- 4.2.3 A 4km zone from the site includes locations in such as Norton, Havercroft, South Hiendley, Brierley, Cudworth and Carlton, as well as Royston and Shafton. All of these locations are situated within a reasonable cycling distance of the proposed development.
- 4.2.4 Cycle access will be provided at the alternative access points, as well as at the main site access point and once on site cyclists are provided for by way of numerous joint pedestrian/cycleways.
- 4.2.5 The closest formal cycle route is National Cycle Route (NCR) 67, which links Chesterfield to Leeds via Sheffield, Barnsley and Wakefield. The route is also known as the central section of the Trans Pennine Trail. The NCR67 runs through Royston providing a traffic free link north – south through the village. The route of the NCR67 is runs within 300 metres of the proposed main site access point and adjacent to the south east site boundary.
- 4.2.6 A signed on road cycle route also runs between South Hiendley and Notton, to the north of the site. The route runs along Church Lane and is within 750 metres of the proposed access point on the eastern side of the site, along Sandybridge Lane.

4.3 BUS SERVICES

- 4.3.1 Two sets of bus stops are situated along the B6428 Lund Hill Lane within a walking distance of approximately 250 metres from the main access point. Two further stops are located within Shafton, along Sandybridge Lane, within 400metres of the Rabbit Ings site.
- 4.3.2 Services 52 and 53 run along the B6428 Lund Hill Lane whilst services 33 and 341 run along Sandybridge Lane. In terms of frequencies, the main bus services that stop within the vicinity of the site are summarised in **Table 1**.

Table 1 - Bus services and Frequencies

Service No.	Route	Frequencies (average mins per service)		
		Weekday	Saturday	Sunday
33	Barnsley – Shafton – South Hiendley – Barnsley	60	60	-
52	Barnsley – Royston – Ryhill / Newstead	60	60	60
53	Barnsley – Royston – Newstead	60	60	-
341	Barnsley – Cudworth - Shafton	60	60	-

4.3.3 **Table 1** shows that the site is reasonably well served by regular public transport services, whilst bearing in mind its relatively rural location. Half hourly service run throughout Monday to Saturday, along both the B6428 Lund Hill Lane and Sandybridge Lane, whilst a 60 minute service is provided along Lund Hill Lane on Sundays.

4.4 SUMMARY

4.4.1 Following the analysis of pedestrian, cycle and public transport facilities available within the vicinity of the site, it is the view of this study that the development site exhibits a reasonable level of sustainable transport links. Pedestrian footway provide access to the site from both Royston and from Shafton, cycle routes to the west and north run within 300 metres and 750 metres of the site's access points, respectively, and regular bus services stop within 400 metres of the site.

5. EXISTING HIGHWAY CONDITIONS

5.1 HIGHWAY CHARACTERISTICS

- 5.1.1 No vehicular access exists to the Rabbit Ings site from the B6428 Lund Hill Lane or from Sandybridge Lane. A former access point to the Royston Drift Mine is located adjacent to the existing access to the Monckton Coke and Chemical Works site along Lund Hill Lane, however this access point is gated and locked.
- 5.1.2 The B6428 Lund Hill Lane is subject to a 30 mph speed limit adjacent to the Rabbit Ings site and is approximately 6.6 metres wide. To the west, the B6428 runs through the centre of Royston, through to the A61 which links Barnsley with Wakefield. Two railway bridges exist over the B6428, approximately 130 metres to the west of the proposed site access. These bridges have a maximum height restriction of 3.3 metres. To the east the B6428 runs through Havercroft and provides a link to the A638 which links Doncaster with Wakefield. A railway bridge also exists along this route, within Fitzwilliam, which has a maximum height restriction of 4 metres.
- 5.1.3 Traffic calming measures in the form of speed bumps, a 20 mph zone and carriageway narrowing have taken place within Royston to slow the movement of traffic through the location. Traffic calming measures in the form of carriageway narrowing have also taken place within Havercroft in an attempt to reduce traffic speeds.
- 5.1.4 The Rabbit Ings site also has a boundary with Sandybridge Lane, although no vehicular access exists on this side of the site. Sandybridge Lane travels north south through Shafton, linking the B6428 with the A628. The A628 provides a link between Barnsley and Pontefract.

5.2 BASE TRAFFIC FLOWS

- 5.2.1 Due to the nature of the proposed development at the Rabbit Ings site, the principle impact on the local highway network associated with the proposed formal and informal recreation uses will be felt at weekends. Therefore, an Automatic Traffic Count (ATC) was undertaken during the week commencing Monday 10th of March 2008 to establish the existing traffic volumes along the B6428 Lund Hill Lane. The ATC was located within metres of the proposed site access junction.
- 5.2.2 The results for the Saturday peak hour (1300-1400) and Sunday peak hour (1300-1400) are summarised in **Appendix E**, which also contains the full survey results of the ATC.

5.3 FORECAST GROWTH

- 5.3.1 The proposed development will open in 2010. The opening year together with 2020 (ten years hence) will be assessed for highway impact.
- 5.3.2 NRTF Central growth factors have been 'localised' through the use of TEMPRO data from the 'Royston nr Barnsley' zone and applied to the base traffic flows. A factor of 1.035 (3.5% increase) has been applied to the 2008 traffic flows to gain 2010 traffic flows, presented within **Appendix E**. A factor of 1.208 (20.8% increase) has been applied to the 2008 traffic flows to gain 2020 traffic flows, also presented within **Appendix E**.

5.4 PERSONAL INJURY ACCIDENT (PIA) RECORDS

- 5.4.1 Personal Injury Accident (PIA) data has been provided by BMBC along both B6428 Lund Hill Lane and Sandybridge Lane, within the vicinity of the proposed development site. The data has been collected for the latest 3-year period, running from 01/01/2005 to 31/12/2007. Full details of the accident records are provided within **Appendix F**, together with summary plans tables of the accidents.

- 5.4.2 Analysis of the accident data showed that a total of 4 accidents occurred along both B6428 Lund Hill Lane and Sandybridge Lane, within the sections looked at. Three of the accidents occurred within 2005, 2 accidents occurred within 2006 and 2007 witnessed three accidents along the sections of road. All of the accidents that occurred resulted in slight injury. No serious or fatal incidents were recorded. None of the recorded accidents involved pedestrians or cyclists, although one accident did involve a rider on horseback.
- 5.4.3 Of the 4 accidents that occurred along the section of B6428 Lund Hill Lane, 2 involved HGVs failing to heed the warnings with regard to bridge height resulting in collisions with the railway bridge located to the west of the development site. One of the accidents took place due to a driver attempting to overtake a turning vehicle, but misjudging the attempt and colliding into the back of the vehicle, whilst the remaining accident was due to a driver losing control of a vehicle whilst travelling round a bend.
- 5.4.4 Of the 4 accidents that occurred along Sandybridge Lane, 3 involved drivers losing control of their vehicles whilst travelling along bends in the road, one of which resulted in a collision with another vehicle travelling in the opposite direction. The one remaining accident occurred due to a driver failing to take due care and attention and colliding with a rider on horse back.
- 5.4.5 Neither of the links analysed exhibit rates which would raise an issue in terms of road safety.
- 5.4.6 Based on the PIA data provided, it can be concluded that there are no particular safety problems for either drivers or vulnerable road users within the vicinity of the proposed development site. As part of the Traffic Routing Scheme (RT39273-03) HGV drivers will be instructed to take routes which do not travel through Royston and therefore do not travel underneath the railway bridge hit by 2 HGVs over the last few years.
- 5.4.7 It is therefore concluded that there are no inherent accident problems associated with the existing road network.

6. TRIP GENERATION AND DISTRIBUTION

6.1 VEHICULAR TRIP GENERATION

- 6.1.1 Trip generation to the site associated with the proposed formal and informal recreational uses has been established using the TRICS database. Site with a similar end use were selected from the database, excluding any sites within Greater London, Northern Ireland and the Republic of Ireland as it is considered that sites in these locations would not adequately reflect the proposed development. **Table 2** presents the resulting trip rates. The full TRICS output is provided within **Appendix C**.

Table 2: Trip Generation Rates

Land Use	Weekend Trip Generation Rates			
	Sat Peak (15-16)		Sun Peak (15-16)	
	Arrive	Depart	Arrive	Depart
Country Park	0.273	0.279	0.707	1.114

- 6.1.2 The trip generation rates displayed within **Table 2** have been applied to the Rabbit Ings site. The resulting levels of trip generation are presented within **Table 3**.

Table 3: Trip Generation

Land Use	Weekend Trip Generation			
	Sat Peak (15-16)		Sun Peak (15-16)	
	Arrive	Depart	Arrive	Depart
Proposed development	17	18	45	71

- 6.1.3 A total of 35 trips will be generated for formal and informal recreational purposes during the Saturday peak hour and 116 trips will be generated during the Sunday peak hour.
- 6.1.4 It should be noted that, when trip rates gained from TRICS for weekday peak periods are applied, 8 trips would be generated in the morning peak hour and 14

trips would be generated in the evening peak hour. It is felt that this level of generation will have a minimal impact on the local highway network and therefore weekday peak hour assessments have not been produced.

6.2 VEHICULAR TRIP DISTRIBUTION

6.2.1 It has been assumed that the existing patterns of movement along the B6428 Lund Hill Lane will be replicated by the traffic generated by the proposed development. Therefore traffic has been distributed on the basis of the traffic survey results which provides the existing movements along the B6428.

6.2.2 The trip distribution patterns have been applied to the trip generation for the proposed formal and informal recreational development (**Table 3**). **Appendix E** presents the resulting vehicular generation for the proposed development.

7. HIGHWAY IMPACT ASSESSMENT

7.1 JUNCTION CAPACITY ASSESSMENT

7.1.1 Junction capacity assessments have been undertaken on the proposed site access junction, as it is felt that the scheme impacts beyond this point will be minimal. Assessments have been undertaken on the 2010 and 2020 base plus development traffic flows presented within **Appendix E**, in order to ascertain junction capacity levels. The results of the assessments are summarised within **Table 4** which provides the highest RFC recorded on a single arm at the proposed junction. The full PICADY outputs are contained within **Appendix G**.

Table 4: Base Plus Development Junction Capacity Assessment Summary

Junction Arm	2010 Base + Development Traffic Flows				2020 Base + Development Traffic Flows			
	Saturday Peak		Sunday Peak		Saturday Peak		Sunday Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
Site Access	0.039	0.04	0.164	0.19	0.039	0.04	0.167	0.20
Lund hill Lane (West)	0.021	0.02	0.048	0.07	0.021	0.03	0.049	0.07

7.1.2 As indicated in **Table 4**, the proposed site access junction on B6428 Lund Hill Lane will operate comfortably within capacity. The highest RFC occurs on the site access arm of the junction during the Sunday peak hour. The RFC reaches 0.167, and creates a queue of just 0.2 PCUs.

7.1.3 Therefore, the site access junction operates with large levels of reserve capacity with negligible queues and delays, in both 2010 and 2020 in relation to the formal and informal recreation proposals.

7.2 CONSTRUCTION TRAFFIC

7.2.1 The construction period is expected to last approximately 12-18 months within which the majority of the 112,000m³ of inert soil and soil making materials will be transported to the site. There is already temporary planning consent (Ref. 2008/0244) for the importation of 95,000m³ of soil making materials over a 24 month period to the former drift mine site for subsequent use as part of the Rabbit

Ings Regeneration scheme. Hence, as part of the main Rabbit Ings planning application it is proposed to import a further 17,000m³ of soil making materials.

- 7.2.2 The existing consent (Ref: 2008/0244) will generate an average of 19 arrivals and 19 departures per day at the site and allows a maximum of 50 arrivals and 50 departures per day.
- 7.2.3 The additional importation of 17,000m³ of materials will increase the average generation per day during the construction phase to 22.4 arrivals and 22.4 departures per day. This works out as an increase of just 3.4 arrivals and 3.4 departures on the local highway network, from the existing planning permission. This increase in generation will have a minimal impact on the local highway network.
- 7.2.4 It is anticipated that HGV movements will take place over the course of an 10 and a half hour period during the day, between 7:30am and 6pm. Deliveries are expected to take place consistently throughout the course of the 10.5-hours, with exceptions between 0800 – 0930 and 1600 – 1800 when a maximum of 6 arrivals and 6 departures per hour will be generated.
- 7.2.5 Construction traffic will access the site via the existing site access junction along the B6428 Lund Hill Lane. The access was previously built to accommodate HVG traffic generated by the former Royston Drift Mine and therefore offers appropriate carriageway widths, corner radii and visibility levels to accommodate consistent HGV use.
- 7.2.6 Based on this level of generation it is felt that the HGVs generated by the proposed development's construction phase will have a minimal impact on the local highway network.
- 7.2.7 HGV traffic will be routed according to the Traffic Routing Scheme (RT39273-03), to ensure that no HGV traffic will travel through Royston. HGV traffic will be only

be allowed to access the site from the east via either the route from the A628 through Shafton, or from the A638 through Havercroft.

7.3 SUMMARY

- 7.3.1 The assessments produced as part of this report indicate that the proposed development has a minimal impact on the local highway network and that the site access junction will operate with substantial spare capacity following the development.
- 7.3.2 Construction traffic will access the development site from the existing access point to the former Royston Drift Mine site, on the B6428 Lund Hill Lane. No construction traffic will access the site via the village of Royston.
- 7.3.3 In view of the assessments undertaken and the impact calculated, no highway capacity mitigation measures are proposed on the local highway network.

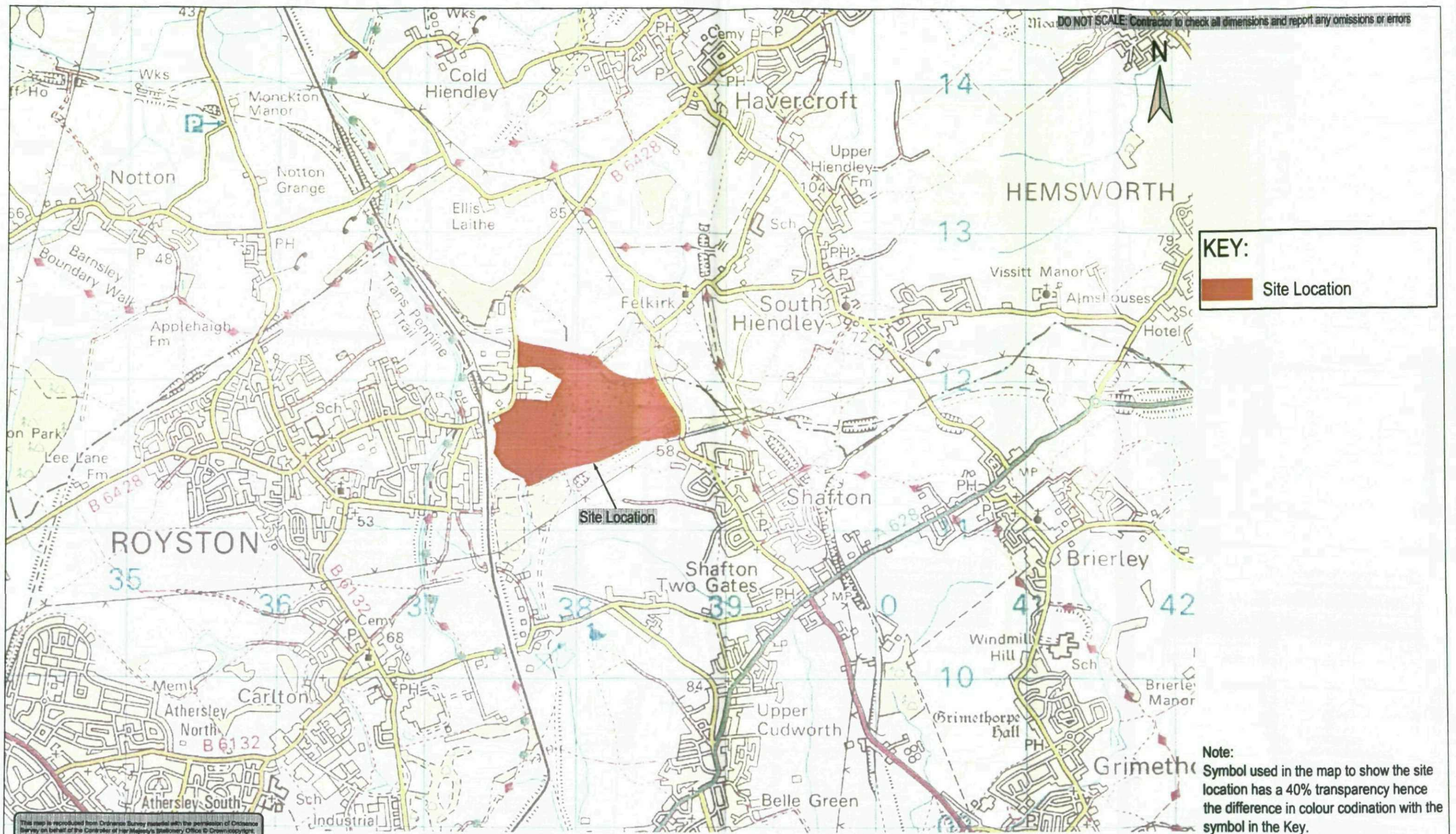
8. CONCLUSIONS

- 8.1 The Transport Assessment (TA) has been prepared as part of the planning application for the regeneration of the Rabbit Ings site, Royston, Barnsley, South Yorkshire.
- 8.2 The proposed scheme will cover an area of approximately 65.9 ha of land and provide 102 car parking spaces. During the construction period a total of approximately 112,000m³ of inert soils, formerly materials, will need to be transported to the site, which will be done via the use of HGVs with a 20 tonne capacity. Permission has already been gained to transport 95,000m³ of material to the site and so an increase of 17,000m³ is being sought as part of this application.
- 8.3 Following construction primary vehicular access to the proposed development sports pitches will be gained via a new purpose built priority controlled T-junction, located along the B6428 Lund Hill Lane. The levels of parking provision proposed within the RMHF development are in line with local and national policy guidance.
- 8.3 There are a number of sustainable transport facilities within the vicinity of the Rabbit Ings site. Pedestrian links, in the form of footways adjacent to the B6428 Lund Hill Road and Sandybridge Lane, provide direct access from Royston, to the west, and Shafton, to the east. National Cycle Route 67 (Trans Pennine Trial) runs through Royston, within 300 metres of the site access junction, providing a high quality link between Barnsley, Wakefield and beyond. Public transport in the area is provided by way of four separate bus services which call at the stops located within 400 metres of the Rabbit Ings site. The buses provide a regular service, 7 days a week.
- 8.4 Based on the accident data provided, there is no evidence of any inherent safety problems for either drivers or vulnerable road users within the vicinity of the site.
- 8.5 A traffic survey has been undertaken along the B6428 Lund Hill Lane in the form of an Automatic Traffic Counter (ATC). The traffic surveys have been factored up

to enable assessment of the proposed opening year (2010) and ten years hence (2020) by the use of NRTF central.

- 8.6 Trip generation has been calculated based on interrogation of the TRICS database for similar sites. The distribution of the trips generated by the proposed development is based on the existing traffic patterns along the B6428 Lund Hill Lane.
- 8.7 Junction assessments have been undertaken at the proposed site access junction during the Saturday and Sunday peak hours. The assessments show that the site access junction will operate comfortably within capacity in both 2010 and 2020. Therefore, no highway improvement measures are proposed as part of the development.
- 8.8 It is the view of this TA, that in transportation terms, there are no overriding objections to the proposed development that should prevent the granting of planning permission.

FIGURES



Executive Park
Avalon Way
Anstey
Leicester
LE7 7GR

Tel: 0116 234 8000
Fax: 0116 234 8001
e-mail: leicester@wyg.com

**White
Young
Green**

Consulting Engineers

Civil Structural Mechanical Electrical Process Rail Traffic Environmental Project Management

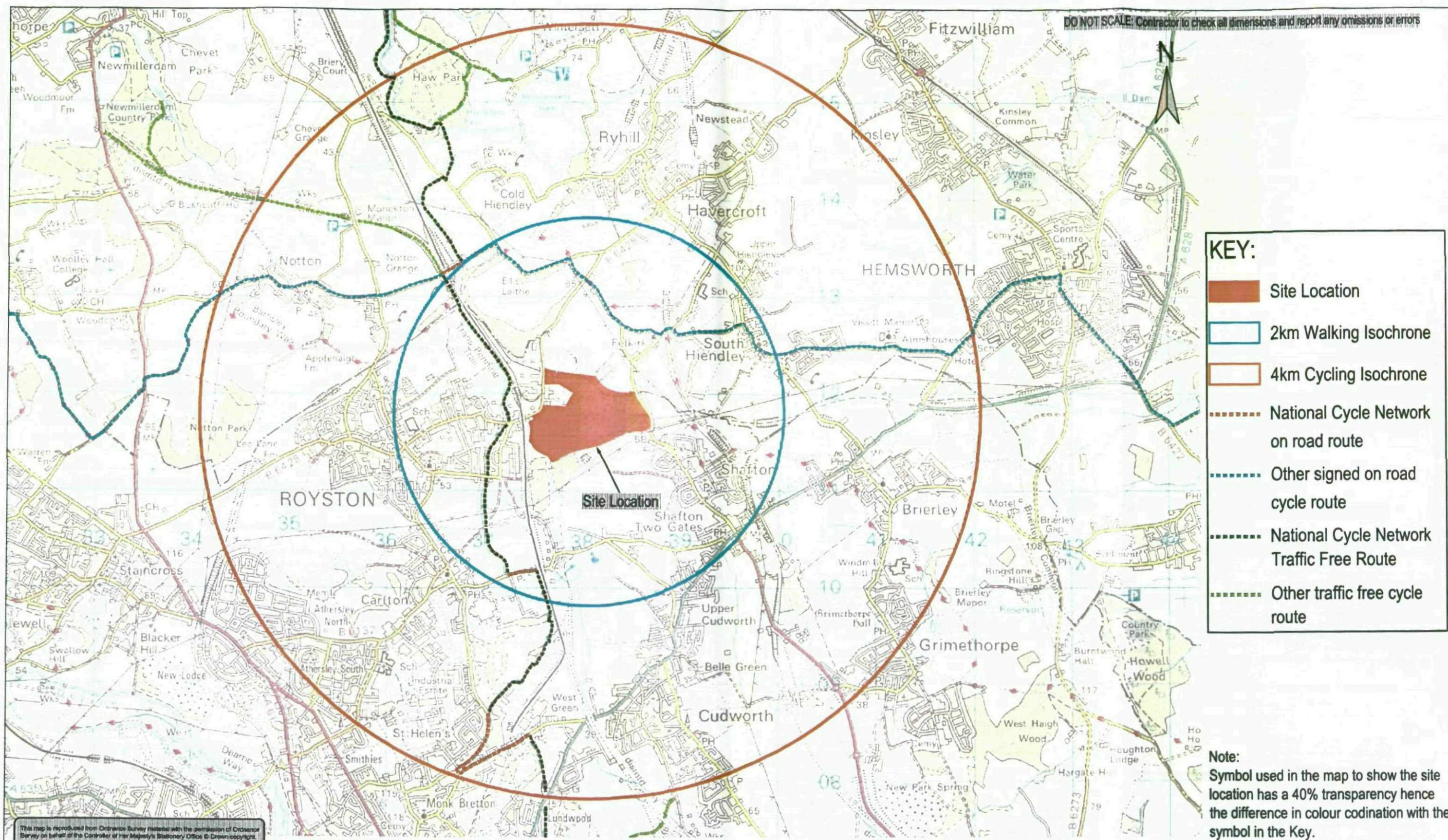
Project:

Rabbit Ings, Royston, Barnsley, South Yorkshire

Client:

Partnership of Wakefield Metropolitan District Council, Renaissance South Yorkshire, English Partnerships and Yorkshire Forward

Rev	Description	By	Chk	App	Date
	Drawing Title:				
	Figure 1				
	Site Location Plan				
Scale	Drawn By	Date	Checked By	Date	Approved By
NTS	CT	05/03/06	MM	05/03/06	PG
Project No.	Office	Type	Drawing No.	Revision	
A039273	35	01	A039273 - 01	-	
APPROVAL ☐ INFORMATION ☒ TENDER ☐ CONTRACT ☐ CONSTRUCTION ☐					



Executive Park
Avalon Way
Anstey
Leicester
LE7 7GR

Tel: 0116 234 8000
Fax: 0116 234 8001
e-mail: leicester@wyg.com

**White
Young
Green**

Consulting Engineers

Civil Structural Mechanical Electrical Process Rail Traffic Environmental Project Management

Project:
Rabbit Ings, Royston, Barnsley, South Yorkshire

Client:
Partnership of Wakefield Metropolitan District Council, Renaissance South Yorkshire, English Partnerships and Yorkshire Forward

Rev	Description	By	Chk	App	Date
-----	-------------	----	-----	-----	------

Drawing Title:
Figure 2
Walking and Cycling Isochrones

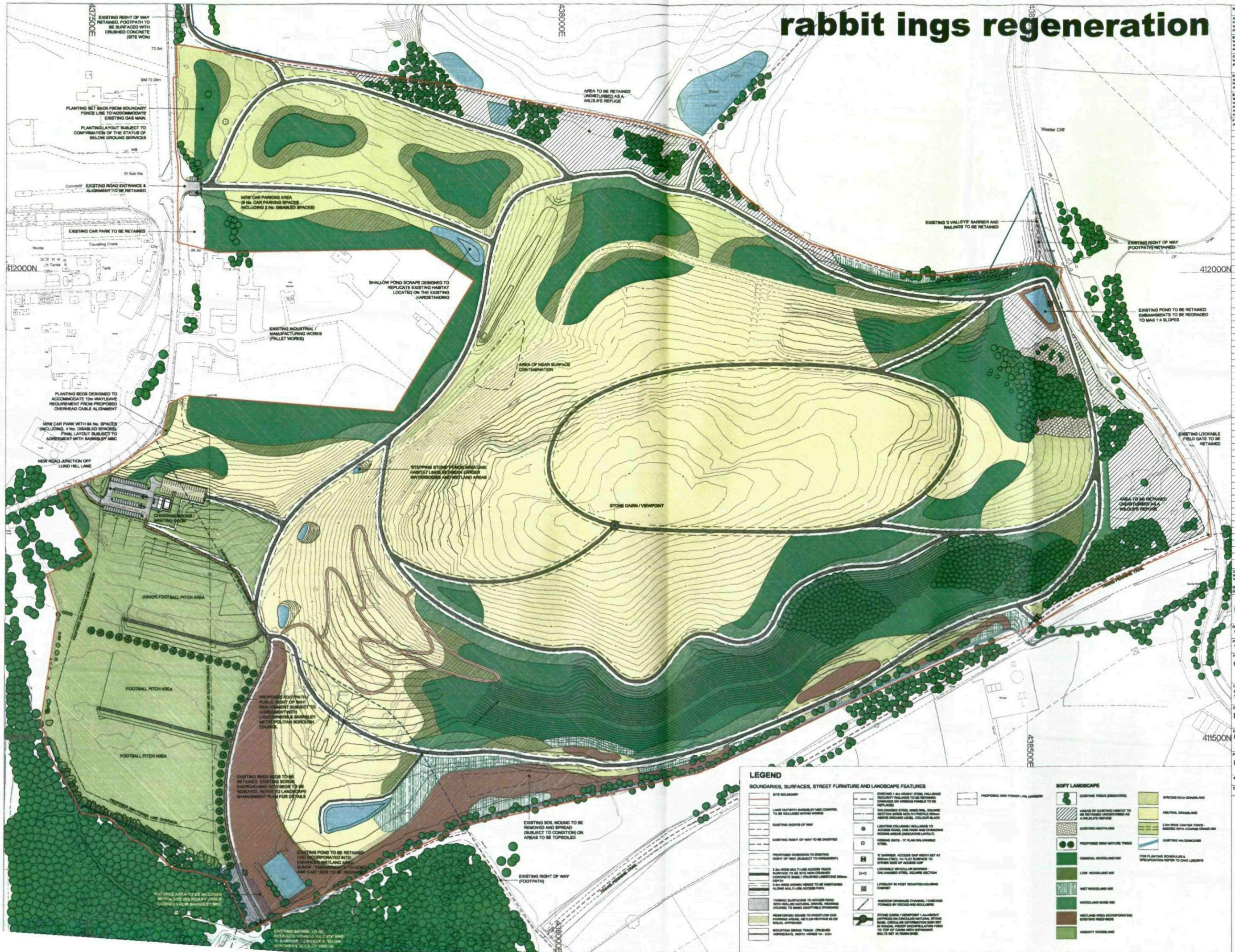
Scale	Drawn By	Date	Checked By	Date	Approved By	Date
NTS	CT	05/03/08	AMH	05/03/08	PG	05/03/08
Project No.	Office	Type	Drawing No.	Revision		
A039273	35	01	A039273 - 02	-		

APPROVAL ☐ INFORMATION ☒ TENDER ☐ CONTRACT ☐ CONSTRUCTION ☐

APPENDICES

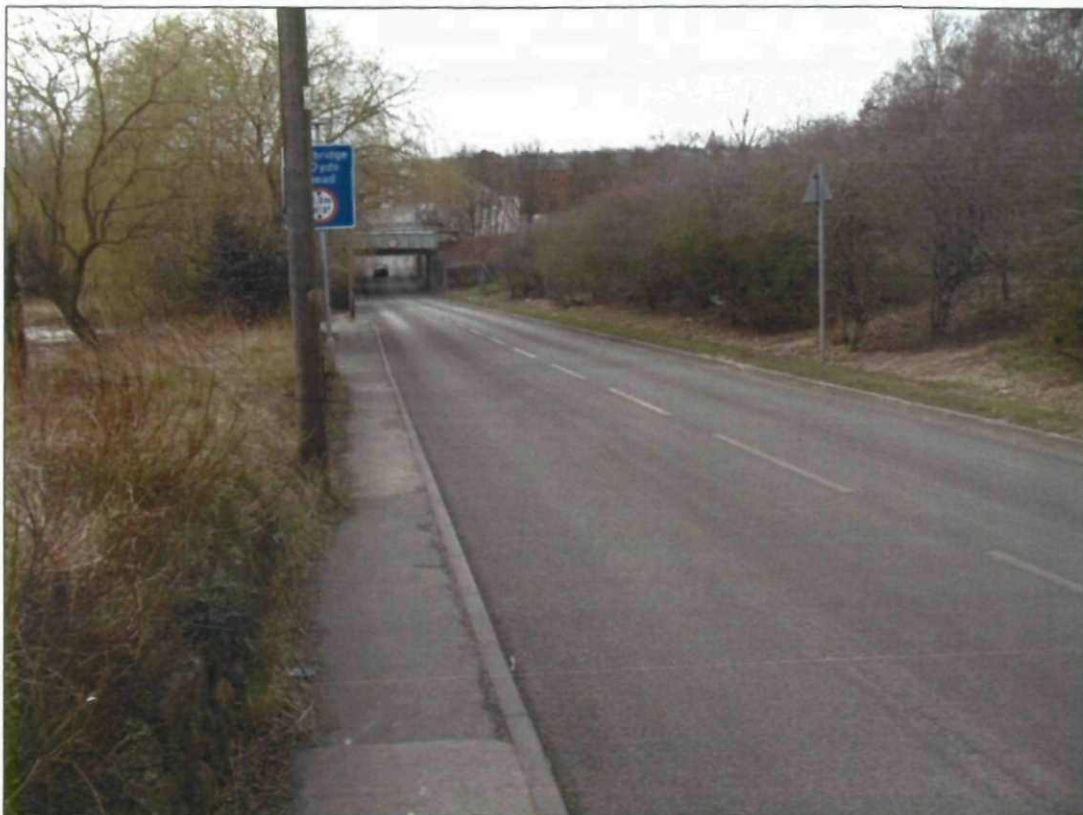
APPENDIX A
Indicative Masterplan

rabbit ings regeneration



REVISIONS	DATE	BY	REASON
1	27.03.09	MC	Initial design
2	31.03.09	MC	Revised design
3	06.05.09	MC	Revised design
4	11.07.09	MC	Revised design
5	20.08.09	MC	Revised design
6	20.08.09	MC	Revised design
7	20.08.09	MC	Revised design
8	20.08.09	MC	Revised design
9	20.08.09	MC	Revised design
10	20.08.09	MC	Revised design
11	20.08.09	MC	Revised design
12	20.08.09	MC	Revised design
13	20.08.09	MC	Revised design
14	20.08.09	MC	Revised design
15	20.08.09	MC	Revised design
16	20.08.09	MC	Revised design
17	20.08.09	MC	Revised design
18	20.08.09	MC	Revised design
19	20.08.09	MC	Revised design
20	20.08.09	MC	Revised design
21	20.08.09	MC	Revised design
22	20.08.09	MC	Revised design
23	20.08.09	MC	Revised design
24	20.08.09	MC	Revised design
25	20.08.09	MC	Revised design
26	20.08.09	MC	Revised design
27	20.08.09	MC	Revised design
28	20.08.09	MC	Revised design
29	20.08.09	MC	Revised design
30	20.08.09	MC	Revised design
31	20.08.09	MC	Revised design
32	20.08.09	MC	Revised design
33	20.08.09	MC	Revised design
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71	20.08.09	MC	Revised design
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85	20.08.09	MC	Revised design
86	20.08.09	MC	Revised design
87	20.08.09	MC	Revised design
88	20.08.09	MC	Revised design
89	20.08.09	MC	Revised design
90	20.08.09	MC	Revised design
</			

APPENDIX B
Photographs from the Proposed Site Access Location



Photograph 1: View looking to the west along the B6428 Lund Hill Lane from the proposed site access location



Photograph 2: View looking to the east along the B6428 Lund Hill Lane from the proposed site access location

APPENDIX C
TRICS Output

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : M - COUNTRY PARKS

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days

Main parameter selection:

Parameter: Site area
Range: 15.20 to 560.00 (units: hect)

Date Range: 01/01/99 to 23/06/07

Selected survey days:

Tuesday	1 days
Wednesday	1 days

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

Selected Locations:

Free Standing (PPS6 Out of Town)	2
----------------------------------	---

Selected Location Sub Categories:

Out of Town	2
-------------	---

Optional parameter selection:Use Class:

Not Known	2 days
-----------	--------

Population within 1 mile:

1,000 or Less	2 days
---------------	--------

Population within 5 miles:

5,001 to 25,000	1 days
75,001 to 100,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	2 days
------------	--------

Travel Plan:

No	2 days
----	--------

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

LIST OF SITES relevant to selection parameters

- | | | | |
|---|------------------|------------------------------|---------------------|
| 1 | CA-07-M-01 | COUNTRY PARK, PETERBOROUGH | CAMBRIDGESHIRE |
| | HAM LANE | | |
| | PETERBOROUGH | | |
| | Total Site area: | 203.00 | hect |
| | Survey date: | WEDNESDAY | 30/07/03 |
| | | | Survey Type: MANUAL |
| 2 | HC-07-M-01 | COUNTRY PK, NEAR PETERSFIELD | HAMPSHIRE |
| | A3 | | |
| | GRAVEL HILL | | |
| | NEAR PETERSFIELD | | |
| | Total Site area: | 560.00 | hect |
| | Survey date: | TUESDAY | 10/06/03 |
| | | | Survey Type: MANUAL |

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS

VEHICLES

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
01:00 - 02:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
02:00 - 03:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
03:00 - 04:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
04:00 - 05:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
05:00 - 06:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
06:00 - 07:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
07:00 - 08:00	2	381.50	0.022	2	381.50	0.005	2	381.50	0.027
08:00 - 09:00	2	381.50	0.080	2	381.50	0.047	2	381.50	0.127
09:00 - 10:00	2	381.50	0.142	2	381.50	0.087	2	381.50	0.229
10:00 - 11:00	2	381.50	0.135	2	381.50	0.122	2	381.50	0.257
11:00 - 12:00	2	381.50	0.161	2	381.50	0.098	2	381.50	0.259
12:00 - 13:00	2	381.50	0.236	2	381.50	0.155	2	381.50	0.391
13:00 - 14:00	2	381.50	0.237	2	381.50	0.149	2	381.50	0.386
14:00 - 15:00	2	381.50	0.207	2	381.50	0.176	2	381.50	0.383
15:00 - 16:00	2	381.50	0.122	2	381.50	0.181	2	381.50	0.303
16:00 - 17:00	2	381.50	0.093	2	381.50	0.291	2	381.50	0.384
17:00 - 18:00	2	381.50	0.085	2	381.50	0.134	2	381.50	0.219
18:00 - 19:00	2	381.50	0.062	2	381.50	0.126	2	381.50	0.188
19:00 - 20:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
20:00 - 21:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
21:00 - 22:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
22:00 - 23:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
23:00 - 24:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
Total Rates:			1.582			1.571			3.153

Parameter summary

Trip rate parameter range selected: 15.20 to 560.00 (units: hect)
 Survey date range: 01/01/99 - 23/06/07
 Number of weekdays (Monday-Friday): 2
 Number of Saturdays: 0
 Number of Sundays: 0
 Optional parameters used in selection: NO
 Surveys manually removed from selection: 0

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : M - COUNTRY PARKS

VEHICLESSelected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	LC LANCASHIRE	1 days
09	NORTH	
	DH DURHAM	1 days

Main parameter selection:

Parameter: Site area
Range: 15.20 to 560.00 (units: hect)

Date Range: 01/01/99 to 23/06/07

Selected survey days:

Saturday 6 days

Selected survey types:

Manual count 6 days
Directional ATC Count 0 days

Selected Locations:

Edge of Town 1
Free Standing (PPS6 Out of Town) 5

Selected Location Sub Categories:

Out of Town 6

Optional parameter selection:Use Class:

Not Known 6 days

Population within 1 mile:

1,000 or Less 3 days
1,001 to 5,000 3 days

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

Optional parameter selection (Cont.):Population within 5 miles:

5,001 to 25,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
125,001 to 250,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	1 days

Travel Plan:

Not Known	1 days
No	5 days

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

LIST OF SITES relevant to selection parameters

- | | | | |
|---|-----------------------|-------------------------------------|------------------------|
| 1 | CA-07-M-01 | COUNTRY PARK, PETERBOROUGH | CAMBRIDGESHIRE |
| | HAM LANE | | |
| | PETERBOROUGH | | |
| | Total Site area: | 203.00 hect | |
| | Survey date: SATURDAY | 12/07/03 | Survey Type: MANUAL |
| 2 | DH-07-M-01 | COUNTRY PARK, SEDGEFIELD | DURHAM |
| | A177 | | |
| | HARDWICK HALL | | |
| | SEDEFIELD | | |
| | Total Site area: | 17.00 hect | |
| | Survey date: SATURDAY | 07/06/03 | Survey Type: MANUAL |
| 3 | HC-07-M-01 | COUNTRY PK, NEAR PETERSFIELD | HAMPSHIRE |
| | A3 | | |
| | GRAVEL HILL | | |
| | NEAR PETERSFIELD | | |
| | Total Site area: | 560.00 hect | |
| | Survey date: SATURDAY | 07/06/03 | Survey Type: MANUAL |
| 4 | LC-07-M-02 | NATURE RES., NEAR LANCASTER | LANCASHIRE |
| | STORRS LANE | | |
| | NEAR LANCASTER | | |
| | Total Site area: | 130.00 hect | |
| | Survey date: SATURDAY | 23/06/07 | Survey Type: MANUAL |
| 5 | SY-07-M-01 | COUNTRY PARK, NEAR SHEFFIELD | SOUTH YORKSHIRE |
| | A618 PLEASLEY ROAD | | |
| | NEAR SHEFFIELD | | |
| | Total Site area: | 19.00 hect | |
| | Survey date: SATURDAY | 29/03/03 | Survey Type: MANUAL |
| 6 | WM-07-M-01 | COUNTRY PARK, BIRMINGHAM | WEST MIDLANDS |
| | GANNOW GREEN LANE | | |
| | GANNOW GREEN | | |
| | BIRMINGHAM | | |
| | Total Site area: | 60.00 hect | |
| | Survey date: SATURDAY | 05/04/03 | Survey Type: MANUAL |

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS

VEHICLES

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
01:00 - 02:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
02:00 - 03:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
03:00 - 04:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
04:00 - 05:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
05:00 - 06:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
06:00 - 07:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
07:00 - 08:00	6	164.83	0.030	6	164.83	0.013	6	164.83	0.043
08:00 - 09:00	6	164.83	0.105	6	164.83	0.057	6	164.83	0.162
09:00 - 10:00	6	164.83	0.117	6	164.83	0.094	6	164.83	0.211
10:00 - 11:00	6	164.83	0.187	6	164.83	0.131	6	164.83	0.318
11:00 - 12:00	6	164.83	0.246	6	164.83	0.146	6	164.83	0.392
12:00 - 13:00	6	164.83	0.229	6	164.83	0.171	6	164.83	0.400
13:00 - 14:00	6	164.83	0.271	6	164.83	0.167	6	164.83	0.438
14:00 - 15:00	6	164.83	0.290	6	164.83	0.219	6	164.83	0.509
15:00 - 16:00	6	164.83	0.273	6	164.83	0.279	6	164.83	0.552
16:00 - 17:00	6	164.83	0.172	6	164.83	0.300	6	164.83	0.472
17:00 - 18:00	6	164.83	0.141	6	164.83	0.273	6	164.83	0.414
18:00 - 19:00	6	164.83	0.135	6	164.83	0.169	6	164.83	0.304
19:00 - 20:00	1	60.00	0.033	1	60.00	0.083	1	60.00	0.116
20:00 - 21:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
21:00 - 22:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
22:00 - 23:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
23:00 - 24:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
Total Rates:			2.229			2.102			4.331

Parameter summary

Trip rate parameter range selected: 15.20 to 560.00 (units: hect)
 Survey date range: 01/01/99 - 23/06/07
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 6
 Number of Sundays: 0
 Optional parameters used in selection: NO
 Surveys manually removed from selection: 0

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : M - COUNTRY PARKS

VEHICLESSelected regions and areas:

04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
11	SCOTLAND	
	LO WEST LOTHIAN	1 days

Main parameter selection:

Parameter: Site area
 Range: 15.20 to 560.00 (units: hect)

Date Range: 01/01/99 to 23/06/07

Selected survey days:

Sunday 4 days

Selected survey types:

Manual count 4 days
 Directional ATC Count 0 days

Selected Locations:

Edge of Town 1
 Free Standing (PPS6 Out of Town) 3

Selected Location Sub Categories:

Out of Town 4

Optional parameter selection:Use Class:

Not Known 4 days

Population within 1 mile:

1,000 or Less 1 days
 1,001 to 5,000 2 days

Population within 5 miles:

75,001 to 100,000 2 days
 125,001 to 250,000 1 days

Car ownership within 5 miles:

0.6 to 1.0 3 days

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

Optional parameter selection (Cont.):

Travel Plan:

Not Known

1 days

No

3 days

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

LIST OF SITES relevant to selection parameters

- | | | | |
|---|---------------------|-------------------------------------|------------------------|
| 1 | CA-07-M-01 | COUNTRY PARK, PETERBOROUGH | CAMBRIDGESHIRE |
| | HAM LANE | | |
| | PETERBOROUGH | | |
| | Total Site area: | 203.00 hect | |
| | Survey date: SUNDAY | 13/07/03 | Survey Type: MANUAL |
| 2 | LO-07-M-01 | COUNTRY PARK, NEAR FALKIRK | WEST LoTHIAN |
| | OFF THE B825 | | |
| | NEAR FALKIRK | | |
| | Total Site area: | 68.90 hect | |
| | Survey date: SUNDAY | 29/04/07 | Survey Type: MANUAL |
| 3 | SY-07-M-01 | COUNTRY PARK, NEAR SHEFFIELD | SOUTH YORKSHIRE |
| | A618 PLEASLEY ROAD | | |
| | NEAR SHEFFIELD | | |
| | Total Site area: | 19.00 hect | |
| | Survey date: SUNDAY | 30/03/03 | Survey Type: MANUAL |
| 4 | WM-07-M-01 | COUNTRY PARK, BIRMINGHAM | WEST MIDLANDS |
| | GANNOW GREEN LANE | | |
| | GANNOW GREEN | | |
| | BIRMINGHAM | | |
| | Total Site area: | 60.00 hect | |
| | Survey date: SUNDAY | 06/04/03 | Survey Type: MANUAL |

White Young Green Executive Park, Avalon Way Leicester, LE7 7GR

Licence No: 705102

TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS

VEHICLES

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
01:00 - 02:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
02:00 - 03:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
03:00 - 04:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
04:00 - 05:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
05:00 - 06:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
06:00 - 07:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
07:00 - 08:00	3	94.00	0.085	3	94.00	0.035	3	94.00	0.120
08:00 - 09:00	4	87.73	0.248	4	87.73	0.137	4	87.73	0.385
09:00 - 10:00	4	87.73	0.362	4	87.73	0.208	4	87.73	0.570
10:00 - 11:00	4	87.73	0.439	4	87.73	0.339	4	87.73	0.778
11:00 - 12:00	4	87.73	0.721	4	87.73	0.442	4	87.73	1.163
12:00 - 13:00	4	87.73	0.858	4	87.73	0.467	4	87.73	1.325
13:00 - 14:00	4	87.73	0.886	4	87.73	0.470	4	87.73	1.356
14:00 - 15:00	4	87.73	0.935	4	87.73	0.767	4	87.73	1.702
15:00 - 16:00	4	87.73	0.707	4	87.73	1.114	4	87.73	1.821
16:00 - 17:00	4	87.73	0.496	4	87.73	1.134	4	87.73	1.630
17:00 - 18:00	4	87.73	0.430	4	87.73	0.861	4	87.73	1.291
18:00 - 19:00	4	87.73	0.279	4	87.73	0.604	4	87.73	0.883
19:00 - 20:00	2	64.45	0.093	2	64.45	0.240	2	64.45	0.333
20:00 - 21:00	1	68.90	0.015	1	68.90	0.102	1	68.90	0.117
21:00 - 22:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
22:00 - 23:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
23:00 - 24:00	0	0.00	0.000	0	0.00	0.000	0	0.00	0.000
Total Rates:			6.554			6.920			13.474

Parameter summary

Trip rate parameter range selected: 15.20 to 560.00 (units: hect)
 Survey date range: 01/01/99 - 23/06/07
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 0
 Number of Sundays: 4
 Optional parameters used in selection: NO
 Surveys manually removed from selection: 0

APPENDIX D
Parking Accumulation

Appendix C
Car Parking Accumulation - Weekday

Time Range	Development Area (sqm)	Arrivals		Departures		Accumulation
		Trip Rate	Total	Trip Rate	Total	
00:00-01:00	65.5	0	0	0	0	0
01:00-02:00	65.5	0	0	0	0	0
02:00-03:00	65.5	0	0	0	0	0
03:00-04:00	65.5	0	0	0	0	0
04:00-05:00	65.5	0	0	0	0	0
05:00-06:00	65.5	0	0	0	0	0
06:00-07:00	65.5	0	0	0	0	0
07:00-08:00	65.5	0.022	1	0.005	0	1
08:00-09:00	65.5	0.08	5	0.047	3	3
09:00-10:00	65.5	0.142	9	0.087	6	7
10:00-11:00	65.5	0.135	9	0.122	8	8
11:00-12:00	65.5	0.161	11	0.098	6	12
12:00-13:00	65.5	0.236	15	0.155	10	17
13:00-14:00	65.5	0.237	16	0.149	10	23
14:00-15:00	65.5	0.207	14	0.176	12	25
15:00-16:00	65.5	0.122	8	0.181	12	21
16:00-17:00	65.5	0.093	6	0.291	19	8
17:00-18:00	65.5	0.085	6	0.134	9	5
18:00-19:00	65.5	0.062	4	0.126	8	1
19:00-20:00	65.5	0	0	0	0	0
20:00-21:00	65.5	0	0	0	0	0
21:00-22:00	65.5	0	0	0	0	0
22:00-23:00	65.5	0	0	0	0	0
23:00-24:00	65.5	0	0	0	0	0

Maximum Accumulation 25

Car Parking Accumulation - Saturday

Time Range	Development Area (sqm)	Arrivals		Departures		Accumulation
		Trip Rate	Total	Trip Rate	Total	
00:00-01:00	65.5	0	0	0	0	0
01:00-02:00	65.5	0	0	0	0	0
02:00-03:00	65.5	0	0	0	0	0
03:00-04:00	65.5	0	0	0	0	0
04:00-05:00	65.5	0	0	0	0	0
05:00-06:00	65.5	0	0	0	0	0
06:00-07:00	65.5	0	0	0	0	0
07:00-08:00	65.5	0.03	2	0.013	1	1
08:00-09:00	65.5	0.105	7	0.057	4	4
09:00-10:00	65.5	0.117	8	0.094	6	6
10:00-11:00	65.5	0.187	12	0.131	9	9
11:00-12:00	65.5	0.246	16	0.146	10	16
12:00-13:00	65.5	0.229	15	0.171	11	20
13:00-14:00	65.5	0.271	18	0.167	11	27
14:00-15:00	65.5	0.29	19	0.219	14	31
15:00-16:00	65.5	0.273	18	0.279	18	31
16:00-17:00	65.5	0.172	11	0.3	20	22
17:00-18:00	65.5	0.141	9	0.273	18	14
18:00-19:00	65.5	0.135	9	0.169	11	12
19:00-20:00	65.5	0.033	2	0.083	5	8
20:00-21:00	65.5	0	0	0	0	0
21:00-22:00	65.5	0	0	0	0	0
22:00-23:00	65.5	0	0	0	0	0
23:00-24:00	65.5	0	0	0	0	0

Maximum Accumulation 31

Car Parking Accumulation - Sunday

Time Range	Development Area (sqm)	Arrivals		Departures		Accumulation
		Trip Rate	Total	Trip Rate	Total	
00:00-01:00	65.5	0	0	0	0	0
01:00-02:00	65.5	0	0	0	0	0
02:00-03:00	65.5	0	0	0	0	0
03:00-04:00	65.5	0	0	0	0	0
04:00-05:00	65.5	0	0	0	0	0
05:00-06:00	65.5	0	0	0	0	0
06:00-07:00	65.5	0	0	0	0	0
07:00-08:00	65.5	0.085	6	0.035	2	3
08:00-09:00	65.5	0.248	16	0.137	9	11
09:00-10:00	65.5	0.362	24	0.208	14	21
10:00-11:00	65.5	0.439	29	0.339	22	27
11:00-12:00	65.5	0.721	47	0.442	29	45
12:00-13:00	65.5	0.858	56	0.467	31	71
13:00-14:00	65.5	0.886	58	0.47	31	98
14:00-15:00	65.5	0.935	61	0.767	50	109
15:00-16:00	65.5	0.707	46	1.114	73	83
16:00-17:00	65.5	0.496	32	1.134	74	41
17:00-18:00	65.5	0.43	28	0.861	56	13
18:00-19:00	65.5	0.279	18	0.604	40	0
19:00-20:00	65.5	0.093	6	0.24	16	0
20:00-21:00	65.5	0.015	0	0.102	0	0
21:00-22:00	65.5	0	0	0	0	0
22:00-23:00	65.5	0	0	0	0	0
23:00-24:00	65.5	0	0	0	0	0

Maximum Accumulation 109

APPENDIX E
Traffic Flows and ATC Survey Data

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Monday 10/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	6	0	0	0	0	0	0	0	0	0	0	0	0	6
2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5	9	0	0	0	0	0	0	0	0	0	0	0	0	9
6	21	0	0	0	0	0	0	0	0	0	0	0	0	21
7	58	6	0	0	0	0	0	0	0	0	0	0	0	64
8	103	10	1	0	0	0	0	0	0	0	0	2	0	116
9	124	22	1	0	0	0	0	1	0	0	0	1	0	149
10	120	15	1	0	0	0	0	0	0	0	0	1	0	137
11	105	5	0	1	0	0	0	0	0	1	0	2	0	114
12	143	9	0	1	0	0	0	1	0	0	0	1	0	155
13	128	9	0	0	0	0	0	0	0	0	0	1	0	138
14	127	8	0	1	0	0	0	0	0	0	0	1	0	137
15	131	7	0	0	0	0	0	0	0	0	0	1	0	139
16	154	12	0	1	0	0	0	0	0	0	0	1	0	168
17	179	16	0	1	0	0	0	0	0	0	0	2	0	198
18	200	11	0	0	0	0	0	0	0	1	0	0	0	212
19	125	2	0	0	0	0	0	0	0	0	0	1	0	128
20	88	2	0	0	0	0	0	0	0	0	0	1	0	91
21	55	1	0	0	0	0	0	0	0	0	0	1	0	57
22	47	1	0	0	0	0	0	0	0	0	0	0	0	48
23	29	2	0	0	0	0	1	0	0	0	0	1	0	33
24	24	0	0	0	0	0	0	0	0	0	0	0	0	24
7-19	1639	126	3	5	0	0	0	2	0	2	0	14	0	1791
6-22	1887	136	3	5	0	0	0	2	0	2	0	16	0	2051
6-24	1940	138	3	5	0	0	1	2	0	2	0	17	0	2108
0-24	1983	138	3	5	0	0	1	2	0	2	0	17	0	2151

Direction : EASTBOUND

Monday 10/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	10	0	0	0	0	0	0	0	0	0	0	0	0	10
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	4	1	0	0	0	0	0	0	0	0	0	0	0	5
4	3	1	0	0	0	0	0	0	0	0	0	0	0	4
5	10	1	0	0	0	0	0	0	0	0	0	0	0	11
6	46	1	0	0	0	0	0	0	0	0	0	1	0	48
7	62	6	0	0	0	0	0	0	0	0	0	2	0	70
8	133	12	1	0	0	0	0	0	0	0	0	1	0	147
9	142	19	0	0	1	0	0	0	0	0	0	1	0	163
10	104	12	0	0	0	0	0	1	0	0	0	0	0	117
11	90	4	0	0	1	0	0	0	0	0	0	0	0	95
12	84	5	0	0	0	0	0	0	0	0	0	3	0	92
13	93	6	0	1	0	0	0	0	0	0	0	0	0	100
14	85	9	1	1	0	0	0	0	0	0	0	2	0	98
15	78	7	0	0	0	0	0	0	0	0	0	1	0	86
16	156	7	0	0	1	0	0	0	0	0	0	1	0	165
17	155	15	1	0	0	0	0	1	0	0	0	1	0	173
18	125	12	1	1	0	0	0	0	0	1	0	2	0	142
19	95	11	0	0	0	0	0	0	0	0	0	1	0	107
20	76	4	0	0	0	0	0	0	0	0	0	0	0	80
21	62	2	0	0	0	0	0	2	0	0	0	1	0	67
22	39	2	0	0	0	0	0	0	0	0	0	0	0	41
23	39	1	0	0	0	0	0	0	0	0	0	1	0	41
24	9	1	0	0	0	0	0	0	0	0	0	1	0	11
7-19	1340	119	4	3	3	0	0	2	0	1	0	13	0	1485
6-22	1579	133	4	3	3	0	0	4	0	1	0	16	0	1743
6-24	1627	135	4	3	3	0	0	4	0	1	0	18	0	1795
0-24	1701	139	4	3	3	0	0	4	0	1	0	19	0	1874

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Tuesday 11/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	8	0	0	0	0	0	0	0	0	0	0	0	0	8
2	1	1	0	0	0	0	0	0	0	0	0	0	0	2
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	19	1	0	0	0	0	0	0	0	0	0	1	0	21
7	52	3	0	0	0	0	0	0	0	0	0	0	0	55
8	103	10	0	0	0	0	1	0	0	0	0	2	0	116
9	138	16	2	0	1	0	0	0	0	0	0	1	0	158
10	95	11	0	1	0	0	0	0	0	0	0	0	0	107
11	108	6	0	0	0	0	0	0	0	0	0	3	0	117
12	100	3	0	0	0	0	0	0	0	0	0	2	0	105
13	96	4	0	0	0	0	0	0	0	0	0	0	0	100
14	116	7	0	0	0	0	0	0	0	1	0	1	0	125
15	112	8	0	1	0	0	0	0	0	0	0	1	0	122
16	137	14	1	1	0	0	1	0	0	0	0	2	0	156
17	199	21	0	0	1	0	0	0	0	0	0	2	0	223
18	190	15	0	0	0	0	0	0	0	0	0	1	0	206
19	122	6	0	0	0	0	0	0	0	0	0	0	0	128
20	95	3	0	0	0	0	2	0	0	0	0	1	0	101
21	68	2	0	0	0	0	0	0	0	0	0	2	0	72
22	52	2	0	0	0	0	0	0	0	0	0	1	0	55
23	34	2	0	0	0	0	0	0	0	0	0	1	0	37
24	10	0	0	0	0	0	0	0	0	0	0	1	0	11
7-19	1516	121	3	3	2	0	2	0	0	1	0	15	0	1663
6-22	1783	131	3	3	2	0	4	0	0	1	0	19	0	1946
6-24	1927	133	3	3	2	0	4	0	0	1	0	21	0	1994
0-24	1866	135	3	3	2	0	4	0	0	1	0	22	0	2036

Direction : EASTBOUND

Tuesday 11/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	3	3	0	0	0	0	0	0	0	0	0	0	0	6
2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
3	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4	5	0	0	0	0	0	0	0	0	0	0	0	0	5
5	9	2	0	0	0	0	0	0	0	0	0	0	0	11
6	34	4	0	0	0	0	0	0	0	0	0	1	0	39
7	41	16	0	0	0	0	0	0	0	0	0	1	0	58
8	121	19	0	0	1	0	0	0	0	0	0	0	0	141
9	123	11	0	0	1	0	0	0	0	0	0	3	0	138
10	89	4	0	0	0	0	0	0	0	0	0	3	0	96
11	46	7	0	1	0	0	0	0	0	0	0	2	0	56
12	83	9	0	0	0	0	0	0	0	0	0	1	0	93
13	55	15	0	0	0	0	0	0	0	0	0	2	0	72
14	61	12	1	0	0	0	0	0	0	0	0	2	0	76
15	97	4	0	1	1	0	0	0	0	0	0	1	0	104
16	98	7	0	0	0	0	0	0	0	0	0	1	0	106
17	143	4	0	0	0	0	0	0	0	0	0	3	0	150
18	150	9	0	0	0	0	0	0	0	0	0	2	0	161
19	105	11	0	0	0	0	0	0	0	1	0	1	0	118
20	55	4	0	0	0	0	0	0	0	0	0	0	0	59
21	65	4	0	0	0	0	0	0	0	0	0	1	0	70
22	55	1	0	0	0	0	0	0	0	0	0	0	0	56
23	46	2	0	0	0	0	0	0	0	0	0	1	0	49
24	13	0	0	0	0	0	0	0	0	0	0	1	0	14
7-19	1171	112	1	2	3	0	0	0	0	1	0	21	0	1311
6-22	1387	137	1	2	3	0	0	0	0	1	0	23	0	1554
6-24	1448	139	1	2	3	0	0	0	0	1	0	25	0	1617
0-24	1499	149	1	2	3	0	0	0	0	1	0	26	0	1681

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Wednesday 12/03/2008 Hr Ending	VEHICLE CLASSIFICATION													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	9	0	0	0	0	0	0	0	0	0	0	0	0	9
2	5	0	0	0	0	0	0	0	0	0	0	0	0	5
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4	5	1	0	0	0	0	0	0	0	0	0	0	0	6
5	9	0	0	0	0	0	0	0	0	0	0	0	0	9
6	17	1	0	0	0	0	0	0	0	0	0	1	0	19
7	54	9	0	0	0	0	0	0	0	0	0	1	0	64
8	106	14	0	0	0	0	0	0	0	0	0	1	0	121
9	124	23	1	0	1	0	0	0	0	0	0	0	0	149
10	119	15	1	0	1	0	0	0	0	0	0	0	0	136
11	105	11	0	0	0	0	0	0	0	0	0	1	0	117
12	120	8	0	0	0	0	0	0	0	0	0	1	0	129
13	108	5	1	2	0	0	0	0	0	0	0	1	0	117
14	119	13	0	1	0	0	0	0	0	0	0	1	0	134
15	138	6	0	1	0	0	0	0	0	0	0	2	0	147
16	155	10	0	1	0	0	0	0	0	0	0	2	0	168
17	153	11	0	0	0	0	0	0	0	0	0	1	0	165
18	207	10	0	0	0	0	0	0	0	0	0	1	0	218
19	124	8	0	0	0	0	0	0	0	0	0	1	0	133
20	86	3	0	0	0	0	0	0	0	0	0	1	0	90
21	64	2	0	0	0	0	0	0	0	0	0	1	0	67
22	52	0	0	0	0	0	0	0	0	0	0	1	0	53
23	25	0	0	0	0	0	0	0	0	0	0	1	0	26
24	14	0	0	0	0	0	0	0	0	0	0	1	0	15
7-19	1578	134	3	5	2	0	0	0	0	0	0	12	0	1734
6-22	1834	148	3	5	2	0	0	0	0	0	0	16	0	2008
6-24	1873	148	3	5	2	0	0	0	0	0	0	18	0	2049
0-24	1919	150	3	5	2	0	0	0	0	0	0	19	0	2098

Direction : EASTBOUND

Wednesday 12/03/2008 Hr Ending	VEHICLE CLASSIFICATION													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	2	1	0	0	0	0	0	0	0	0	0	0	0	3
2	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3	3	1	0	0	0	0	0	0	0	0	0	0	0	4
4	3	3	0	0	0	0	0	0	0	0	0	0	0	6
5	12	3	0	0	0	0	0	0	0	0	0	0	0	15
6	45	6	0	0	0	0	0	0	0	0	0	2	0	53
7	69	14	0	3	0	0	0	0	0	0	0	1	0	87
8	140	12	0	0	1	0	0	0	0	0	0	1	0	154
9	149	4	0	0	0	0	0	0	0	0	0	2	0	155
10	90	7	0	0	0	0	0	0	0	0	0	1	0	98
11	92	9	0	0	0	0	1	0	0	0	0	0	0	102
12	67	9	0	0	0	0	0	0	0	0	0	1	0	77
13	87	8	0	0	0	0	0	0	0	0	0	2	0	97
14	91	7	0	0	0	0	0	0	0	0	0	2	0	100
15	63	12	0	0	0	0	0	0	0	0	0	1	0	76
16	123	4	0	0	0	0	0	0	0	0	0	0	0	127
17	108	4	0	0	0	0	0	0	0	0	0	5	0	117
18	136	15	0	0	0	0	0	0	0	0	0	2	0	153
19	112	11	0	0	0	0	0	0	0	0	0	1	0	124
20	61	4	0	0	0	0	0	0	0	0	0	0	0	65
21	59	1	0	0	0	0	0	0	0	0	0	1	0	61
22	26	5	0	0	0	0	0	0	0	0	0	1	0	32
23	36	0	0	0	0	0	0	0	0	0	0	1	0	37
24	14	0	0	0	0	0	0	0	0	0	0	1	0	15
7-19	1258	102	0	0	1	0	1	0	0	0	0	18	0	1380
6-22	1473	126	0	3	1	0	1	0	0	0	0	21	0	1625
6-24	1523	126	0	3	1	0	1	0	0	0	0	23	0	1677
0-24	1588	141	0	3	1	0	1	0	0	0	0	25	0	1759

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Thursday 13/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	6	0	0	0	0	0	0	0	0	0	0	0	0	6
2	4	0	0	0	0	0	0	0	0	0	0	0	0	4
3	3	0	0	0	0	0	0	0	0	0	0	0	0	3
4	14	0	0	0	0	0	0	0	0	0	0	0	0	14
5	8	0	0	0	0	0	0	0	0	0	0	0	0	8
6	30	2	0	0	0	0	0	0	0	0	0	1	0	33
7	55	3	0	0	0	0	0	0	0	0	0	1	0	59
8	113	9	0	0	0	0	0	0	0	0	0	2	0	124
9	139	10	0	0	0	0	0	0	0	0	0	2	0	151
10	108	4	0	0	0	0	0	0	0	0	0	2	0	114
11	117	11	0	1	0	0	0	0	0	0	0	3	0	132
12	116	9	0	1	0	0	0	0	0	0	0	3	0	129
13	127	10	0	1	0	0	1	0	0	0	0	3	0	142
14	107	10	1	1	0	0	0	0	0	0	0	2	0	121
15	128	14	0	0	0	0	0	0	0	0	0	1	0	143
16	169	22	0	0	0	0	1	0	0	0	0	1	0	193
17	185	14	0	1	0	0	1	0	0	0	0	1	0	202
18	205	15	0	0	0	0	0	0	0	0	0	1	0	221
19	135	5	1	0	0	0	0	0	0	0	0	1	0	142
20	88	2	0	0	0	0	0	0	0	0	0	1	0	91
21	75	0	0	0	0	0	0	0	0	0	0	1	0	76
22	52	3	0	1	0	0	0	0	0	0	0	1	0	57
23	33	2	0	0	0	0	0	0	0	0	0	1	0	36
24	17	0	0	0	0	0	0	0	0	0	0	1	0	18

7-19	1649	133	2	5	0	0	3	0	0	0	0	22	0	1814
6-22	1919	141	2	6	0	0	3	0	0	0	0	26	0	2097
6-24	1969	143	2	6	0	0	3	0	0	0	0	28	0	2151
0-24	2034	145	2	6	0	0	3	0	0	0	0	29	0	2218

Direction : EASTBOUND

Thursday 13/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	8	2	0	0	0	0	0	0	0	0	0	0	0	10
2	4	0	0	0	0	0	0	0	0	0	0	0	0	4
3	4	0	0	0	0	0	0	0	0	0	0	0	0	4
4	5	2	0	0	0	0	0	0	0	0	0	0	0	7
5	15	1	0	0	0	0	0	0	0	0	0	0	0	16
6	44	4	0	0	0	0	0	0	0	0	0	0	0	48
7	60	7	0	1	0	0	0	0	0	0	0	1	0	69
8	143	11	0	0	1	0	1	0	0	0	0	4	0	160
9	148	12	1	1	0	0	0	0	0	0	0	2	0	164
10	82	8	1	0	1	0	0	0	0	0	0	1	0	93
11	94	7	1	0	0	0	0	0	0	0	0	1	0	103
12	121	9	1	2	0	0	0	0	0	0	0	1	0	134
13	123	12	0	0	0	0	0	0	0	0	0	4	0	139
14	108	11	0	0	1	0	0	0	0	0	0	1	0	121
15	129	12	0	1	0	0	0	0	0	0	0	2	0	144
16	151	15	0	1	1	0	0	0	0	0	0	1	0	169
17	146	19	0	1	0	0	0	0	0	0	0	1	0	167
18	182	11	1	0	1	0	0	0	0	0	0	2	0	197
19	135	7	0	0	0	0	0	0	0	0	0	1	0	143
20	69	4	0	0	0	0	0	0	0	0	0	0	0	73
21	63	1	0	0	0	0	0	0	0	0	0	1	0	65
22	67	2	0	0	0	0	0	0	0	0	0	1	0	70
23	40	0	0	0	0	0	0	0	0	0	0	1	0	41
24	15	1	0	0	0	0	0	0	0	0	0	1	0	17

7-19	1562	134	5	6	5	0	1	0	0	0	0	21	0	1734
6-22	1821	148	5	7	5	0	1	0	0	0	0	24	0	2011
6-24	1876	149	5	7	5	0	1	0	0	0	0	26	0	2069
0-24	1956	158	5	7	5	0	1	0	0	0	0	26	0	2158

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Friday 14/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	10	0	0	0	0	0	0	0	0	0	0	0	0	10
2	3	0	0	0	0	0	0	0	0	0	0	0	0	3
3	5	0	0	0	0	0	0	0	0	0	0	0	0	5
4	9	0	0	0	0	0	0	0	0	0	0	0	0	9
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	23	1	0	0	0	0	0	0	0	0	0	1	0	25
7	42	8	0	0	0	0	0	0	0	0	0	1	0	51
8	110	10	1	1	0	0	0	0	0	1	0	3	0	126
9	136	19	0	0	0	0	0	0	0	0	0	3	0	158
10	112	6	1	0	0	0	0	0	0	1	0	2	0	122
11	109	11	0	0	0	0	0	0	0	0	0	1	0	121
12	114	9	0	1	0	0	0	0	0	1	0	2	0	127
13	141	14	0	0	0	0	1	0	0	0	0	1	0	157
14	122	9	0	1	1	0	0	0	0	0	0	1	0	134
15	173	12	0	3	0	0	0	0	0	0	0	0	0	188
16	177	6	0	1	0	0	1	0	0	0	0	1	0	186
17	186	7	2	0	0	0	0	0	0	0	0	2	0	197
18	173	15	0	0	1	0	2	0	0	0	0	1	0	192
19	133	3	0	0	0	0	0	0	0	0	0	1	0	137
20	120	2	0	0	0	0	0	0	0	0	0	1	0	123
21	60	1	0	0	0	0	0	0	0	0	0	1	0	62
22	51	3	0	0	0	0	0	0	0	0	0	1	0	55
23	40	0	0	0	0	0	0	0	0	0	0	1	0	41
24	28	0	0	0	0	0	0	0	0	0	0	1	0	29
7-19	1686	121	4	7	2	0	4	0	0	3	0	18	0	1845
6-22	1959	135	4	7	2	0	4	0	0	3	0	22	0	2136
6-24	2027	135	4	7	2	0	4	0	0	3	0	24	0	2206
0-24	2083	136	4	7	2	0	4	0	0	3	0	25	0	2264

Direction : EASTBOUND

Friday 14/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	8	2	0	0	0	0	0	0	0	0	0	0	0	10
2	4	0	0	0	0	0	0	0	0	0	0	0	0	4
3	7	0	0	0	0	0	0	0	0	0	0	0	0	7
4	4	2	0	0	0	0	0	0	0	0	0	0	0	6
5	16	1	0	0	0	0	0	0	0	0	0	0	0	17
6	37	5	0	0	0	0	0	0	0	0	0	1	0	43
7	54	14	0	0	0	0	0	0	0	0	0	2	0	70
8	172	12	0	0	0	0	0	1	0	0	0	2	0	187
9	150	7	0	0	0	0	1	1	0	0	0	0	0	159
10	81	7	0	0	1	0	1	0	0	0	0	1	0	91
11	96	5	0	0	0	0	0	0	0	0	0	3	0	104
12	98	12	0	0	0	0	0	0	0	0	0	5	0	115
13	113	9	0	1	0	0	0	0	0	0	0	2	0	125
14	111	9	0	1	0	0	0	0	0	0	0	2	0	123
15	133	7	0	0	0	0	0	1	0	0	0	3	0	144
16	151	7	2	0	0	0	2	0	0	1	0	2	0	165
17	127	12	0	0	0	0	0	0	0	0	0	1	0	140
18	170	19	0	0	0	0	1	0	0	0	0	1	0	191
19	140	4	0	1	0	0	0	0	0	0	0	1	0	146
20	88	4	0	0	0	0	0	0	0	0	0	1	0	93
21	61	2	0	0	0	0	0	0	0	0	0	1	0	64
22	48	1	0	0	0	0	0	0	0	0	0	1	0	50
23	40	1	0	0	0	0	0	0	0	0	0	1	0	42
24	31	0	0	0	0	0	0	0	0	0	0	1	0	32
7-19	1542	110	2	3	1	0	5	3	0	1	0	23	0	1690
6-22	1793	131	2	3	1	0	5	3	0	1	0	28	0	1967
6-24	1864	132	2	3	1	0	5	3	0	1	0	30	0	2041
0-24	1940	142	2	3	1	0	5	3	0	1	0	31	0	2128

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Saturday 15/03/2008 Hr Ending	VEHICLE CLASSIFICATION													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	18	1	0	0	0	0	0	0	0	0	0	0	0	19
2	20	1	0	0	0	0	0	0	0	0	0	0	0	21
3	12	0	0	0	0	0	0	0	0	0	0	0	0	12
4	8	0	0	0	0	0	0	0	0	0	0	0	0	8
5	5	0	0	0	0	0	0	0	0	0	0	0	0	5
6	13	0	0	0	0	0	0	0	0	0	0	1	0	14
7	28	3	0	0	0	0	0	0	0	0	0	1	0	32
8	35	2	0	1	0	0	0	0	0	0	0	0	0	38
9	89	4	0	1	1	0	0	0	0	0	0	0	0	95
10	106	9	0	0	0	0	0	0	0	0	0	0	0	115
11	146	2	0	0	0	0	0	0	0	1	0	1	0	150
12	133	5	1	0	0	0	0	0	0	0	0	2	0	141
13	145	3	1	0	0	0	0	0	0	0	0	1	0	150
14	133	9	0	1	0	0	0	0	0	0	0	2	0	145
15	102	2	0	0	0	0	1	0	0	0	0	1	0	108
16	112	4	0	0	0	0	0	0	0	0	0	1	0	117
17	124	1	1	0	0	0	0	0	0	1	0	1	0	128
18	105	2	0	0	0	0	0	0	0	0	0	0	0	107
19	104	6	0	0	0	0	0	0	0	0	0	0	0	110
20	103	0	0	0	0	0	0	0	0	0	0	1	0	104
21	63	1	0	0	0	0	0	0	0	0	0	1	0	65
22	49	1	0	0	0	0	0	0	0	0	0	1	0	51
23	30	0	0	0	0	0	0	0	0	0	0	0	0	30
24	39	2	0	0	0	0	0	0	0	0	0	1	0	42
7-19	1334	49	3	3	1	0	1	0	0	2	0	9	0	1402
6-22	1577	54	3	3	1	0	1	0	0	2	0	13	0	1654
6-24	1645	56	3	3	1	0	1	0	0	2	0	14	0	1726
0-24	1722	58	3	3	1	0	1	0	0	2	0	15	0	1805

Direction : EASTBOUND

Saturday 15/03/2008 Hr Ending	VEHICLE CLASSIFICATION													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	25	1	0	0	0	0	0	0	0	0	0	0	0	26
2	11	1	0	0	0	0	0	0	0	0	0	0	0	12
3	8	1	0	0	0	0	0	0	0	0	0	0	0	9
4	2	2	0	0	0	0	0	0	0	0	0	0	0	4
5	9	0	0	0	0	0	0	0	0	0	0	0	0	9
6	11	1	0	0	0	0	0	0	0	0	0	0	0	12
7	21	1	0	0	1	0	0	0	0	0	0	0	0	23
8	57	2	0	0	0	0	0	0	0	0	0	0	0	59
9	53	3	0	0	0	0	0	0	0	0	0	1	0	57
10	81	4	0	0	0	0	0	0	0	0	0	0	0	85
11	92	4	0	0	0	0	0	0	0	0	0	4	0	100
12	125	4	1	0	0	0	0	0	0	0	0	1	0	131
13	146	5	0	0	0	0	0	0	0	0	0	1	0	152
14	146	2	0	1	0	0	0	0	0	0	0	2	0	151
15	117	4	0	0	0	0	0	0	0	0	0	1	0	122
16	111	5	3	1	0	0	0	0	0	0	0	1	0	121
17	95	1	0	0	0	0	0	0	0	0	0	3	0	99
18	100	4	1	0	0	0	0	0	0	0	0	1	0	106
19	75	2	1	0	0	0	0	0	0	0	0	0	0	78
20	60	1	1	0	0	0	0	0	0	0	0	2	0	64
21	32	1	0	0	0	0	0	0	0	0	0	1	0	34
22	34	1	1	0	0	0	0	0	0	0	0	0	0	36
23	35	0	0	0	0	0	0	0	0	0	0	1	0	36
24	30	0	0	0	0	0	0	0	0	0	0	1	0	31
7-19	1198	40	6	2	0	0	0	0	0	0	0	15	0	1261
6-22	1345	44	8	2	1	0	0	0	0	0	0	18	0	1418
6-24	1410	44	8	2	1	0	0	0	0	0	0	20	0	1485
0-24	1476	50	8	2	1	0	0	0	0	0	0	20	0	1557

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

Sunday 16/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	19	1	0	0	0	0	0	0	0	0	0	0	0	20
2	15	0	0	0	0	0	0	0	0	0	0	0	0	15
3	6	0	0	0	0	0	0	0	0	0	0	0	0	6
4	7	0	0	0	0	0	0	0	0	0	0	0	0	7
5	4	0	0	0	0	0	0	0	0	0	0	0	0	4
6	7	0	0	0	0	0	0	0	0	0	0	0	0	7
7	14	0	0	0	0	0	0	0	0	0	0	0	0	14
8	16	0	0	0	0	0	0	0	0	0	0	1	0	17
9	24	1	0	0	0	0	0	0	0	0	0	0	0	25
10	70	4	0	0	0	0	0	0	0	0	0	0	0	74
11	98	4	0	0	0	0	0	0	0	0	0	0	0	102
12	128	7	0	0	0	0	0	0	0	0	0	1	0	136
13	147	3	0	0	0	0	0	0	0	0	0	1	0	151
14	119	2	0	0	0	0	0	0	0	0	0	1	0	122
15	125	3	0	0	0	0	0	0	0	0	0	0	0	128
16	131	2	0	0	0	0	0	0	0	0	0	0	0	133
17	107	3	0	0	0	0	0	0	0	0	0	0	0	110
18	89	1	0	0	0	0	0	0	0	0	0	1	0	91
19	81	1	0	0	0	0	0	0	0	0	0	1	0	83
20	89	0	0	0	0	0	1	0	0	0	0	0	0	90
21	58	0	0	0	0	0	0	0	0	0	0	1	0	59
22	44	1	0	0	0	0	0	0	0	0	0	1	0	46
23	30	0	0	0	0	0	0	0	0	0	0	1	0	31
24	25	0	0	0	0	0	0	0	0	0	0	1	0	26
7-19	1135	31	0	0	0	0	0	0	0	0	0	6	0	1172
6-22	1340	32	0	0	0	0	1	0	0	0	0	8	0	1381
6-24	1385	32	0	0	0	0	1	0	0	0	0	10	0	1438
0-24	1453	33	0	0	0	0	1	0	0	0	0	10	0	1497

Direction : EASTBOUND

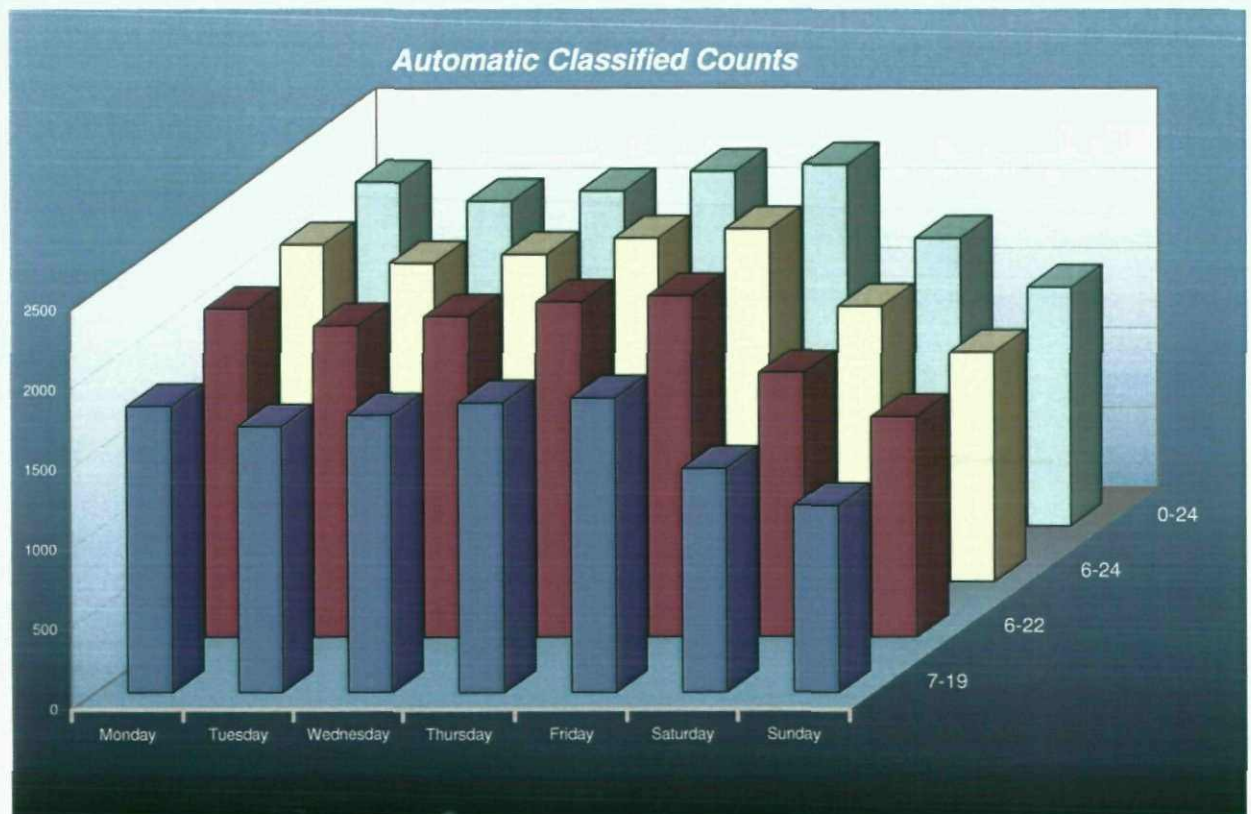
Sunday 16/03/2008	VEHICLE CLASSIFICATION													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	26	0	0	0	0	0	0	0	0	0	0	0	0	26
2	8	0	0	0	0	0	0	0	0	0	0	0	0	8
3	13	0	0	0	0	0	0	0	0	0	0	0	0	13
4	7	1	0	0	0	0	0	0	0	0	0	0	0	8
5	5	1	0	0	0	0	0	0	0	0	0	0	0	6
6	9	2	0	0	0	0	0	0	0	0	0	0	0	11
7	9	2	0	0	0	0	0	0	0	0	0	0	0	11
8	24	1	0	0	0	0	0	0	0	0	0	0	0	25
9	25	1	0	0	0	0	0	0	0	0	0	0	0	26
10	78	1	0	0	0	0	0	0	0	0	0	1	0	80
11	87	4	1	0	1	0	0	0	0	0	0	0	0	93
12	89	4	1	0	0	0	0	0	0	0	0	1	0	95
13	127	1	0	0	0	0	0	0	0	0	0	0	0	128
14	88	5	0	0	0	0	0	0	0	0	0	0	0	93
15	97	4	0	0	0	0	0	0	0	0	0	1	0	102
16	90	2	0	0	0	0	0	0	0	0	0	1	0	93
17	79	2	0	0	0	0	0	0	0	0	0	3	0	84
18	66	1	0	0	0	0	0	0	0	0	0	1	0	68
19	70	2	0	0	0	0	0	0	0	0	0	1	0	73
20	52	1	0	0	0	0	0	0	0	0	0	1	0	54
21	52	1	0	0	0	0	0	0	0	0	0	1	0	54
22	32	0	0	0	0	0	0	0	0	0	0	0	0	32
23	23	0	0	0	0	0	0	0	0	0	0	1	0	24
24	12	0	0	0	0	0	0	0	0	0	0	1	0	13
7-19	920	28	2	0	1	0	0	0	0	0	0	9	0	960
6-22	1065	32	2	0	1	0	0	0	0	0	0	11	0	1111
6-24	1100	32	2	0	1	0	0	0	0	0	0	13	0	1148
0-24	1168	36	2	0	1	0	0	0	0	0	0	13	0	1220

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

VEHICLE FLOWS									
Hr Ending	Monday 10-Mar-08	Tuesday 11-Mar-08	Wednesday 12-Mar-08	Thursday 13-Mar-08	Friday 14-Mar-08	Saturday 15-Mar-08	Sunday 16-Mar-08	WEEKDAY AVERAGE	WEEK AVERAGE
1	6	8	9	6	10	19	20	8	11
2	2	2	5	4	3	21	15	3	7
3	2	2	1	3	5	12	6	3	4
4	3	3	6	14	9	8	7	7	7
5	9	6	9	8	6	5	4	8	7
6	21	21	19	33	25	14	7	24	20
7	64	55	64	59	51	32	14	59	48
8	116	116	121	124	126	38	17	121	94
9	149	158	149	151	158	95	25	153	126
10	137	107	136	114	122	115	74	123	115
11	114	117	117	132	121	150	102	120	122
12	155	105	129	129	127	141	136	129	132
13	138	100	117	142	157	150	151	131	136
14	137	125	134	121	134	145	122	130	131
15	139	122	147	143	188	106	128	148	139
16	168	156	168	193	186	117	133	174	160
17	198	223	165	202	197	128	110	197	175
18	212	206	218	221	192	107	91	210	178
19	128	128	133	142	137	110	83	134	123
20	91	101	90	91	123	104	90	99	99
21	57	72	67	76	62	65	59	67	65
22	48	55	53	57	55	51	46	54	52
23	33	37	26	36	41	30	31	35	33
24	24	11	15	18	29	42	26	19	24
7-19	1791	1663	1734	1814	1845	1402	1172	1769	1632
6-22	2051	1946	2008	2097	2136	1654	1381	2048	1896
6-24	2108	1994	2049	2151	2206	1726	1438	2102	1953
0-24	2151	2036	2098	2219	2264	1805	1497	2154	2010



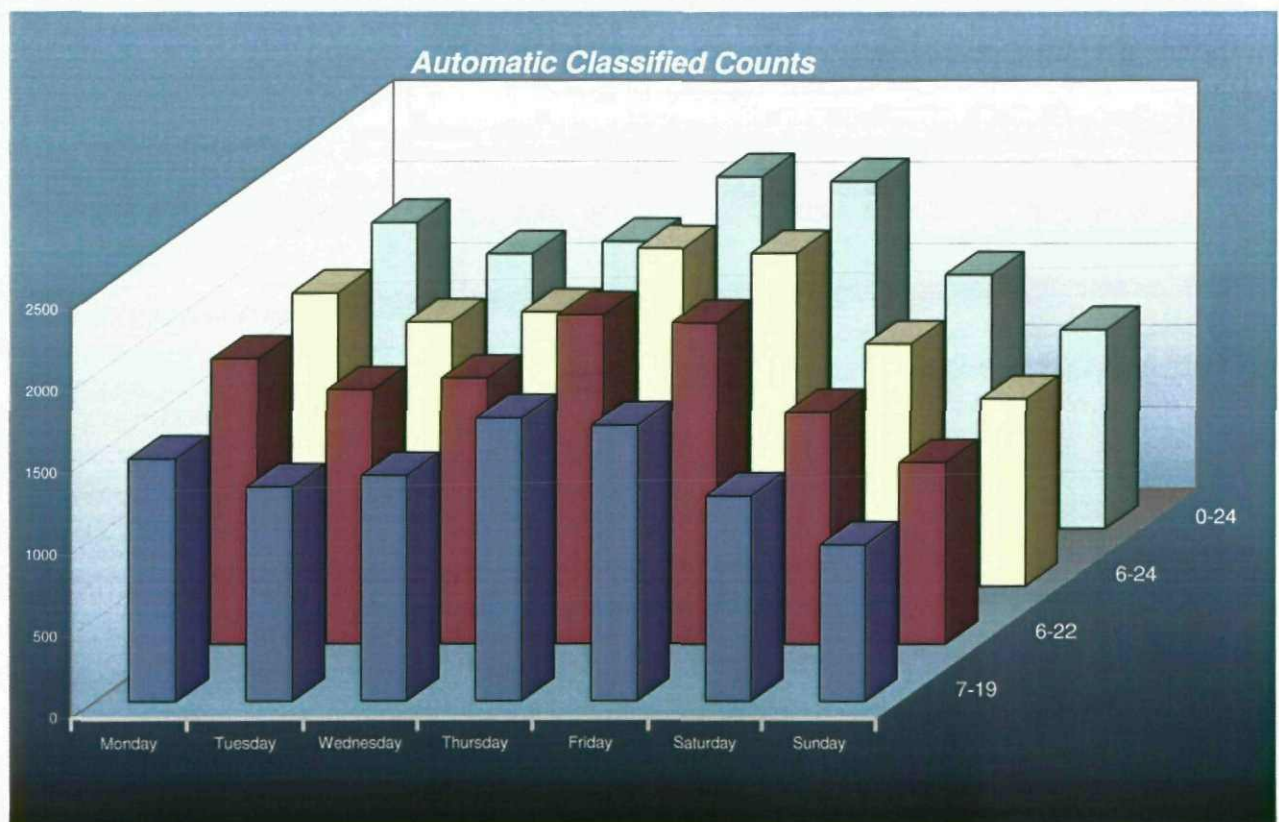
survey and presentation by **trafficsense** Ltd.

Automatic Classified Counts, Royston

LOCATION: B6428

Direction : EASTBOUND

EASTBOUND									
Hr Ending	Monday 10-Mar-08	Tuesday 11-Mar-08	Wednesday 12-Mar-08	Thursday 13-Mar-08	Friday 14-Mar-08	Saturday 15-Mar-08	Sunday 16-Mar-08	WEEKDAY AVERAGE	WEEK AVERAGE
1	10	6	3	10	10	26	26	8	13
2	1	2	1	4	4	12	8	2	5
3	5	1	4	4	7	9	13	4	6
4	4	5	6	7	6	4	8	6	6
5	11	11	15	16	17	9	6	14	12
6	48	39	53	48	43	12	11	46	36
7	70	58	87	69	70	23	11	71	55
8	147	141	154	160	187	59	25	158	125
9	163	138	155	164	159	57	26	156	123
10	117	96	98	93	91	85	80	99	94
11	95	56	102	103	104	100	93	92	93
12	92	93	77	134	115	131	95	102	105
13	100	72	97	139	125	152	128	107	116
14	98	76	100	121	123	151	93	104	109
15	86	104	76	144	144	122	102	111	111
16	165	106	127	169	165	121	93	146	135
17	173	150	117	167	140	99	84	149	133
18	142	161	153	197	191	106	68	169	145
19	107	118	124	143	146	78	73	128	113
20	80	59	65	73	93	64	54	74	70
21	67	70	61	65	64	34	54	65	59
22	41	56	32	70	50	36	32	50	45
23	41	49	37	41	42	36	24	42	39
24	11	14	15	17	32	31	13	18	19
7-19	1485	1311	1380	1734	1690	1261	960	1520	1403
6-22	1743	1554	1625	2011	1967	1418	1111	1780	1633
6-24	1795	1617	1677	2069	2041	1485	1148	1840	1690
0-24	1874	1681	1759	2158	2128	1557	1220	1920	1768



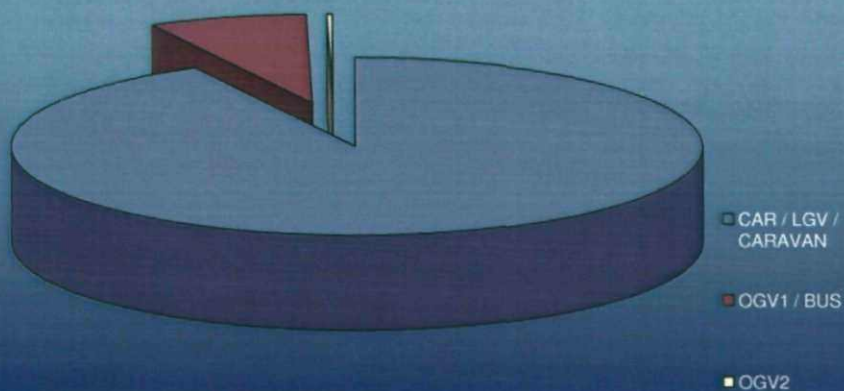
Automatic Classified Counts, Royston

LOCATION: B6428

Direction : WESTBOUND

VEHICLE CLASSIFICATION				
	CAR / LGV / CARAVAN	OGV1 / BUS	OGV2	TOTAL
10-Mar-08				
7-19	1639	143	9	1791
6-22	1887	155	9	2051
6-24	1940	159	9	2108
0-24	1983	159	9	2151
11-Mar-08				
7-19	1516	143	4	1663
6-22	1783	159	4	1946
6-24	1827	163	4	1994
0-24	1866	166	4	2036
12-Mar-08				
7-19	1578	151	5	1734
6-22	1834	169	5	2008
6-24	1873	171	5	2049
0-24	1919	174	5	2098
13-Mar-08				
7-19	1649	160	5	1814
6-22	1919	172	6	2097
6-24	1969	176	6	2151
0-24	2034	179	6	2219
14-Mar-08				
7-19	1686	149	10	1845
6-22	1959	167	10	2136
6-24	2027	169	10	2206
0-24	2083	171	10	2264
15-Mar-08				
7-19	1334	63	5	1402
6-22	1577	72	5	1654
6-24	1646	75	5	1726
0-24	1722	78	5	1805
16-Mar-08				
7-19	1135	37	0	1172
6-22	1340	41	0	1381
6-24	1395	43	0	1438
0-24	1453	44	0	1497
AVERAGE				
7-19	1505	121	5	1632
6-22	1757	134	6	1896
6-24	1811	137	6	1953
0-24	1866	139	6	2010

Total Vehicle Class Distribution



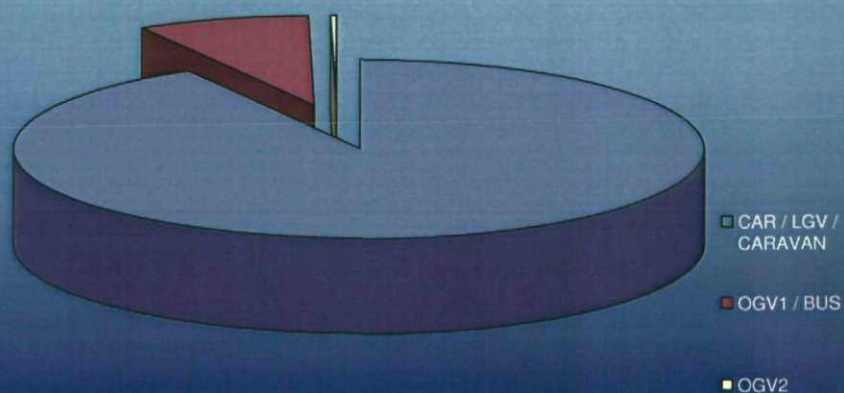
Automatic Classified Counts, Royston

LOCATION: B6428

Direction : EASTBOUND

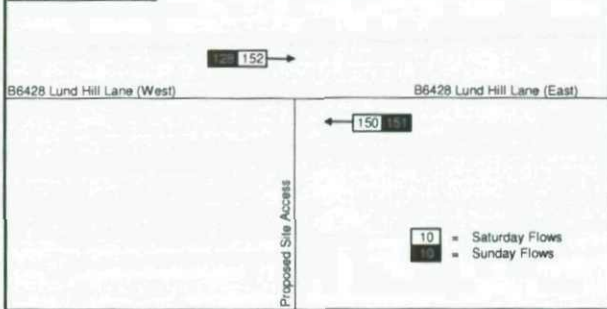
VEHICLE CLASSIFICATION				
	CAR / LGV / CARAVAN	OGV1 / BUS	OGV2	TOTAL
10-Mar-08				
7-19	1340	139	6	1485
6-22	1579	156	8	1743
6-24	1627	160	8	1795
0-24	1701	165	8	1874
11-Mar-08				
7-19	1171	137	3	1311
6-22	1387	164	3	1554
6-24	1446	168	3	1617
0-24	1499	179	3	1681
12-Mar-08				
7-19	1258	122	0	1380
6-22	1473	149	3	1625
6-24	1523	151	3	1677
0-24	1588	168	3	1759
13-Mar-08				
7-19	1562	166	6	1734
6-22	1821	183	7	2011
6-24	1876	186	7	2069
0-24	1956	195	7	2158
14-Mar-08				
7-19	1542	141	7	1690
6-22	1793	167	7	1967
6-24	1864	170	7	2041
0-24	1940	181	7	2128
15-Mar-08				
7-19	1198	61	2	1261
6-22	1345	71	2	1418
6-24	1410	73	2	1485
0-24	1476	79	2	1557
16-Mar-08				
7-19	920	40	0	960
6-22	1065	46	0	1111
6-24	1100	48	0	1148
0-24	1168	52	0	1220
AVERAGE				
7-19	1284	115	3	1403
6-22	1495	134	4	1633
6-24	1549	137	4	1690
0-24	1618	146	4	1768

Total Vehicle Class Distribution

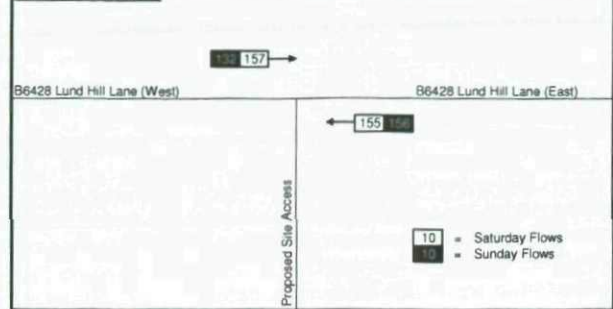


Weekend Peak Hour Traffic Flows

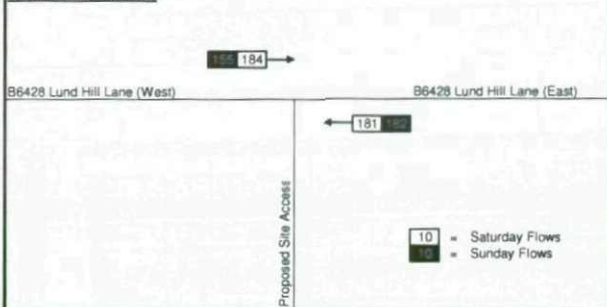
2008 Base Traffic Flows



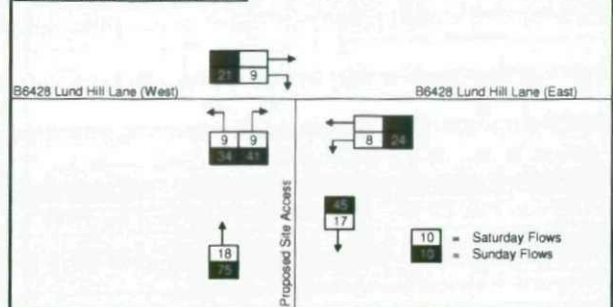
2010 Base Traffic Flows



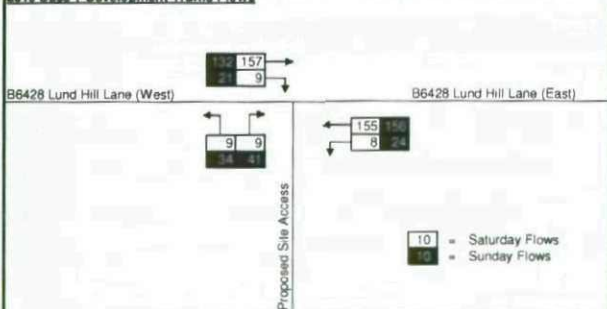
2020 Base Traffic Flows



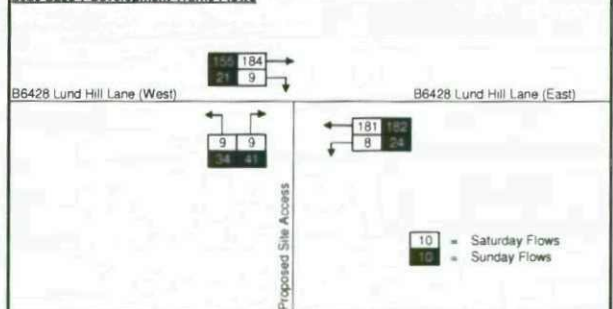
Development Generated Traffic Flows



2010 Base + Development Traffic Flows



2020 Base + Development Traffic Flows



APPENDIX F
PIA Data

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within B

B-00402-05 28/03/2005 Monday Time:2030 Vehicles 1 Casualties 1 Slight

Easting: 437,554 Northing: 411,820

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

Road Type: Single carriageway Speed 30

Location: LUND HILL LN ROYSTON

Description:DRIVER SUSPECTED OPL OVERTURNS VEH.

Vehicle Reference:1 Car

Going ahead

First point of impact:Front

Vehicle direction: N to S

Journey: Other/Not known

Age of Driver : 32

Breath test:Negative

Contributory Factors : 410

Casualty Reference 1 Age:26 Female Passenger Severity:Slight

Ped Dir: Ped Movement : Not pedestrian

Ped Location:

AccsMap - Accident Analysis System

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within B

B-01798-05 16/12/2005 Friday Time:0730 Vehicles 1 Casualties 1 Slight

Easting: 438,695

Northing: 411,637

Fine without high winds

Road Surface:Wet/Damp

Darkness: no street lighting

Road Type: Single carriageway

Speed 60

Location: SANDYBRIDGE LN SHAFTON 2000 MTS FROM J/W GREENSIDE

Description:V1 TV SANDYBRIDGE LN IN INLIT AREA WHEN CONFRONTED BY HORSE & WAS
UNABLE TO AVOID COLL

Vehicle Reference:1 Car

Going ahead

First point of impact:Front

Vehicle direction: NW to SE

Journey: Commuting to/from work

Age of Driver : 20

Breath test:Negative

Contributory Factors : 109

Casualty Reference 1 Age:20 Female Driver/rider Severity:Slight

Ped Dir:

Ped Movement : Not pedestrian

Ped Location:

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within E

B-01804-05 18/12/2005 Sunday Time:1515 Vehicles 1 Casualties 1 Slight

Easting: 438,693

Northing: 411,626

Fine without high winds

Road Surface:Wet/Damp

Daylight: no street lighting

Road Type: Single carriageway

Speed 30

Location: SANDYBRIDGE LN SHAFTON 150 MTS FROM GREENSIDE

Description:DRIVER LOSES CONTROL ON BEND ON SLIPPERY SURFACE AND VEERS OFF
RD XING CARR, MOUNTING VERGE AND COLL WITH RD SIGN POST.

Vehicle Reference:1 Car

Going ahead right hand bend

First point of impact:Front

Vehicle direction: S to N

Journey: Other/Not known

Age of Driver : 17

Breath test:Not requested

Contributory Factors : 103 605 108

Casualty Reference 1 Age:17 Male Driver/rider Severity:Slight

Ped Dir:

Ped Movement : Not pedestrian

Ped Location:

AccsMap - Accident Analysis System

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within B

B-00156-06 02/02/2006 Thursday Time:1635 Vehicles 2 Casualties 1 Slight
Easting: 437,550 Northing: 411,835
Fine without high winds Road Surface:Dry Darkness: street lights present and lit
Road Type: Single carriageway Speed 30

Location: LUND HILL LN ROYSTON J/W MONKTON COKING PLANT

Description: V2 INDICATING R & ATTEMPTED TO TURN R INTO ENTRANCE TO IND EST WHEN
V1 (TV IN DIRC OF ROYSTON) ATTEMPTED TO O/T V2 AS IT WAS TURNING &
COLL OCCURED

Vehicle Reference1 Car Overtaking moving vehicle on its offside
First point of impact: Nearside
Vehicle direction: N to S Journey: Other/Not known
Age of Driver : 22 Breath test: Negative

Contributory Factors : 602 403

Vehicle Reference2 Other motor vehicle Waiting to turn left
First point of impact: Offside
Vehicle direction: N to S Journey: Journey as part of work
Age of Driver : 30 Breath test: Not requested

Contributory Factors : 602 403

Casualty Reference 1 Age:30 Male Driver/rider Severity:Slight
Ped Dir: Ped Movement : Not pedestrian
Ped Location:

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within B

B-00514-06 18/04/2006 Tuesday Time:1210 Vehicles 1 Casualties 1 Slight

Easting: 437,586 Northing: 412,169

Fine without high winds

Road Surface:Dry

Daylight: street lighting unknown

Road Type: Single carriageway

Speed 30

Location: LUNDHILL LN ROYSTON 100 MTS FROM RAILWAY BRIDGE

Description: V1 TURNED RGT UNDER BRIDGE SCRAPING IT AND THEN COLL WITH NEXT BRIDGE.

Vehicle Reference:1 Goods between 3.5 and 7.5 ton Going ahead

First point of impact: Offside

Vehicle direction: E to W

Journey: Journey as part of work

Age of Driver : 50

Breath test: Not requested

Contributory Factors : 607 602

Casualty Reference 1 Age:50 Male Driver/rider Severity:Slight

Ped Dir: Ped Movement : Not pedestrian

Ped Location:

AccsMap - Accident Analysis System

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within B

B-00512-07 14/04/2007 Saturday Time:1245 Vehicles 1 Casualties 2 Slight

Easting: 437,382 Northing: 411,730

Fine without high winds Road Surface:Dry Daylight: no street lighting

Road Type: Single carriageway Speed 30

Location: LUND HILL LN ROYSTON

Description: V1 TV DOWN LUNDHILL LN TW ROYSTON DRIVING SKIP LORRY. DRIVER FAILED TO SEE LOW BRIDGE IN FRONT & TOP OF LORRY COLL WITH BRIDGE CAUSING EXTENSIVE DAMAGE

Vehicle Reference:1 Goods >= 7.5 tonnes mgw Going ahead

First point of impact: Front

Vehicle direction: E to W

Journey: Journey as part of work

Age of Driver : 27

Breath test: Negative

Contributory Factors : 405 509

Casualty Reference 1 Age:27 Male Driver/rider Severity:Slight

Ped Dir: Ped Movement :

Ped Location:

Casualty Reference 2 Age:19 Male Passenger Severity:Slight

Ped Dir: Ped Movement :

Ped Location:

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within B

B-01007-07 21/07/2007 Saturday Time:1820 Vehicles 2 Casualties 1 Slight

Easting: 438,690

Northing: 411,580

Other

Road Surface:Wet/Damp

Daylight: no street lighting

Road Type: Single carriageway

Speed 30

Location: SANDYBRIDGE LN SHAFTON

Description:V1 TV TW SHAFTON FROM ROYSTON . WHILST NEG L/H BEND V1 SPUN ON WET
RD SURFACE & COLL WITH V2 TV OPP DIRC.

Vehicle Reference1 Car

Going ahead left hand bend

First point of impact:Front

Vehicle direction: N to SE

Journey: Commuting to/from work

Age of Driver : 27

Breath test:Negative

Contributory Factors : 103 108 306 307 410

Vehicle Reference2 Car

Going ahead right hand bend

First point of impact:Offside

Vehicle direction: SE to N

Journey: Other/Not known

Age of Driver : 44

Breath test:Negative

Contributory Factors : 103 108 306 307 410

Casualty Reference 1 Age:14 Female Passenger Severity:Slight

Ped Dir:

Ped Movement :

Ped Location:

AccsMap - Accident Analysis System

Accidents between dates 01/01/2005 and 31/12/2007 (36) months

Selection:

Notes:

Selected using Build Query :

Areas on Lund Hill Lane and Sandybridge Lane within E

B-01803-07 22/10/2007 Monday Time:0119 Vehicles 1 Casualties 1 Slight

Easting: 438,694 Northing: 411,567

Fine without high winds Road Surface:Dry Daylight:street lights present

Road Type: Single carriageway Speed 30

Location: SANDYBRIDGE LN SHAFTON

Description:VEH LEFT RD ON RGT HAND BEND AND COLL WITH ELECTRIC PYLON

Vehicle Reference:1 Car

Going ahead

First point of impact:Front

Vehicle direction: Parked to Parked

Journey: Other/Not known

Age of Driver : 50

Breath test:Not requested

Contributory Factors : 410

Casualty Reference 1 Age:50 Male Driver/rider Severity:Slight

Ped Dir: Ped Movement :

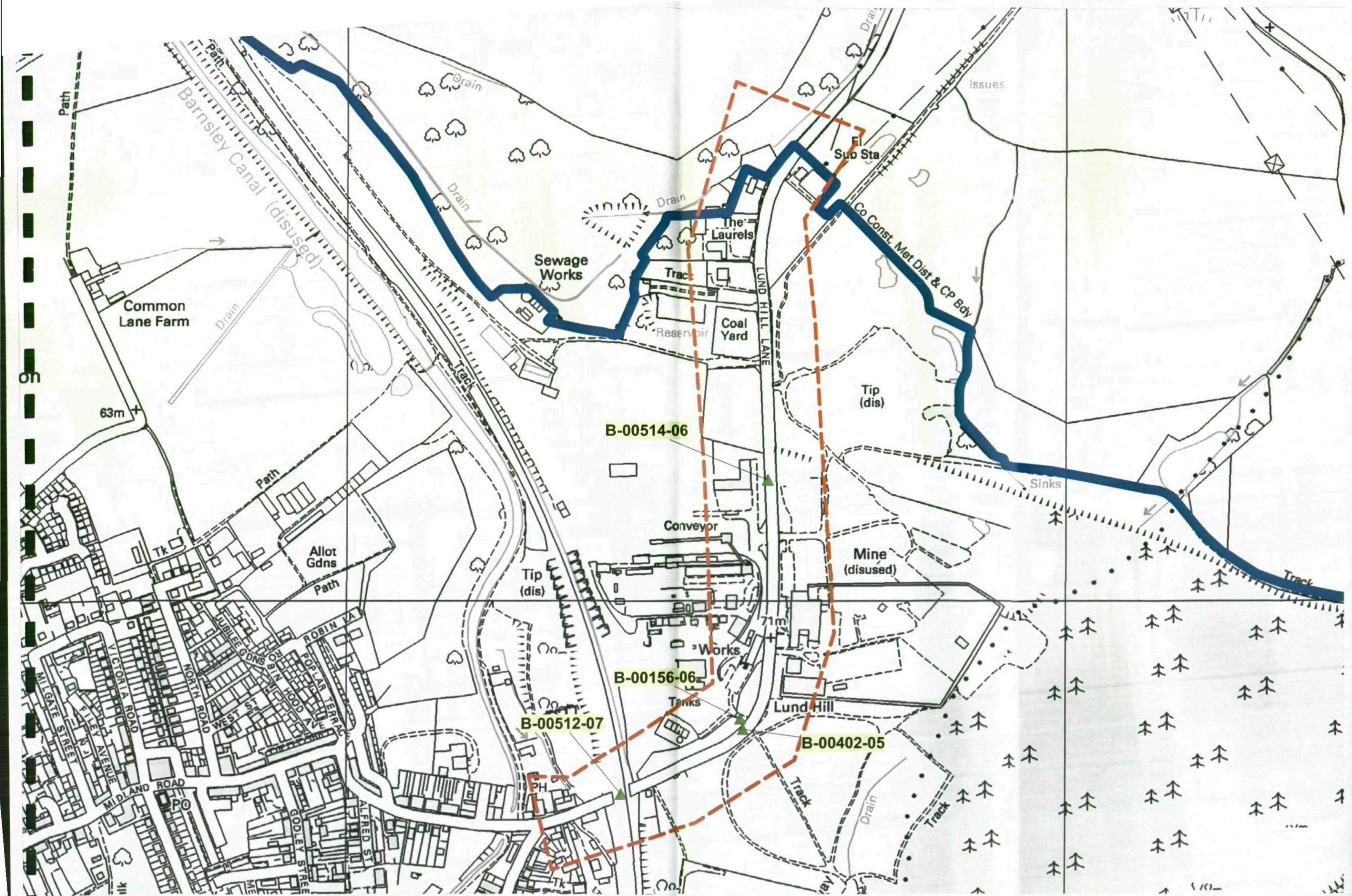
Ped Location:

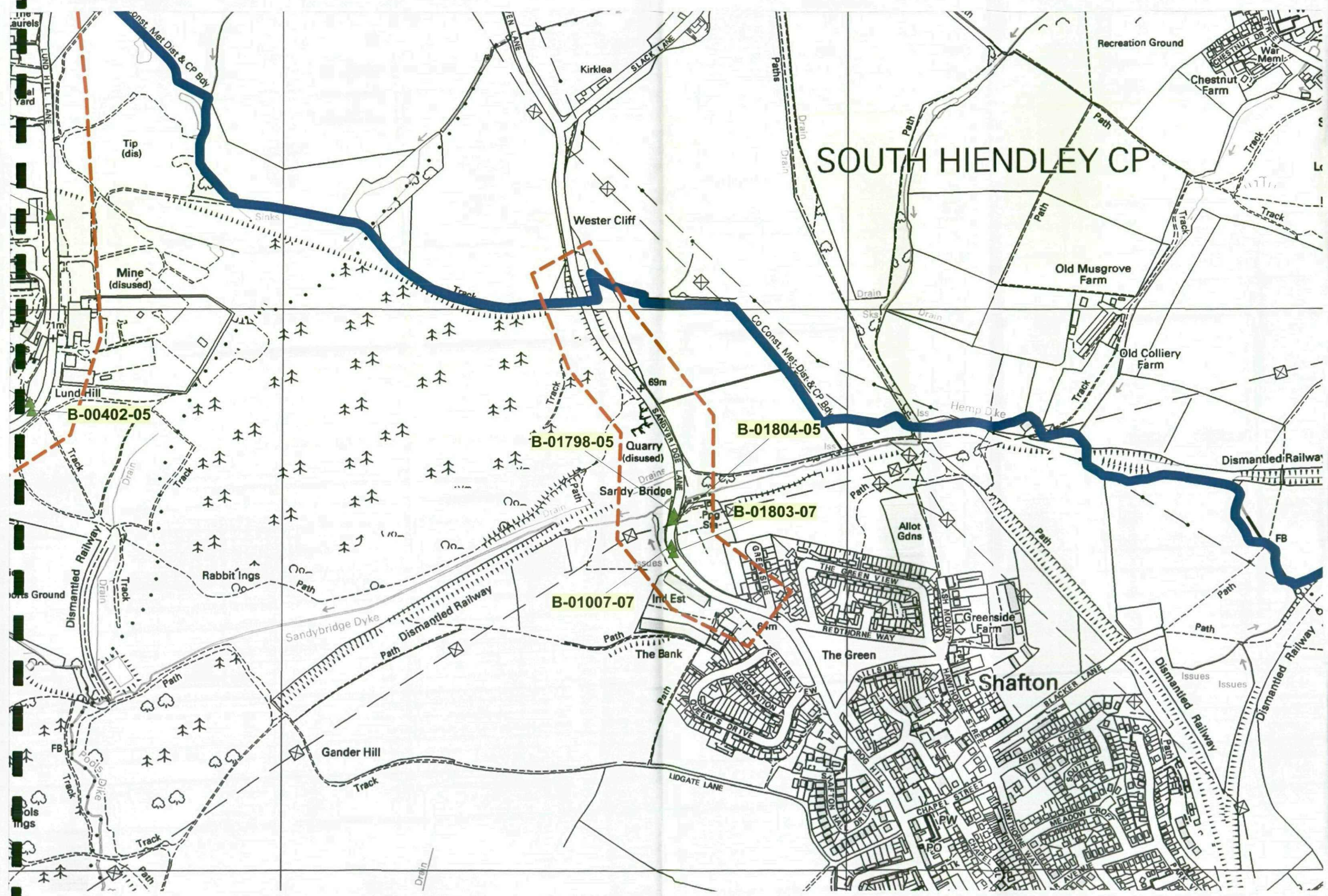
Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only excluding 2-wheels	0	0	8	8
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	8	8

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	6	6
Passenger	0	0	3	3
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	9	9





SOUTH HIENDLEY CP

Shafton

B-00402-05

B-01798-05

B-01804-05

B-01803-07

B-01007-07

APPENDIX G
PICADY Assessments

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)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
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PROGRAM ADVICE AND MAINTENANCE CONTACT:
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
NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"N:\Projects\A039273\calculations\Site Access PICADY\2010 Saturday Peak.vpi"
(give-on-the-left) at 16:09:42 on Tuesday, 25 March 2008

RUN INFORMATION

RUN TITLE: Proposed Country Park Site Access - Saturday Peak
LOCATION: Royston, Barnsley
DATE: 07/03/08
CLIENT:
NUMERATOR: martin.murphy [35-T-048CS]
JOB NUMBER: A039273
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 B6428 Lund Hill Lane (East)
ARM B IS Site Access
ARM C IS B6428 Lund Hill Lane (West)

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

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.60 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B) 100.0 M.
- BLOCKS TRAFFIC	YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 120.0 M.
- VISIBILITY TO RIGHT	(VB-A) 100.0 M.
- LANE 1 WIDTH	(WB-C) 3.25 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

SLOPES AND INTERCEPT

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

Intercept For Stream B-C	Slope For Stream A-C	Opposing Stream A-B
704.08	0.27	0.11

Intercept For Stream B-A	Slope For Stream A-C	Opposing Stream A-B	Slope For Stream C-A	Opposing Stream C-B
581.90	0.26	0.10	0.16	0.37

Intercept For Stream C-B	Slope For Stream A-C	Opposing Stream A-B
631.87	0.24	0.24

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Proposed Country Park Site Access - Saturday 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

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.04	3.06	2.04
ARM B	15.00	45.00	75.00	0.22	0.34	0.22
ARM C	15.00	45.00	75.00	2.08	3.11	2.08

		TURNING PROPORTIONS					
		TURNING COUNTS (VEH/HR)					
		(PERCENTAGE OF H.V.S)					
TIME	FROM/TO	ARM A	ARM B	ARM C			
11.45 - 13.15	ARM A	0.000	0.049	0.951			
		0.0	8.0	155.0			
		(0.0)	(10.0)	(10.0)			
	ARM B	0.500	0.000	0.500			
		9.0	0.0	9.0			
		(10.0)	(0.0)	(10.0)			
	ARM C	0.946	0.054	0.000			
		157.0	9.0	0.0			
		(10.0)	(10.0)	(0.0)			

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)
11.45-12.00									
B-AC	0.23	8.90	0.025		0.00	0.03	0.4		0.12
C-AB	0.14	10.39	0.013		0.00	0.02	0.2		0.10
C-A	1.94								
A-B	0.10								
A-C	1.94								

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)
12.00-12.15									
B-AC	0.27	8.75	0.031		0.03	0.03	0.5		0.12
C-AB	0.17	10.56	0.016		0.02	0.02	0.3		0.10
C-A	2.31								
A-B	0.12								
A-C	2.32								

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-AC	0.33	8.55	0.039		0.03	0.04	0.6		0.12
C-AB	0.22	10.79	0.021		0.02	0.02	0.4		0.09
C-A	2.82								
A-B	0.15								
A-C	2.84								

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-AC	0.33	8.55	0.039		0.04	0.04	0.6		0.12
C-AB	0.22	10.79	0.021		0.02	0.02	0.4		0.09
C-A	2.82								
A-B	0.15								
A-C	2.84								

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-AC	0.27	8.75	0.031		0.04	0.03	0.5		0.12
C-AB	0.17	10.56	0.016		0.02	0.02	0.3		0.10
C-A	2.31								
A-B	0.12								
A-C	2.32								

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-AC	0.23	8.90	0.025		0.03	0.03	0.4		0.12
C-AB	0.14	10.39	0.013		0.02	0.02	0.2		0.10
C-A	1.94								
A-B	0.10								
A-C	1.94								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.0
12.30	0.0
12.45	0.0
13.00	0.0
13.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.0
12.30	0.0
12.45	0.0
13.00	0.0
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING *	* INCLUSIVE QUEUEING *
		* DELAY *	* DELAY *
	(VEH)	(VEH/H)	(MIN)
		(MIN/VEH)	(MIN)
B-AC	24.8	16.5	2.9
C-AB	16.0	10.7	1.8
C-A	212.5	141.7	
A-B	11.0	7.3	
A-C	213.3	142.2	
ALL	477.6	318.4	4.7

* 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

===== end of file =====



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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:-
"N:\Projects\A039273\calculations\Site Access PICADY\2010 Sunday Peak.vpi"
(live-on-the-left) at 16:10:52 on Tuesday, 25 March 2008

RUN TITLE: Proposed Country Park Site Access - Sunday Peak
LOCATION: Royston, Barnsley
DATE: 07/03/08
CLIENT:
NUMERATOR: martin.murphy [35-T-048CS]
JOB NUMBER: A039273
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 B6428 Lund Hill Lane (East)
ARM B IS Site Access
ARM C IS B6428 Lund Hill Lane (West)

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) 6.60 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) 100.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 120.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 100.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) 3.25 M.	I
I	- LANE 2 WIDTH	I	(WB-A) 0.00 M.	I

.SLOPES AND INTERCEPT

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

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	Stream B-C	Stream	A-C	Stream	A-B	I
I	704.08		0.27		0.11	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	Stream B-A	Stream	A-C	Stream	A-B	Stream	C-A	I
I	581.90		0.26		0.10		0.16	I
							0.37	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	Stream C-B	Stream	A-C	Stream	A-B	I
I	631.87		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: Proposed Country Park Site Access - Saturday 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	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	2.25	I	3.38	I	2.25	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	0.94	I	1.41	I	0.94	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	1.91	I	2.87	I	1.91	I

TIME	TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)			
	FROM/TO	ARM A	ARM B	ARM C
11.45 - 13.15	ARM A	0.000	0.133	0.867
		0.0	24.0	156.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.547	0.000	0.453
		41.0	0.0	34.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.863	0.137	0.000
		132.0	21.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)
11.45-12.00									
B-AC	0.94	8.77	0.107		0.00	0.12	1.7		0.13
C-AB	0.31	10.14	0.031		0.00	0.04	0.6		0.10
C-A	1.61								
A-B	0.30								
A-C	1.96								

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)
12.00-12.15									
B-AC	1.12	8.62	0.130		0.12	0.15	2.2		0.13
C-AB	0.39	10.25	0.038		0.04	0.05	0.8		0.10
C-A	1.90								
A-B	0.36								
A-C	2.34								

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-AC	1.38	8.40	0.164		0.15	0.19	2.8		0.14
C-AB	0.50	10.42	0.048		0.05	0.07	1.1		0.10
C-A	2.31								
A-B	0.44								
A-C	2.96								

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-AC	1.38	8.40	0.164		0.19	0.19	2.9		0.14
C-AB	0.50	10.42	0.048		0.07	0.07	1.1		0.10
C-A	2.31								
A-B	0.44								
A-C	2.86								

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-AC	1.12	8.62	0.130		0.19	0.15	2.3		0.13
C-AB	0.39	10.26	0.038		0.07	0.05	0.8		0.10
C-A	1.90								
A-B	0.36								
A-C	2.34								

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-AC	0.94	8.77	0.107		0.15	0.12	1.9		0.13
C-AB	0.31	10.14	0.031		0.05	0.04	0.6		0.10
C-A	1.61								
A-B	0.30								
A-C	1.96								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING *	* INCLUSIVE QUEUEING *
		* DELAY *	* DELAY *
	(VEH)	(VEH/H)	(MIN)
	(VEH)	(MIN/VEH)	(MIN)
B-AC	103.2	68.8	13.8
C-AB	36.0	24.0	4.9
C-A	174.6	116.4	
A-B	33.0	22.0	
A-C	214.7	143.1	
ALL	561.6	374.4	18.8

* 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

===== end of file =====

[Printed at 16:10:56 on 25/03/2008]

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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:-
"N:\Projects\A039273\calculations\Site Access PICADY\2020 Saturday Peak.vpi"
(drive-on-the-left) at 16:11:35 on Tuesday, 25 March 2008

RUN INFORMATION

RUN TITLE: Proposed Country Park Site Access - Saturday Peak
LOCATION: Royston, Barnsley
DATE: 07/03/08
CLIENT:
NUMERATOR: martin.murphy [35-T-048CS]
JOB NUMBER: A039273
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 B6428 Lund Hill Lane (East)
ARM B IS Site Access
ARM C IS B6428 Lund Hill Lane (West)

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) 6.60 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) 100.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 120.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 100.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) 3.25 M.	I
I	- LANE 2 WIDTH	I	(WB-A) 0.00 M.	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	704.08	0.27	0.11	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	581.90	0.26	0.10	0.16	0.37	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	631.87	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: Proposed Country Park Site Access - Saturday 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	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	2.36	I	3.54	I	2.36	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	0.22	I	0.34	I	0.22	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	2.41	I	3.62	I	2.41	I

TIME	TURNING PROPORTIONS					
	TURNING COUNTS (VEH/HR)					
	(PERCENTAGE OF H.V.S)					
FROM/TO	ARM A	ARM B	ARM C			
11.45 - 13.15						
ARM A	0.000	0.042	0.958			
	0.0	8.0	181.0			
	(0.0)	(10.0)	(10.0)			
ARM B	0.500	0.000	0.500			
	9.0	0.0	9.0			
	(10.0)	(0.0)	(10.0)			
ARM C	0.953	0.047	0.000			
	184.0	9.0	0.0			
	(10.0)	(10.0)	(0.0)			

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)
11.45-12.00									
B-AC	0.23	8.78	0.026		0.00	0.03	0.4		0.12
C-AB	0.14	10.54	0.014		0.00	0.02	0.2		0.10
C-A	2.28								
A-B	0.10								
A-C	2.27								

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)
12.00-12.15									
B-AC	0.27	8.61	0.031		0.03	0.03	0.5		0.12
C-AB	0.18	10.74	0.017		0.02	0.02	0.3		0.09
C-A	2.71								
A-B	0.12								
A-C	2.71								

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-AC	0.33	8.37	0.039		0.03	0.04	0.6		0.12
C-AB	0.23	11.01	0.021		0.02	0.03	0.4		0.09
C-A	3.31								
A-B	0.15								
A-C	3.32								

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-AC	0.33	8.37	0.039		0.04	0.04	0.6		0.12
C-AB	0.23	11.01	0.021		0.03	0.03	0.4		0.09
C-A	3.31								
A-B	0.15								
A-C	3.32								

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-AC	0.27	8.61	0.031		0.04	0.03	0.5		0.12
C-AB	0.13	10.74	0.017		0.03	0.02	0.3		0.09
C-A	2.71								
A-B	0.12								
A-C	2.71								

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-AC	0.23	3.78	0.026		0.03	0.03	0.4		0.12
C-AB	0.14	10.54	0.014		0.02	0.02	0.2		0.10
C-A	2.28								
A-B	0.10								
A-C	2.27								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.0
12.30	0.0
12.45	0.0
13.00	0.0
13.15	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.0
12.30	0.0
12.45	0.0
13.00	0.0
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * (MIN)	* INCLUSIVE QUEUEING * (MIN)
			(MIN/VEH)	(MIN/VEH)
B-AC	24.3	16.5	3.0	0.12
C-AB	16.7	11.1	1.8	0.11
C-A	248.9	166.0		
A-B	11.0	7.3		
A-C	249.1	166.1		
ALL	550.6	367.0	4.8	0.01

* 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

===== end of file =====

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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:-
"N:\Projects\A039273\calculations\Site Access PICADY\2020 Sunday Peak.vpi"
(drive-on-the-left) at 16:12:38 on Tuesday, 25 March 2008

RUN INFORMATION

RUN TITLE: Proposed Country Park Site Access - Sunday Peak
LOCATION: Royston, Barnsley
DATE: 07/03/08
CLIENT:
NUMERATOR: martin.murphy [35-T-048CS]
JOB NUMBER: A039273
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 B6428 Lund Hill Lane (East)
ARM B IS Site Access
ARM C IS B6428 Lund Hill Lane (West)

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) 6.60 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) 100.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 120.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 100.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) 3.25 M.	I
I	- LANE 2 WIDTH	I	(WB-A) 0.00 M.	I

.SLOPES AND INTERCEPT

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

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	Stream B-C	Stream	A-C	Stream	A-B	I
I	704.08		0.27		0.11	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	Stream B-A	Stream	A-C	Stream	A-B	Stream	C-A	I
I	581.90		0.26		0.10		0.16	I
							0.37	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	Stream C-B	Stream	A-C	Stream	A-B	I
I	631.87		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: Proposed Country Park Site Access - Saturday 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	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	2.58	I	3.86	I	2.58	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	0.94	I	1.41	I	0.94	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	2.20	I	3.30	I	2.20	I

TIME	TURNING PROPORTIONS					
	TURNING COUNTS (VEH/HR)					
	(PERCENTAGE OF H.V.S)					
	FROM/TO	ARM A	ARM B	ARM C		
11.45 - 13.15	ARM A	0.000	0.117	0.883		
		0.0	24.0	182.0		
		(0.0)	(10.0)	(10.0)		
	ARM B	0.547	0.000	0.453		
		41.0	0.0	34.0		
		(10.0)	(0.0)	(10.0)		
	ARM C	0.881	0.119	0.000		
		155.0	21.0	0.0		
		(10.0)	(10.0)	(0.0)		

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)
11.45-12.00									
B-AC	0.94	8.66	0.109		0.00	0.12	1.7		0.13
C-AB	0.32	10.26	0.032		0.00	0.04	0.6		0.10
C-A	1.89								
A-B	0.30								
A-C	2.28								

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)
12.00-12.15									
B-AC	1.12	8.48	0.133		0.12	0.15	2.2		0.14
C-AB	0.40	10.40	0.039		0.04	0.05	0.8		0.10
C-A	2.23								
A-B	0.36								
A-C	2.73								

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-AC	1.38	8.23	0.167		0.15	0.20	2.9		0.15
C-AB	0.52	10.59	0.049		0.05	0.07	1.1		0.10
C-A	2.71								
A-B	0.44								
A-C	3.34								

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-AC	1.38	8.22	0.167		0.20	0.20	3.0		0.15
C-AB	0.52	10.59	0.049		0.07	0.07	1.1		0.10
C-A	2.71								
A-B	0.44								
A-C	3.34								

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-AC	1.12	8.47	0.133		0.20	0.15	2.4		0.14
C-AB	0.40	10.40	0.039		0.07	0.05	0.8		0.10
C-A	2.23								
A-B	0.36								
A-C	2.73								

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-AC	0.94	8.65	0.109		0.15	0.12	1.9		0.13
C-AB	0.32	10.26	0.032		0.05	0.04	0.6		0.10
C-A	1.88								
A-B	0.30								
A-C	2.28								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	DEMAND (VEH/H)	QUEUEING (MIN)	INCLUSIVE QUEUEING (MIN/VEH)
B-AC	103.2	68.8	14.1	0.14
C-AB	37.4	24.9	5.1	0.14
C-A	204.8	136.6		
A-B	33.0	22.0		
A-C	250.5	167.0		
ALL	629.0	419.4	19.2	0.03

* 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

