

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE  
BARROW, CLITHEROE**

**TRANSPORT STATEMENT**

3 2 0 0 9 0 7 9 1 P

**TTHC**

St James Building  
79 Oxford Street  
Manchester  
M1 6EJ  
Telephone (0161) 235 8600  
Facsimile (0161) 235 8601  
[www.tthc.co.uk](http://www.tthc.co.uk)

TTHC Ref: MH/M06008-01D  
Date: December 2007

## CONTENTS

|                                        | <u>Page No</u> |
|----------------------------------------|----------------|
| 1.0 INTRODUCTION                       | 1              |
| 2.0 DESCRIPTION OF SITE AND LOCAL AREA | 4              |
| 3.0 EXISTING TRAFFIC FLOWS             | 5              |
| 4.0 ACCESSIBILITY                      | 6              |
| 5.0 PROPOSED ACCESS ARRANGEMENT        | 9              |
| 6.0 TRIP GENERATION                    | 10             |
| 7.0 OPERATIONAL ASSESSMENT             | 18             |
| 8.0 CONCLUSION                         | 19             |

## TABLES

|          |                                                                  |
|----------|------------------------------------------------------------------|
| Table 1  | Suggested Acceptable Walking Distances                           |
| Table 2  | Bus services                                                     |
| Table 3  | Office Business Park Trip Generation Rates                       |
| Table 4  | Industrial Unit trip Generation Rates                            |
| Table 5  | Hotel Trip Generation Rates                                      |
| Table 6  | Predicted Consented Business Village Office Trip Generations     |
| Table 7  | Predicted Consented Business Village Industrial Trip Generations |
| Table 8  | Predicted Consented Hotel Trip Generations                       |
| Table 9  | Total Trip Generation for consented development (BASE)           |
| Table 10 | Residential - Houses Trip Generation Rates                       |
| Table 11 | Residential – Flats Trip Generation Rates                        |
| Table 12 | Predicted Nursery Trip Generation Rates                          |
| Table 13 | Predicted Training College Trip Generation Rates                 |
| Table 14 | Predicted Office – Trip Generations – PROPOSED SCHEME            |
| Table 15 | Predicted Residential – Houses- Trip Generations                 |
| Table 16 | Predicted Residential – Flats- Trip Generations                  |
| Table 17 | Predicted Nursery Trip Generations                               |
| Table 18 | Predicted Training College Trip Generations                      |
| Table 19 | Trip Generations for Proposed Scheme                             |
| Table 20 | Total Trip Generations (Base + Proposed Scheme)                  |

## FIGURES

- Figure 1 Site Location Plan
- Figure 2 Local Area Plan
- Figure 3 Existing Traffic Flows
- Figure 4 Location of Personal Injury Accidents
- Figure 5 Existing Bus Services
- Figure 6 2010 Base
- Figure 7 2010 Base + Development

## APPENDICES

- Appendix A Personal Injury Accident Data
- Appendix B Proposed Site Layout
- Appendix C TRICS Output
- Appendix D ARCADY output

## 1.0 INTRODUCTION & BACKGROUND

- 1.1 This Transport Statement has been prepared by TTHC Ltd (TTHC) on behalf of Newclose Properties Limited (NPL), in association with a planning application for the mixed use development of a site at Barrow Brook Business Village, Barrow near Clitheroe. The statement has been prepared for submission to the Local Planning Authority (LPA), Ribble Valley Borough Council (RVBC) and the Local Highway Authority (LHA), Lancashire County Council (LCC).
- 1.2 The location of the application site (the 'Site') is shown in a **Figure 1** and within the context of its local area in **Figure 2**.
- 1.3 The Site itself already benefits from planning consent for 125,000sqft commercial development (approximately 87,000sqft office and 38,000sqft light industrial), all of which would be served from a roundabout access which exists off the A59, as shown in **Figures 1** and **2**.
- 1.4 Some development has already been constructed and is served from this access. This new proposal would also be served for this access.
- 1.5 The remaining land within the vicinity of the Site which would also be served from the roundabout access off the A59 has planning consent for some 311,000sqft of commercial development (approximately 281,000sqft office and 30,000sqft light industrial). There is also a permission for a hotel with circa 60 to 70 rooms.

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

- 1.6 Recently there have been new planning applications relating to the area of which the 311,000sqft consent relates to. One planning application is for 225,000sqft of office development and would replace 231,000sqft of the office/light industrial of which approximately 201,000sqft is office and 30,000sqft is light industrial. Part of the remaining office/light industrial land was granted a new consent in 2006 for a frozen food distribution centre of 30,500sqft. The remaining land has been sold to a developer who intends to submit a planning application for approximately 50,000sqft of offices.
- 1.7 This submission follows a previous application made in February this year for a similar scheme but with access from Whalley Road. Although the principle of such an access had been discussed between NPL and LCC prior to the application being made, LCC's consultation response suggested that they could not support an access from Whalley Road but that they would support a scheme using the A59 access.
- 1.8 The February application was subsequently withdrawn in order to prepare a revised scheme.
- 1.9 Following the preparation of a revised scheme TTHC has had further dialogue and pre – application discussions with LCC regarding the proposals to be served from the A59. These exchanges have included the provision of plans for comment and a review of layout details such as pedestrian and cycle provision, which have since been confirmed as being consistent with LCC policy.
- 1.10 The proposed development is a mixed use scheme which comprises residential units, Live/Work units, a nursery, office units and the 'Aspire Centre' which is a vocational training centre.
- 1.11 The proposed residential component will consist of 55 units, (34 houses ranging between 2 to 4 bedrooms and 21 flats consisting of 1 or 2 bedrooms). 31 Live/Work units are also proposed.

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

- 1.12 As indicated, the Site already benefits from a commercial development consent comprising 125,000sqft served via the A59 access. This application would reduce the overall office floorspace to 21,378sqft (building includes 3,143sqft of associated A3 use), a 4,822sqft children's nursery, the Aspire centre totalling 14,004sqft and the work element of the Live work unit totally 18,192sqft. Overall this application will provide 58,396sqft of commercial floorspace
- 1.13 The remainder of this statement provides information under the following headings:
- Description of the Site and Local Area
  - Existing Traffic Flows and Conditions
  - Proposed Access
  - Trip Generation
  - Accessibility
  - Conclusion
- 1.14 We will commence with a description of the site and local area.

## 2.0 DESCRIPTION OF SITE AND LOCAL AREA

- 2.1 The Site is located within the centre of Barrow adjacent to Whalley Road and the A59. The application Site itself is currently undeveloped, although it does benefit from an existing planning consent for commercial development and there has been other associated adjacent development which has been implemented within the last five years, namely the Printworks office building, a McDonalds and a petrol station with supermarket.
- 2.2 There is an existing roundabout access into the Site off the A59 and which currently serves the existing uses.
- 2.3 As discussed in Section 1, the existing consent provides for all the commercial development to be served via the road network from the A59.
- 2.4 The A59 is a dual carriageway serves a distribution road function with connections to Preston to the West and Skipton to the East. It is subject to a 70mph speed limit.
- 2.5 Whalley Road forms the western boundary of the site. To the East of the Site there are employment uses and north and south within the wider surrounding area the predominant land use is residential.
- 2.6 The Site is situated within 200m of the bus stops located along Whalley Road and within 500m of the local primary school. **Figure 2** shows the bus stops and other facilities.
- 2.7 Having described the Site and its local area, we will now discuss existing traffic flows and conditions.

### 3.0 EXISTING TRAFFIC FLOWS & CONDITIONS

- 3.1 Traffic surveys have been undertaken at the existing Site access junction off the A59 on Monday 5<sup>th</sup> November 2007 during the morning and evening highway peak periods of 0730 to 0930 hours and 1630 to 1830 hours.
- 3.2 The existing peak hour traffic flows are indicated in **Figures 3** for the AM and PM peak hours respectively.
- 3.3 The peak directional flows are 1366 and 1247 vehicles in the AM and PM peak hours respectively. Both the A59 and the roundabout access junction operate well within capacity with no material queuing or delays.
- 3.4 Personal Injury Accident (PIA) data has been obtained for the area of interest for the last five years. A copy of the accident data is attached in **Appendix A** which includes a summary table. A plot of the accidents is provided in **Figure 4**.
- 3.5 In total, along the 1.7km section of A59 within the area of assessment, there have been 4 PIA's within the last five years. 3 of these occurred within close proximity to the Site access roundabout.
- 3.6 3 out of the 4 accidents within the area of interest resulted in 'Slight' casualties. The other accident which occurred resulted in a 'Serious' classification. None of the accidents involved pedestrian casualties and none of the accidents involved cyclist.
- 3.7 There is no particular pattern or common factor between the accidents which have been examined and the records do not suggest any fundamental safety issues.
- 3.8 Having described the existing traffic flows and conditions, we will now discuss the accessibility.

#### 4.0 ACCESSIBILITY

- 4.1 With regard to non-car modes of travel, the Site benefits from its close proximity to the bus stops as indicated in **Figure 2**.
- 4.2 In order to access the bus services on Whalley Road from the proposed development there is a proposed cycle and pedestrian link from the residential area on to Whalley Road as shown on the Proposed Site layout plan contained in **Appendix B**.
- 4.3 The Site is also within 500m of the local primary school.
- 4.4 The Site's accessibility has been examined with reference to walking distances to and from sources of public transport and local facilities.
- 4.5 The Institute of Highways and Transportation (IHT) produced their 'Guidelines for Journeys on Foot' in 2000 which suggests that around 80% of walk journeys and walk stages in urban areas are less than 1 mile with the average length of a walk journey being just 1km (0.6 miles).
- 4.6 This guidance also provides 'suggested acceptable walking distances'. For commuting, school and sightseeing trip purposes, the walking thresholds presented in **Table 1** below are suggested:

| Suggested Acceptable Walking Distances |                                     |               |
|----------------------------------------|-------------------------------------|---------------|
|                                        | Commuting, school & Sightseeing (m) | Elsewhere (m) |
| Desirable                              | 500                                 | 400           |
| Acceptable                             | 1000                                | 800           |
| Preferred maximum                      | 2000                                | 1200          |

**TABLE 1**

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

- 4.7 The Department for Environment, Transport and Region's (DETR's) 'Planning for Sustainable Development Towards Better Practise' document suggests an 'easy walking distance' as being up to 800m. Although this distance is defined as 'easy walking distance' in respect of a walking trip to the town centre, TTHC consider this to represent the maximum that should be expected in terms of a walk to a bus stop, with 400 to 500m representing the 'desirable' limit.
- 4.8 With respect to these thresholds, it should be noted that the application site is well within desirable walking distance to the bus stops, and the school.
- 4.9 With regard to the destinations available from the bus stops, a plot of the existing bus services has been prepared and is shown in **Figure 5** and a summary of those services is available in the **Table 2** below.

| Bus Service Summary Table |                                  | Monday – Friday |               |         | Sat     | Sun    |
|---------------------------|----------------------------------|-----------------|---------------|---------|---------|--------|
| Service                   | Route                            | 08:00 - 09:00   | 17:00 - 18:00 | Daily   | Daily   | Daily  |
| 5                         | Longridge - Clitheroe            | 0 (0)           | 1 (0)         | 5 (6)   | 5 (6)   | 0 (0)  |
| 21                        | Clitheroe - Colne - Trawden      | 0               | 0             | 3       | 2       | 1      |
| 22                        | Clitheroe - Burnley              | 1               | 1             | 5       | 3       | 0      |
| 23                        | Clitheroe - Colne                | 0               | 1             | 5       | 4       | 12     |
| 26                        | Colne - Clitheroe                | 2               | 1             | 15      | 13      | 7      |
| 27                        | Colne - Clitheroe                | 1               | 1             | 14      | 14      | 6      |
| 28                        | Clitheroe - Colne - Barnoldswick | 1               | 0             | 9       | 9       | 0      |
| 29                        | Clitheroe - Colne - Barnoldswick | 0               | 0             | 7       | 9       | 0      |
| 225                       | Bolton - Blackburn - Clitheroe   | 2 (2)           | 2 (2)         | 26 (25) | 24 (22) | 9 (0)  |
| 225                       | Blackburn - Clitheroe            | 0 (0)           | 0 (0)         | 4 (6)   | 5 (6)   | 2 (2)  |
| 225                       | Darwen - Blackburn - Clitheroe   | 0 (0)           | 0 (0)         | 2 (0)   | 2 (2)   | 13 (6) |
| 231                       | Accrington - Clitheroe           | 0 (1)           | 0 (0)         | 0 (7)   | 0 (0)   | 0 (0)  |
| 241                       | Accrington - Clitheroe           | 1 (1)           | 0 (1)         | 7 (7)   | 7 (7)   | 0 (0)  |
| 280                       | Preston-Clitheroe-Barnoldswick   | 0 (0)           | 0 (0)         | 2 (2)   | 2 (2)   | 0 (0)  |
| 280/X80                   | Preston – Clitheroe – Skipton    | 0 (0)           | 1 (1)         | 9 (9)   | 9 (9)   | 2 (2)  |
| 280/X80                   | Preston - Clitheroe              | 0 (0)           | 0 (0)         | 0 (1)   | 0 (1)   | 3 (3)  |
| X80                       | Whalley - Skipton                | 1 (0)           | 0 (0)         | 1 (0)   | 1 (0)   | 0 (0)  |

**Table 2**

Stated direction (reverse direction)

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

- 4.10 As shown, the existing services available from within 200m of the Site provide access to all of the nearby towns, including Clitheroe, Preston, Colne, Bolton and Blackburn. This is important not only in respect of serving the proposed residential components but also in terms of access for students to the Aspire Centre.
- 4.11 The table of frequencies presented above also show that these provide a total of 177 buses per day during the week, with good provision during the peaks as well as during shopping periods.
- 4.12 There are also additional School - only bus services to those mentioned in **Table 2** which provide services for near by schools.
- 4.13 Overall, the Site is considered to have good accessibility for non-car modes.

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

**5.0 PROPOSED ACCESS ARRANGEMENT**

5.1 A copy of the proposed Site Layout Plan is attached to this statement in **Appendix B**.

5.2 As shown, vehicular access to the proposals would be via the existing access which serves the Printworks, McDonalds and a petrol station with supermarket from the A59.

5.3 The Aspire Centre and commercial components of the scheme would be served via separate spurs off the access road.

5.4 As the access continues into the proposed residential area the carriageway width reduces from 7.3m to 5.5m and then to 4.5m with an adjacent shared foot/cycle path, which then leads to a shared surface route. A separate foot/cycle path connection is provided through to Whalley Road.

5.5 Having described the proposed access arrangements, we will now discuss the likely trip generation.

## **6.0 TRIP GENERATION**

6.1 This section examines the trip generation of the proposed mixed use development which would be accessed via the A59.

### **Base Scenario**

6.2 In order to produce a suitable Base Scenario, the total consented (but not yet built out) development for the whole of the Barrow Brook Business Village needs to be added to the existing traffic movements. The current consented development includes 436,000sqft commercial development consent of which 368,000sqft is office and 68,000sqft is light industrial.

6.3 Trip rates have been derived for the proposed residential use based on sites within the TRICS database 2007b.

6.4 In order to produce robust trip generation rates, the generations for each day from each site have been averaged before averaging the combined data from each of the Sites. This methodology avoids any weighting of the average by any one particular site.

6.5 The resulting trip generation rates from this exercise are presented in **Table 3** to **9** below and the relevant output from the TRICS database is attached in **Appendix C**.

**Office Business Park Trip Generation Rates**

| <b>AM Peak Hour</b> |                  |                |                   |              |
|---------------------|------------------|----------------|-------------------|--------------|
| <b>Land Use</b>     | <b>Trip Rate</b> | <b>Arrival</b> | <b>Departures</b> | <b>Total</b> |
| Office              | Trips/GFA        | 1.45           | 0.24              | 1.69         |
| <b>PM Peak Hour</b> |                  |                |                   |              |
| <b>Land Use</b>     | <b>Trip Rate</b> | <b>Arrival</b> | <b>Departures</b> | <b>Total</b> |
| Office              | Trips/GFA        | 0.13           | 1.05              | 1.18         |

**Table 3**

### Industrial Unit Trip Generation Rates

| AM Peak Hour |           |         |            |       |
|--------------|-----------|---------|------------|-------|
| Land Use     | Trip Rate | Arrival | Departures | Total |
| Office       | Trips/GFA | 1.33    | 0.32       | 1.65  |
| PM Peak Hour |           |         |            |       |
| Land Use     | Trip Rate | Arrival | Departures | Total |
| Office       | Trips/GFA | 0.14    | 0.96       | 1.10  |

Table 4

### Hotel Trip Generation Rates

| AM Peak Hour |                |         |            |       |
|--------------|----------------|---------|------------|-------|
| Land Use     | Trip Rate      | Arrival | Departures | Total |
| Hotel        | Trips/Bedrooms | 0.213   | 0.263      | 0.476 |
| PM Peak Hour |                |         |            |       |
| Land Use     | Trip Rate      | Arrival | Departures | Total |
| Hotel        | Trips/Bedrooms | 0.239   | 0.186      | 0.425 |

Table 5

6.6 The above trip rates have been applied to the consented commercial floorspace to produce the Trips in **Table 6 to 8** below.

### Predicted Consented Business Village Trip Generation

| AM Peak Hour             |               |         |            |       |
|--------------------------|---------------|---------|------------|-------|
| Site                     | Trip Rate     | Arrival | Departures | Total |
| Application Site         | GFA 8,082sqm  | 117     | 19         | 136   |
| Remaining consented Land | GFA 26,105sqm | 379     | 63         | 442   |
| PM Peak Hour             |               |         |            |       |
| Site                     | Trip Rate     | Arrival | Departures | Total |
| Application Site         | GFA 8,082sqm  | 11      | 85         | 96    |
| Remaining consented Land | GFA 26,105sqm | 34      | 274        | 308   |

Table 6

**Predicted Consented Business Village Industrial Trip Generation**

| AM Peak Hour             |              |         |            |       |
|--------------------------|--------------|---------|------------|-------|
| Site                     | Trip Rate    | Arrival | Departures | Total |
| Application Site         | GFA 3,530sqm | 47      | 11         | 58    |
| Remaining consented Land | GFA 2,787sqm | 37      | 9          | 45    |
| PM Peak Hour             |              |         |            |       |
| Site                     | Trip Rate    | Arrival | Departures | Total |
| Application Site         | GFA 3,530sqm | 5       | 34         | 39    |
| Remaining consented Land | GFA 2,787sqm | 4       | 27         | 31    |

**Table 7**

**Predicted Consented Hotel Trip Generation**

| AM Peak Hour |             |         |            |       |
|--------------|-------------|---------|------------|-------|
| Land Use     | Trip Rate   | Arrival | Departures | Total |
| Hotel        | 65 Bedrooms | 14      | 17         | 31    |
| PM Peak Hour |             |         |            |       |
| Land Use     | Trip Rate   | Arrival | Departures | Total |
| Hotel        | 65 bedrooms | 16      | 12         | 28    |

**Table 8**

6.7 The combined trip generation totals for the current planning consent are summarised in **Table 9** below:

**Total Trip Generation for Consented Development - BASE**

| AM Peak Hour                 |  |         |            |       |
|------------------------------|--|---------|------------|-------|
| Land Use                     |  | Arrival | Departures | Total |
| Total planning consent trips |  | 594     | 119        | 713   |
| PM Peak Hour                 |  |         |            |       |
| Land Use                     |  | Arrival | Departures | Total |
| Total planning consent trips |  | 70      | 432        | 502   |

**Table 9**

- 6.8 These trips have been added to the Existing traffic flows from **Figure 3** to produce the 'Base' flows presented in **Figure 6**, which have also been growth to the assumed completion year of 2010.

### Proposed Development

- 6.9 In order to assess the net effect of the proposals, the trips relating to the residential, live/work, nursery and Aspire Centre components need to be added to the Base, with appropriate adjustments to 'remove' the office component which this application would replace (21,378sqft).
- 6.10 In terms of the trip rates for the proposed uses, these have again been derived from TRICS and are set out in **Tables 10 to 13**.

#### Residential - Houses Trip Generation Rates

| AM Peak Hour |                 |         |            |       |
|--------------|-----------------|---------|------------|-------|
| Land Use     | Trip Rate       | Arrival | Departures | Total |
| Residential  | Trips/household | 0.16    | 0.38       | 0.54  |
| PM Peak Hour |                 |         |            |       |
| Land Use     | Trip Rate       | Arrival | Departures | Total |
| Residential  | Trips/household | 0.36    | 0.22       | 0.58  |

Table 10

#### Residential - Flats Trip Generation Rates

| AM Peak Hour |                 |         |            |       |
|--------------|-----------------|---------|------------|-------|
| Land Use     | Trip Rate       | Arrival | Departures | Total |
| Residential  | Trips/household | 0.05    | 0.26       | 0.31  |
| PM Peak Hour |                 |         |            |       |
| Land Use     | Trip Rate       | Arrival | Departures | Total |
| Residential  | Trips/household | 0.25    | 0.13       | 0.38  |

Table 11

### Nursery Trip Generation Rates

| AM Peak Hour |           |         |            |       |
|--------------|-----------|---------|------------|-------|
| Land Use     | Trip Rate | Arrival | Departures | Total |
| Nursery      | Trips/GFA | 6.83    | 6.26       | 13.09 |
| PM Peak Hour |           |         |            |       |
| Land Use     | Trip Rate | Arrival | Departures | Total |
| Nursery      | Trips/GFA | 2.31    | 3.07       | 5.38  |

Table 12

### Training College Trip Generation Rates

| AM Peak Hour |           |         |            |       |
|--------------|-----------|---------|------------|-------|
| Land Use     | Trip Rate | Arrival | Departures | Total |
| College      | Trips/GFA | 1.20    | 0.32       | 1.52  |
| PM Peak Hour |           |         |            |       |
| Land Use     | Trip Rate | Arrival | Departures | Total |
| College      | Trips/GFA | 0.43    | 0.73       | 1.16  |

Table 13

6.11

The trip rates set out in Table 3 and in Tables 10 to 13 have then been applied to the proposed uses in order to produce the estimated trip generations set out below in Table 14 to 18:

### Predicted Office Trip Generation

| AM Peak Hour |               |         |            |       |
|--------------|---------------|---------|------------|-------|
| Land Use     | Trip Rate     | Arrival | Departures | Total |
| Office       | GFA -1986sqm  | 29      | 5          | 34    |
| PM Peak Hour |               |         |            |       |
| Land Use     | Trip Rate     | Arrival | Departures | Total |
| Office       | GFA – 1986sqm | 3       | 21         | 24    |

Table 14

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

**Predicted (houses) Trip Generations**

| <b>AM Peak Hour</b>      |          |                 |                   |              |
|--------------------------|----------|-----------------|-------------------|--------------|
| <b>Land Use Schedule</b> |          | <b>Arrivals</b> | <b>Departures</b> | <b>Total</b> |
| Residential              | 34 units | 5               | 13                | 18           |
| <b>PM Peak Hour</b>      |          |                 |                   |              |
| <b>Land Use Schedule</b> |          | <b>Arrivals</b> | <b>Departures</b> | <b>Total</b> |
| Residential              | 34 units | 12              | 7                 | 19           |

**Table 15**

**Predicted (flats) Trip Generations**

| <b>AM Peak Hour</b>      |                      |                 |                   |              |
|--------------------------|----------------------|-----------------|-------------------|--------------|
| <b>Land Use Schedule</b> |                      | <b>Arrivals</b> | <b>Departures</b> | <b>Total</b> |
| Residential              | 21 units + 31 'Live' | 3               | 14                | 17           |
| <b>PM Peak Hour</b>      |                      |                 |                   |              |
| <b>Land Use Schedule</b> |                      | <b>Arrivals</b> | <b>Departures</b> | <b>Total</b> |
| Residential              | 21 units + 31 'Live' | 13              | 7                 | 20           |

**Table 16**

**Predicted Nursery Trip Generation**

| <b>AM Peak Hour</b> |                  |                |                   |              |
|---------------------|------------------|----------------|-------------------|--------------|
| <b>Land Use</b>     | <b>Trip Rate</b> | <b>Arrival</b> | <b>Departures</b> | <b>Total</b> |
| Nursery             | GFA – 448sqm     | 31             | 28                | 59           |
| <b>PM Peak Hour</b> |                  |                |                   |              |
| <b>Land Use</b>     | <b>Trip Rate</b> | <b>Arrival</b> | <b>Departures</b> | <b>Total</b> |
| Nursery             | GFA – 448sqm     | 10             | 14                | 24           |

**Table 17**

**Predicted Training College Trip Generation**

| AM Peak Hour |             |         |            |       |
|--------------|-------------|---------|------------|-------|
| Land Use     | Trip Rate   | Arrival | Departures | Total |
| College      | GFA 1301sqm | 16      | 4          | 20    |
| PM Peak Hour |             |         |            |       |
| Land Use     | Trip Rate   | Arrival | Departures | Total |
| College      | GFA 1301sqm | 6       | 10         | 16    |

**Table 18**

6.12 The combined trip generation totals for the full development are summarised in **Table 19** below:

**Trip Generations for Proposed Scheme**

| AM Peak Hour      |  |          |            |       |
|-------------------|--|----------|------------|-------|
| Land Use Schedule |  | Arrivals | Departures | Total |
| All development   |  | 55       | 59         | 114   |
| PM Peak Hour      |  |          |            |       |
| Land Use Schedule |  | Arrivals | Departures | Total |
| All development   |  | 41       | 38         | 79    |

**Table 19**

**Total Trip Generations (Base + Proposed Scheme)**

| AM Peak Hour      |  |          |            |       |
|-------------------|--|----------|------------|-------|
| Land Use Schedule |  | Arrivals | Departures | Total |
| All development   |  | 471      | 131        | 602   |
| PM Peak Hour      |  |          |            |       |
| Land Use Schedule |  | Arrivals | Departures | Total |
| All development   |  | 79       | 339        | 418   |

**Table 20**

**PROPOSED MIXED USE DEVELOPMENT  
BARROW BROOK BUSINESS VILLAGE, BARROW, CLITHEROE  
TRANSPORT STATEMENT**

- 6.13 The trips in **Table 20** have been added to the Base trips presented in **Figure 6** (after the removal of the consented trip which this scheme would replace) to produce the Base plus development trip presented in **Figure 7**. It should be noted that because the proposals for the application Site generate less traffic than that which already has permission, the 'net' effect of the scheme would be to reduce overall traffic volumes when compared to the 'Base' scenario.
- 6.14 Clearly, the traffic implications of the proposed mixed use development scheme will therefore be less than that of the Base.
- 6.15 Having described the potential trip generation of the Site, we will now discuss operational assessment and results.

## 7.0 OPERATIONAL ASSESSMENT AND RESULTS

7.1 For the purpose of this testing work an assessment year of 2010 has been selected for operational analyses as it is reasonable to expect that the proposed development would be completed in this timescale.

7.2 The 2010 flows presented in **Figure 6** and **7** were factored to 2010 using the DETR's National Road Traffic Forecasts ('NRTF') total traffic - low growth indices.

### **A59 Site Access Operational Results.**

7.3 Although it is clear that the flows generated by the proposed use of the Site access are unlikely to result in any operational difficulties, for completeness a full set of ARCADY assessments have been undertaken. A copy of the full ARCADY output is provided in **Appendix D**, which includes a summary of the results.

7.4 These tests have been undertaken adopting the default 'surge' demand profiles, which assume a simultaneous increase of +12.5% in the central half hour of the peak. This is a robust assumption for the peak hour assessments as it assumes a peak within a peak.

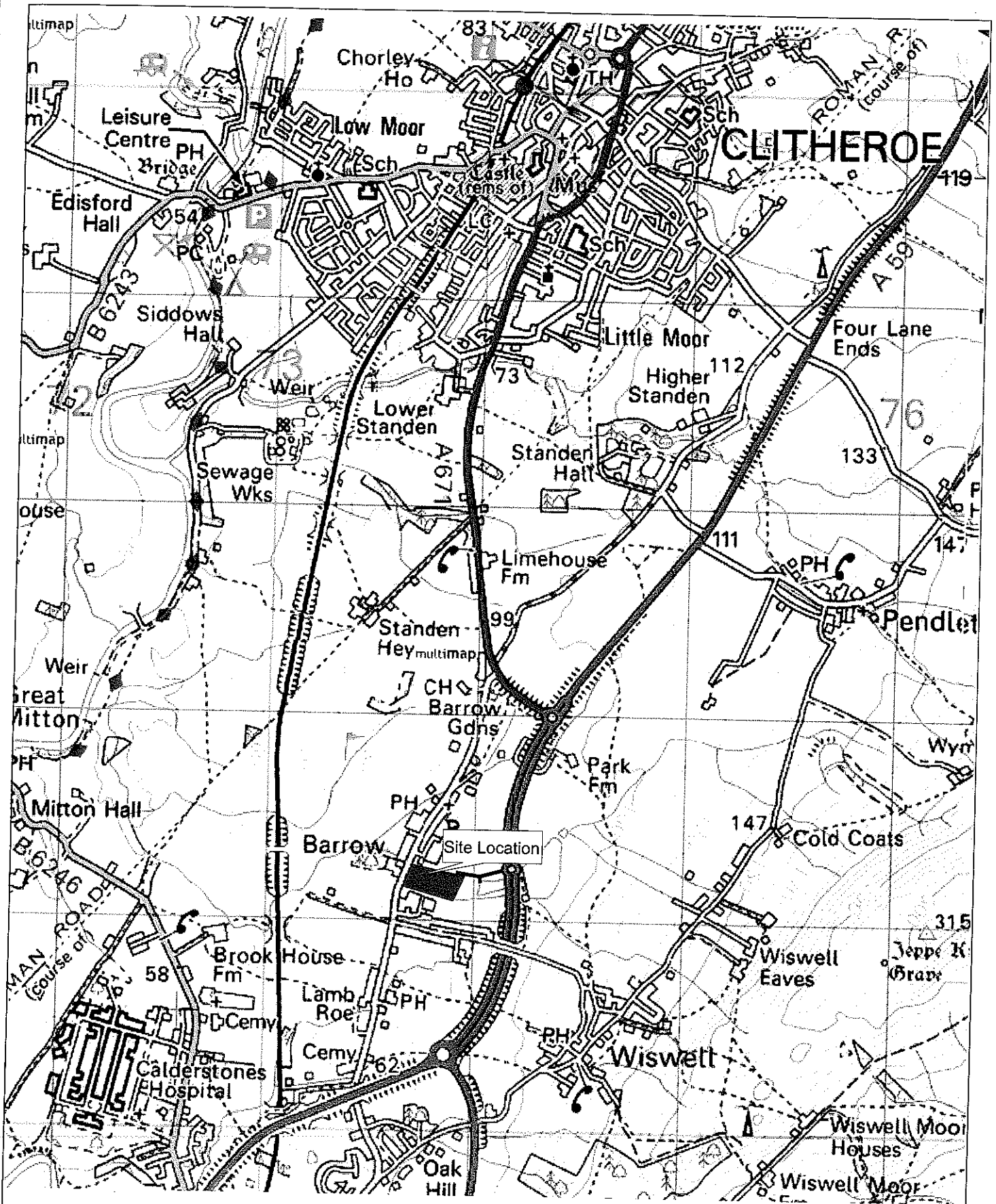
7.5 As shown, the tests indicate that the roundabout junction access would readily accommodate the traffic generated by the proposed development in 2010 in both the AM and PM peak hours with minimal queuing. All Ratios of Flow to Capacity (RFC's) would be well within the design threshold of 0.85.

7.6 Indeed, the proposals would result in a slightly improved operational performance over the 'Base' scenario.

## **8.0 CONCLUSIONS**

- 8.1 This statement has examined the transport related implications of a proposed mixed use development of undeveloped land off A59, Barrow.
- 8.2 The Site already benefits from planning consent for commercial development, all of which would be served from a roundabout access which exists off the A59.
- 8.3 It has been demonstrated that the existing flows in the area are low and that the likely trip generation from the Site can easily be accommodated on the local network without detriment to its operation.
- 8.4 It has also been demonstrated that the proposed development would have good non-car accessibility in accordance with local and national policy guidance.
- 8.5 It is therefore concluded that there are no transport related issues which should prevent the proposals from proceeding.

## FIGURES

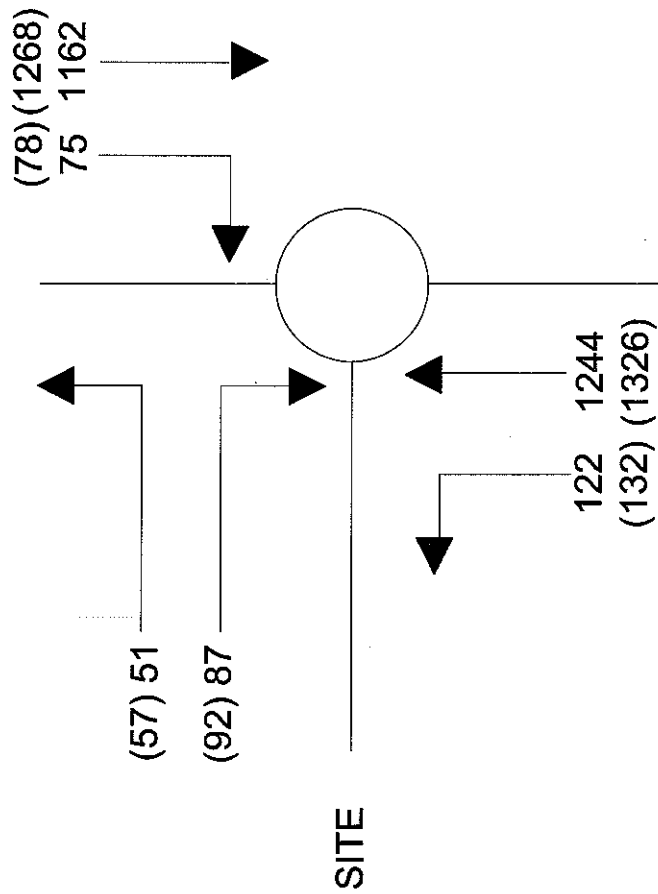


**tthc**

the Traffic, Transport  
& Highway Consultancy

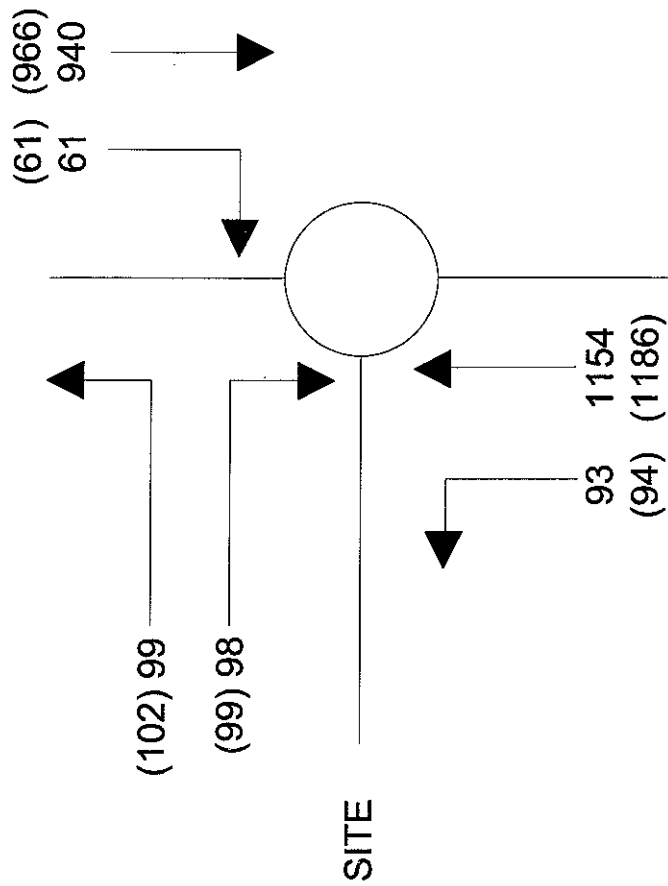
|                            |                        |                               |          |
|----------------------------|------------------------|-------------------------------|----------|
| Drawing No<br>M06008-C-003 | Rev                    | BARROW BROOK BUSINESS VILLAGE |          |
| Date<br>FEB 07             | Rev Date               | SITE LOCATION PLAN            |          |
| Drawn By<br>GB             | Authorised<br>INITIALS | Scale<br>SCALE                | FIGURE 1 |

AM PEAK



VEH (PCUS):

PM PEAK



VEH (PCUS):



the Traffic, Transport  
& Highway Consultancy

Drawing No.

M06008-A-013

Rev

Date

NOV 07

Rev Date

Drawn By

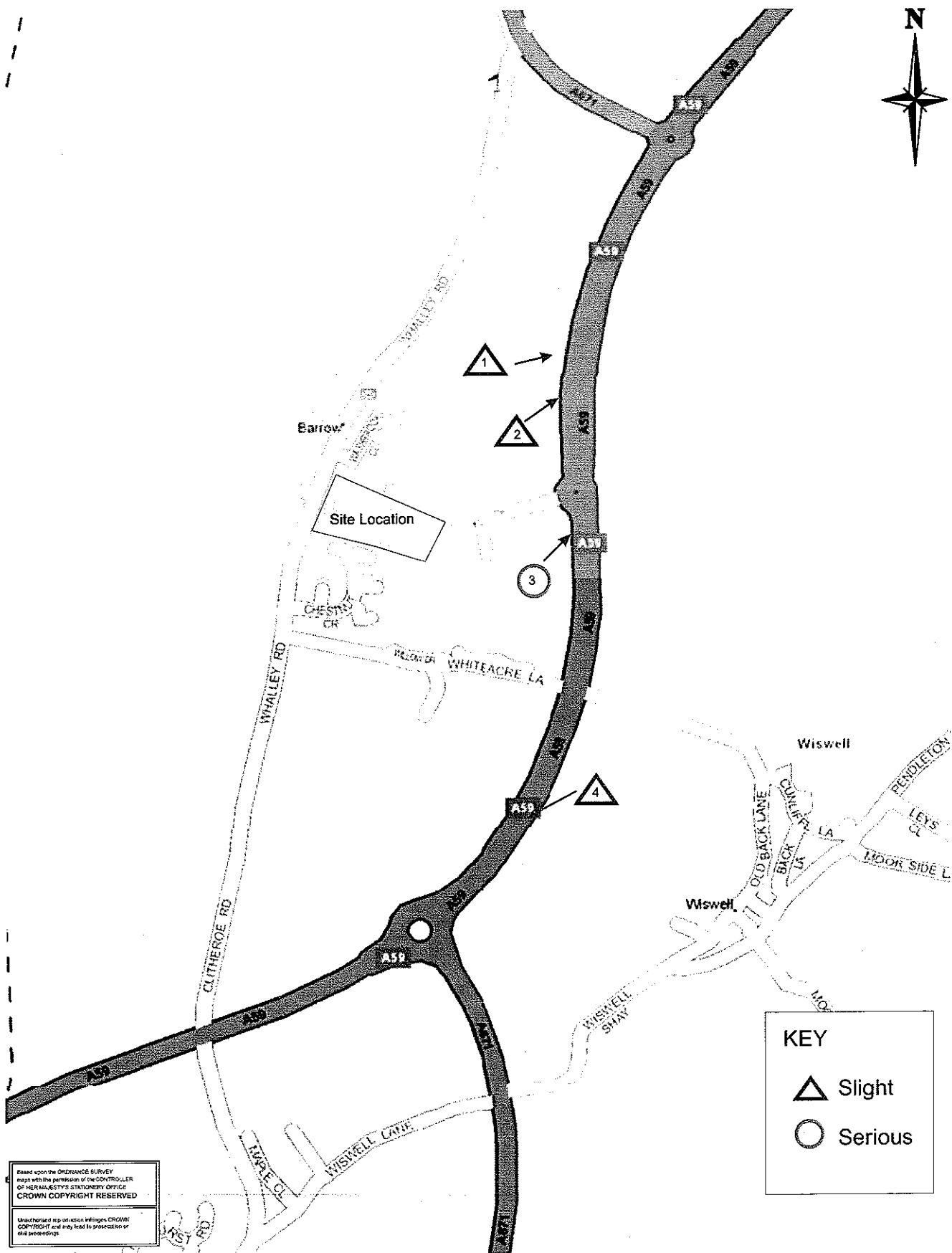
Authorised

Scale

BARROW BROOK BUSINESS VILLAGE

EXISTING TRAFFIC FLOWS

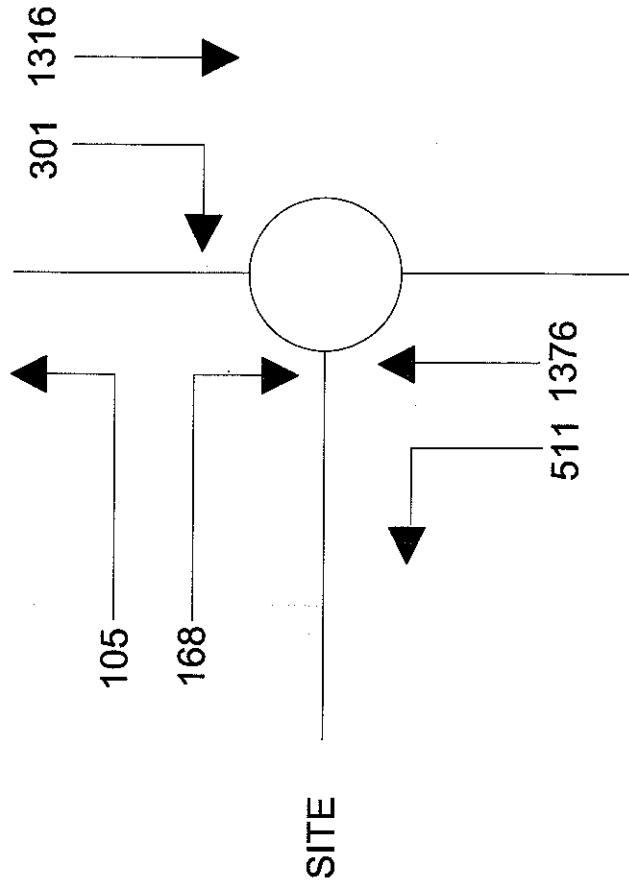
FIGURE 3



|                                                                                                                                       |                  |          |                                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------------------------------------|--|
| <br>the Traffic, Transport<br>& Highway Consultancy | Drawing No       | Rev      | BARROW BROOK BUSINESS VILLAGE         |  |
|                                                                                                                                       | M06008 - C - 012 |          |                                       |  |
|                                                                                                                                       | Date             | Rev Date | LOCATION OF PERSONAL INJURY ACCIDENTS |  |
|                                                                                                                                       | NOV 2007         |          |                                       |  |
| Drawn By                                                                                                                              | Authorised       | Scale    | FIGURE 4                              |  |
|                                                                                                                                       | MWI              | NTS      |                                       |  |

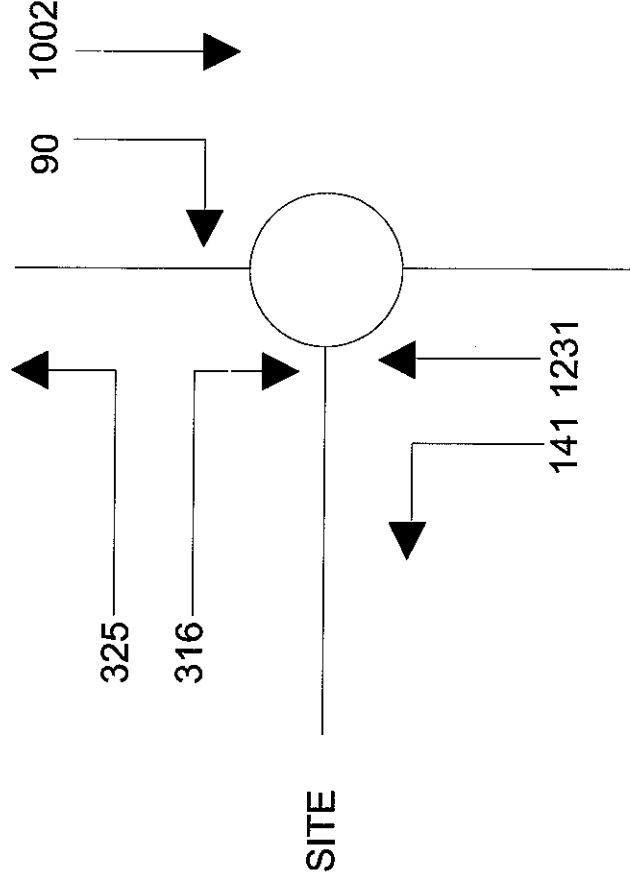


# AM PEAK



PCUS:

# PM PEAK



PCUS:



Drawing No.

M06008-A-011

Rev

Rev Date

Date NOV 07

Authorised

Scale

BARROW BROOK BUSINESS VILLAGE

2010BASE TRAFFIC FLOWS

FIGURE 6

## **APPENDIX A**

### Accident summary table

|                 | Accident<br>Number |        | Severity | Date      | Day       | Time  | Pedestrian | Cyclist | No. of<br>vehicles |
|-----------------|--------------------|--------|----------|-----------|-----------|-------|------------|---------|--------------------|
| Whalley<br>Road | 1                  | E08281 | Slight   | 21-Apr-03 | Monday    | 10:45 | -          | -       | 1                  |
|                 | 2                  | E0691  | Slight   | 02-Sep-03 | Sunday    | 12:31 | -          | -       | 1                  |
|                 | 3                  | E0305  | Serious  | 07-Apr-01 | Saturday  | 22:30 | -          | -       | 1                  |
|                 | 4                  | E0268  | Slight   | 21-Apr-04 | Wednesday | 17:20 | -          | -       | 1                  |

ACCIDENT RECORD FOR A59 FROM RAILWAY BRIDGE TO A671

DIVISION, ACC NO & ACC CLASS: EN E0281 SLIGHT

DATE & TIME: MON 21APR2003 1045

OFFICER DEALING: 00861 BIRCH

LOCATION DETAILS: A0059 CLITHEROE BYPASS

METERAGE: 5740

MAP REFERENCE: 37424000

43851000

JUNCTION: U RIBBLE VALLEY BUSINESS PARK

DISTANCE & DIRECTION FROM JCTN:

NATURE OF ACCIDENT: VEH 1 LOSES CONTROL EXITING ROUNDABOUT AND COLLIDES WITH  
CENTRAL RESERVATION AND OVERTURNS

CONDIIONS: WEATHER: Rain SURFACE: Wet

LIGHTING: Day\_Lgt\_Over\_7m

NO OF VEHICLES: 1 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:  
1 Car Str\_ahead\_other

NO OF CASUALTIES: 1 CASUALTY NO: SEVERITY:  
1 Slight

DIVISION, ACC NO & ACC CLASS: EN E0295 SLIGHT

DATE & TIME: WED 05MAY2004 0800

OFFICER DEALING: 01320 BOLTON

LOCATION DETAILS: A0059 CLITHEROE BY-PASS

METERAGE: 6001

MAP REFERENCE: 37555000

44073000

JUNCTION: U PENDLE ROAD

DISTANCE & DIRECTION FROM JCTN:

NATURE OF ACCIDENT: V1 PULLS OUT OF SIDE ROAD INTO PATH OF V2

CONDIIONS: WEATHER: Fine SURFACE: Dry

LIGHTING: Day\_Lgt\_Over\_7m

NO OF VEHICLES: 2 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:  
1 Car Turning\_right  
2 Car Str\_ahead\_other

NO OF CASUALTIES: 3 CASUALTY NO: SEVERITY:  
1 Slight  
2 Slight  
3 Slight

ACCIDENT RECORD FOR A59 FROM RAILWAY BRIDGE TO A671

DIVISION, ACC NO & ACC CLASS: EN E0626 SLIGHT

DATE & TIME: FRI 22AUG2003 1409

OFFICER DEALING: 01029 GREENWOOD

LOCATION DETAILS: A0059 CLITHEROE BY PASS

METERAGE: 5901

MAP REFERENCE: 37506000

43986000

JUNCTION: U PENDLE ROAD

DISTANCE & DIRECTION FROM JCTN:

NATURE OF ACCIDENT: V1 TURNS RIGHT OUT OF JUNCTION INTO PATH OF ONCOMING V2  
DUE TO THIS V1 COLLIDED INTO V1

CONDITIONS: WEATHER: Fine SURFACE: Dry

LIGHTING: Day\_Lgt\_Over\_7m

NO OF VEHICLES: 2 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:

1 Car Turning\_right

2 Car Str\_ahead\_other

NO OF CASUALTIES: 1 CASUALTY NO: SEVERITY:

1 Slight

DIVISION, ACC NO & ACC CLASS: EN E0642 SLIGHT

DATE & TIME: TUE 02SEP2003 1256

OFFICER DEALING: 00132 PLAITER

LOCATION DETAILS: A0059 BARROW LINK ROAD

METERAGE: 5713

MAP REFERENCE: 37421000

43823000

JUNCTION: U RIBBLE VALLEY IND ESTATE LINK ROAD

DISTANCE & DIRECTION FROM JCTN:

NATURE OF ACCIDENT: VEH 1 TRAVELS EAST ON A59 APPROACHES BARROW LINK R/O  
TAKES O/S/ANE CLIPS KERB OF R/ABOUT WITH O/S FRONT WHEEL  
SKIPS INTO ARMCO BARRIER ON OUTSIDE OF R/ABOUT COMES  
TO STOP

CONDITIONS: WEATHER: Fine SURFACE: Dry

LIGHTING: Day\_Lgt\_Over\_7m

NO OF VEHICLES: 1 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:

1 Car Str\_ahead\_L\_bend

NO OF CASUALTIES: 2 CASUALTY NO: SEVERITY:

1 Slight

2 Slight

ACCIDENT RECORD FOR A59 FROM RAILWAY BRIDGE TO A671

.....

DIVISION, ACC NO & ACC CLASS: EN E0305 SERIOUS

DATE & TIME: SAT 07APR2001 2230

OFFICER DEALING: 01866 TAYLOR

LOCATION DETAILS: A0059 BARROW LINK ROAD

METERAGE: 5700

MAP REFERENCE: 37420000

43810000

JUNCTION: U NEW ACCESS ROAD TO INDUSTRIAL EST

DISTANCE & DIRECTION FROM JCTN:

NATURE OF ACCIDENT: V1 4WD FAILS TO NEGOTIATE ROUNDABOUT, STRIKES N/S KERB  
LOSSES CONTROL AND VEHICLE ROLLS OVER

CONDITIONS: WEATHER: Fine SURFACE: Dry  
LIGHTING: Ngt\_Lgt\_Over\_7m

NO OF VEHICLES: 1 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:  
1 Car Str\_ahead\_other

NO OF CASUALTIES: 5 CASUALTY NO: SEVERITY:  
1 Serious  
2 Slight  
3 Slight  
4 Slight  
5 Slight

.....

DIVISION, ACC NO & ACC CLASS: EN E0307 SLIGHT

DATE & TIME: SUN 09APR2000 0740

OFFICER DEALING: 01115 SPOUSE

LOCATION DETAILS: A0059 CLITHEROE BY PASS

METERAGE: 6001

MAP REFERENCE: 37555000

44073000

JUNCTION: U PENDLE ROAD

DISTANCE & DIRECTION FROM JCTN:

NATURE OF ACCIDENT: VEH 1 TURNING RIGHT ONTO MAIN ROAD FAILS TO SEE  
OVERTAKING VEH 2 AND COLLIDES IN MIDDLE OF JUNCTION

CONDITIONS: WEATHER: Fine SURFACE: Dry  
LIGHTING: Day\_Lgt\_Over\_7m

NO OF VEHICLES: 2 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:  
1 Car Turning\_right  
2 Car Str\_ahead\_other

NO OF CASUALTIES: 2 CASUALTY NO: SEVERITY:  
1 Slight  
2 Slight

.....

ACCIDENT RECORD FOR A59 FROM RAILWAY BRIDGE TO A671

DIVISION, ACC NO & ACC CLASS: EN E0262 SLIGHT

DATE & TIME: FRI 23APR2004 1055

OFFICER DEALING: 00081 BIRCH

LOCATION DETAILS: A0059 CLITHEROE BY-PASS

METERAGE: 6015

MAP REFERENCE: 37557000

44078000

JUNCTION: U U

DISTANCE & DIRECTION FROM JCIN:

NATURE OF ACCIDENT: VEHICLE 1 SALOON CROSSES MAIN ROAD IN FRONT OF VEHICLE 3  
APPROACHING FROM OFFSIDE & TURNING LEFT VEHICLE 2  
SALOON OVERTAKES VEHICLE 3 & COLLIDES WITH VEHICLE 1 IN  
CARRIAGEWAY

CONDITIONS: WEATHER: Fine SURFACE: Dry

LIGHTING: Day\_Lgt\_Over\_7m

NO OF VEHICLES: 3 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:  
1 Car Moving\_from\_parked  
2 M\_cycle\_under\_125 Str\_ahead\_other  
3 Car Turning\_left  
NO OF CASUALTIES: 3 CASUALTY NO: SEVERITY:  
1 Slight  
2 Slight  
3 Slight

DIVISION, ACC NO & ACC CLASS: EN E0268 SLIGHT

DATE & TIME: WED 21APR2004 1720

OFFICER DEALING: 01663 WRIGHT

LOCATION DETAILS: A0059 WHALLEY - CLITHEROE BY PASS

METERAGE: 5860

MAP REFERENCE: 37481000

43954000

JUNCTION: A671

DISTANCE & DIRECTION FROM JCIN: 0300 M PENDLETON

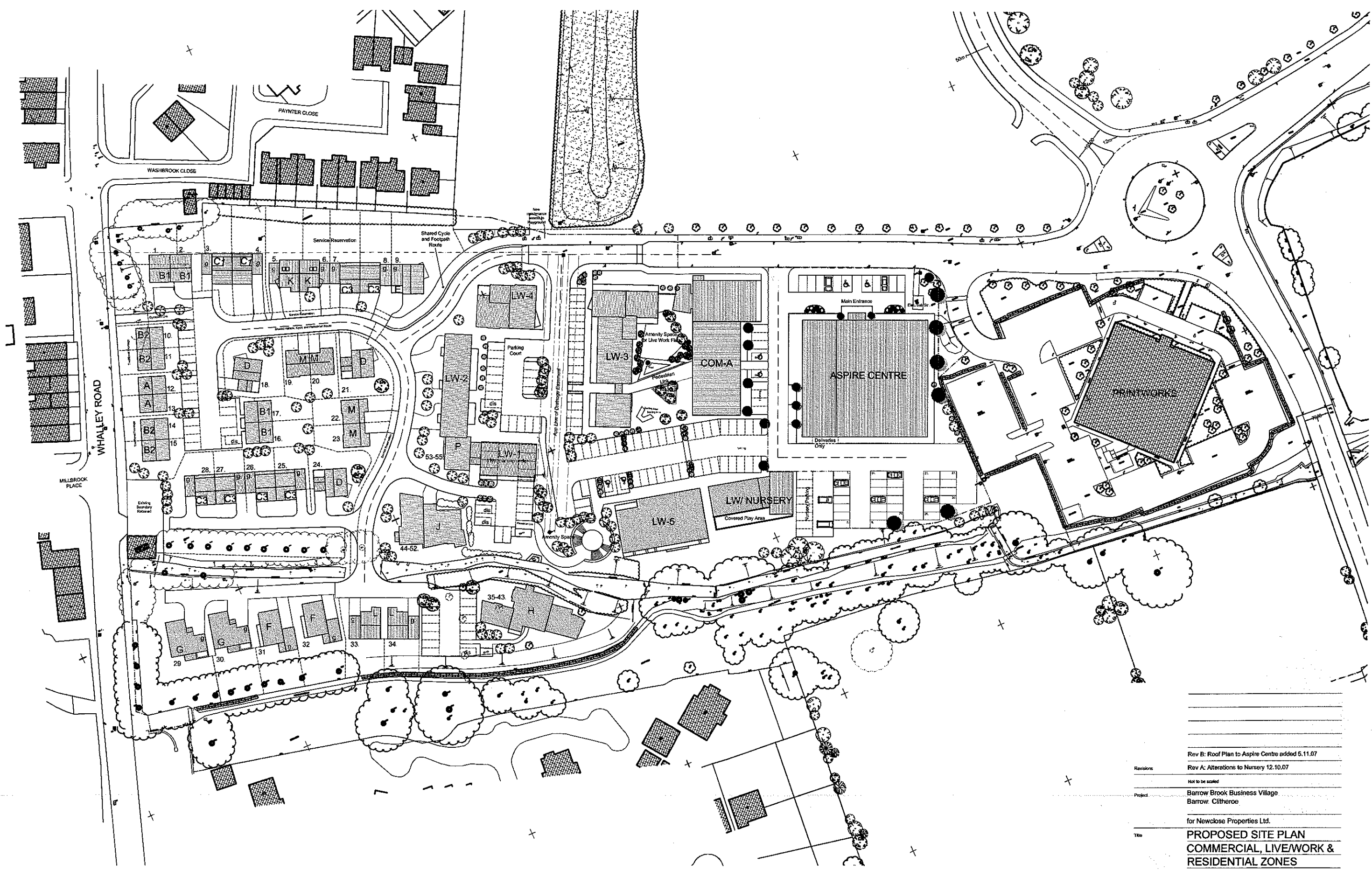
NATURE OF ACCIDENT: V1 LEAVES ROAD TO NEARSIDE AND COLLIDES WITH LAMPOST

CONDITIONS: WEATHER: Fine SURFACE: Dry

LIGHTING: Day\_Lgt\_Over\_7m

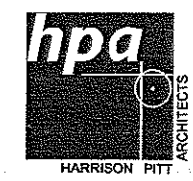
NO OF VEHICLES: 1 VEHICLE NO: VEHICLE TYPE: MANOEUVRES:  
1 Car Str\_ahead\_other  
NO OF CASUALTIES: 1 CASUALTY NO: SEVERITY:  
1 Slight

## APPENDIX B



|                  |                                                                                 |
|------------------|---------------------------------------------------------------------------------|
| Revisions        | Rev B: Roof Plan to Aspire Centre added 5.11.07                                 |
|                  | Rev A: Alterations to Nursery 12.10.07                                          |
| Not to be scaled |                                                                                 |
| Project          | Barrow Brook Business Village<br>Barrow, Cumbria                                |
|                  | for Newclose Properties Ltd.                                                    |
| Title            | <b>PROPOSED SITE PLAN<br/>COMMERCIAL, LIVE/WORK &amp;<br/>RESIDENTIAL ZONES</b> |
| Drawing number   | 1355-500 B 1:500 10/07                                                          |

VICTORIA COURT  
PENNY STREET  
LANCASTER  
LA1 1XN  
TEL: 01524 32479  
FAX: 01524 32470  
hpa@hparch.co.uk



## APPENDIX C

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 02 - EMPLOYMENT  
Category : B - BUSINESS PARK

**VEHICLES**Selected regions and areas:**02 SOUTH EAST**

OX OXFORDSHIRE 1 days

**06 WEST MIDLANDS**

WM WEST MIDLANDS 1 days

**Main parameter selection:**

Parameter: Gross floor area  
Range: 30042 to 33105 (units: sqm)

Date Range: 01/01/99 to 10/02/06

Selected survey days:

Tuesday 1 days  
Friday 1 days

Selected survey types:

Manual count 2 days  
Directional ATC Count 0 days

LIST OF SITES relevant to selection parameters

- |          |                   |                                |                      |
|----------|-------------------|--------------------------------|----------------------|
| <b>1</b> | <b>OX-02-B-01</b> | <b>BUSINESS PARK, OXFORD</b>   | <b>OXFORDSHIRE</b>   |
|          |                   | GARSINGTON ROAD                |                      |
|          |                   | COWLEY                         |                      |
|          |                   | OXFORD                         |                      |
|          |                   | Total Gross floor area:        | 33105 sqm            |
|          |                   | Survey date: TUESDAY           | 21/10/03             |
| <b>2</b> | <b>WM-02-B-01</b> | <b>BUSINESS PARK, COVENTRY</b> | <b>WEST MIDLANDS</b> |
|          |                   | COURTALD WAY                   |                      |
|          |                   | FOLESHILL                      |                      |
|          |                   | COVENTRY                       |                      |
|          |                   | Total Gross floor area:        | 30042 sqm            |
|          |                   | Survey date: FRIDAY            | 10/02/06             |
|          |                   |                                | Survey Type: MANUAL  |

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

**VEHICLES**

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |              |              | DEPARTURES |              |              | TOTALS   |              |              |
|---------------|----------|--------------|--------------|------------|--------------|--------------|----------|--------------|--------------|
|               | No. Days | Ave. GFA     | Trip Rate    | No. Days   | Ave. GFA     | Trip Rate    | No. Days | Ave. GFA     | Trip Rate    |
| 00:00 - 00:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 00:30 - 01:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 01:00 - 01:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 01:30 - 02:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 02:00 - 02:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 02:30 - 03:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 03:00 - 03:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 03:30 - 04:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 04:00 - 04:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 04:30 - 05:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 05:00 - 05:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 05:30 - 06:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 06:00 - 06:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 06:30 - 07:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 07:00 - 07:30 | 2        | 31574        | 0.154        | 2          | 31574        | 0.032        | 2        | 31574        | 0.186        |
| 07:30 - 08:00 | 2        | 31574        | 0.461        | 2          | 31574        | 0.070        | 2        | 31574        | 0.531        |
| 08:00 - 08:30 | 2        | 31574        | 0.732        | 2          | 31574        | 0.108        | 2        | 31574        | 0.840        |
| 08:30 - 09:00 | 2        | <b>31574</b> | <b>0.754</b> | 2          | 31574        | 0.130        | 2        | <b>31574</b> | <b>0.884</b> |
| 09:00 - 09:30 | 2        | 31574        | 0.535        | 2          | 31574        | 0.155        | 2        | 31574        | 0.690        |
| 09:30 - 10:00 | 2        | 31574        | 0.348        | 2          | 31574        | 0.174        | 2        | 31574        | 0.522        |
| 10:00 - 10:30 | 2        | 31574        | 0.152        | 2          | 31574        | 0.105        | 2        | 31574        | 0.257        |
| 10:30 - 11:00 | 2        | 31574        | 0.141        | 2          | 31574        | 0.114        | 2        | 31574        | 0.255        |
| 11:00 - 11:30 | 2        | 31574        | 0.147        | 2          | 31574        | 0.114        | 2        | 31574        | 0.261        |
| 11:30 - 12:00 | 2        | 31574        | 0.122        | 2          | 31574        | 0.139        | 2        | 31574        | 0.261        |
| 12:00 - 12:30 | 2        | 31574        | 0.171        | 2          | 31574        | 0.302        | 2        | 31574        | 0.473        |
| 12:30 - 13:00 | 2        | 31574        | 0.261        | 2          | 31574        | 0.301        | 2        | 31574        | 0.562        |
| 13:00 - 13:30 | 2        | 31574        | 0.293        | 2          | 31574        | 0.390        | 2        | 31574        | 0.683        |
| 13:30 - 14:00 | 2        | 31574        | 0.242        | 2          | 31574        | 0.188        | 2        | 31574        | 0.430        |
| 14:00 - 14:30 | 2        | 31574        | 0.147        | 2          | 31574        | 0.196        | 2        | 31574        | 0.343        |
| 14:30 - 15:00 | 2        | 31574        | 0.166        | 2          | 31574        | 0.204        | 2        | 31574        | 0.370        |
| 15:00 - 15:30 | 2        | 31574        | 0.135        | 2          | 31574        | 0.252        | 2        | 31574        | 0.387        |
| 15:30 - 16:00 | 2        | 31574        | 0.086        | 2          | 31574        | 0.282        | 2        | 31574        | 0.368        |
| 16:00 - 16:30 | 2        | 31574        | 0.059        | 2          | 31574        | 0.348        | 2        | 31574        | 0.407        |
| 16:30 - 17:00 | 2        | 31574        | 0.090        | 2          | 31574        | 0.447        | 2        | 31574        | 0.537        |
| 17:00 - 17:30 | 2        | 31574        | 0.057        | 2          | <b>31574</b> | <b>0.595</b> | 2        | 31574        | 0.652        |
| 17:30 - 18:00 | 2        | 31574        | 0.071        | 2          | 31574        | 0.477        | 2        | 31574        | 0.548        |
| 18:00 - 18:30 | 2        | 31574        | 0.040        | 2          | 31574        | 0.293        | 2        | 31574        | 0.333        |
| 18:30 - 19:00 | 2        | 31574        | 0.017        | 2          | 31574        | 0.133        | 2        | 31574        | 0.150        |
| 19:00 - 19:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 19:30 - 20:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 20:00 - 20:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 20:30 - 21:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 21:00 - 21:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 21:30 - 22:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 22:00 - 22:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 22:30 - 23:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 23:00 - 23:30 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| 23:30 - 24:00 | 0        | 0            | 0.000        | 0          | 0            | 0.000        | 0        | 0            | 0.000        |
| Total Rates:  |          |              | 5.381        |            |              | 5.549        |          |              | 10.930       |

**Parameter summary**

|                                          |                            |
|------------------------------------------|----------------------------|
| Trip rate parameter range selected:      | 30042 - 33105 (units: sqm) |
| Survey date range:                       | 01/01/99 - 10/02/06        |
| 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                          |

RANK ORDER for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK  
**VEHICLES**

Ranking Type: **ARRIVALS** Time Range: 08:00-09:00  
 Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area          | Day | Date     | Trip Rate |
|------|------------|-------------------------|---------------|-----|----------|-----------|
| 1    | OX-02-B-01 | BUSINESS PARK, OXFORD   | OXFORDSHIRE   | Tue | 21/10/03 | 2.099     |
| 2    | WM-02-B-01 | BUSINESS PARK, COVENTRY | WEST MIDLANDS | Fri | 10/02/06 | 0.809     |

RANK ORDER for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 08:00-09:00  
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area          | Day | Date     | Trip Rate |
|------|------------|-------------------------|---------------|-----|----------|-----------|
| 1    | WM-02-B-01 | BUSINESS PARK, COVENTRY | WEST MIDLANDS | Fri | 10/02/06 | 0.273     |
| 2    | OX-02-B-01 | BUSINESS PARK, OXFORD   | OXFORDSHIRE   | Tue | 21/10/03 | 0.205     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK  
**VEHICLES**

Ranking Type: **ARRIVALS** Time Range: 17:00-18:00  
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area          | Day | Date     | Trip Rate |
|------|------------|-------------------------|---------------|-----|----------|-----------|
| 1    | OX-02-B-01 | BUSINESS PARK, OXFORD   | OXFORDSHIRE   | Tue | 21/10/03 | 0.187     |
| 2    | WM-02-B-01 | BUSINESS PARK, COVENTRY | WEST MIDLANDS | Fri | 10/02/06 | 0.063     |

RANK ORDER for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 17:00-18:00  
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area          | Day | Date     | Trip Rate |
|------|------------|-------------------------|---------------|-----|----------|-----------|
| 1    | OX-02-B-01 | BUSINESS PARK, OXFORD   | OXFORDSHIRE   | Tue | 21/10/03 | 1.492     |
| 2    | WM-02-B-01 | BUSINESS PARK, COVENTRY | WEST MIDLANDS | Fri | 10/02/06 | 0.609     |

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 02 - EMPLOYMENT  
Category : C - INDUSTRIAL UNIT

**VEHICLES**Selected regions and areas:

03 SOUTH WEST

DC DORSET

2 days

**Main parameter selection:**

Parameter: Gross floor area  
Range: 3035 to 4600 (units: sqm)

Date Range: 01/01/99 to 11/10/01

Selected survey days:

Tuesday 1 days  
Thursday 1 days

Selected survey types:

Manual count 2 days  
Directional ATC Count 0 days

TTHC Oxford Street Manchester

Licence No: 734101

LIST OF SITES relevant to selection parameters

- |          |                                                  |                                    |                     |
|----------|--------------------------------------------------|------------------------------------|---------------------|
| <b>1</b> | <b>DC-02-C-02</b>                                | <b>NEWSPAPER HQ, WEYMOUTH</b>      | <b>DORSET</b>       |
|          | HAMPSHIRE ROAD<br>CHICKERELL<br>WEYMOUTH         |                                    |                     |
|          | Total Gross floor area: 3035 sqm                 |                                    |                     |
|          | Survey date: TUESDAY 04/07/00                    |                                    | Survey Type: MANUAL |
| <b>2</b> | <b>DC-02-C-05</b>                                | <b>ULTRA ELECTRONICS, WEYMOUTH</b> | <b>DORSET</b>       |
|          | HAMPSHIRE ROAD<br>GRANBY IND. ESTATE<br>WEYMOUTH |                                    |                     |
|          | Total Gross floor area: 4600 sqm                 |                                    |                     |
|          | Survey date: THURSDAY 11/10/01                   |                                    | Survey Type: MANUAL |

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

**VEHICLES**

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |              | DEPARTURES |             |              | TOTALS   |             |              |
|---------------|----------|-------------|--------------|------------|-------------|--------------|----------|-------------|--------------|
|               | No. Days | Ave. GFA    | Trip Rate    | No. Days   | Ave. GFA    | Trip Rate    | No. Days | Ave. GFA    | Trip Rate    |
| 00:00 - 00:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 00:30 - 01:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 01:00 - 01:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 01:30 - 02:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 02:00 - 02:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 02:30 - 03:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 03:00 - 03:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 03:30 - 04:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 04:00 - 04:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 04:30 - 05:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 05:00 - 05:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 05:30 - 06:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 06:00 - 06:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 06:30 - 07:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 07:00 - 07:30 | 2        | 3818        | 0.196        | 2          | 3818        | 0.026        | 2        | 3818        | 0.222        |
| 07:30 - 08:00 | 2        | 3818        | 0.694        | 2          | 3818        | 0.092        | 2        | 3818        | 0.786        |
| 08:00 - 08:30 | 2        | 3818        | 0.524        | 2          | 3818        | 0.092        | 2        | 3818        | 0.616        |
| 08:30 - 09:00 | 2        | <b>3818</b> | <b>0.773</b> | 2          | 3818        | 0.210        | 2        | <b>3818</b> | <b>0.983</b> |
| 09:00 - 09:30 | 2        | 3818        | 0.236        | 2          | 3818        | 0.065        | 2        | 3818        | 0.301        |
| 09:30 - 10:00 | 2        | 3818        | 0.118        | 2          | 3818        | 0.065        | 2        | 3818        | 0.183        |
| 10:00 - 10:30 | 2        | 3818        | 0.196        | 2          | 3818        | 0.236        | 2        | 3818        | 0.432        |
| 10:30 - 11:00 | 2        | 3818        | 0.170        | 2          | 3818        | 0.157        | 2        | 3818        | 0.327        |
| 11:00 - 11:30 | 2        | 3818        | 0.236        | 2          | 3818        | 0.223        | 2        | 3818        | 0.459        |
| 11:30 - 12:00 | 2        | 3818        | 0.170        | 2          | 3818        | 0.196        | 2        | 3818        | 0.366        |
| 12:00 - 12:30 | 2        | 3818        | 0.236        | 2          | 3818        | 0.288        | 2        | 3818        | 0.524        |
| 12:30 - 13:00 | 2        | 3818        | 0.314        | 2          | 3818        | 0.511        | 2        | 3818        | 0.825        |
| 13:00 - 13:30 | 2        | 3818        | 0.472        | 2          | 3818        | 0.275        | 2        | 3818        | 0.747        |
| 13:30 - 14:00 | 2        | 3818        | 0.406        | 2          | 3818        | 0.157        | 2        | 3818        | 0.563        |
| 14:00 - 14:30 | 2        | 3818        | 0.144        | 2          | 3818        | 0.183        | 2        | 3818        | 0.327        |
| 14:30 - 15:00 | 2        | 3818        | 0.170        | 2          | 3818        | 0.105        | 2        | 3818        | 0.275        |
| 15:00 - 15:30 | 2        | 3818        | 0.236        | 2          | 3818        | 0.210        | 2        | 3818        | 0.446        |
| 15:30 - 16:00 | 2        | 3818        | 0.170        | 2          | 3818        | 0.223        | 2        | 3818        | 0.393        |
| 16:00 - 16:30 | 2        | 3818        | 0.157        | 2          | 3818        | 0.550        | 2        | 3818        | 0.707        |
| 16:30 - 17:00 | 2        | 3818        | 0.157        | 2          | <b>3818</b> | <b>0.694</b> | 2        | 3818        | 0.851        |
| 17:00 - 17:30 | 2        | 3818        | 0.079        | 2          | 3818        | 0.602        | 2        | 3818        | 0.681        |
| 17:30 - 18:00 | 2        | 3818        | 0.039        | 2          | 3818        | 0.314        | 2        | 3818        | 0.353        |
| 18:00 - 18:30 | 2        | 3818        | 0.052        | 2          | 3818        | 0.275        | 2        | 3818        | 0.327        |
| 18:30 - 19:00 | 2        | 3818        | 0.026        | 2          | 3818        | 0.105        | 2        | 3818        | 0.131        |
| 19:00 - 19:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 19:30 - 20:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 20:00 - 20:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 20:30 - 21:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 21:00 - 21:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 21:30 - 22:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 22:00 - 22:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 22:30 - 23:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 23:00 - 23:30 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 23:30 - 24:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| Total Rates:  |          |             | 5.971        |            |             | 5.854        |          |             | 11.825       |

### Parameter summary

|                                          |                          |
|------------------------------------------|--------------------------|
| Trip rate parameter range selected:      | 3035 - 4600 (units: sqm) |
| Survey date date range:                  | 01/01/99 - 11/10/01      |
| 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                        |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

**VEHICLES**

Ranking Type: **ARRIVALS**

Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description              | Area   | Day | Date     | Trip Rate |
|------|------------|--------------------------|--------|-----|----------|-----------|
| 1    | DC-02-C-02 | NEWSPAPER HQ, WEYMOUTH   | DORSET | Tue | 04/07/00 | 1.483     |
| 2    | DC-02-C-05 | ULTRA ELECTRONICS, WEYMO | DORSET | Thu | 11/10/01 | 1.174     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area   | Day | Date     | Trip Rate |
|------|------------|-------------------------|--------|-----|----------|-----------|
| 1    | DC-02-C-02 | NEWSPAPER HQ, WEYMOUTH  | DORSET | Tue | 04/07/00 | 0 395     |
| 2    | DC-02-C-05 | ULTRA ELECTRONICS,WEYMO | DORSET | Thu | 11/10/01 | 0 239     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

**VEHICLES**

Ranking Type: **ARRIVALS**

Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description              | Area   | Day | Date     | Trip Rate |
|------|------------|--------------------------|--------|-----|----------|-----------|
| 1    | DC-02-C-02 | NEWSPAPER HQ, WEYMOUTH   | DORSET | Tue | 04/07/00 | 0.231     |
| 2    | DC-02-C-05 | ULTRA ELECTRONICS, WEYMO | DORSET | Thu | 11/10/01 | 0.043     |

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

**VEHICLES**Ranking Type: **DEPARTURES**

Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description              | Area   | Day | Date     | Trip Rate |
|------|------------|--------------------------|--------|-----|----------|-----------|
| 1    | DC-02-C-02 | NEWSPAPER HQ, WEYMOUTH   | DORSET | Tue | 04/07/00 | 1.186     |
| 2    | DC-02-C-05 | ULTRA ELECTRONICS, WEYMO | DORSET | Thu | 11/10/01 | 0.739     |

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 04 - EDUCATION

Category : D - NURSERY

**VEHICLES**Selected regions and areas:**04 EAST ANGLIA**

CA CAMBRIDGESHIRE 1 days

SF SUFFOLK 1 days

**09 NORTH**

TW TYNE &amp; WEAR 1 days

**Main parameter selection:**

Parameter: Gross floor area

Range: 420 to 600 (units: sqm)

Date Range: 01/01/99 to 09/05/06

Selected survey days:

Monday 1 days

Tuesday 1 days

Friday 1 days

Selected survey types:

Manual count 3 days

Directional ATC Count 0 days

LIST OF SITES relevant to selection parameters

- |          |                         |                                    |                        |
|----------|-------------------------|------------------------------------|------------------------|
| <b>1</b> | <b>CA-04-D-01</b>       | <b>NURSERY, CAMBRIDGE</b>          | <b>CAMBRIDGESHIRE</b>  |
|          | CHAPEL STREET           |                                    |                        |
|          | CAMBRIDGE               |                                    |                        |
|          | Total Gross floor area: | 420 sqm                            |                        |
|          | Survey date: FRIDAY     | 05/11/04                           | Survey Type: MANUAL    |
| <b>2</b> | <b>SF-04-D-01</b>       | <b>NURSERY, NR BURY ST EDMUNDS</b> | <b>SUFFOLK</b>         |
|          | IXWORTH ROAD            |                                    |                        |
|          | THURSTON                |                                    |                        |
|          | NEAR BURY ST EDMUNDS    |                                    |                        |
|          | Total Gross floor area: | 600 sqm                            |                        |
|          | Survey date: TUESDAY    | 09/05/06                           | Survey Type: MANUAL    |
| <b>3</b> | <b>TW-04-D-01</b>       | <b>NURSERY, NEWCASTLE</b>          | <b>TYNE &amp; WEAR</b> |
|          | STATION ROAD            |                                    |                        |
|          | HEBBURN                 |                                    |                        |
|          | NEWCASTLE               |                                    |                        |
|          | Total Gross floor area: | 420 sqm                            |                        |
|          | Survey date: MONDAY     | 23/06/03                           | Survey Type: MANUAL    |

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

**VEHICLES**

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |            |              | DEPARTURES |            |              | TOTALS   |            |               |
|---------------|----------|------------|--------------|------------|------------|--------------|----------|------------|---------------|
|               | No. Days | Ave. GFA   | Trip Rate    | No. Days   | Ave. GFA   | Trip Rate    | No. Days | Ave. GFA   | Trip Rate     |
| 00:00 - 01:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 01:00 - 02:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 02:00 - 03:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 03:00 - 04:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 04:00 - 05:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 05:00 - 06:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 06:00 - 07:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 07:00 - 08:00 | 2        | 510        | 0.686        | 2          | 510        | 0.392        | 2        | 510        | 1.078         |
| 08:00 - 09:00 | <b>3</b> | <b>480</b> | <b>6.389</b> | <b>3</b>   | <b>480</b> | <b>5.833</b> | <b>3</b> | <b>480</b> | <b>12.222</b> |
| 09:00 - 10:00 | 3        | 480        | 3.333        | 3          | 480        | 3.681        | 3        | 480        | 7.014         |
| 10:00 - 11:00 | 3        | 480        | 2.361        | 3          | 480        | 2.500        | 3        | 480        | 4.861         |
| 11:00 - 12:00 | 3        | 480        | 0.903        | 3          | 480        | 0.833        | 3        | 480        | 1.736         |
| 12:00 - 13:00 | 3        | 480        | 2.222        | 3          | 480        | 1.944        | 3        | 480        | 4.166         |
| 13:00 - 14:00 | 3        | 480        | 2.431        | 3          | 480        | 2.292        | 3        | 480        | 4.723         |
| 14:00 - 15:00 | 3        | 480        | 2.639        | 3          | 480        | 2.917        | 3        | 480        | 5.556         |
| 15:00 - 16:00 | 3        | 480        | 1.736        | 3          | 480        | 1.944        | 3        | 480        | 3.680         |
| 16:00 - 17:00 | 2        | 510        | 1.471        | 2          | 510        | 0.980        | 2        | 510        | 2.451         |
| 17:00 - 18:00 | 2        | 510        | 2.255        | 2          | 510        | 2.941        | 2        | 510        | 5.196         |
| 18:00 - 19:00 | 2        | 510        | 0.000        | 2          | 510        | 0.588        | 2        | 510        | 0.588         |
| 19:00 - 20:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 20:00 - 21:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 21:00 - 22:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 22:00 - 23:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| 23:00 - 24:00 | 0        | 0          | 0.000        | 0          | 0          | 0.000        | 0        | 0          | 0.000         |
| Total Rates:  |          | 26.426     |              |            | 26.845     |              |          | 53.271     |               |

**Parameter summary**

Trip rate parameter range selected: 420 - 600 (units: sqm)  
 Survey date range: 01/01/99 - 09/05/06  
 Number of weekdays (Monday-Friday): 3  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Optional parameters used in selection: NO  
 Surveys manually removed from selection: 0

RANK ORDER for Land Use 04 - EDUCATION/D - NURSERY

**VEHICLES**

Ranking Type: **ARRIVALS**

Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | CA-04-D-01 | NURSERY, CAMBRIDGE      | CAMBRIDGESHIRE | Fri | 05/11/04 | 12.143    |
| 2    | TW-04-D-01 | NURSERY, NEWCASTLE      | TYNE & WEAR    | Mon | 23/06/03 | 5 000     |
| 3    | SF-04-D-01 | NURSERY, NR BURY ST EDM | SUFFOLK        | Tue | 09/05/06 | 3.333     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 04 - EDUCATION/D - NURSERY

# VEHICLES

Ranking Type: **DEPARTURES** Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | CA-04-D-01 | NURSERY, CAMBRIDGE      | CAMBRIDGESHIRE | Fri | 05/11/04 | 11.429    |
| 2    | TW-04-D-01 | NURSERY, NEWCASTLE      | TYNE & WEAR    | Mon | 23/06/03 | 4.524     |
| 3    | SF-04-D-01 | NURSERY, NR BURY ST EDM | SUFFOLK        | Tue | 09/05/06 | 2.833     |

RANK ORDER for Land Use 04 - EDUCATION/D - NURSERY

**VEHICLES**Ranking Type: **ARRIVALS**

Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area        | Day | Date     | Trip Rate |
|------|------------|-------------------------|-------------|-----|----------|-----------|
| 1    | TW-04-D-01 | NURSERY, NEWCASTLE      | TYNE & WEAR | Mon | 23/06/03 | 2.619     |
| 2    | SF-04-D-01 | NURSERY, NR BURY ST EDM | SUFFOLK     | Tue | 09/05/06 | 2.000     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 04 - EDUCATION/D - NURSERY

**VEHICLES**Ranking Type: **DEPARTURES**

Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area        | Day | Date     | Trip Rate |
|------|------------|-------------------------|-------------|-----|----------|-----------|
| 1    | TW-04-D-01 | NURSERY, NEWCASTLE      | TYNE & WEAR | Mon | 23/06/03 | 3.810     |
| 2    | SF-04-D-01 | NURSERY, NR BURY ST EDM | SUFFOLK     | Tue | 09/05/06 | 2.333     |

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 03 - RESIDENTIAL

Category : C - FLATS PRIVATELY OWNED

**VEHICLES**Selected regions and areas:**06 WEST MIDLANDS**

WM WEST MIDLANDS 2 days

**07 YORKSHIRE & NORTH LINCOLNSHIRE**

NY NORTH YORKSHIRE 1 days

WY WEST YORKSHIRE 1 days

**Main parameter selection:**

Parameter: Number of households

Range: 12 to 30 (units: )

Date Range: 01/01/99 to 13/09/06

Selected survey days:

Monday 1 days

Tuesday 1 days

Wednesday 1 days

Friday 1 days

Selected survey types:

Manual count 4 days

Directional ATC Count 0 days

LIST OF SITES relevant to selection parameters

- |   |                                                                                                                                                                         |                                                               |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1 | <b>NY-03-C-01 PRIVATE FLATS,NORTHALLERTON</b><br>BOROUGHBRIDGE ROAD<br>ROMANBY<br>NORTHALLERTON<br>Total Number of households: 30 *****<br>Survey date: MONDAY 22/09/03 | <b>NORTH YORKSHIRE</b><br><br><br><br><br>Survey Type: MANUAL |
| 2 | <b>WM-03-C-01 FLATS, BIRMINGHAM</b><br>WAKE GREEN ROAD<br>MOSELEY<br>BIRMINGHAM<br>Total Number of households: 26 *****<br>Survey date: FRIDAY 16/06/00                 | <b>WEST MIDLANDS</b><br><br><br><br><br>Survey Type: MANUAL   |
| 3 | <b>WM-03-C-02 BIRMINGHAM FLATS</b><br>WAKE GREEN ROAD<br>MOSELEY<br>BIRMINGHAM<br>Total Number of households: 24 *****<br>Survey date: TUESDAY 14/11/00                 | <b>WEST MIDLANDS</b><br><br><br><br><br>Survey Type: MANUAL   |
| 4 | <b>WY-03-C-02 FLATS, HUDDERSFIELD</b><br>KINGS MILL LANE<br>ASPLEY<br>HUDDERSFIELD<br>Total Number of households: 12 *****<br>Survey date: WEDNESDAY 13/09/06           | <b>WEST YORKSHIRE</b><br><br><br><br><br>Survey Type: MANUAL  |

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

**VEHICLES**

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |              | DEPARTURES |             |              | TOTALS   |             |              |
|---------------|----------|-------------|--------------|------------|-------------|--------------|----------|-------------|--------------|
|               | No. Days | Ave. HHOLDS | Trip Rate    | No. Days   | Ave. HHOLDS | Trip Rate    | No. Days | Ave. HHOLDS | Trip Rate    |
| 00:00 - 01:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 01:00 - 02:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 02:00 - 03:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 03:00 - 04:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 04:00 - 05:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 05:00 - 06:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 06:00 - 07:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 07:00 - 08:00 | 4        | 23          | 0.022        | 4          | 23          | 0.152        | 4        | 23          | 0.174        |
| 08:00 - 09:00 | 4        | 23          | 0.054        | <b>4</b>   | <b>23</b>   | <b>0.239</b> | 4        | 23          | 0.293        |
| 09:00 - 10:00 | 4        | 23          | 0.076        | 4          | 23          | 0.109        | 4        | 23          | 0.185        |
| 10:00 - 11:00 | 4        | 23          | 0.109        | 4          | 23          | 0.087        | 4        | 23          | 0.196        |
| 11:00 - 12:00 | 4        | 23          | 0.054        | 4          | 23          | 0.076        | 4        | 23          | 0.130        |
| 12:00 - 13:00 | 4        | 23          | 0.141        | 4          | 23          | 0.109        | 4        | 23          | 0.250        |
| 13:00 - 14:00 | 4        | 23          | 0.087        | 4          | 23          | 0.098        | 4        | 23          | 0.185        |
| 14:00 - 15:00 | 4        | 23          | 0.087        | 4          | 23          | 0.087        | 4        | 23          | 0.174        |
| 15:00 - 16:00 | 4        | 23          | 0.152        | 4          | 23          | 0.152        | 4        | 23          | 0.304        |
| 16:00 - 17:00 | 4        | 23          | 0.141        | 4          | 23          | 0.054        | 4        | 23          | 0.195        |
| 17:00 - 18:00 | <b>4</b> | <b>23</b>   | <b>0.228</b> | 4          | 23          | 0.109        | <b>4</b> | <b>23</b>   | <b>0.337</b> |
| 18:00 - 19:00 | 4        | 23          | 0.174        | 4          | 23          | 0.098        | 4        | 23          | 0.272        |
| 19:00 - 20:00 | 2        | 25          | 0.160        | 2          | 25          | 0.140        | 2        | 25          | 0.300        |
| 20:00 - 21:00 | 2        | 25          | 0.100        | 2          | 25          | 0.100        | 2        | 25          | 0.200        |
| 21:00 - 22:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 22:00 - 23:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 23:00 - 24:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| Total Rates:  |          |             | 1.585        |            |             | 1.610        |          |             | 3.195        |

**Parameter summary**

Trip rate parameter range selected: 12 - 30 (units: )  
 Survey date range: 01/01/99 - 13/09/06  
 Number of weekdays (Monday-Friday): 4  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Optional parameters used in selection: NO  
 Surveys manually removed from selection: 0

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

**VEHICLES**Ranking Type: **ARRIVALS**

Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area            | Day | Date     | Trip Rate |
|------|------------|-------------------------|-----------------|-----|----------|-----------|
| 1    | WM-03-C-02 | BIRMINGHAM FLATS        | WEST MIDLANDS   | Tue | 14/11/00 | 0.125     |
| 2    | WM-03-C-01 | FLATS, BIRMINGHAM       | WEST MIDLANDS   | Fri | 16/06/00 | 0.038     |
| 3    | NY-03-C-01 | PRIVATE FLATS,NORTHALLE | NORTH YORKSHIRE | Mon | 22/09/03 | 0.033     |
| 4    | WY-03-C-02 | FLATS, HUDDERSFIELD     | WEST YORKSHIRE  | Wed | 13/09/06 | 0.000     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

**VEHICLES**Ranking Type: **DEPARTURES** Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area            | Day | Date     | Trip Rate |
|------|------------|-------------------------|-----------------|-----|----------|-----------|
| 1    | WM-03-C-02 | BIRMINGHAM FLATS        | WEST MIDLANDS   | Tue | 14/11/00 | 0.375     |
| 2    | WY-03-C-02 | FLATS, HUDDERSFIELD     | WEST YORKSHIRE  | Wed | 13/09/06 | 0.333     |
| 3    | WM-03-C-01 | FLATS, BIRMINGHAM       | WEST MIDLANDS   | Fri | 16/06/00 | 0.192     |
| 4    | NY-03-C-01 | PRIVATE FLATS,NORTHALLE | NORTH YORKSHIRE | Mon | 22/09/03 | 0.133     |

TTHC Oxford Street Manchester

Licence No: 734101

**RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED  
VEHICLES**Ranking Type: **ARRIVALS**

Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area            | Day | Date     | Trip Rate |
|------|------------|-------------------------|-----------------|-----|----------|-----------|
| 1    | WM-03-C-02 | BIRMINGHAM FLATS        | WEST MIDLANDS   | Tue | 14/11/00 | 0.375     |
| 2    | WY-03-C-02 | FLATS, HUDDERSFIELD     | WEST YORKSHIRE  | Wed | 13/09/06 | 0.333     |
| 3    | WM-03-C-01 | FLATS, BIRMINGHAM       | WEST MIDLANDS   | Fri | 16/06/00 | 0.154     |
| 4    | NY-03-C-01 | PRIVATE FLATS,NORTHALLE | NORTH YORKSHIRE | Mon | 22/09/03 | 0.133     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

**VEHICLES**Ranking Type: **DEPARTURES** Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area            | Day | Date     | Trip Rate |
|------|------------|-------------------------|-----------------|-----|----------|-----------|
| 1    | WY-03-C-02 | FLATS, HUDDERSFIELD     | WEST YORKSHIRE  | Wed | 13/09/06 | 0.250     |
| 2    | NY-03-C-01 | PRIVATE FLATS,NORTHALLE | NORTH YORKSHIRE | Mon | 22/09/03 | 0.100     |
| 3    | WM-03-C-02 | BIRMINGHAM FLATS        | WEST MIDLANDS   | Tue | 14/11/00 | 0.083     |
| 4    | WM-03-C-01 | FLATS, BIRMINGHAM       | WEST MIDLANDS   | Fri | 16/06/00 | 0.077     |

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED

**VEHICLES**Selected regions and areas:

|                         |        |
|-------------------------|--------|
| <b>02 SOUTH EAST</b>    |        |
| BD BEDFORDSHIRE         | 1 days |
| SC SURREY               | 1 days |
| <b>03 SOUTH WEST</b>    |        |
| WL WILTSHIRE            | 1 days |
| <b>05 EAST MIDLANDS</b> |        |
| DS DERBYSHIRE           | 1 days |
| <b>06 WEST MIDLANDS</b> |        |
| WM WEST MIDLANDS        | 1 days |
| WO WORCESTERSHIRE       | 1 days |
| <b>08 NORTH WEST</b>    |        |
| LC LANCASHIRE           | 1 days |
| <b>09 NORTH</b>         |        |
| CB CUMBRIA              | 1 days |
| TW TYNE & WEAR          | 1 days |

**Main parameter selection:**

Parameter: Number of households

Range: 20 to 99 (units: )

Date Range: 01/01/99 to 02/10/06

Selected survey days:

|           |        |
|-----------|--------|
| Monday    | 2 days |
| Tuesday   | 4 days |
| Wednesday | 1 days |
| Thursday  | 1 days |
| Friday    | 1 days |

Selected survey types:

|                       |        |
|-----------------------|--------|
| Manual count          | 9 days |
| Directional ATC Count | 0 days |

LIST OF SITES relevant to selection parameters

- |   |                                  |                                    |                        |
|---|----------------------------------|------------------------------------|------------------------|
| 1 | <b>BD-03-A-02</b>                | <b>SEMI DETACHED, LUTON</b>        | <b>BEDFORDSHIRE</b>    |
|   | RIDDY LANE                       |                                    |                        |
|   | LUTON                            |                                    |                        |
|   | Total Number of households:      | 82 *****                           |                        |
|   | Survey date: TUESDAY             | 06/07/04                           | Survey Type: MANUAL    |
| 2 | <b>CB-03-A-02</b>                | <b>SEMI-DETACHED, WORKINGTON</b>   | <b>CUMBRIA</b>         |
|   | HAWKSHEAD AVENUE                 |                                    |                        |
|   | WORKINGTON                       |                                    |                        |
|   | Total Number of households:      | 40 *****                           |                        |
|   | Survey date: MONDAY              | 20/06/05                           | Survey Type: MANUAL    |
| 3 | <b>DS-03-A-01</b>                | <b>TERRACED HOUSES, DRONFIELD</b>  | <b>DERBYSHIRE</b>      |
|   | THE AVENUE                       |                                    |                        |
|   | HOLMESDALE                       |                                    |                        |
|   | DRONFIELD                        |                                    |                        |
|   | Total Number of households:      | 20 *****                           |                        |
|   | Survey date: THURSDAY            | 22/06/06                           | Survey Type: MANUAL    |
| 4 | <b>LC-03-A-22</b>                | <b>BUNGALOWS, BLACKPOOL</b>        | <b>LANCASHIRE</b>      |
|   | CLIFTON DRIVE NORTH              |                                    |                        |
|   | BLACKPOOL                        |                                    |                        |
|   | Total Number of households:      | 98 *****                           |                        |
|   | Survey date: TUESDAY             | 18/10/05                           | Survey Type: MANUAL    |
| 5 | <b>SC-03-A-03</b>                | <b>DETACHED HOUSES, E. MOLESEY</b> | <b>SURREY</b>          |
|   | RIVERMEAD                        |                                    |                        |
|   | HURST PARK                       |                                    |                        |
|   | EAST MOLESEY                     |                                    |                        |
|   | Total Number of households:      | 54 *****                           |                        |
|   | Survey date: TUESDAY             | 12/11/02                           | Survey Type: MANUAL    |
| 6 | <b>TW-03-A-01</b>                | <b>PRIVATE HOUSING, SUNDERLAND</b> | <b>TYNE &amp; WEAR</b> |
|   | MYRELLA CRESCENT                 |                                    |                        |
|   | HILLVIEW                         |                                    |                        |
|   | SUNDERLAND                       |                                    |                        |
|   | Total Number of households:      | 81 *****                           |                        |
|   | Survey date: WEDNESDAY           | 18/09/02                           | Survey Type: MANUAL    |
| 7 | <b>WL-03-A-01</b>                | <b>HOUSES, WOOTTON BASSETT</b>     | <b>WILTSHIRE</b>       |
|   | MAPLE DRIVE                      |                                    |                        |
|   | WOOTTON BASSETT                  |                                    |                        |
|   | Total Number of households:      | 99 *****                           |                        |
|   | Survey date: MONDAY              | 02/10/06                           | Survey Type: MANUAL    |
| 8 | <b>WM-03-A-01</b>                | <b>HOUSES, COVENTRY</b>            | <b>WEST MIDLANDS</b>   |
|   | EDMUND RD/HONEYFIELD RD/LEWIS RD |                                    |                        |
|   | FOLESHILL                        |                                    |                        |
|   | COVENTRY                         |                                    |                        |
|   | Total Number of households:      | 79 *****                           |                        |
|   | Survey date: FRIDAY              | 03/02/06                           | Survey Type: MANUAL    |

TTHC Oxford Street Manchester

Licence No: 734101

LIST OF SITES relevant to selection parameters (Cont.)

9 WO-03-A-02 SEMI-DETACHED, REDDITCH WORCESTERSHIRE  
MEADOWHILL ROAD

REDDITCH

Total Number of households: 48 \*\*\*\*\*

Survey date: TUESDAY 02/05/06

Survey Type: MANUAL

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
VEHICLES

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           | DEPARTURES |             |           | TOTALS   |             |           |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
|               | No. Days | Ave. HHOLDS | Trip Rate | No. Days   | Ave. HHOLDS | Trip Rate | No. Days | Ave. HHOLDS | Trip Rate |
| 00:00 - 01:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 01:00 - 02:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 02:00 - 03:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 03:00 - 04:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 04:00 - 05:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 05:00 - 06:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 06:00 - 07:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 07:00 - 08:00 | 9        | 67          | 0.090     | 9          | 67          | 0.253     | 9        | 67          | 0.343     |
| 08:00 - 09:00 | 9        | 67          | 0.168     | 9          | 67          | 0.399     | 9        | 67          | 0.567     |
| 09:00 - 10:00 | 9        | 67          | 0.235     | 9          | 67          | 0.253     | 9        | 67          | 0.488     |
| 10:00 - 11:00 | 9        | 67          | 0.203     | 9          | 67          | 0.241     | 9        | 67          | 0.444     |
| 11:00 - 12:00 | 9        | 67          | 0.200     | 9          | 67          | 0.196     | 9        | 67          | 0.396     |
| 12:00 - 13:00 | 9        | 67          | 0.268     | 9          | 67          | 0.223     | 9        | 67          | 0.491     |
| 13:00 - 14:00 | 9        | 67          | 0.225     | 9          | 67          | 0.240     | 9        | 67          | 0.465     |
| 14:00 - 15:00 | 9        | 67          | 0.213     | 9          | 67          | 0.218     | 9        | 67          | 0.431     |
| 15:00 - 16:00 | 9        | 67          | 0.301     | 9          | 67          | 0.251     | 9        | 67          | 0.552     |
| 16:00 - 17:00 | 9        | 67          | 0.379     | 9          | 67          | 0.236     | 9        | 67          | 0.615     |
| 17:00 - 18:00 | 9        | 67          | 0.366     | 9          | 67          | 0.211     | 9        | 67          | 0.577     |
| 18:00 - 19:00 | 9        | 67          | 0.313     | 9          | 67          | 0.201     | 9        | 67          | 0.514     |
| 19:00 - 20:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 20:00 - 21:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 21:00 - 22:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 22:00 - 23:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| 23:00 - 24:00 | 0        | 0           | 0.000     | 0          | 0           | 0.000     | 0        | 0           | 0.000     |
| Total Rates:  |          |             | 2.961     |            |             | 2.922     |          |             | 5.883     |

#### Parameter summary

Trip rate parameter range selected: 20 - 99 (units: )  
 Survey date date range: 01/01/99 - 02/10/06  
 Number of weekdays (Monday-Friday): 9  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Optional parameters used in selection: NO  
 Surveys manually removed from selection: 0

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
**VEHICLES**

Ranking Type: **ARRIVALS**

Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 8 (\*\*)

85th Percentile = No. 2 (\*\*)

| Rank | Site-Ref          | Description                    | Area                   | Day        | Date            | Trip Rate    |
|------|-------------------|--------------------------------|------------------------|------------|-----------------|--------------|
| 1    | BD-03-A-02        | SEMI DETACHED, LUTON           | BEDFORDSHIRE           | Tue        | 06/07/04        | 0.317        |
| 2 ** | <b>TW-03-A-01</b> | <b>PRIVATE HOUSING, SUNDER</b> | <b>TYNE &amp; WEAR</b> | <b>Wed</b> | <b>18/09/02</b> | <b>0.235</b> |
| 3    | DS-03-A-01        | TERRACED HOUSES, DRONFI        | DERBYSHIRE             | Thu        | 22/06/06        | 0.200        |
| 4    | LC-03-A-22        | BUNGALOWS, BLACKPOOL           | LANCASHIRE             | Tue        | 18/10/05        | 0.173        |
| 5    | WM-03-A-01        | HOUSES, COVENTRY               | WEST MIDLANDS          | Fri        | 03/02/06        | 0.152        |
| 6    | SC-03-A-03        | DETACHED HOUSES, E. MOL        | SURREY                 | Tue        | 12/11/02        | 0.148        |
| 7    | WO-03-A-02        | SEMI-DETACHED, REDDITCH        | WORCESTERSHIRE         | Tue        | 02/05/06        | 0.104        |
| 8 ** | <b>CB-03-A-02</b> | <b>SEMI-DETACHED, WORKINGT</b> | <b>CUMBRIA</b>         | <b>Mon</b> | <b>20/06/05</b> | <b>0.075</b> |
| 9    | WL-03-A-01        | HOUSES, WOOTTON BASSETT        | WILTSHIRE              | Mon        | 02/10/06        | 0.071        |

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. **8 (\*\*)**

85th Percentile = No. **2 (\*\*)**

| Rank        | Site-Ref          | Description                    | Area                   | Day        | Date            | Trip Rate    |
|-------------|-------------------|--------------------------------|------------------------|------------|-----------------|--------------|
| 1           | BD-03-A-02        | SEMI DETACHED, LUTON           | BEDFORDSHIRE           | Tue        | 06/07/04        | 0.537        |
| <b>2 **</b> | <b>TW-03-A-01</b> | <b>PRIVATE HOUSING, SUNDER</b> | <b>TYNE &amp; WEAR</b> | <b>Wed</b> | <b>18/09/02</b> | <b>0.506</b> |
| 3           | CB-03-A-02        | SEMI-DETACHED, WORKINGT        | CUMBRIA                | Mon        | 20/06/05        | 0.425        |
| 4           | WM-03-A-01        | HOUSES, COVENTRY               | WEST MIDLANDS          | Fri        | 03/02/06        | 0.418        |
| 5           | SC-03-A-03        | DETACHED HOUSES, E. MOL        | SURREY                 | Tue        | 12/11/02        | 0.389        |
| 6           | LC-03-A-22        | BUNGALOWS, BLACKPOOL           | LANCASHIRE             | Tue        | 18/10/05        | 0.337        |
| 7           | WO-03-A-02        | SEMI-DETACHED, REDDITCH        | WORCESTERSHIRE         | Tue        | 02/05/06        | 0.333        |
| <b>8 **</b> | <b>WL-03-A-01</b> | <b>HOUSES, WOOTTON BASSETT</b> | <b>WILTSHIRE</b>       | <b>Mon</b> | <b>02/10/06</b> | <b>0.333</b> |
| 9           | DS-03-A-01        | TERRACED HOUSES, DRONFI        | DERBYSHIRE             | Thu        | 22/06/06        | 0.100        |

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
**VEHICLES**

Ranking Type: **ARRIVALS** Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. **8 (\*\*)**

85th Percentile = No. **2 (\*\*)**

| Rank        | Site-Ref          | Description                    | Area                   | Day        | Date            | Trip Rate    |
|-------------|-------------------|--------------------------------|------------------------|------------|-----------------|--------------|
| 1           | CB-03-A-02        | SEMI-DETACHED, WORKINGT        | CUMBRIA                | Mon        | 20/06/05        | 0.525        |
| <b>2 **</b> | <b>TW-03-A-01</b> | <b>PRIVATE HOUSING, SUNDER</b> | <b>TYNE &amp; WEAR</b> | <b>Wed</b> | <b>18/09/02</b> | <b>0.519</b> |
| 3           | WO-03-A-02        | SEMI-DETACHED, REDDITCH        | WORCESTERSHIRE         | Tue        | 02/05/06        | 0.458        |
| 4           | WL-03-A-01        | HOUSES, WOOTTON BASSETT        | WILTSHIRE              | Mon        | 02/10/06        | 0.374        |
| 5           | LC-03-A-22        | BUNGALOWS, BLACKPOOL           | LANCASHIRE             | Tue        | 18/10/05        | 0.347        |
| 6           | WM-03-A-01        | HOUSES, COVENTRY               | WEST MIDLANDS          | Fri        | 03/02/06        | 0.342        |
| 7           | SC-03-A-03        | DETACHED HOUSES, E. MOL        | SURREY                 | Tue        | 12/11/02        | 0.296        |
| <b>8 **</b> | <b>BD-03-A-02</b> | <b>SEMI DETACHED, LUTON</b>    | <b>BEDFORDSHIRE</b>    | <b>Tue</b> | <b>06/07/04</b> | <b>0.232</b> |
| 9           | DS-03-A-01        | TERRACED HOUSES, DRONFI        | DERBYSHIRE             | Thu        | 22/06/06        | 0.100        |

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 8 (\*\*)

85th Percentile = No. 2 (\*\*)

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | CB-03-A-02 | SEMI-DETACHED, WORKINGT | CUMBRIA        | Mon | 20/06/05 | 0.400     |
| 2 ** | BD-03-A-02 | SEMI DETACHED, LUTON    | BEDFORDSHIRE   | Tue | 06/07/04 | 0.268     |
| 3    | TW-03-A-01 | PRIVATE HOUSING, SUNDER | TYNE & WEAR    | Wed | 18/09/02 | 0.259     |
| 4    | WO-03-A-02 | SEMI-DETACHED, REDDITCH | WORCESTERSHIRE | Tue | 02/05/06 | 0.229     |
| 5    | WM-03-A-01 | HOUSES, COVENTRY        | WEST MIDLANDS  | Fri | 03/02/06 | 0.203     |
| 6    | LC-03-A-22 | BUNGALOWS, BLACKPOOL    | LANCASHIRE     | Tue | 18/10/05 | 0.173     |
| 7    | DS-03-A-01 | TERRACED HOUSES, DRONFI | DERBYSHIRE     | Thu | 22/06/06 | 0.150     |
| 8 ** | WL-03-A-01 | HOUSES, WOOTTON BASSETT | WILTSHIRE      | Mon | 02/10/06 | 0.141     |
| 9    | SC-03-A-03 | DETACHED HOUSES, E. MOL | SURREY         | Tue | 12/11/02 | 0.130     |

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 04 - EDUCATION

Category : F - COMMUNITY EDUCATION

**VEHICLES**Selected regions and areas:**04 EAST ANGLIA**

CA CAMBRIDGESHIRE 1 days

**09 NORTH**

CB CUMBRIA 1 days

DH DURHAM 1 days

**Main parameter selection:**

Parameter: Gross floor area

Range: 560 to 3900 (units: sqm)

Date Range: 01/01/99 to 04/11/03

Selected survey days:

Tuesday 2 days

Friday 1 days

Selected survey types:

Manual count 3 days

Directional ATC Count 0 days

LIST OF SITES relevant to selection parameters

- |          |                   |                                    |                       |
|----------|-------------------|------------------------------------|-----------------------|
| <b>1</b> | <b>CA-04-F-01</b> | <b>ADULT EDU. COL,PETERBOROUGH</b> | <b>CAMBRIDGESHIRE</b> |
|          |                   | BROOK STREET                       |                       |
|          |                   | PETERBOROUGH                       |                       |
|          |                   | Total Gross floor area:            | 3900 sqm              |
|          |                   | Survey date: FRIDAY                | 11/07/03              |
|          |                   |                                    | Survey Type: MANUAL   |
| <b>2</b> | <b>CB-04-F-01</b> | <b>COMMUNITY CENTRE, CARLISLE</b>  | <b>CUMBRIA</b>        |
|          |                   | VICTORIA ROAD                      |                       |
|          |                   | BOTCHERBY                          |                       |
|          |                   | CARLISLE                           |                       |
|          |                   | Total Gross floor area:            | 560 sqm               |
|          |                   | Survey date: TUESDAY               | 04/11/03              |
|          |                   |                                    | Survey Type: MANUAL   |
| <b>3</b> | <b>DH-04-F-01</b> | <b>TRAINING CENTRE, SPENNYMOOR</b> | <b>DURHAM</b>         |
|          |                   | MERRINGTON LANE                    |                       |
|          |                   | SPENNYMOOR                         |                       |
|          |                   | Total Gross floor area:            | 700 sqm               |
|          |                   | Survey date: TUESDAY               | 10/06/03              |
|          |                   |                                    | Survey Type: MANUAL   |

TRIP RATE for Land Use 04 - EDUCATION/F - COMMUNITY EDUCATION  
**VEHICLES**

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period**

| Time Range          | ARRIVALS |             |              | DEPARTURES |            |              | TOTALS   |             |               |
|---------------------|----------|-------------|--------------|------------|------------|--------------|----------|-------------|---------------|
|                     | No. Days | Ave. GFA    | Trip Rate    | No. Days   | Ave. GFA   | Trip Rate    | No. Days | Ave. GFA    | Trip Rate     |
| 00:00 - 01:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 01:00 - 02:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 02:00 - 03:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 03:00 - 04:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 04:00 - 05:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 05:00 - 06:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 06:00 - 07:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 07:00 - 08:00       | 1        | 560         | 0.000        | 1          | 560        | 0.000        | 1        | 560         | 0.000         |
| 08:00 - 09:00       | 3        | 1720        | 1.047        | 3          | 1720       | 0.368        | 3        | 1720        | 1.415         |
| 09:00 - 10:00       | <b>3</b> | <b>1720</b> | <b>1.550</b> | 3          | 1720       | 0.349        | <b>3</b> | <b>1720</b> | <b>1.899</b>  |
| 10:00 - 11:00       | 3        | 1720        | 0.581        | 3          | 1720       | 0.349        | 3        | 1720        | 0.930         |
| 11:00 - 12:00       | 3        | 1720        | 0.465        | 3          | 1720       | 0.950        | 3        | 1720        | 1.415         |
| 12:00 - 13:00       | 3        | 1720        | 0.833        | 3          | 1720       | 0.833        | 3        | 1720        | 1.666         |
| 13:00 - 14:00       | 3        | 1720        | 0.950        | 3          | 1720       | 0.911        | 3        | 1720        | 1.861         |
| 14:00 - 15:00       | 3        | 1720        | 0.368        | 3          | 1720       | 0.329        | 3        | 1720        | 0.697         |
| 15:00 - 16:00       | 3        | 1720        | 0.407        | 3          | 1720       | 0.853        | 3        | 1720        | 1.260         |
| 16:00 - 17:00       | 3        | 1720        | 0.329        | 3          | 1720       | 0.950        | 3        | 1720        | 1.279         |
| 17:00 - 18:00       | 3        | 1720        | 0.446        | 3          | 1720       | 0.659        | 3        | 1720        | 1.105         |
| 18:00 - 19:00       | 2        | 630         | 0.238        | <b>2</b>   | <b>630</b> | <b>1.032</b> | 2        | 630         | 1.270         |
| 19:00 - 20:00       | 2        | 630         | 0.635        | 2          | 630        | 0.714        | 2        | 630         | 1.349         |
| 20:00 - 21:00       | 2        | 630         | 0.000        | 2          | 630        | 0.317        | 2        | 630         | 0.317         |
| 21:00 - 22:00       | 1        | 560         | 0.000        | 1          | 560        | 0.893        | 1        | 560         | 0.893         |
| 22:00 - 23:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| 23:00 - 24:00       | 0        | 0           | 0.000        | 0          | 0          | 0.000        | 0        | 0           | 0.000         |
| <b>Total Rates:</b> |          |             | <b>7.849</b> |            |            | <b>9.507</b> |          |             | <b>17.356</b> |

**Parameter summary**

|                                          |                         |
|------------------------------------------|-------------------------|
| Trip rate parameter range selected:      | 560 - 3900 (units: sqm) |
| Survey date range:                       | 01/01/99 - 04/11/03     |
| Number of weekdays (Monday-Friday):      | 3                       |
| Number of Saturdays:                     | 0                       |
| Number of Sundays:                       | 0                       |
| Optional parameters used in selection:   | NO                      |
| Surveys manually removed from selection: | 0                       |

TTHC Oxford Street Manchester

Licence No: 73410

RANK ORDER for Land Use 04 - EDUCATION/F - COMMUNITY EDUCATION  
**VEHICLES**

Ranking Type: **ARRIVALS** Time Range: 08:00-09:00  
 Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | DH-04-F-01 | TRAINING CENTRE, SPENNY | DURHAM         | Tue | 10/06/03 | 2.714     |
| 2    | CA-04-F-01 | ADULT EDU. COL,PETERBOR | CAMBRIDGESHIRE | Fri | 11/07/03 | 0.897     |
| 3    | CB-04-F-01 | COMMUNITY CENTRE, CARLI | CUMBRIA        | Tue | 04/11/03 | 0.000     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 04 - EDUCATION/F - COMMUNITY EDUCATION  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 08:00-09:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | DH-04-F-01 | TRAINING CENTRE, SPENNY | DURHAM         | Tue | 10/06/03 | 0.571     |
| 2    | CA-04-F-01 | ADULT EDU. COL,PETERBOR | CAMBRIDGESHIRE | Fri | 11/07/03 | 0.385     |
| 3    | CB-04-F-01 | COMMUNITY CENTRE, CARLI | CUMBRIA        | Tue | 04/11/03 | 0.000     |

RANK ORDER for Land Use 04 - EDUCATION/F - COMMUNITY EDUCATION  
**VEHICLES**

Ranking Type: **ARRIVALS**

Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | DH-04-F-01 | TRAINING CENTRE, SPENNY | DURHAM         | Tue | 10/06/03 | 0.857     |
| 2    | CA-04-F-01 | ADULT EDU. COL,PETERBOR | CAMBRIDGESHIRE | Fri | 11/07/03 | 0.436     |
| 3    | CB-04-F-01 | COMMUNITY CENTRE, CARLI | CUMBRIA        | Tue | 04/11/03 | 0.000     |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 04 - EDUCATION/F - COMMUNITY EDUCATION

# VEHICLES

Ranking Type: **DEPARTURES** Time Range: 17:00-18:00

Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | DH-04-F-01 | TRAINING CENTRE, SPENNY | DURHAM         | Tue | 10/06/03 | 0.857     |
| 2    | CB-04-F-01 | COMMUNITY CENTRE, CARLI | CUMBRIA        | Tue | 04/11/03 | 0.714     |
| 3    | CA-04-F-01 | ADULT EDU COL,PETERBOR  | CAMBRIDGESHIRE | Fri | 11/07/03 | 0.615     |

TTHC Oxford Street Manchester

Licence No: 734101

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 06 - HOTEL, FOOD & DRINK  
Category : A - HOTELS

**VEHICLES**

Selected regions and areas:

|                         |        |
|-------------------------|--------|
| <b>02 SOUTH EAST</b>    |        |
| HC HAMPSHIRE            | 1 days |
| HF HERTFORDSHIRE        | 1 days |
| SC SURREY               | 1 days |
| <b>04 EAST ANGLIA</b>   |        |
| CA CAMBRIDGESHIRE       | 1 days |
| <b>06 WEST MIDLANDS</b> |        |
| WO WORCESTERSHIRE       | 2 days |
| <b>09 NORTH</b>         |        |
| TW TYNE & WEAR          | 1 days |

**Main parameter selection:**

Parameter: Number of bedrooms  
Range: 50 to 82 (units: )

Date Range: 01/01/99 to 26/04/05

Selected survey days:

|           |        |
|-----------|--------|
| Tuesday   | 1 days |
| Wednesday | 3 days |
| Thursday  | 3 days |

Selected survey types:

|                       |        |
|-----------------------|--------|
| Manual count          | 7 days |
| Directional ATC Count | 0 days |

LIST OF SITES relevant to selection parameters

- |   |                           |                                      |                        |
|---|---------------------------|--------------------------------------|------------------------|
| 1 | <b>CA-06-A-02</b>         | <b>HOTEL, CAMBRIDGE</b>              | <b>CAMBRIDGESHIRE</b>  |
|   | GONVILLE PLACE            |                                      |                        |
|   | CAMBRIDGE                 |                                      |                        |
|   | Total Number of bedrooms: | 78 *****                             |                        |
|   | Survey date:              | THURSDAY 13/05/04                    | Survey Type: MANUAL    |
| 2 | <b>HC-06-A-06</b>         | <b>HOTEL, SOUTHAMPTON</b>            | <b>HAMPSHIRE</b>       |
|   | GRANGE ROAD               |                                      |                        |
|   | HEDGE END                 |                                      |                        |
|   | SOUTHAMPTON               |                                      |                        |
|   | Total Number of bedrooms: | 56 *****                             |                        |
|   | Survey date:              | THURSDAY 18/07/02                    | Survey Type: MANUAL    |
| 3 | <b>HF-06-A-01</b>         | <b>HOTEL, HARPENDEN</b>              | <b>HERTFORDSHIRE</b>   |
|   | LUTON ROAD                |                                      |                        |
|   | HARPENDEN                 |                                      |                        |
|   | Total Number of bedrooms: | 60 *****                             |                        |
|   | Survey date:              | WEDNESDAY 06/03/02                   | Survey Type: MANUAL    |
| 4 | <b>SC-06-A-04</b>         | <b>NUTFIELD PRIORY, NEAR REDHILL</b> | <b>SURREY</b>          |
|   | NUTFIELD ROAD             |                                      |                        |
|   | NUTFIELD                  |                                      |                        |
|   | NEAR REDHILL              |                                      |                        |
|   | Total Number of bedrooms: | 60 *****                             |                        |
|   | Survey date:              | THURSDAY 10/05/01                    | Survey Type: MANUAL    |
| 5 | <b>TW-06-A-01</b>         | <b>PREMIER TRAV. INN, NEWCASTLE</b>  | <b>TYNE &amp; WEAR</b> |
|   | CITY ROAD                 |                                      |                        |
|   | QUAYSIDE                  |                                      |                        |
|   | NEWCASTLE                 |                                      |                        |
|   | Total Number of bedrooms: | 82 *****                             |                        |
|   | Survey date:              | TUESDAY 26/04/05                     | Survey Type: MANUAL    |
| 6 | <b>WO-06-A-02</b>         | <b>QUALITY HOTEL, REDDITCH</b>       | <b>WORCESTERSHIRE</b>  |
|   | POOLE BANK                |                                      |                        |
|   | SOUTHCREST                |                                      |                        |
|   | REDDITCH                  |                                      |                        |
|   | Total Number of bedrooms: | 73 *****                             |                        |
|   | Survey date:              | WEDNESDAY 26/03/03                   | Survey Type: MANUAL    |
| 7 | <b>WO-06-A-03</b>         | <b>RAMADA HOTEL, BROMSGROVE</b>      | <b>WORCESTERSHIRE</b>  |
|   | KIDDERMINSTER ROAD        |                                      |                        |
|   | BROMSGROVE                |                                      |                        |
|   | Total Number of bedrooms: | 58 *****                             |                        |
|   | Survey date:              | WEDNESDAY 30/04/03                   | Survey Type: MANUAL    |

TRIP RATE for Land Use 06 - HOTEL, FOOD &amp; DRINK/A - HOTELS

**VEHICLES**

Calculation factor: 1 BEDRMS

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |              | DEPARTURES |             |              | TOTALS   |             |              |
|---------------|----------|-------------|--------------|------------|-------------|--------------|----------|-------------|--------------|
|               | No. Days | Ave. BEDRMS | Trip Rate    | No. Days   | Ave. BEDRMS | Trip Rate    | No. Days | Ave. BEDRMS | Trip Rate    |
| 00:00 - 01:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 01:00 - 02:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 02:00 - 03:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 03:00 - 04:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 04:00 - 05:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 05:00 - 06:00 | 0        | 0           | 0.000        | 0          | 0           | 0.000        | 0        | 0           | 0.000        |
| 06:00 - 07:00 | 1        | 60          | 0.050        | 1          | 60          | 0.017        | 1        | 60          | 0.067        |
| 07:00 - 08:00 | 7        | 67          | 0.126        | 7          | 67          | 0.143        | 7        | 67          | 0.269        |
| 08:00 - 09:00 | 7        | 67          | 0.199        | 7          | 67          | 0.266        | 7        | 67          | 0.465        |
| 09:00 - 10:00 | 7        | 67          | 0.173        | 7          | 67          | 0.176        | 7        | 67          | 0.349        |
| 10:00 - 11:00 | 7        | 67          | 0.120        | 7          | 67          | 0.141        | 7        | 67          | 0.261        |
| 11:00 - 12:00 | 7        | 67          | 0.109        | 7          | 67          | 0.105        | 7        | 67          | 0.214        |
| 12:00 - 13:00 | 7        | 67          | 0.165        | 7          | 67          | 0.131        | 7        | 67          | 0.296        |
| 13:00 - 14:00 | 7        | 67          | 0.122        | 7          | 67          | 0.141        | 7        | 67          | 0.263        |
| 14:00 - 15:00 | 7        | 67          | 0.137        | 7          | 67          | 0.197        | 7        | 67          | 0.334        |
| 15:00 - 16:00 | 7        | 67          | 0.221        | 7          | 67          | 0.167        | 7        | 67          | 0.388        |
| 16:00 - 17:00 | 7        | 67          | 0.158        | 7          | 67          | 0.182        | 7        | 67          | 0.340        |
| 17:00 - 18:00 | 7        | 67          | 0.233        | 7          | 67          | 0.176        | 7        | 67          | 0.409        |
| 18:00 - 19:00 | 7        | 67          | 0.178        | 7          | 67          | 0.137        | 7        | 67          | 0.315        |
| 19:00 - 20:00 | 2        | 71          | 0.190        | 2          | 71          | 0.141        | 2        | 71          | 0.331        |
| 20:00 - 21:00 | 2        | 71          | 0.183        | 2          | 71          | 0.148        | 2        | 71          | 0.331        |
| 21:00 - 22:00 | 1        | 60          | 0.300        | 1          | 60          | <b>0.383</b> | 1        | 60          | 0.683        |
| 22:00 - 23:00 | 1        | <b>60</b>   | <b>0.350</b> | 1          | 60          | 0.350        | 1        | <b>60</b>   | <b>0.700</b> |
| 23:00 - 24:00 | 1        | 60          | 0.017        | 1          | 60          | 0.033        | 1        | 60          | 0.050        |
| Total Rates:  |          |             | 3.031        |            |             | 3.034        |          |             | 6.065        |

**Parameter summary**

Trip rate parameter range selected: 50 - 82 (units: )  
Survey date range: 01/01/99 - 26/04/05  
Number of weekdays (Monday-Friday): 7  
Number of Saturdays: 0  
Number of Sundays: 0  
Optional parameters used in selection: NO  
Surveys manually removed from selection: 2

RANK ORDER for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS  
**VEHICLES**

Ranking Type: **ARRIVALS**

Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No **6 (\*\*)**

85th Percentile = No **2 (\*\*)**

| Rank        | Site-Ref          | Description                    | Area                  | Day        | Date            | Trip Rate    |
|-------------|-------------------|--------------------------------|-----------------------|------------|-----------------|--------------|
| 1           | HC-06-A-06        | HOTEL, SOUTHAMPTON             | HAMPSHIRE             | Thu        | 18/07/02        | 0.429        |
| <b>2 **</b> | <b>HF-06-A-01</b> | <b>HOTEL, HARPENDEN</b>        | <b>HERTFORDSHIRE</b>  | <b>Wed</b> | <b>06/03/02</b> | <b>0.367</b> |
| 3           | WO-06-A-03        | RAMADA HOTEL, BROMSGROV        | WORCESTERSHIRE        | Wed        | 30/04/03        | 0.190        |
| 4           | SC-06-A-04        | NUTFIELD PRIORY, NEAR R        | SURREY                | Thu        | 10/05/01        | 0.183        |
| 5           | CA-06-A-02        | HOTEL, CAMBRIDGE               | CAMBRIDGESHIRE        | Thu        | 13/05/04        | 0.115        |
| <b>6 **</b> | <b>WO-06-A-02</b> | <b>QUALITY HOTEL, REDDITCH</b> | <b>WORCESTERSHIRE</b> | <b>Wed</b> | <b>26/03/03</b> | <b>0.110</b> |
| 7           | TW-06-A-01        | PREMIER TRAV. INN, NEWC        | TYNE & WEAR           | Tue        | 26/04/05        | 0.098        |

TTHC Oxford Street Manchester

Licence No: 734101

RANK ORDER for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. **6 (\*\*)**

85th Percentile = No. **2 (\*\*)**

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | WO-06-A-02 | QUALITY HOTEL, REDDITCH | WORCESTERSHIRE | Wed | 26/03/03 | 0.384     |
| 2 ** | HF-06-A-01 | HOTEL, HARPENDEN        | HERTFORDSHIRE  | Wed | 06/03/02 | 0.350     |
| 3    | WO-06-A-03 | RAMADA HOTEL, BROMSGROV | WORCESTERSHIRE | Wed | 30/04/03 | 0.345     |
| 4    | TW-06-A-01 | PREMIER TRAV. INN, NEWC | TYNE & WEAR    | Tue | 26/04/05 | 0.293     |
| 5    | CA-06-A-02 | HOTEL, CAMBRIDGE        | CAMBRIDGESHIRE | Thu | 13/05/04 | 0.205     |
| 6 ** | HC-06-A-06 | HOTEL, SOUTHAMPTON      | HAMPSHIRE      | Thu | 18/07/02 | 0.161     |
| 7    | SC-06-A-04 | NUTFIELD PRIORY, NEAR R | SURREY         | Thu | 10/05/01 | 0.100     |

TTHC Oxford Street Manchester

RANK ORDER for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS  
**VEHICLES**

Ranking Type: **ARRIVALS** Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
20 surveys is not recommended by TRICS and may be misleading

15th Percentile = No. 6 (\*\*)

85th Percentile = No. 2 (\*\*)

| Rank | Site-Ref   | Description             | Area           | Day | Date     | Trip Rate |
|------|------------|-------------------------|----------------|-----|----------|-----------|
| 1    | WO-06-A-02 | QUALITY HOTEL, REDDITCH | WORCESTERSHIRE | Wed | 26/03/03 | 0.370     |
| 2 ** | HC-06-A-06 | HOTEL, SOUTHAMPTON      | HAMPSHIRE      | Thu | 18/07/02 | 0.286     |
| 3    | WO-06-A-03 | RAMADA HOTEL, BROMSGROV | WORCESTERSHIRE | Wed | 30/04/03 | 0.276     |
| 4    | SC-06-A-04 | NUTFIELD PRIORY, NEAR R | SURREY         | Thu | 10/05/01 | 0.233     |
| 5    | HF-06-A-01 | HOTEL, HARPENDEN        | HERTFORDSHIRE  | Wed | 06/03/02 | 0.233     |
| 6 ** | CA-06-A-02 | HOTEL, CAMBRIDGE        | CAMBRIDGESHIRE | Thu | 13/05/04 | 0.167     |
| 7    | TW-06-A-01 | PREMIER TRAV. INN, NEWC | TYNE & WEAR    | Tue | 26/04/05 | 0.110     |

RANK ORDER for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS  
**VEHICLES**

Ranking Type: **DEPARTURES** Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. **6 (\*\*)**

85th Percentile = No. **2 (\*\*)**

| Rank        | Site-Ref          | Description                    | Area                  | Day        | Date            | Trip Rate    |
|-------------|-------------------|--------------------------------|-----------------------|------------|-----------------|--------------|
| 1           | HC-06-A-06        | HOTEL, SOUTHAMPTON             | HAMPSHIRE             | Thu        | 18/07/02        | 0.411        |
| <b>2 **</b> | <b>SC-06-A-04</b> | <b>NUTFIELD PRIORY, NEAR R</b> | <b>SURREY</b>         | <b>Thu</b> | <b>10/05/01</b> | <b>0.283</b> |
| 3           | WO-06-A-03        | RAMADA HOTEL, BROMSGROV        | WORCESTERSHIRE        | Wed        | 30/04/03        | 0.155        |
| 4           | WO-06-A-02        | QUALITY HOTEL, REDDITCH        | WORCESTERSHIRE        | Wed        | 26/03/03        | 0.137        |
| 5           | TW-06-A-01        | PREMIER TRAV. INN, NEWC        | TYNE & WEAR           | Tue        | 26/04/05        | 0.110        |
| <b>6 **</b> | <b>CA-06-A-02</b> | <b>HOTEL, CAMBRIDGE</b>        | <b>CAMBRIDGESHIRE</b> | <b>Thu</b> | <b>13/05/04</b> | <b>0.103</b> |
| 7           | HF-06-A-01        | HOTEL, HARPENDEN               | HERTFORDSHIRE         | Wed        | 06/03/02        | 0.100        |

## **APPENDIX D**

## APPENDIX D

|                 | 2010 Base  |       |            |       | 2010 Base + Development |          |            |          |
|-----------------|------------|-------|------------|-------|-------------------------|----------|------------|----------|
|                 | AM Peak    |       | PM Peak    |       | AM Peak                 |          | PM Peak    |          |
|                 | Max<br>RFC | MAX Q | Max<br>RFC | MAX Q | Max<br>RFC              | MAX<br>Q | Max<br>RFC | MAX<br>Q |
| Arm A<br>(A59N) | 0.839      | 5     | 0.603      | 2     | 0.823                   | 5        | 0.593      | 1        |
| Arm B<br>(A59S) | 0.842      | 5     | 0.566      | 1     | 0.792                   | 4        | 0.569      | 1        |
| Arm C<br>Site   | 0.341      | 1     | 0.708      | 2     | 0.356                   | 1        | 0.606      | 2        |

## A59 2010 Base AM Peak

A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 2.0 (MAR 2005)

(c) Copyright TRL Limited. 2004

Adapted from ARCADY/3 which is Crown Copyright  
by permission of the controller of HMSOFor sales and distribution information,  
program advice and maintenance, contact:

|                   |                                 |
|-------------------|---------------------------------|
| TRL Limited       | Tel: +44 (0) 1344 770018        |
| Crowthorne House  | Fax: +44 (0) 1344 770864        |
| Nine Mile Ride    | Email: softwarebureau@trl.co.uk |
| Wokingham, Berks. | Web: www.trlsoftware.co.uk      |
| RG40 3GA UK       |                                 |

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

Run with file:-

"p:\M06000 PROJECTS\M06008 Barrow Brook Business Village\Tech\Arcady\A59 2010 Base AM Peak.vai  
(drive-on-the-left) at 14:49:35 on Monday 3 December 2007

## FILE PROPERTIES

\*\*\*\*\*

RUN TITLE: A59 2010 Base  
LOCATION: Barrow  
DATE: 15/11/2007  
CLIENT:  
ENUMERATOR: mwilliamson [TTHC13]  
JOB NUMBER: M06008  
STATUS:  
DESCRIPTION:

## INPUT DATA

\*\*\*\*\*  
ARM A - A59 (N)  
ARM B - A59 (S)  
ARM C - Site

## GEOMETRIC DATA

-----

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|
| I | ARM A | I | 6.50  | I | 7.30  | I | 18.00 | I | 25.00 | I | 34.00 | I | 23.0      | I | 0.776 | I | 37.601              | I |
| I | ARM B | I | 7.30  | I | 9.30  | I | 30.00 | I | 43.00 | I | 34.00 | I | 34.0      | I | 0.869 | I | 45.744              | I |
| I | ARM C | I | 3.00  | I | 8.25  | I | 28.00 | I | 90.00 | I | 34.00 | I | 33.0      | I | 0.714 | I | 32.597              | I |

V = approach half-width  
E = entry width

L = effective flare length  
R = entry radius

D = inscribed circle diameter  
PHI = entry angle

## TRAFFIC DEMAND DATA

-----

(Only sets included in the current run are shown)

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

TIME PERIOD BEGINS 08 15 AND ENDS 09 45  
LENGTH OF TIME PERIOD - 90 MINUTES.  
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A59 2010 Base

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN<br>FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED IF FALLING | I | FLOW STOPS | I | RATE OF FLOW (VEH/MIN)<br>BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK |
|---|-------|---|----------------------------------------------------------|---|-----------------------------------|---|------------|---|---------------------------------------|---|----------------|---|------------|
| I | ARM A | I | 15.00                                                    | I | 45.00                             | I | 75.00      | I | 20.21                                 | I | 30.32          | I | 20.21      |
| I | ARM B | I | 15.00                                                    | I | 45.00                             | I | 75.00      | I | 23.59                                 | I | 35.38          | I | 23.59      |
| I | ARM C | I | 15.00                                                    | I | 45.00                             | I | 75.00      | I | 3.41                                  | I | 5.12           | I | 3.41       |

DEMAND SET TITLE: A59 2010 Base

| I | TIME          | I | FROM/TO | I | ARM A  | I | ARM B  | I | ARM C  |
|---|---------------|---|---------|---|--------|---|--------|---|--------|
| I | 08.15 - 09.45 | I | ARM A   | I | 0.000  | I | 0.814  | I | 0.186  |
| I |               | I |         | I | 0.0    | I | 1316.0 | I | 301.0  |
| I |               | I |         | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) |
| I |               | I | ARM B   | I | 0.729  | I | 0.000  | I | 0.271  |



A59 2010 Base AM Peak

09.30 0.3  
09.45 0.2

-----  
QUEUEING DELAY INFORMATION OVER WHOLE PERIOD  
-----

| I | ARM | I | TOTAL DEMAND | I       | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|-----|---|--------------|---------|--------------|-----------|------------------------|-----------|
| I | I   | I | I            | I       | * DELAY *    | I         | * DELAY *              | I         |
| I | I   | I | (VEH)        | (VEH/H) | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | A   | I | 2217.2       | I       | 1478.2       | I         | 243.0                  | I         |
| I | B   | I | 2587.5       | I       | 1725.0       | I         | 244.7                  | I         |
| I | C   | I | 374.3        | I       | 249.6        | I         | 29.9                   | I         |
| I | ALL | I | 5179.1       | I       | 3452.7       | I         | 517.7                  | I         |

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

END OF JOB

## A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 2.0 (MAR 2005)

(c) Copyright TRL Limited, 2004

Adapted from ARCADY/3 which is Crown Copyright  
by permission of the controller of HMSOFor sales and distribution information,  
program advice and maintenance, contact:

|                   |                                 |
|-------------------|---------------------------------|
| TRL Limited       | Tel: +44 (0) 1344 770018        |
| Crowthorne House  | Fax: +44 (0) 1344 770864        |
| Nine Mile Ride    | Email: softwarebureau@trl.co.uk |
| Wokingham, Berks. | Web: www.trlsoftware.co.uk      |
| RG40 3GA UK       |                                 |

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

Run with file:-  
"p:\M06000 PROJECTS\M06008 Barrow Brook Business Village\Tech\Arcady\A59 2010 Base M Peak.vai"  
(drive-on-the-left) at 14:51:06 on Monday, 3 December 2007

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: A59 2010 Base PM Base  
LOCATION: Barrow  
DATE: 15/11/2007  
CLIENT:  
ENUMERATOR: mwilliamson [TTHC13]  
JOB NUMBER: M06008  
STATUS:  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - A59 (N)  
ARM B - A59 (S)  
ARM C - Site

GEOMETRIC DATA  
-----

| I ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I |
|---------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|
| I ARM A | I | 6.50  | I | 7.30  | I | 18.00 | I | 25.00 | I | 34.00 | I | 23.0      | I | 0.776 | I | 37.601              | I |
| I ARM B | I | 7.30  | I | 9.30  | I | 30.00 | I | 43.00 | I | 34.00 | I | 34.0      | I | 0.869 | I | 45.744              | I |
| I ARM C | I | 3.00  | I | 8.25  | I | 28.00 | I | 90.00 | I | 34.00 | I | 33.0      | I | 0.714 | I | 32.597              | I |

V = approach half-width  
E = entry width

L = effective flare length  
R = entry radius

D = inscribed circle diameter  
PHI = entry angle

TRAFFIC DEMAND DATA  
-----

(Only sets included in the current run are shown)

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

TIME PERIOD BEGINS 16.45 AND ENDS 18.15  
LENGTH OF TIME PERIOD - 90 MINUTES  
LENGTH OF TIME SEGMENT - 15 MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A59 2010 Base PM

| I ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK IS REACHED | I | FLOW STOPS IF 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 | 13.65                              | I | 20.47          | I | 13.65      | I |
| I ARM B | I | 15.00                                         | I | 45.00                  | I | 75.00                 | I | 17.15                              | I | 25.72          | I | 17.15      | I |
| I ARM C | I | 15.00                                         | I | 45.00                  | I | 75.00                 | I | 8.01                               | I | 12.02          | I | 8.01       | I |

DEMAND SET TITLE: A59 2010 Base PM

| I | I | TURNING PROPORTIONS     | I |
|---|---|-------------------------|---|
| I | I | TURNING COUNTS (VEH/HR) | I |
| I | I | (PERCENTAGE OF H.V.S)   | I |
| I | I | TIME                    | I |
| I | I | FROM/TO                 | I |
| I | I | ARM A                   | I |
| I | I | ARM B                   | I |
| I | I | ARM C                   | I |
| I | I | 16.45 - 18.15           | I |
| I | I | ARM A                   | I |
| I | I | 0.000                   | I |
| I | I | 0.0                     | I |
| I | I | 1002.0                  | I |
| I | I | 90.0                    | I |
| I | I | (0.0)                   | I |
| I | I | (0.0)                   | I |
| I | I | (0.0)                   | I |
| I | I | ARM B                   | I |
| I | I | 0.897                   | I |
| I | I | 0.000                   | I |
| I | I | 0.103                   | I |

A59 2010 Base M Peak

|   |   |   |       |       |      |       |      |       |       |      |
|---|---|---|-------|-------|------|-------|------|-------|-------|------|
| I | I | I | 1231  | 0     | I    | 0     | 0    | I     | 141.0 | I    |
| I | I | I | (     | 0.0)  | I    | (     | 0.0) | I     | (     | 0.0) |
| I | I | I | I     | I     | I    | I     | I    | I     | I     | I    |
| I | I | I | ARM C | 0.507 | I    | 0.493 | I    | 0.000 | I     | I    |
| I | I | I | I     | 325.0 | I    | 316.0 | I    | 0.0   | I     | I    |
| I | I | I | I     | (     | 0.0) | I     | (    | 0.0)  | I     | (    |
| I | I | I | I     | I     | I    | I     | I    | I     | I     | I    |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| I | TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) | I |
|---|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|---|
| I | 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 13.65               | 34.55                 | 0.395                        |                                  | 0.0                      | 0.6                    | 9.5                                 |                                               | 0.05                                           | I |
| I | ARM B       | 17.15               | 44.77                 | 0.383                        |                                  | 0.0                      | 0.6                    | 9.1                                 |                                               | 0.04                                           | I |
| I | ARM C       | 8.01                | 21.64                 | 0.370                        |                                  | 0.0                      | 0.6                    | 8.5                                 |                                               | 0.07                                           | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 16.30               | 33.95                 | 0.480                        |                                  | 0.6                      | 0.9                    | 13.5                                |                                               | 0.06                                           | I |
| I | ARM B       | 20.48               | 44.58                 | 0.459                        |                                  | 0.6                      | 0.8                    | 12.5                                |                                               | 0.04                                           | I |
| I | ARM C       | 9.57                | 19.50                 | 0.491                        |                                  | 0.6                      | 1.0                    | 13.8                                |                                               | 0.10                                           | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 19.96               | 33.15                 | 0.602                        |                                  | 0.9                      | 1.5                    | 21.7                                |                                               | 0.08                                           | I |
| I | ARM B       | 25.08               | 44.32                 | 0.566                        |                                  | 0.8                      | 1.3                    | 19.0                                |                                               | 0.05                                           | I |
| I | ARM C       | 11.72               | 16.56                 | 0.708                        |                                  | 1.0                      | 2.3                    | 32.0                                |                                               | 0.20                                           | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 19.96               | 33.12                 | 0.603                        |                                  | 1.5                      | 1.5                    | 22.5                                |                                               | 0.08                                           | I |
| I | ARM B       | 25.08               | 44.31                 | 0.566                        |                                  | 1.3                      | 1.3                    | 19.5                                |                                               | 0.05                                           | I |
| I | ARM C       | 11.72               | 16.54                 | 0.708                        |                                  | 2.3                      | 2.4                    | 35.3                                |                                               | 0.21                                           | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 16.30               | 33.90                 | 0.481                        |                                  | 1.5                      | 0.9                    | 14.3                                |                                               | 0.06                                           | I |
| I | ARM B       | 20.48               | 44.57                 | 0.459                        |                                  | 1.3                      | 0.9                    | 13.0                                |                                               | 0.04                                           | I |
| I | ARM C       | 9.57                | 19.47                 | 0.491                        |                                  | 2.4                      | 1.0                    | 15.4                                |                                               | 0.10                                           | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |
| I | ARM A       | 13.65               | 34.52                 | 0.395                        |                                  | 0.9                      | 0.7                    | 10.0                                |                                               | 0.05                                           | I |
| I | ARM B       | 17.15               | 44.76                 | 0.383                        |                                  | 0.9                      | 0.6                    | 9.5                                 |                                               | 0.04                                           | I |
| I | ARM C       | 8.01                | 21.61                 | 0.371                        |                                  | 1.0                      | 0.6                    | 9.1                                 |                                               | 0.07                                           | I |
| I |             |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                | I |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.6                            | *  |
| 17.15                  | 0.9                            | *  |
| 17.30                  | 1.5                            | *  |
| 17.45                  | 1.5                            | ** |
| 18.00                  | 0.9                            | *  |
| 18.15                  | 0.7                            | *  |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |   |
|------------------------|--------------------------------|---|
| 17.00                  | 0.6                            | * |
| 17.15                  | 0.8                            | * |
| 17.30                  | 1.3                            | * |
| 17.45                  | 1.3                            | * |
| 18.00                  | 0.9                            | * |
| 18.15                  | 0.6                            | * |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |    |
|------------------------|--------------------------------|----|
| 17.00                  | 0.6                            | *  |
| 17.15                  | 1.0                            | *  |
| 17.30                  | 2.3                            | ** |
| 17.45                  | 2.4                            | ** |

A59 2010 Base M Peak

18 00 1.0 \*  
18 15 0.6 \*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | ARM | I | TOTAL DEMAND |         | I      | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I    |
|---|-----|---|--------------|---------|--------|--------------|-----------|---|------------------------|-----------|------|
|   |     |   | (VEH)        | (VEH/H) |        | (MIN)        | (MIN/VEH) |   | (MIN)                  | (MIN/VEH) |      |
| I | A   | I | 1497.4       | I       | 998.2  | I            | 91.6      | I | 91.6                   | I         | 0.06 |
| I | B   | I | 1881.3       | I       | 1254.2 | I            | 82.6      | I | 82.6                   | I         | 0.04 |
| I | C   | I | 878.9        | I       | 586.0  | I            | 114.1     | I | 114.1                  | I         | 0.13 |
| I | ALL | I | 4257.6       | I       | 2838.4 | I            | 288.3     | I | 288.3                  | I         | 0.07 |

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

END OF JOB

## A R C A D Y 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 2.0 (MAR 2005)

(c) Copyright TRL Limited, 2004

Adapted from ARCADY/3 which is Crown Copyright  
by permission of the controller of HMSOFor sales and distribution information,  
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018  
 Crowthorne House Fax: +44 (0) 1344 770864  
 Nine Mile Ride Email: softwarebureau@trl.co.uk  
 Wokingham, Berks. Web: www.trlsoftware.co.uk  
 RG40 3GA, UK

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

Run with file:-  
 "p:\M06000 PROJECTS\M06008 Barrow Brook Business Village\Tech\Arcady\A59 2010 Base AM + dev Peak.vai  
 (drive-on-the-left) at 12:58:00 on Thursday, 29 November 2007

## FILE PROPERTIES

\*\*\*\*\*  
 RUN TITLE: A59 2010 Base + Dev AM Base  
 LOCATION: Barrow  
 DATE: 15/11/2007  
 CLIENT:  
 ENUMERATOR: mwilliamson [TTHC13]  
 JOB NUMBER: M06008  
 STATUS:  
 DESCRIPTION:

## INPUT DATA

\*\*\*\*\*  
 ARM A - A59 (N)  
 ARM B - A59 (S)  
 ARM C - Site

## GEOMETRIC DATA

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|
| I | ARM A | I | 6.50  | I | 7.30  | I | 18.00 | I | 25.00 | I | 34.00 | I | 23.0      | I | 0.776 | I | 37.601              | I |
| I | ARM B | I | 7.30  | I | 9.30  | I | 30.00 | I | 43.00 | I | 34.00 | I | 34.0      | I | 0.869 | I | 45.744              | I |
| I | ARM C | I | 3.00  | I | 8.25  | I | 28.00 | I | 90.00 | I | 34.00 | I | 33.0      | I | 0.714 | I | 32.597              | I |

V = approach half-width L = effective flare length D = inscribed circle diameter  
 E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

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

TIME PERIOD BEGINS 08.15 AND ENDS 09.45  
 LENGTH OF TIME PERIOD - 90 MINUTES.  
 LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A59 2010 Base + DEV AM

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS IF 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 | 19.76                              | I | 29.64          | I | 19.76      | I |
| I | ARM B | I | 15.00                                                 | I | 45.00                  | I | 75.00                 | I | 22.50                              | I | 33.75          | I | 22.50      | I |
| I | ARM C | I | 15.00                                                 | I | 45.00                  | I | 75.00                 | I | 3.56                               | I | 5.34           | I | 3.56       | I |

DEMAND SET TITLE: A59 2010 Base + DEV AM

| I | TIME          | I | FROM/TO | I | ARM A  | I | ARM B  | I | ARM C  | I |
|---|---------------|---|---------|---|--------|---|--------|---|--------|---|
| I | 08.15 - 09.45 | I | ARM A   | I | 0.000  | I | 0.832  | I | 0.168  | I |
| I |               | I |         | I | 0.0    | I | 1316.0 | I | 265.0  | I |
| I |               | I | ( 0.0)  | I | ( 0.0) | I | ( 0.0) | I | ( 0.0) | I |
| I |               | I | ARM B   | I | 0.764  | I | 0.000  | I | 0.236  | I |

[illegible]

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  | 0.0                      | 1.2                    | 17.6                                |                                               | 0.06                                           |
| ARM A       | 19.76               | 35.90                 | 0.550                        |                                  | 0.0                      | 1.1                    | 16.0                                |                                               | 0.05                                           |
| ARM B       | 22.50               | 42.88                 | 0.525                        |                                  | 0.0                      | 0.2                    | 3.1                                 |                                               | 0.06                                           |
| ARM C       | 3.56                | 20.36                 | 0.175                        |                                  |                          |                        |                                     |                                               |                                                |
| 08.30-08.45 |                     |                       |                              |                                  | 1.2                      | 1.9                    | 28.0                                |                                               | 0.08                                           |
| ARM A       | 23.60               | 35.56                 | 0.664                        |                                  | 1.1                      | 1.7                    | 25.0                                |                                               | 0.06                                           |
| ARM B       | 26.87               | 42.31                 | 0.635                        |                                  | 0.2                      | 0.3                    | 4.5                                 |                                               | 0.07                                           |
| ARM C       | 4.25                | 17.96                 | 0.237                        |                                  |                          |                        |                                     |                                               |                                                |
| 08.45-09.00 |                     |                       |                              |                                  | 1.9                      | 4.4                    | 60.3                                |                                               | 0.15                                           |
| ARM A       | 28.90               | 35.11                 | 0.823                        |                                  | 1.7                      | 3.7                    | 51.4                                |                                               | 0.11                                           |
| ARM B       | 32.91               | 41.56                 | 0.792                        |                                  | 0.3                      | 0.5                    | 7.9                                 |                                               | 0.10                                           |
| ARM C       | 5.21                | 14.72                 | 0.354                        |                                  |                          |                        |                                     |                                               |                                                |
| 09.00-09.15 |                     |                       |                              |                                  | 4.4                      | 4.5                    | 67.2                                |                                               | 0.16                                           |
| ARM A       | 28.90               | 35.10                 | 0.823                        |                                  | 3.7                      | 3.7                    | 55.7                                |                                               | 0.12                                           |
| ARM B       | 32.91               | 41.54                 | 0.792                        |                                  | 0.5                      | 0.5                    | 8.2                                 |                                               | 0.11                                           |
| ARM C       | 5.21                | 14.65                 | 0.356                        |                                  |                          |                        |                                     |                                               |                                                |
| 09.15-09.30 |                     |                       |                              |                                  | 4.5                      | 2.0                    | 31.7                                |                                               | 0.09                                           |
| ARM A       | 23.60               | 35.55                 | 0.664                        |                                  | 3.7                      | 1.8                    | 27.5                                |                                               | 0.07                                           |
| ARM B       | 26.87               | 42.28                 | 0.635                        |                                  | 0.5                      | 0.3                    | 4.8                                 |                                               | 0.07                                           |
| ARM C       | 4.25                | 17.87                 | 0.238                        |                                  |                          |                        |                                     |                                               |                                                |
| 09.30-09.45 |                     |                       |                              |                                  | 2.0                      | 1.2                    | 19.1                                |                                               | 0.06                                           |
| ARM A       | 19.76               | 35.89                 | 0.551                        |                                  | 1.8                      | 1.1                    | 17.1                                |                                               | 0.05                                           |
| ARM B       | 22.50               | 42.86                 | 0.525                        |                                  | 0.3                      | 0.2                    | 3.3                                 |                                               | 0.06                                           |
| ARM C       | 3.56                | 20.30                 | 0.175                        |                                  |                          |                        |                                     |                                               |                                                |

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |       |
|------------------------|--------------------------------|-------|
| 08.30                  | 1.2                            | *     |
| 08.45                  | 1.9                            | **    |
| 09.00                  | 4.4                            | ***** |
| 09.15                  | 4.5                            | ***** |
| 09.30                  | 2.0                            | **    |
| 09.45                  | 1.2                            | *     |

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |     |
|------------------------|--------------------------------|-----|
| 08.30                  | 1.1                            | *   |
| 08.45                  | 1.7                            | **  |
| 09.00                  | 3.7                            | *** |
| 09.15                  | 3.7                            | *** |
| 09.30                  | 1.8                            | **  |
| 09.45                  | 1.1                            | *   |

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 08 30                  | 0 2                            |
| 08.45                  | 0.3                            |
| 09.00                  | 0.5 *                          |
| 09.15                  | 0.5 *                          |

09 30 0.3  
09 45 0.2

-----  
 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD  
 -----

| I | ARM | I | TOTAL DEMAND |          | I | * QUEUEING * |           | I | * INCLUSIVE QUEUEING * |           | I |
|---|-----|---|--------------|----------|---|--------------|-----------|---|------------------------|-----------|---|
| I |     | I |              |          | I | * DELAY *    |           | I | * DELAY *              |           | I |
| I |     | I | (VEH)        | (VEH/H)  | I | (MIN)        | (MIN/VEH) | I | (MIN)                  | (MIN/VEH) | I |
| I | A   | I | 2167.9       | I 1445.3 | I | 223.9        | I 0.10    | I | 224.0                  | I 0.10    | I |
| I | B   | I | 2468.2       | I 1645.5 | I | 192.8        | I 0.08    | I | 192.8                  | I 0.08    | I |
| I | C   | I | 390.8        | I 260.5  | I | 31.8         | I 0.08    | I | 31.8                   | I 0.08    | I |
| I | ALL | I | 5026.9       | I 3351.2 | I | 448.6        | I 0.09    | I | 448.6                  | I 0.09    | I |

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

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

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

END OF JOB

## ARCADY 6

## ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 2.0 (MAR 2005)

(c) Copyright TRL Limited 2004

Adapted from ARCADY/3 which is Crown Copyright  
by permission of the controller of HMSOFor sales and distribution information,  
program advice and maintenance, contact:

TRL Limited  
Crowthorne House  
Nine Mile Ride  
Wokingham, Berks.  
RG40 3GA UK

Tel: +44 (0) 1344 770018  
Fax: +44 (0) 1344 770864  
Email: softwarebureau@trl.co.uk  
Web: www.trlsoftware.co.uk

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

Run with file:-  
"p:\M06000 PROJECTS\M06008 Barrow Brook Business Village\Tech\Arcady\A59 2010 Base PM + dev Peak.vai  
(drive-on-the-left) at 12:57:40 on Thursday, 29 November 2007

FILE PROPERTIES  
\*\*\*\*\*

RUN TITLE: A59 2010 Base + Dev PM Base  
LOCATION: Barrow  
DATE: 15/11/2007  
CLIENT:  
ENUMERATOR: mwilliamson [TTHC13]  
JOB NUMBER: M06008  
STATUS:  
DESCRIPTION:

INPUT DATA  
\*\*\*\*\*

ARM A - A59 (N)  
ARM B - A59 (S)  
ARM C - Site

GEOMETRIC DATA  
\*\*\*\*\*

| I | ARM   | I | V (M) | I | E (M) | I | L (M) | I | R (M) | I | D (M) | I | PHI (DEG) | I | SLOPE | I | INTERCEPT (PCU/MIN) | I |
|---|-------|---|-------|---|-------|---|-------|---|-------|---|-------|---|-----------|---|-------|---|---------------------|---|
| I | ARM A | I | 6.50  | I | 7.30  | I | 18.00 | I | 25.00 | I | 34.00 | I | 23.0      | I | 0.776 | I | 37.601              | I |
| I | ARM B | I | 7.30  | I | 9.30  | I | 30.00 | I | 43.00 | I | 34.00 | I | 34.0      | I | 0.869 | I | 45.744              | I |
| I | ARM C | I | 3.00  | I | 8.25  | I | 28.00 | I | 90.00 | I | 34.00 | I | 33.0      | I | 0.714 | I | 32.597              | I |

V = approach half-width  
E = entry width

L = effective flare length  
R = entry radius

D = inscribed circle diameter  
PHI = entry angle

TRAFFIC DEMAND DATA  
\*\*\*\*\*

(Only sets included in the current run are shown)

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

TIME PERIOD BEGINS 16.45 AND ENDS 18.15  
LENGTH OF TIME PERIOD - 90 MINUTES.  
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A59 2010 Base + DEV PM

| I | ARM   | I | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | I | TOP OF PEAK IS REACHED | I | IF FLOW STOPS IF 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 | 13.70                              | I | 20.55          | I | 13.70      | I |
| I | ARM B | I | 15.00                                         | I | 45.00                  | I | 75.00                    | I | 17.21                              | I | 25.82          | I | 17.21      | I |
| I | ARM C | I | 15.00                                         | I | 45.00                  | I | 75.00                    | I | 6.85                               | I | 10.27          | I | 6.85       | I |

DEMAND SET TITLE: A59 2010 Base + DEV PM

| I | TIME          | I | FROM/TO | I | ARM A | I | ARM B  | I | ARM C | I |
|---|---------------|---|---------|---|-------|---|--------|---|-------|---|
| I | 16.45 - 18.15 | I | ARM A   | I | 0.000 | I | 0.914  | I | 0.086 | I |
| I |               | I |         | I | 0.0   | I | 1002.0 | I | 94.0  | I |
| I |               | I |         | I | (0.0) | I | (0.0)  | I | (0.0) | I |
| I |               | I | ARM B   | I | 0.894 | I | 0.000  | I | 0.106 | I |

A59 2010 Base PM + dev Peak

```

I      I      I 1231.0 I 0 0 I 146.0 I
I      I      I ( 0.0) I ( 0.0) I ( 0.0) I
I      I      I      I      I      I
I      I      I      I      I      I
I      I      I 0.507 I 0.493 I 0.000 I
I      I      I 278.0 I 270.0 I 0.0 I
I      I      I ( 0.0) I ( 0.0) I ( 0.0) I
I      I      I      I      I      I

```

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 16.45-17.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 13.70               | 34.99                 | 0.392                        |                                  | 0.0                      | 0.6                    | 9.4                                 |                                               | 0.05                                           |
| ARM B       | 17.21               | 44.73                 | 0.385                        |                                  | 0.0                      | 0.6                    | 9.2                                 |                                               | 0.04                                           |
| ARM C       | 6.85                | 21.64                 | 0.316                        |                                  | 0.0                      | 0.5                    | 6.7                                 |                                               | 0.07                                           |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 16.36               | 34.48                 | 0.474                        |                                  | 0.6                      | 0.9                    | 13.2                                |                                               | 0.06                                           |
| ARM B       | 20.55               | 44.53                 | 0.462                        |                                  | 0.6                      | 0.9                    | 12.6                                |                                               | 0.04                                           |
| ARM C       | 8.18                | 19.50                 | 0.420                        |                                  | 0.5                      | 0.7                    | 10.4                                |                                               | 0.09                                           |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 20.04               | 33.79                 | 0.593                        |                                  | 0.9                      | 1.4                    | 21.0                                |                                               | 0.07                                           |
| ARM B       | 25.17               | 44.25                 | 0.569                        |                                  | 0.9                      | 1.3                    | 19.2                                |                                               | 0.05                                           |
| ARM C       | 10.02               | 16.56                 | 0.605                        |                                  | 0.7                      | 1.5                    | 21.2                                |                                               | 0.15                                           |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 20.04               | 33.77                 | 0.593                        |                                  | 1.4                      | 1.4                    | 21.7                                |                                               | 0.07                                           |
| ARM B       | 25.17               | 44.25                 | 0.569                        |                                  | 1.3                      | 1.3                    | 19.7                                |                                               | 0.05                                           |
| ARM C       | 10.02               | 16.54                 | 0.606                        |                                  | 1.5                      | 1.5                    | 22.6                                |                                               | 0.15                                           |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 16.36               | 34.45                 | 0.475                        |                                  | 1.4                      | 0.9                    | 14.0                                |                                               | 0.06                                           |
| ARM B       | 20.55               | 44.52                 | 0.462                        |                                  | 1.3                      | 0.9                    | 13.2                                |                                               | 0.04                                           |
| ARM C       | 8.18                | 19.47                 | 0.420                        |                                  | 1.5                      | 0.7                    | 11.4                                |                                               | 0.09                                           |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| ARM A       | 13.70               | 34.97                 | 0.392                        |                                  | 0.9                      | 0.6                    | 9.9                                 |                                               | 0.05                                           |
| ARM B       | 17.21               | 44.72                 | 0.385                        |                                  | 0.9                      | 0.6                    | 9.6                                 |                                               | 0.04                                           |
| ARM C       | 6.85                | 21.61                 | 0.317                        |                                  | 0.7                      | 0.5                    | 7.2                                 |                                               | 0.07                                           |

QUEUE AT ARM A

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 17.00                  | 0.6 *                          |
| 17.15                  | 0.9 *                          |
| 17.30                  | 1.4 *                          |
| 17.45                  | 1.4 *                          |
| 18.00                  | 0.9 *                          |
| 18.15                  | 0.6 *                          |

QUEUE AT ARM B

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 17.00                  | 0.6 *                          |
| 17.15                  | 0.9 *                          |
| 17.30                  | 1.3 *                          |
| 17.45                  | 1.3 *                          |
| 18.00                  | 0.9 *                          |
| 18.15                  | 0.6 *                          |

QUEUE AT ARM C

| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
|------------------------|--------------------------------|
| 17.00                  | 0.5                            |
| 17.15                  | 0.7 *                          |
| 17.30                  | 1.5 *                          |
| 17.45                  | 1.5 **                         |

18.00 0 7 \*  
18.15 0 5

-----  
QUEUEING DELAY INFORMATION OVER WHOLE PERIOD  
-----

| I | ARM | I | TOTAL DEMAND | I        | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|-----|---|--------------|----------|--------------|-----------|------------------------|-----------|
| I | I   | I | I            | I        | * DELAY *    | I         | * DELAY *              | I         |
| I | I   | I | I            | I        | I            | I         | I                      | I         |
| I | I   | I | (VEH)        | (VEH/H)  | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | A   | I | 1502.8       | I 1001.9 | I 89.1       | I 0.06    | I 89.1                 | I 0.06    |
| I | B   | I | 1888.2       | I 1258.8 | I 83.4       | I 0.04    | I 83.4                 | I 0.04    |
| I | C   | I | 751.4        | I 500.9  | I 79.5       | I 0.11    | I 79.5                 | I 0.11    |
| I | ALL | I | 4142.4       | I 2761.6 | I 252.0      | I 0.06    | I 252.0                | I 0.06    |

\* 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