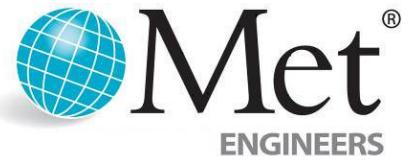


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Group (WARD)**

**A65/A658 (Leeds to
Burley-in-Wharfedale)**

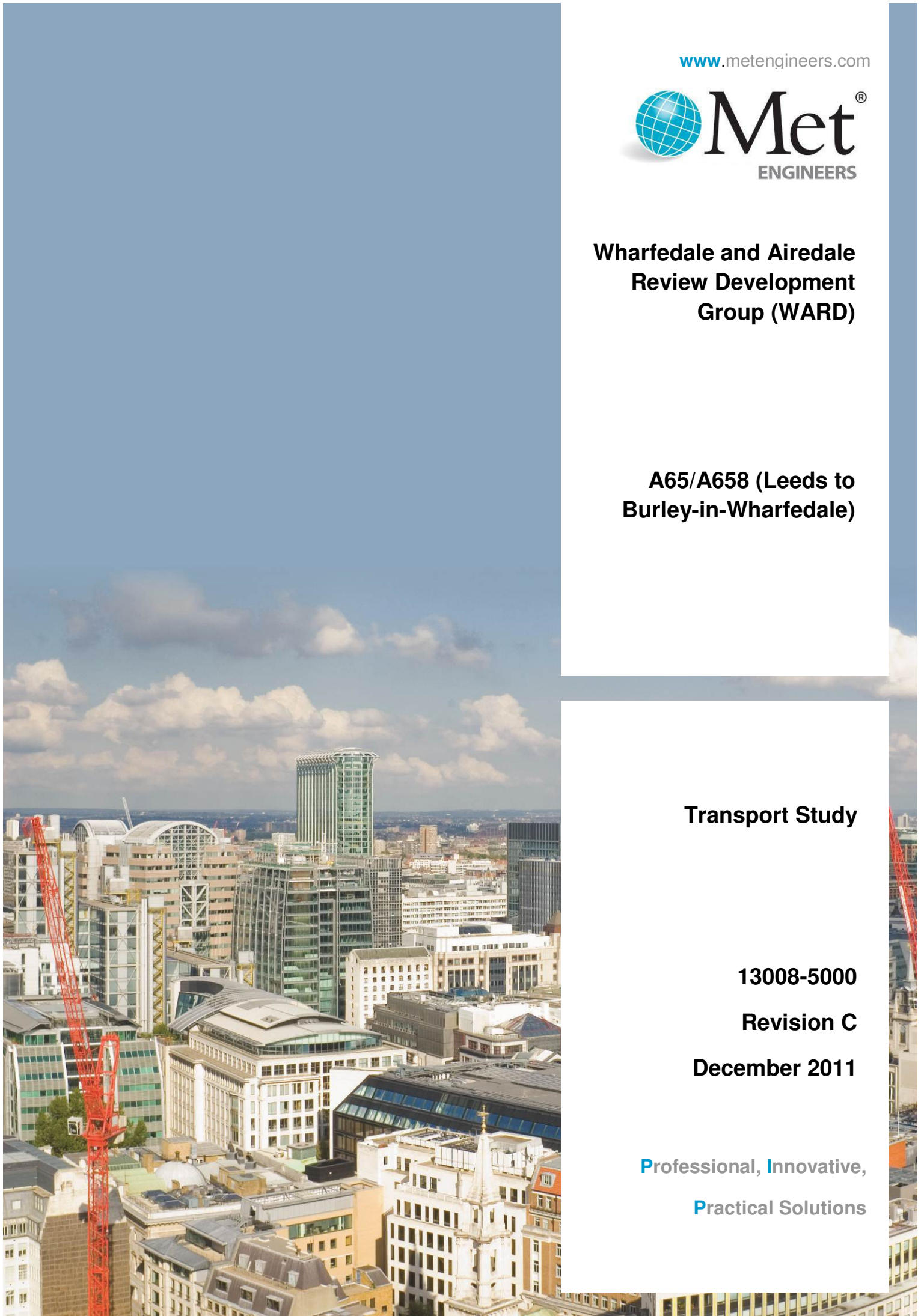
Transport Study

13008-5000

Revision C

December 2011

**Professional, Innovative,
Practical Solutions**



Revision Record

Revision Record					
Report Ref: 13008-5000 A					
Rev	Description	Date	Originator	Checked	Approved
A	Transport Study	Sep 2011	BJS		
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1.0 INTRODUCTION

1.1 This A65/A658 Transport Study was commissioned by Wharfedale and Airedale Review Development Group (WARD) to assess traffic conditions along the A65 corridor, given a background of major changes along the corridor in the past 20 years.

1.2 The report will also consider traffic conditions on some subsidiary roads, namely the A658 and the Outer Ring Road.

1.3.1 In addition, comments regarding the level of congestion on the A65 will be made and highway improvement schemes identified.

1.4 The most obvious changes are:-

- Loss of many Large Employment Sites

Most of these former employment sites have been designated as ‘brownfield sites’ for housing development;

- Large numbers of New Dwellings

Since 1995 some 1,029 new dwellings have been built. In addition there are now planning applications that have been passed to build at least a further 2,689 dwellings, with current applications for around 929 dwellings. Figure A shows the numbers of large developments built, those with planning permission and those that are part of current applications;

- Major expansion of Leeds/Bradford Airport

Passenger numbers have increased from 1.4 million in 2004 to 4.3 million in 2011 and the airport management company has further plans to increase passenger numbers to 5.1 million in 2016 and 7 million by 2030.

- 1.5 The loss of so much employment plus all the new dwellings (and planned new dwellings) has created major problems for the transport infrastructure as a direct consequence of the disappearance of these opportunities, new and existing residents must travel into Leeds, Bradford and other major towns for employment instead of making short journeys to local employment. The two main roads, the A65 and the A658 have barely changed at all during this period and it is very difficult to see how any improvements to the road network could be achieved given the geography and topography of the area.
- 1.6 At weekends the pressures on the local road infrastructures are at times even greater as all the new and existing residents travel to shops and other destinations. Current travel monitoring overlooks this ‘leisure’ traffic. Monitoring systems need to reflect all congested times, and not simply commuter between residences and workplaces. The fact that both the A65 and A658 are major through routes and also carry holiday traffic to the Yorkshire Dales further exacerbates the problem of congestion. Additional and more analytical traffic monitoring needs to be undertaken to provide accurate information about this problem, including times outside traditional peak periods.
- 1.7 Congestion on both roads has lead to large numbers of car drivers ‘rat running’ on residential and minor roads through out the corridor to try and avoid the main roads, creating potential dangers for residents and having a negative impact on the environment. Roads particularly affected are listed below:
- Hawksworth Road, Horsforth;
 - Bayton Lane, Yeadon;
 - Cemetery Road, Yeadon;
 - Netherfield Road, Guiseley;
 - Moor Lane, Guiseley;
 - Queensway, Rawdon;
 - Town Street, Rawdon.

One of the consequences of this activity is to introduce unpredictable distortion of the data collected at traditional monitoring points. Ultimately, of course, all traffic travelling along the section of the A65 which this study considers must cross the Leeds Outer Ring Road.

2.0 BACKGROUND

- 2.1 In considering the scope of this report, the following documents have been reviewed and relevant extracts used within this report:-
- Leeds Central Cordon 2009 – Traffic Flows;
 - Local Transport Plan 2 (2006-2011);
 - West Yorkshire Local Transport Plan (2011-2026);
 - Leeds Monitoring Report and A65 Quality Bus Initiative;
 - A65, Transport Assessment – 2005.
- 2.2 Both Leeds City Council and Bradford Metropolitan District Council have been contacted and some relevant traffic data has been obtained from these Authorities. It is notable, however, that there are substantial deficiencies in the available data, both as to its currency and its comprehensiveness.
- 2.3 Planning Policies, in the 1990's, were based on developing sites with good access by car. These decisions resulted in increased numbers of car based trips being made on the network and have added to congestion problems. The increase in car ownership and the expansion of commuter traffic over the intervening 20 years means that many such sites no longer enjoy the previous good access by car, and it is questionable whether it is valid to continue to develop out-of-town areas as though they did still enjoy such access, in light of the obvious consequence of the generation of commuter traffic.
- 2.4 The Department for Transport (DfT) latest statistics relating to “Households with good transport access to key services or work” (Table ACS0111) indicate that the index of households with such “good access” (as defined) has declined over the period 2007-2010 as follows:

Location	Index: 2007	Index: 2010
Bradford	113	104
Leeds	117	109
West Yorkshire	102	98

Congestion

- 2.5 Traffic congestion is a condition on road networks (composed of junctions and links) that occurs as car use increases, and is characterised by slower speeds, longer journey times and increased vehicular queuing.
- 2.6 The Leeds City Council A65 Transport Study of May 2005 indicated that “Congestion arises from greater demands on the transport system than it can cope with. This is partly a result of more people taking advantage of the transport networks available and making more journeys on those networks.” Bradford Council has defined congestion as “vehicles travelling at traffic speeds less than 70% of the speed limit”.
- 2.7 Leeds City Council notes that “LTP2 proposes to measure congestion by vehicle delay (time lost per vehicle kilometre) in the morning peak period from 07:00 to 10:00. However, there are suggestions that person delay would be a more appropriate measure as this takes account of priority schemes e.g. HOV and bus lanes.”

3.0 INFORMATION / OVERVIEW

3.1 A new 15 year Local Transport Plan (LTP3) sets the transport policies in the wider context of West Yorkshire, consistent with national and regional policy. This plan sets out the transport needs and ambitions until 2026.

3.2 In summary the transport objectives are :-

- To support the growth of local economies, contribute to an enhanced quality of life within communities and reduce the adverse impact of car based travel;
- To improve access to jobs, education and other services particularly by public transport, walking and cycling;
- To improve the personal security and perception of safety of transport users;
- To improve journey time reliability and make better use of highway capacity;
- To encourage a greater proportion of journeys by public transport, cycling and walking;
- To reduce the level of demand for travel by car;
- To reduce the number and severity of road casualties, and tackle problems facing vulnerable road users (including those in deprived areas);
- To reduce transport emissions of air pollutants, greenhouse gases and noise;
- To improve the condition and manage the use of the highway and public transport infrastructure, to meet the needs of current and future transport users.

- 3.3 LTP3 (2011-2026) sets out to tackle congestion and a lack of transport investment, which are key contributory factors to lower than average economic performance in West Yorkshire.
- 3.4 In terms of the earlier proposition that “Congestion arises from greater demands on the transport system than it can cope with.”. Figure No’s 1 and 2 of the A65 Transport Assessment (May 2005) show the congestion patterns for the primary road network centres on the A65. The average vehicle speeds over the 3 hour morning and evening peak periods have been developed by the West Yorkshire Monitoring Team from weekday data (2003) supplied by the Department of Transport (DfT). Each direction of travel along the roads is coloured to represent the average speed in the peak period. Red colours identify low vehicle speeds whilst green colours are higher speeds. From the plans, the commonly congested lengths of the A65 are clear although, there will be periods when congestion is worse than the average shown.
- 3.5 It is recognised that that data relating back to 2003 needs to be updated, and any comprehensive study of the A65 would benefit from current monitoring at various points, particularly:
- a) the Leeds Outer Ring Road between Horsforth and Rodley;
 - b) the A658 from Bramhope (the Dyneley Arms crossroads on Pool Bank) to Greengates ;
 - c) the A65 on Saturday and Sundays.

- 3.6 The congestion patterns indicate 3 areas of serious congestion on the A65 where peak speeds are between 11mph and 20 mph (compared with a general 30 mph speed limit):

AM Peak Period (07:30 to 09:30)

1. Guiseley to Rawdon Traffic Lights (A65/A658 junction):
This is a point-to-point distance of 1.9 miles which, with unimpeded progress at the prevailing speed limit (30 mph), but allowing for potential interruption at traffic signals, would take around 5 minutes to travel but which typically takes 6 minutes in the AM peak.
2. Rawdon Airedale Works to outer Ring Road Junction, Horsforth:
The distance in this case is 1.1 miles, and the travel time at the prevailing speed limit (40 mph) would be no more than 2 minutes. There is one pedestrian controlled crossing at Layton Lane. Typically takes 7 minutes in the AM peak.
3. Kirkstall Abbey to Leeds Centre:
A point-to-point distance of 3.3 miles with unimpeded travel time, at the prevailing speed limit (30 mph), and allowing for traffic signals at Kirkstall Lane, Cardigan Fields and Kirkstall Viaduct, of 8 minutes. Typically 20 minutes in the AM peak.

PM Peak Period (16:00 to 19:00)

1. Leeds Centre to Kirkstall Lane Traffic Signals:
This is a point-to-point distance of 2.6 miles which, with unimpeded progress at the prevailing speed limit (30 mph), would take 6 minutes to travel. This journey takes, typically, 14 minutes in the PM peak.
2. Horsforth (Hawsworth Road) via Outer Ring Road and Rawdon Traffic Lights to Guiseley gyratory system:

The distance in this case is 4.7 miles, and the travel time at the prevailing speed limit (30 mph) would be 12 minutes. Typically 16 minutes in the PM peak.

3. White Cross to Otley Road, Menston:

A point-to-point distance of 1.1 miles with unimpeded travel time, at the prevailing speed limit (30 mph), of 3 minutes. Typically 5 minutes in the PM peak.

The overall distances between the areas of congestion, and the notional travel time at the prevailing speed limit and the empirical evidence of actual journey times in the AM and PM peaks are as follows:

AM peak				
From	To	Distance (miles)	Unimpeded time at prevailing limit	Typical time
Otley Road, Menston	Wellington Street, Leeds	10.8	28 minutes	45 minutes

PM peak				
From	To	Distance (miles)	Unimpeded time at prevailing limit	Typical time
Wellington Street, Leeds	Otley Road, Menston	10.8	26 minutes	48 minutes

3.7 Similar figures for the whole of Leeds (which are available separately) indicate that all corridors on the network suffer congestion, but with the A65 and A660 substantially more congested than other radial routes into and out of the city centre. Table 1a shows inbound journey times along the A65.

Table 1a: Journey times into Leeds along A65 corridor

	Bus (off-peak)	Bus (peak)	Car (off-peak)	Car (Peak)	Train
Menston - Leeds	62 mins	83 mins	28 mins	59 mins	18 mins
Guiseley - Leeds	57 mins	70 mins	21 mins	48 mins	15 mins
Rawdon - Leeds	37 mins	55 mins	18 mins	42 mins	n/a
Horsforth - Leeds	30 mins	44 mins	15 mins	33 mins	n/a

3.8 Table 1a shows that inbound journey times along the A65 are considerably increased at peak times, due to congestion. A similar pattern is evident during the outbound peak times as indicated in Table 1b below:-

Table 1b: Journey times from Leeds along A65 corridor

	Car (off-peak)	Car (Peak)
Leeds - Horsforth	11 mins	23 mins
Leeds - Rawdon	15 mins	27 mins
Leeds - Guiseley	21 mins	42 mins
Leeds - Menston	26 mins	48 mins

Of particular concern is the effect on bus services, so that journeys take between 20% and 45% longer at peak times, aside from reliability issues. A journey time of ONE HOUR or more to reach, or return from, the city centre, before any onward journeys, would be unacceptable to almost any resident except those with no alternative. It hardly needs saying that further congestion on the A65, with even longer journey times, would further undermine attempts to increase the use of public transport.

- 3.9 Also notable are the short journey times where a train service is available. It is therefore no surprise that the train is an extremely popular option. Unfortunately, inbound AM peak trains arriving at Guiseley are already full and there is no realistic prospect of increasing capacity. The popularity of trains has created serious problems of parking in all areas served by stations (e.g. Menston and Guiseley) due to commuters (including those from Pool, Addingham and Otley) filling car parks and local streets for large periods of the day to the inconvenience of other residents and train users. This factor and the unavailability of additional land for parking would need to be taken into account before increasing train capacity (not possible in the short term due to platform length and lack of rolling stock).
- 3.10 It is clear from Table 1a that the bus service, with inbound times for journeys beyond Horsforth being a minimum of 55 minutes at peak times, will continue to be an unattractive option to residents of Rawdon, Yeadon, Guiseley and Menston, even when the Quality Bus Route has been completed. The Quality Bus Route will not affect AM peak travellers into Leeds until they reach Horsforth, so it will not address two of the areas of serious congestion listed above. The QBR may serve to shorten the journey time to Horsforth in the PM peak but will not have any effect on serious congestion areas 2 and 3 listed above, beyond the Outer Ring Road.

3.11 Other general factors to be aware of are that :-

- Demand for travel is increasing. This can be seen in car ownership trends for Yorkshire & Humber, which showed an increase from 380 per 1,000 population owning cars to 425 per 1,000 over the period 2000-2010. [Source: DfT statistics, Table veh104/2010]. This trend is in addition to the forecast growth in households which will also impact upwards on car ownership levels. Household car ownership is shown (also by the DfT: Table NTS9902) to have increased, only 26% of households NOT owning a car or van in 2009/10, compared with 34% in 1995/7.
- There is suppressed demand for public transport in the corridor, particularly rail. This evidence comes from the rapid take up of new rail capacity on the Wharfedale Line, first with electrification, then following introduction of new and additional train sets and finally following extension of the train sets from 3 to 4 coaches. There are limits to the expansion of the service on this line, both for reasons of station platform length and the availability of capacity at Leeds City Station, so the introduction of additional coaches, when it happens, may ameliorate but will not resolve this problem.
- The increased popularity of trains for commuters has created a new problem of large scale parking near to local stations. Station car parks are typically full from 0730 onwards and local streets are filled with the parked cars of commuters for most of the day, creating problems for train users at other times of the day and for residents.
- Bus use has declined despite an increase in the population of the area.
- Car travel from this area is greater than the average for Leeds and bus travel numbers are lower. DfT Table TSGB0108 “Usual method of travel to work” reveals that 73% of commuter journeys in West Yorkshire are made by car. In the case of the Wharfedale Ward (which covers Menston) the 2001 Census indicated (Table UV39) that 75% of the resident population travelled to work by car, which confirms that the farther distant

from Leeds or Bradford, the greater the propensity to rely upon car-based journeys. This is probably because bus journeys to city centres take longer due to congestion, and the fact that the area under study is furthest from Leeds city centre (10.5 miles), making even off-peak journeys less attractive. [Refer to Table 1 for journey times along the A65 by bus].

3.12 The Leeds Monitoring reports 2004 and 2010 are the initial sources of much of the traffic flow data, together with flow data obtained from Leeds City Council and Bradford Metropolitan District Council for other locations.

3.13 The flow data relates to the following sites :-

- Site 1 – Bradford Road, A65, south of the A65/A660 roundabout;
- Site 2 – Bradford Road (A65) north of Windermere Avenue junction;
- Site 3 – Buckle Lane, Menston, east of Bradford Road (A65)/Bingley Road junction;
- Site 4 – Bradford Road (A65), Menston near Moorland Crescent junction;
- Site 5 – New Road (A65), Yeadon between Kirk Lane and Whack House Lane;
- Site 6 – Green Lane (A658), Yeadon between New Road Side (A65) and Harrogate Road (B6152);
- Site 7 – Harrogate Road (A658) north of Green Lane/B6152 junction;
- Site 8 – Rawdon Road (A65), between Water Lane and Bar Lane junctions;
- Site 9 – Horsforth New Road (A6120), north of A6120/A657 roundabout;
- Site 10 – Abbey Road (A65) between Abbeydale Mount and Hawksworth Road junctions;
- Site 11 – Bridge End (B6157), Kirkstall between Abbey Road, Commercial Road (A65) and Kirkstall Bridge;
- Site 12 – Kirkstall Road (A65) outside Fire Station.

- 3.14 The base flows in vehicles, for the AM Peak Hour (08:00 – 09:00) are indicated on Figure B, whereas the base flows for the PM Peak Hour (17:00 – 18:00) are indicated on Figure C.
- 3.15 In addition this document includes a report on movements into Leeds Central Area utilising a cordon around the central area, which is split into corridors to assist analysis (Figure 3). The A65 forms part of corridor 6.
- 3.16 The A65 itself is the 4th busiest radial road across the cordon. Only the Ingram Road Distributor, Clay Pit Lane and York Road have two way flows in excess of the 45,000 vehicles/weekday experienced on the A65. All the other radial roads are dual carriageways where they cross the corridor. It follows, therefore, that the A65 is carrying a volume of traffic equivalent to that expected of a dual carriageway, without commensurate capacity.
- 3.17 Tables 2 and 3 show basic data for the A65 in comparison to the cordon. Table 4 provides comparative data for the formerly congested highway in Bingley on the A650.
- 3.18 Table 2 identifies that inbound traffic flows are about 2,000 vehicles per hour.

Table 2: Traffic Flows on the A65 in comparison to the cordon		
2004 – Traffic Flows	A65	Leeds Cordon
(AM Peak)		
AM peak hour 07:00-08:00 inbound	1,950	
AM peak hour 08:00-09:00 inbound	1,950	36,564
AM peak hour 09:00-10:00 inbound	1,580	
AM peak hour 07:00-10:00 inbound	5,480	98,280
(PM Peak)		
PM peak hour 17:00-18:00 outbound	1,830	35,321
PM peak hour 16:00-19:00 outbound	6,840	120,708

- 3.19 The A65 currently has no genuine dual carriageway working other than the 400 metre stretch on Kirkstall Road between the Fire Station and Inner Ring Road (A58(M)) at the West Street gyratory system -this will probably be revised with Quality Bus Scheme. Leeds City Council’s A65 Transport Assessment of May 2005 stated (correctly in my professional opinion) that “few opportunities to improve highway capacity have been identified”. Table 2 also identifies that the A65 is virtually at capacity for the whole 3 hour period to which the AM peak has now extended.
- 3.20 What is also clear is that motorists, in both the AM and PM peaks, are seeking to use alternatives (‘rat runs’) to avoid congestion on the A65. Whilst it is doubtful whether this actually achieves the intentions of the motorists, it has the undesirable effect of diverting traffic onto roads less well-equipped to cope with such traffic or to provide safety for pedestrians and other road users.
- 3.21 This practice of using ‘rat runs’ is common for the entire length of the A65 between Guiseley and the Kirkstall viaduct. For reasons of topography (the river running parallel to and south of the A65 throughout most of its length), it is more common for such diversions to be in a northerly direction, seeking faster ways to travel to locations north-west of Leeds. The same practice takes place in the PM flow, and this situation is getting worse is increasingly encouraged as the A65 becomes progressively more congested and slower. The extent of such ‘rat runs’ is indicated in paragraph 1.7.
- 3.22 Table 3 identifies the am peak modal split (but excluding train) of travel into Leeds. The table identifies that the A65 has a higher than average percentage of cyclists (although the actual numbers remain small), a lower than average percentage of bus passengers and a higher than the average percentage of car occupants. The information has not been validated. However, given the overall

length of the A65 between Menston and Leeds City Centre (10.5 miles) it is unlikely that many of the journeys by bicycle or on foot are for the whole of that length. They are more likely to be shorter journeys, but noted at the monitoring sites.

2004 – am 07:30-09:30 inbound	A65	Leeds Cordon
Motorcyclists	32 (0.6%)	646 (0.6%)
Cyclists	58 (1%)	577 (0.6%)
People walking	182 (3.2%)	3786 (3.5%)
Bus passengers	1,390 (24.5%)	33,461 (31%)
Car occupants	4,010 (70.7%)	69,517 (64.4%)
Train passengers	n/a*	12,435

* Rail line data cannot be specifically allocated to one corridor

3.23 Figures 4 and 5 of the Leeds City Council 2005 Report identify sites along the A65 where traffic counts are regularly monitored. Peak hour flows over the study period indicated a degree of consistency which in turn, indicates that peak hour traffic flows are generally as high as the road allows. On this evidence, it is an inescapable conclusion that the road is operating at its capacity: as the flow cannot increase, peak spreading is occurring and the phenomenon of ‘rat-running’ is taking place as a response to frustration.

3.24 The data from the May 2005 A65 Traffic Assessment identifies that there have been different patterns of traffic growth on the A65 at different locations and in some cases flow levels have reduced. In some locations there has been growth in the periods either side of the peak hour and not in the peak hour, referred to as peak spreading. Peak spreading is generally considered a consequence of motorists travelling either earlier or later to avoid the congestion. Evidence also appears to indicate that the traditional peak hours of 08:00 – 09:00 (AM) and

17:00 – 18:00 (PM) have spread from 07:00 – 09:30 and from 16:00 to after 18:00 hours respectively.

- 3.25 The 2005 Transport Assessment indicated a fall in traffic levels the AM peak hour between 2000 and 2004 at the A65 White Cross Roundabout (travel divides here between Bradford and Leeds as the travel destination). Between 2004 and 2009, the AM and PM peak hours southbound flows on Bradford Road, on the approach to the White Cross Roundabout, were reported to have reduced. The northbound flows from the roundabout have increased during the same period. That survey data, however, all pre-dated the establishment of the residential development site at High Royds, Menston, the additional traffic generated from which development led to highway changes to permit a higher volume of traffic to join the A65 and to proceed to the White Cross Roundabout. No highway improvements were effected on the A65 (nor, indeed, on the A6038 Bradford Road) as a consequence of that increase in residential commuter traffic.
- 3.26 In the case of the A658 (Harrogate Road), passing the airport, LBIA's own statistical data reveal that passenger numbers (excluding transit passengers) increased from 2.4 million in 2004/5 to 2.8 million in 2010/11. Given that the airport is not served by a direct rail link and is not proximate to (within walking distance of) any of the communities served by the A65, those passengers must be arriving by road. LBIA has increased the space allocated to passenger parking by more than 1,000 spaces between 2008 and 2011, and now claims to offer a total of more than 3,000 parking spaces on-site and another 2,000 on a nearby off-site facility. In light of this information relating to increased passenger numbers and parking spaces created to accommodate them, traffic to/from and passing the airport will increase. Figure D below (from CAA sources) shows the massive expansion in passenger traffic at Leeds/Bradford Airport between 1997 and 2010.

Figure D



3.27 LBIA is served (directly) by the A658 (Bradford-Harrogate-Knaresborough) which is the primary route between Bradford and the airport. The A658 is a tributary to the A65 which it crosses at Rawdon. The A65 is the primary route from Leeds to the airport, although the A660 provides an alternative for those travelling from the northern outskirts of Leeds. The expansion of the airport is underway, to accommodate the expansion of passenger numbers to 7 million by 2030, with an intermediate target of 5 million by 2016. Recent statistical data from LBIA indicates that the airport is ‘on target’ for 4.1 million passengers during 2011/12 (based on 1.23 million passengers in the period April to June 2011, which represented an increase of 12.7% in traffic over the same period the previous year).

3.28 Statistical data from the Civil Aviation Authority record that LBIA is currently 16th in the list of the UK’s 40 largest airports and was the fastest-growing UK airport during 2009/10, showing a 7% increase in passenger traffic, whilst even Heathrow passenger numbers declined by 0.2%.

- 3.29 It is difficult to understand why this additional traffic to and from the airport has not been subject to accurate measurement nor that it has led to any significant infrastructure development on either the A658 or the A65 during the entire period shown in the graph above. Due account must be taken of the implications of this traffic upon flows on the A658 and A65.
- 3.30 There is, perhaps, one mitigating factor in respect of airport traffic, and that is that the passengers are required to be present at the airport up to 2 hours before departure times, so (given the majority of departures are scheduled for the period 0700 to 0900) they may be travelling before the AM peak, and predominantly in the opposite direction to the commuter traffic flows into the cities of Leeds and Bradford. Arrival times at LBIA tend to be scheduled for the main traffic to arrive between 1600 and 2200, so travellers may find their arrival coincides with the PM peak, but it is likely that their journey will, once again, be in the opposite direction to the commuter flow on the A65 and A658, but not necessarily on the wider road network.
- 3.31 It may be instructive to consider the experience of the diversion of the A650 Main Street, Bingley, in relation to the construction of a bypass. Like the A65, the Bingley Town Centre route is also a single carriageway road. The statistics show traffic flows of 1,721 in the AM peak and 1,996 in the PM peak. The equivalent figures for the A65 are slightly higher for the AM peak hour and slightly lower for the PM peak. The Department of Transport had sufficient concern to sanction the building of a bypass to deal with an unacceptable level of congestion in Bingley (A650). With no prospect of any bypasses on the A65 nor a conducive topography, however, the conclusion is that the A65 is severely congested and cannot cope with any additional vehicles.

Table 4: Traffic Flow and Traffic Flow Changes on Main Street, Bingley
before and after construction of by-pass (Highways Agency, A650 Bingley
Traffic Impact Study)

	01/10/99	01/06/03	01/01/04	% decrease 1999-2004	% decrease 2003-2004
0800-0900	1525	1721	1053	31.00%	39.00%
0700-1000	4984	5606	2705	46.00%	52.00%
1700-1800	1864	1996	1065	41.00%	45%
1600-1900	5671	5823	2994	45	47
Average Weekday Traffic	26600	28500	14000	46	49

Junction Assessment

3.32 The 2005 Transport Assessment observed 5 No junctions during the peak periods. The following conditions were noted, and further comment is provided to indicate the more recent position, based on empirical evidence :-

- A6120/A65 Outer Ring Road Roundabout

The 2005 report stated: “Peak queues are common, quite often caused by queues on the ring road.”

This continues to be the case, and traffic frequently extends back on each of the four arms of this junction by as much as 1 mile. As regards the Ring Road, this means that queuing traffic may be backed-up to the

Rodley A6120/A657 roundabout, and at PM peak times the traffic may queue back almost to the Priesthorpe roundabout at the A6120 junction with the A647 Stanningley Bypass. In the northerly direction of the Ring Road, traffic frequently queues back to the proximity of the Horsforth Broadway/ Low Lane roundabout. Although the roundabout itself has been reduced in size so as to accommodate an extra ‘through’ lane, lane blocking is commonplace. On the Rawdon side of the A65, AM peak hours will cause traffic to queue back 1.1 miles to the junction with Layton Lane (exceptionally even farther).

Much of the queuing is caused by traffic intending to turn right towards Rodley being unable to join the roundabout due to the tailback of the Rodley carriageway reaching the Horsforth Roundabout. ‘Blocking’ of the roundabout affects all roads

On the (eastbound) Leeds side of the A65, traffic in the PM peak is typically queued back through Horsforth New Road Side to the junction of Hawksworth Road, which result in the latter being used as a ‘rat run’. Traffic calming measures have been introduced as a consequence.

- A65/A658 Apperley Lane/Green Lane Roundabout, Rawdon

The 2005 report stated: “This junction generally performs well because traffic is unable to reach the junction in sufficient numbers to cause congestion. Traffic is constrained by the lack of capacity at the A65 junctions either side, in particular A65/Micklefield Lane/Harrogate Road signals.”

Since 2005 the situation has deteriorated for the AM peak, and it is no longer the case that the junction performs well in the AM peak. The congestion of traffic on the incline between the A65/A658 Apperley

Lane/Green Lane Roundabout is severe, owing to the impeded flow through those traffic signals.

As traffic queues back from the traffic lights towards the roundabout, many drivers use the nearby Quakers' Lane as a "rat run" to link to the A658 or beyond it, using Batter Lane, Rawdon, as another such deviation into Old Rawdon village and beyond to Horsforth. These roads are entirely unsuited to large volumes of vehicular traffic.

Furthermore it is no longer the case that the junction "performs well" in the PM peak, as the realignment and reconfiguration at the Rawdon Traffic Signals has relieved the flow there, (giving Leeds-bound traffic a new release road) such that it now queues on the decline to the A65/A658 Apperley Lane/Green Lane Roundabout. It is now frequently the case that the roundabout is blocked as a result of the entry of traffic turning left out of Apperley Lane to join the A65 towards Guiseley, but being held up by vehicles waiting to turn right up Henshaw Lane.

- A65/Micklefield Lane/Harrogate Road signals (Rawdon Traffic Signals):
The commentary in the 2005 report was that "Congestion here appears to be related to airport traffic both turning right from and into the A65."

Circumstances have changed at this junction, as a result of the prohibition of right turns from Micklefield Lane onto the A65 (now diverted via Micklefield Road) and a similar prohibition on traffic turning right onto Micklefield Lane or left onto Harrogate Road from the east-bound A65.

This is a key junction, which is preferred by many drivers to the Apperley Lane - Green Lane A658/A65 junction, because the traffic lights do facilitate crossing the A65 better at peak hours than does the roundabout at the Apperley Lane – Green Lane junction. This junction now provides a

dedicated right-turn facility from the A658 from Bradford onto the A65 east-bound towards Leeds. Congestion here is exacerbated by airport traffic, both turning from and onto the A65. Flow improvements have been introduced since the 2005 A65 Transport Assessment was written, but the junction still acts as an interruption to the flow of the A65, now at two points: i.e. at the traffic signals and at the Micklefield Road feed onto the A65 (some 150 metres south of the traffic signals).

- A65/A6038 White Cross (Harry Ramsden's) Roundabout:

The 2005 report stated that there was “little evidence of queuing caused by this junction” but noted that “there are external influences which do affect traffic flows at this junction”. To the north, the A65/Bingley Road/Buckle Lane signalled junction acts as a capacity restraint for traffic heading towards Leeds, especially in the AM peak. Were this restriction to traffic flow to be eased, the operational performance of the White Cross roundabout would be expected to suffer as a consequence.”

Recent highway works at the A65/Bingley Road/Buckle Lane have introduced a gyratory system to facilitate access to/egress from the adjacent High Royds housing development (600 dwellings authorised and under construction). Traffic into and from this site now add to the routine queuing along the A65 in both directions. Therefore, it is possible to conclude that precisely those circumstances predicted in the 2005 report have come about, principally as a result of the introduction of the gyratory system which ensures a constant flow of traffic eastbound in the AM peak, but the situation has been exacerbated by the addition of traffic generated by the residential development.

- A65/Oxford Road junction, Guiseley

In the 2005 report, it was commented: “There are four phases to these signals rather than the conventional two, the additional phases providing benefits to pedestrians but at the expense of vehicular capacity even though the pedestrian phase largely works in the shadow of Oxford Road. The junction is at capacity, and the addition of development traffic will only be accommodated by peak spreading or new highway measures.”

Several new developments have been constructed since 2005 which feed into this junction [Edison Fields (Netherfield Road), Silver Cross (completion), High Royds, for example], and another development of 98 houses has been authorised for future construction on Netherfield Road (at Moon’s Field). New traffic signal phasing for enhanced pedestrian protection is proposed, but this prefers a solution which stops all traffic (“all red”) in all four directions and, as such, must further impede traffic flow and reduce capacity.

In addition, there have been recent highway design changes, in effect reducing the Leeds-bound flow at the Guiseley gyratory system to a single lane, dedicating the left-hand lane to the smaller volume of traffic turning onto The Green. This has resulted in longer traffic queues on Otley Road and Park Road, Guiseley, with the further consequence that the traffic does not clear before the signal phase changes, and regular lane-blocking occurs. Inter alia, this results in traffic backing up in the AM peak from the gyratory system to the Oxford Road junction and beyond, and in the PM peak, the consequence is lane-blocking on the gyratory system itself as two lanes feed into one in the westerly direction on Otley Road.

3.33 The Outer Ring Road (A6120) Study, prepared by Scott Wilson in 2005 on behalf of Leeds City Council, concluded that junction improvement works would be

targeted at junctions displaying the greatest level of congestion and delay. Two of the junctions identified were :-

- A65 / A6120 (Horsforth Roundabout)
- A627 / A6120 (Rodley Roundabout)

The report observed: “Delays of up to 9 minutes with queue lengths of 1,600 metres were identified on the A65 on the approach from Rawdon to the Horsforth Roundabout, in the AM peak hour (inbound), with the reverse in the PM peak hour (outbound).”

However, matters have deteriorated rapidly since the 2005 report was written, as indicated in the first element of paragraph 3.32 above. Queues in the PM peak are particularly severe, and it is very common to encounter traffic regularly queuing back from the Rodley Roundabout to the Horsforth Roundabout (i.e. southbound), whilst the two lane system on the northbound stretch allows vehicles to accelerate until they reach the congestion at the Horsforth Roundabout. It is extremely common to encounter a stationary traffic queue from the Priesthorpe Roundabout to the Rodley Roundabout, causing some drivers to divert onto Calverley Lane and make their way westwards along the southern bank of the River Aire and the canal (via Calverley and Greengates) in the hope that they will make more rapid progress than on the northern bank via Rawdon and Guiseley. Again, this is a regrettable situation as it exposes yet more unsuitable roads to the practice of ‘rat running’.

- 3.34 The report identified a new airport link road, to be located on the A65, 600m north of the Horsforth Roundabout (adjacent to Rawdon Crematorium). Insofar as this link road is not designed as a direct connection to the A6120 Ring Road, however, traffic intending to use it will still have to approach and navigate the congested Horsforth Roundabout (A65/A6120 junction). It will not improve traffic flows on that roundabout, and could conceivably increase congestion and

- queue lengths. The report, furthermore, concluded that this link road would not provide a major benefit to the wider network, in that traffic from Guiseley and Rawdon would not divert onto the link road. This road link is not yet scheduled for completion, and should not be treated as any justification for further residential development in the green areas which border it.
- 3.35 The report identified major congestion on the A65, not just in the traditional peak hours, but on the shoulders of the peak hours, seasonal holiday traffic and weekends. Traffic data for traffic flows during the weekend periods is, unfortunately, unavailable.
- 3.36 Naturally, the 2005 report is inadequate in analytical terms as it pre-dates numerous residential developments and other changes to the road network. The A65 is subject to interruption of flow at numerous points, most of which are subject to congestion, such as the following (in sequence from Menston proceeding south-eastwards):
- Pelican lights at St Mary’s School, Menston, merely 60 metres from the A65/Buckle Lane/Bingley Road junction, but independently controlled;
 - Traffic signals 150 metres later, at the entrance to High Royds Drive;
 - Further Pelican lights after 700 metres at the White Cross Roundabout;
 - A Pelican crossing at Guiseley Cricket Club and opposite housing at the former Silver Cross factory site, after 450 metres;
 - Traffic signals at the A65/Oxford Road junction after 620 metres;
 - A pelican crossing after 150 metres at Morrison’s supermarket, Otley Road, Guiseley;
 - Traffic signals after a further 150 metres prior to the Guiseley Gyratory system;
 - Further traffic signals 120 metres later, on/after the Guiseley Gyratory at The Green;
 - Traffic signals after 300 metres at West Side Retail Park;

- Traffic signals after 450 metres at Kirk Lane/Dibb Lane junction;
- Pelican crossing after 300 metres at Whack House Lane;
- Traffic signals after 600 metres at Gill Lane junction;
- Roundabout after 300 metres at A65/Green Lane/Apperley Lane;
- Pelican crossing after 300 metres at Rawdon Littlemoor Primary School;
- Traffic signals after 300 metres at A65/Micklefield Lane junction;
- A65/A6120 Horsforth Roundabout after 1350 metres.

3.37 There are some 17 intersections or potential interruptions of flow in this 5 mile journey. Residential developments have taken place at various points along this route, adding to the traffic volume. One of the unforeseen consequences of the disruption to the flow has been the increase in ‘rat-running’. The most commonly used routes for this purpose are identified in paragraph 1.7.

Future Proposals

3.38 Figure A is summary of the housing development sites (since 2000) that have been built on the A65 corridor and surrounding area, together with sites with planning permission and new applications, is attached. Some 1,029 units have been built in this area, with 2,689 units allocated to sites with planning permission and 929 units associated with new applications.

3.39 Figure A under estimates the traffic from additional dwellings as it does not include other local residential development sites in Otley or Apperley Bridge.

3.40 Of particular concern is a current planning application to build 550 dwellings on the site of the former Clariant Works/Riverside Mills. The extra traffic from any such development would add to an already severely congested section of the Ring Road. The plan for ALL traffic to exit the site to the north, and then for traffic intending to travel south to effectively make a 'U-Turn' at the Horsforth

- Roundabout will lead to queuing on the roundabout and potential gridlock for traffic on the A65 entering the junction. There are safety concerns about the proposals.
- 3.41 To assess trip rates associated with developments, a TRICS database (Trip Rate Information and Computer System) is often used. The TRICS database is a national standard for trip generation analysis and is a good practice guide, used widely by Developers, Consultants and Local Authorities. Figure 12 of the 2005 Transport Assessment indicates the cumulative effect of development trips on junction flows, and since 2005, further development applications have either been approved or are under consideration.
- 3.42 For example the permission for the development at Springhead Mills, Guiseley for some 65 units, was granted in July 2011, although the Transport Assessment concluded the capacity on several links were exceeded, particularly in the PM peak period e.g. Oxford Road, Victoria Road, The Green and Otley Road. The impact of this development on queuing and capacity was considered to be marginal, which is questionable.
- 3.43 Developer generated trips will therefore worsen conditions all along the A.65 and the surrounding network, especially at the A65/Oxford Road and A65/Outer Ring Road junctions.
- 3.44 As stated earlier, Leeds City Council has identified the A65 corridor as a length of highway which suffers from peak hour congestion. The studies undertaken as part of the Leeds Local Transport Plan and the Transport Assessment (2005) identified a number of schemes designed to control traffic movements within the District and particularly those major routes leading to and from the City Centre.

- 3.45 The main scheme of improving travel along the A65 corridor is the A65 Quality Bus initiative which has been divided into two schemes :-
- 1) Abbey Road Bus Priority Scheme has been introduced which provides a new inbound bus lane and cycle lane from Kirkstall Forge to Kirkstall Abbey and improved pedestrian crossing facilities;
 - 2) Kirkstall Road, from Kirkstall Lane to the Inner Ring Road. The scheme is contained within the Councils Supplementary Planning Document (SPD) being funded by the Department for Transport, for which the construction programme commenced in April 2010 and is programmed for completion in June 2012.
- 3.46 The current phase comprises extensive bus priority measures together with improvements for the benefit of pedestrians and cyclists.
- 3.47 Some highway improvement works have also been carried out on the A65 in Menston, to facilitate the development at High Royds. These works consisted of an improvement to the A65/Bingley Road/Buckle Lane junction, together with the introduction of turning prohibitions; a new traffic signal controlled junction on the A65, incorporating a new link connecting Bradford Road to Bingley Road (part of the traffic gyratory system) and a new traffic signal controlled junction at High Royds Drive to facilitate the residential development.
- 3.48 The West Yorkshire Local Transport Plan (2011- 2026) has identified a highway improvement/bus priority scheme for Horsforth Roundabout (A65/A6120) with a profiled capital cost commencing in 2011/12 and a projected completion date during the financial year 2013/14.

- 3.49 The SPD also includes an extension of the Horsforth Roundabout scheme along the A65 towards Guiseley with provision of bus priority lanes and signals.
- 3.50 The benefits of the above schemes are intended to reduce vehicle flows and increase bus patronage.
- 3.51 Developer contributions are being sought by Leeds CC to enable the Otley Road/Oxford Road junction, Guiseley to accommodate controlled pedestrian facilities. Any improvement will assist pedestrians and address road safety issues, but the introduction of these measures will invariably reduce highway capacity through the junction.
- 3.52 The impact of airport growth, future bus and rail will impact on future travel behaviour along the A65.
- 3.53 The airport authorities aim to increase the modal shift from the private car to service bus public transport.
- 3.54 LTP2 and 3, seek to manage traffic growth by increasing capacity on rail based public transport, although it is recognised that the fixed nature of the rail network will provide only limited opportunities. One additional peak hour service would only provide 300 seats. If all these were filled by people transferring from the car, this would equate to 240 less cars on the network. More likely some of the seats would be filled by some passengers transferring from cars, some from existing bus services and some from suppressed demand (trips that currently cannot take place because there is no capacity).
- 3.55 LTP3 identifies “draft” targets to increase bus patronage by 9% over the day and reduce overall vehicular flows over the day by 6%. Environmental benefits are

-
- also predicted as a consequence of the reduction in vehicle numbers as a result of the A65 Quality Bus Initiative.
- 3.56 The aim and objective of future transport proposals on the A65 is to deliver people rather than cars into the city centre.
- 3.57 Future legislation in the form of the proposed Localism Bill and the draft National Planning Policy Framework will enable community groups to advise regarding future development in the area, but there is a conflict between planning for sustainable development, localism and a presumption in favour of development.

4.0 SUMMARY AND CONCLUSIONS

4.1 As long ago as May 2005 Leeds City Council identified the A65 corridor as a length of highway which suffers from peak hour congestion, with evidence of peak spreading and more trips travelling outside the Peak Periods. Base data contained in that report identified different patterns of traffic growth on the A65 at different locations, but did not include reference to development-generated traffic from construction sites other than the High Royds development between Guiseley and Menston.

4.2 That report (The A65 Transport Assessment) did not undertake independent research into development generated traffic, but adopted the figures of Development Trip Generations offered by the developers. These estimates may have been conservative.

4.3 The key findings from the listed reports, namely :-

- The A65 Transport Assessment 2005;
- Outer Ring Road Study by Scott Wilson;
- A65 Quality Bus Study by Faber Maunsell,

concluded the following :-

- The A65 is operating at capacity at peak times and suffers severe congestion on a regular basis;
- The A65 is the only major radial route to the cordon which is not dual carriageway, yet it carries (with delays) the volume of traffic equivalent to a dual carriageway;
- The A65, between Rawdon Traffic Signals and the A65/A6038 (“The Fox”) roundabout at Menston, is also operating at capacity during the weekend periods;

- Peak spreading is exacerbating the congestion problem by extending the duration over which congestion and delays are encountered;
 - The A65/Outer Ring Road at Horsforth and Outer Ring Road/A657 at Rodley are key junctions with significant delays during AM and PM peak periods.
- 4.4 Since 2005 road flow alterations have been carried out at Menston, principally to accommodate the development generated traffic from the High Royds site, and to improve the flow at the A65/Buckle Lane/Bingley Road junction at Menston in light of the proximity to the High Royds access road. Minor schemes have been introduced at the Guiseley Gyratory and at the White Cross Roundabout.
- 4.5 The Abbey Road Bus Priority Scheme has been introduced in anticipation of the A65 Quality Bus Initiative (Kirkstall Lane to the Inner Ring Road), due for completion in June 2012.
- 4.6 A highway improvement/bus priority scheme for the Horsforth Roundabout has been identified in the West Yorkshire Local Transport Plan (2011 – 2026) with a projected completion date of 2013/14. Leeds City Council are securing developer contributions to improve the Oxford Road/Otley Road junction, Guiseley.
- 4.7 The identified schemes are designed to ease congestion and improve public transport, with a view to encouraging increased bus use and reliability of bus journey times. However, given the distance and time taken for bus journeys and the capacity limitations upon rail travel between Menston and Leeds, public transport opportunities are unlikely to result in a significant mode shift to either buses or trains. Therefore, neither the Quality Bus Initiative nor any other improvements between the Outer Ring Road at Horsforth and the centre of Leeds are likely to alleviate the congestion or reduce delays.

- 4.8 It was concluded in 2005 that “Few opportunities exist to introduce low cost measures to improve highway capacity on the A65 due to the constraints within the limits of the public highway.” This position has not changed, yet the loading on the A65 continues to increase as a consequence of development-generated traffic beyond the cordon and the decline of opportunities for employment locally for residents of Rawdon, Yeadon, Guiseley and Menston.
- 4.9 The Leeds City Council report concluded that “Developer generated trips will worsen conditions on the A65 and surrounding network.” However, that report could not have anticipated the subsequent rapid expansion of construction between 2005 and 2009, nor did it anticipate the increase in passenger traffic at Leeds Bradford Airport which has been experienced as result of the basing there of major air carriers such as Jet2 and Ryanair.
- 4.10 Subsequent to 2005 there have been numerous residential development projects along the A65 corridor. Some 1,029 new dwellings have been constructed in the A65 corridor, mainly in Yeadon and Guiseley. The High Royds development is authorised for 600 units but to date only approximately half have been constructed and occupied. A further 3,700 units, or thereabouts, have either been approved for construction or are subject to application, between Menston and Kirkstall. The absence of employment opportunities locally will inevitably mean that anyone proposing to live in these new developments will have to be employed to afford a mortgage, and will have to commute to work, probably in Leeds, to generate an income sufficient to sustain their residency in this area.
- 4.11 Leeds Bradford Airport is in the process of implementing its major expansion plans, and is already shown in CAA data to be the UK’s fastest growing airport, standing at No. 16 in the UK rankings of airports by passenger volume. It expanded its passenger numbers by 7% in 2009/10 despite 16 out of the top 20 airports having witnessed a reduction in passengers. The airport has increased its

parking capacity by over 1,000 spaces available daily (on-site and a further 2,000 off-site). Passenger numbers have increased from 2.4 million to 2.8 million per annum, and are planned to increase to 5 million by 2016 and 7 million by 2030. Recent statistics suggest that passenger traffic in 2011/12 may reach 4.1 million. The airport is served by the A65 and the A658, the latter joining the A65 from the south and east.

- 4.12 The A65 was definitively stated not to have the capacity to carry all the additional trips in the peak period which were identified in 2005. Since then, the reduction in centres of employment in the Wharfe Valley has accelerated, residential development has taken most of the former employment sites and created a new generation of commuters to Leeds and Bradford, and the airport has demonstrated substantial expansion in both passenger and freight traffic, which is forecast to continue such that passenger numbers by 2030 will be three times their volume in 2004/5.
- 4.13 There is little or no scope for infrastructure improvement in the entire length of the A65 under consideration as it lies in a valley with constraints on development on either side and ‘ribbon development’ in the intermediate settlements.
- 4.14 The A65/A6120 Horsforth Roundabout is the single major source of congestion of traffic flow, both along the A65 and along its own length in both directions. However, there is an imminent threat of a potential substantial increase in traffic, as two major residential developments (totally 550 additional dwellings) are in the planning system in the vicinity of Calverley and Rodley, all the traffic output from which would egress to the Ring Road.
- 4.15 The A65 is simply unfit for the volume of traffic now using it, whether on weekdays or at weekends, and any further increase in capacity will see further

reductions in traffic flow speeds, higher levels of congestion and a continuation of the practice of trying to make more rapid progress by “rat running” onto even less suitable roads through residential areas.

**Wharfedale & Airedale Review Development (WARD) :
Housing Developments On A65 Corridor & Surrounding Area, October 2011**

A. New Applications

Location		Housing Units	Developer	Year	Details: Appeals etc
Bingley Road	Menston	125	Taylor Wimpey	2010	Greenfield site. <i>Application Now In</i>
Derry Hill	Menston	174	Barratt	2010	Greenfield site. <i>Application Now In</i>
Riverside Mill & Clariant Works	Horsforth	550	Harrow Estates	2010	<i>Outline planning permission app. Refused. Appeal 8 Nov 11</i>
St Josephs's care home	Horsforth	80		2010	80 beds, 20 staff + visitors. Refused
Approx. Total		929			

B. Sites With Planning Permission But Not Built

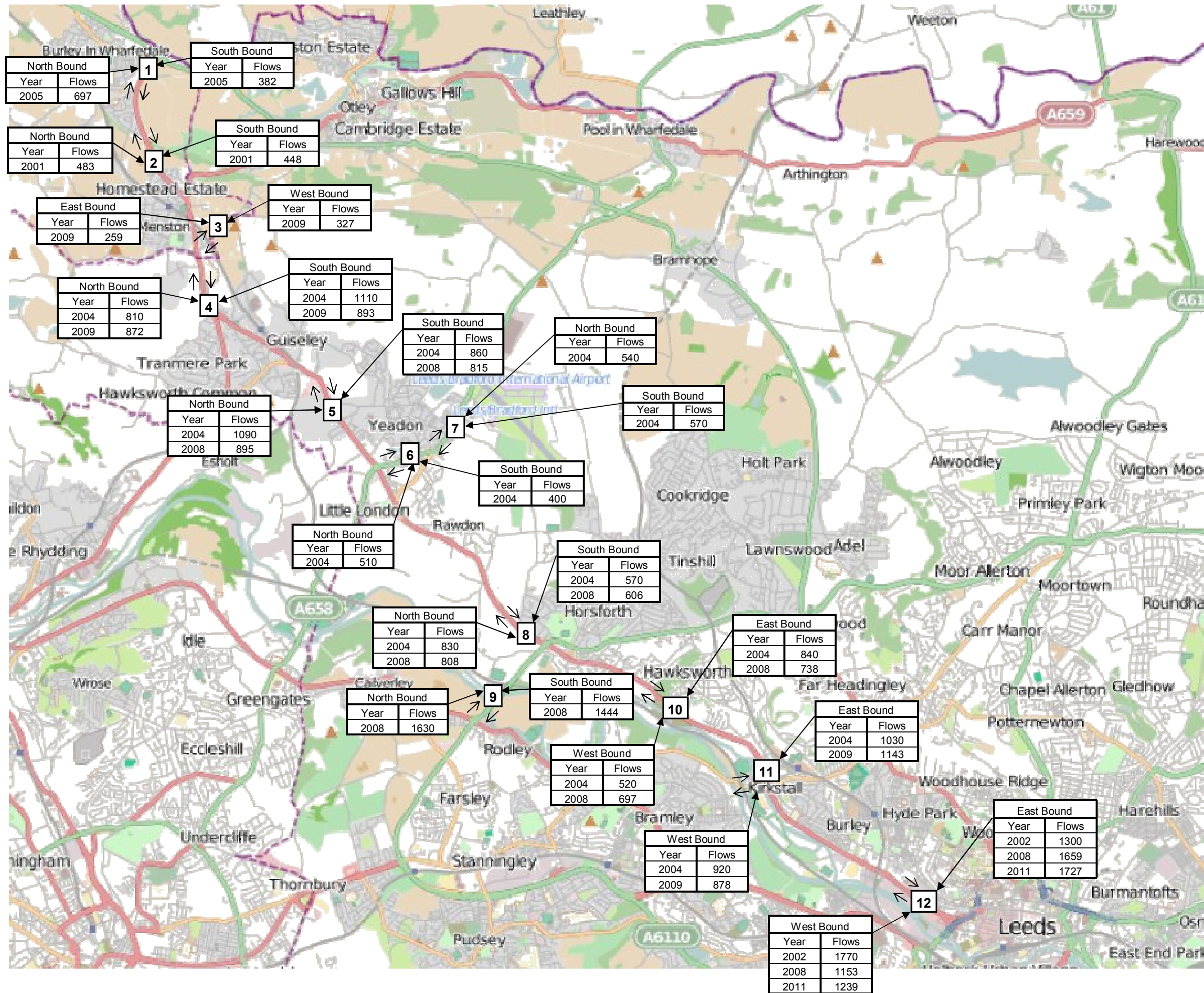
Location		Housing Units	Developer	Year	Details: Appeals etc
High Royds (part)	Menston	391	Raven, then sold on several times. Now Ben Bailey Homes	2004	Only about a third of properties built due to poor sales. Listed buildings for sale since 2010 following planning permission for new build. English Heritage view – historic grounds at risk.
Brook Crompton	Guiseley	200	Demolition by St Modwen. Sold on.	2007	Bellway started building, then stopped. Restarted.
Greenlea Ave	Yeadon	40		2010	Not started.
Woodside	Horsforth	850			Not started.
Kirkstall Forge	Kirkstall	1045			Not started.
Springhead Mill	Guiseley	65	Evans Property Gp	2010	<i>Permission given July 2011</i>
Moons Field, Netherfield Rd	Guiseley	98	Redrow	2010	Greenfield Site. 2 nd Application Refused. Appeal Upheld.
Approx. Total		2689			

C. Built

Location		Housing Units	Developer	Year	Details: Appeals etc
Silver Cross	Guiseley	130		2004	
Oxford Road	Guiseley	39	McCarthy & Stone	2008	
Greenwoods	Guiseley	100	Barratt		
Yorkshire Electricity, Back Lne	Guiseley	62	Persimmon	2000	
Tram Shed	Guiseley	19		2001	
High Royds (part)	Guiseley	200	Raven, then others		One third of development only completed.
Corn Mill Fold	Horsforth	123	Miller Homes	2004	Enabling dev. For Listed Corn Mill – now derelict, never restored.
Glenwood Villas	Horsforth	12		2003	New Road Side
Manor Fold, New Road Side	Horsforth	24		2003	24 flats next to A65
Brownberrie Lane	Horsforth	50	McCarthy & Stone	2007	Inspector granted on appeal at 3 rd attempt by developer.
Leafield Mills site	Yeadon	94	Tay Homes		
Aireborough Grammar School	Yeadon	80		1993	
Scott and Rhodes Dyeworks	Yeadon	79	David Wilson	2002	
Manor Mills & Kirk Lane Mills	Yeadon				
Approx. Total		1029			NB Spreadsheet does not include other local residential developments in Otley, or Apperley Bridge.

Grand Total of Additional New Housing if all applications go ahead
4647

FIGURE "A"



North Bound	
Year	Flows
2005	697

South Bound	
Year	Flows
2005	382

North Bound	
Year	Flows
2001	483

South Bound	
Year	Flows
2001	448

East Bound	
Year	Flows
2009	259

West Bound	
Year	Flows
2009	327

North Bound	
Year	Flows
2004	810
2009	872

South Bound	
Year	Flows
2004	1110
2009	893

South Bound	
Year	Flows
2004	860
2008	815

North Bound	
Year	Flows
2004	540

North Bound	
Year	Flows
2004	1090
2008	895

South Bound	
Year	Flows
2004	860
2008	815

North Bound	
Year	Flows
2004	540

South Bound	
Year	Flows
2004	400

North Bound	
Year	Flows
2004	510

South Bound	
Year	Flows
2004	570
2008	606

North Bound	
Year	Flows
2004	830
2008	808

East Bound	
Year	Flows
2004	840
2008	738

North Bound	
Year	Flows
2008	1630

South Bound	
Year	Flows
2008	1444

East Bound	
Year	Flows
2004	1030
2009	1143

West Bound	
Year	Flows
2004	520
2008	697

East Bound	
Year	Flows
2002	1300
2008	1659
2011	1727

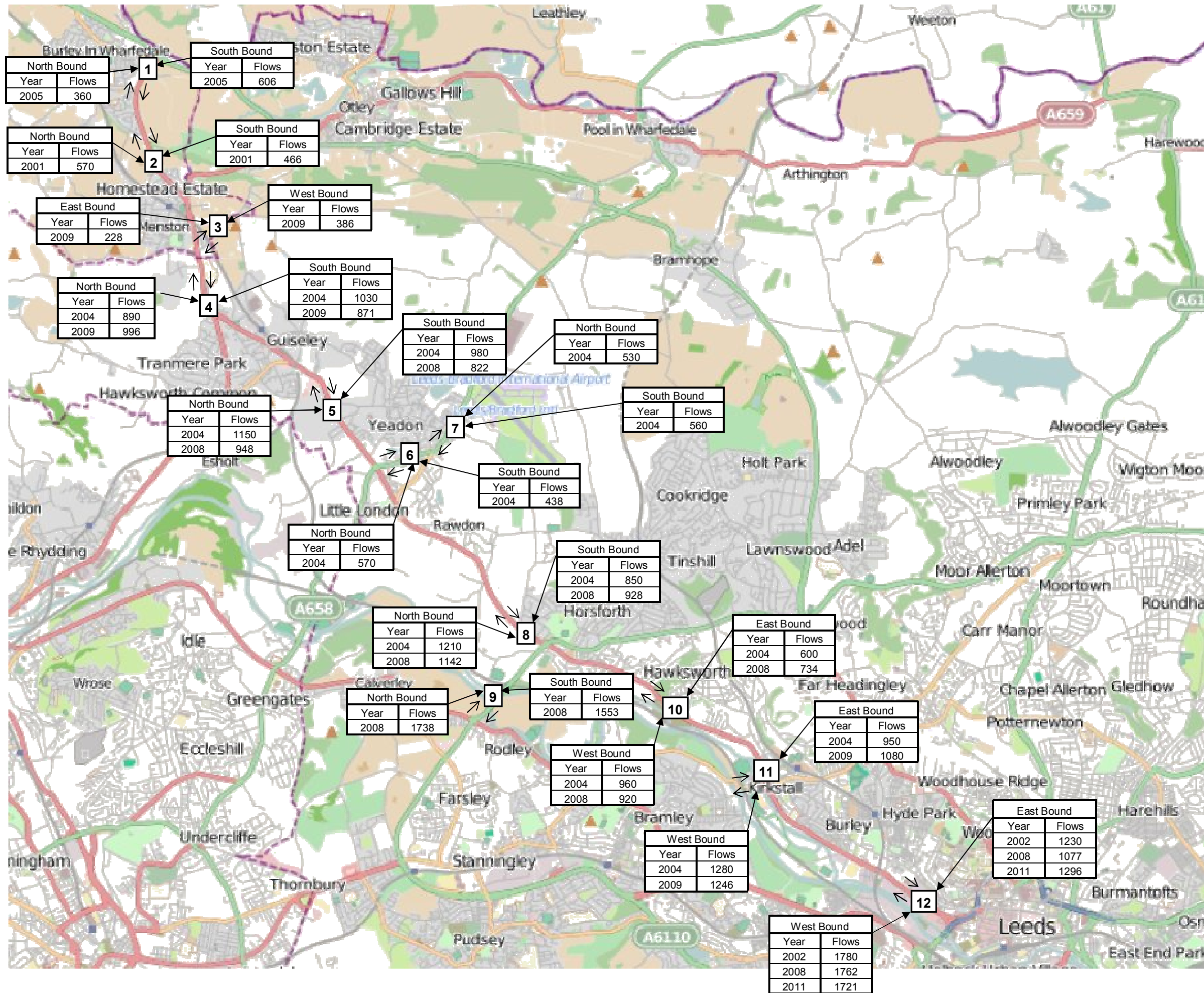
West Bound	
Year	Flows
2004	920
2009	878

West Bound	
Year	Flows
2002	1770
2008	1153
2011	1239



Southgate House
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A65 Transport Study
AM Peak Hour (0800-0900)
Wharfedale & Airedale Review
Flows in Vehicles
Figure B



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Web: www.metengineers.com

A65 Transport Study
PM Peak Hour (1700-1800)
Wharfedale & Airedale Review
Flows in Vehicles
Figure C



O.S. SHEET REF.:
VARIOUS

A65 TRANSPORT ASSESSMENT
A.M. AVERAGE TRAFFIC SPEEDS (mph)

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	INITIALS	DATE	SCALE
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AutoCAD BY	A.L.S.	12/05/05	
CHECKED BY	M.T.D.	12/05/05	

ORIGINAL SHEET SIZE: A3

LEEDS CITY COUNCIL
DEVELOPMENT DEPARTMENT
PLANNING & DEVELOPMENT SERVICES

DRAWING NUMBER: FS/03/256910/01

FIGURE 1

DATE: May 2005



Data have not been validated or low weighted
 Information derived from data provided by ITIS Holdings obtained from vehicles fitted with GPS devices
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 3 December 2004

O.S. SHEET REF.: VARIOUS

A65 TRANSPORT ASSESSMENT
P.M. AVERAGE TRAFFIC SPEEDS (mph)

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	INITIALS	DATE	SCALE
DRAWN BY	A.L.S.	12/05/05	N.T.S.
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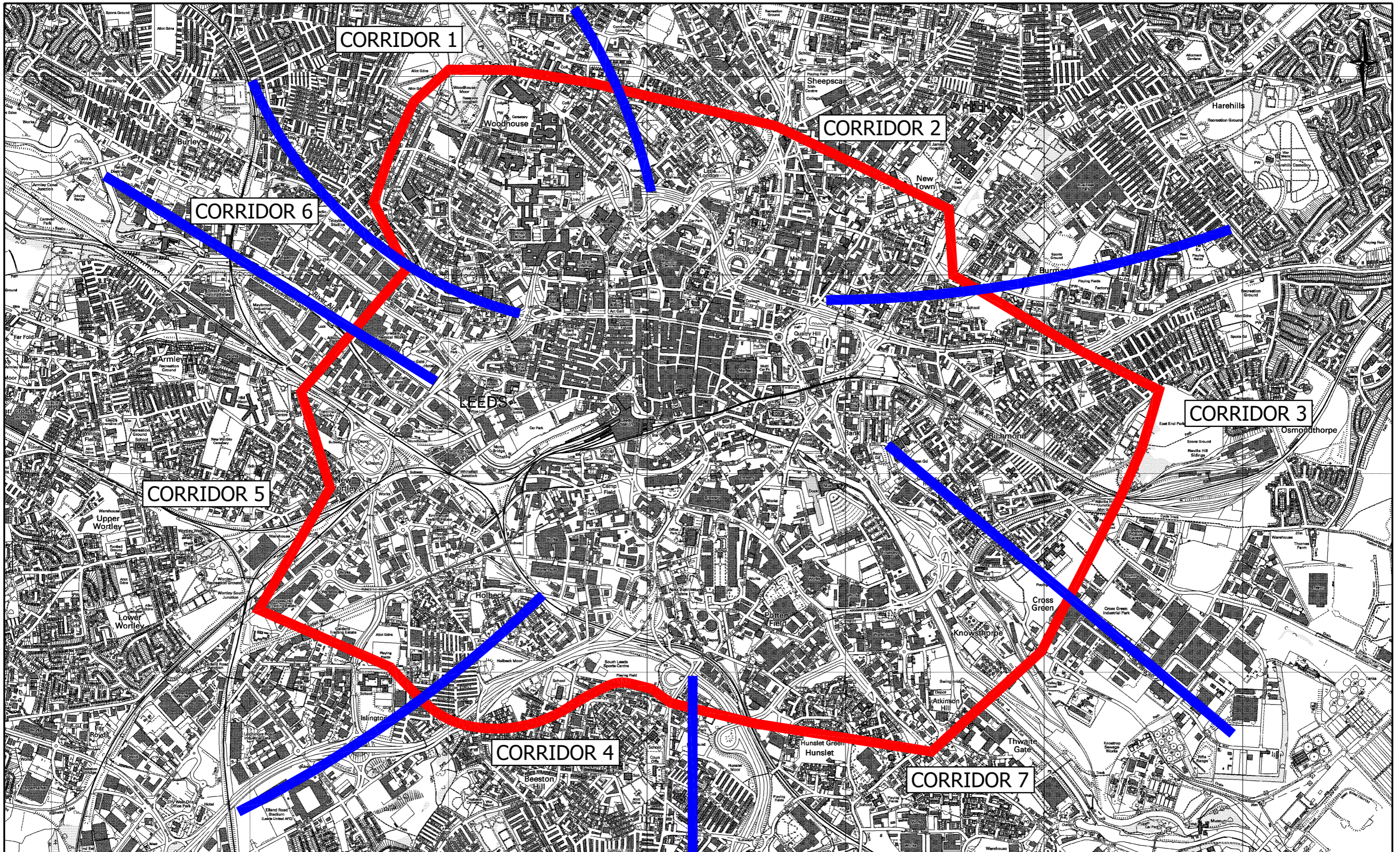


DEVELOPMENT DEPARTMENT
PLANNING & DEVELOPMENT SERVICES

DRAWING NUMBER: FS/03/256910/02

FIGURE 2

DATE: May 2005



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A65 TRANSPORT ASSESSMENT
LOCATION OF LEEDS CENTRAL AREA CORDON
AND L.T.P. CORRIDORS

	INITIALS	DATE	SCALE
DRAWN BY	A.L.S.	12/05/05	N.T.S.
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CHECKED BY	M.T.D.	12/05/05	

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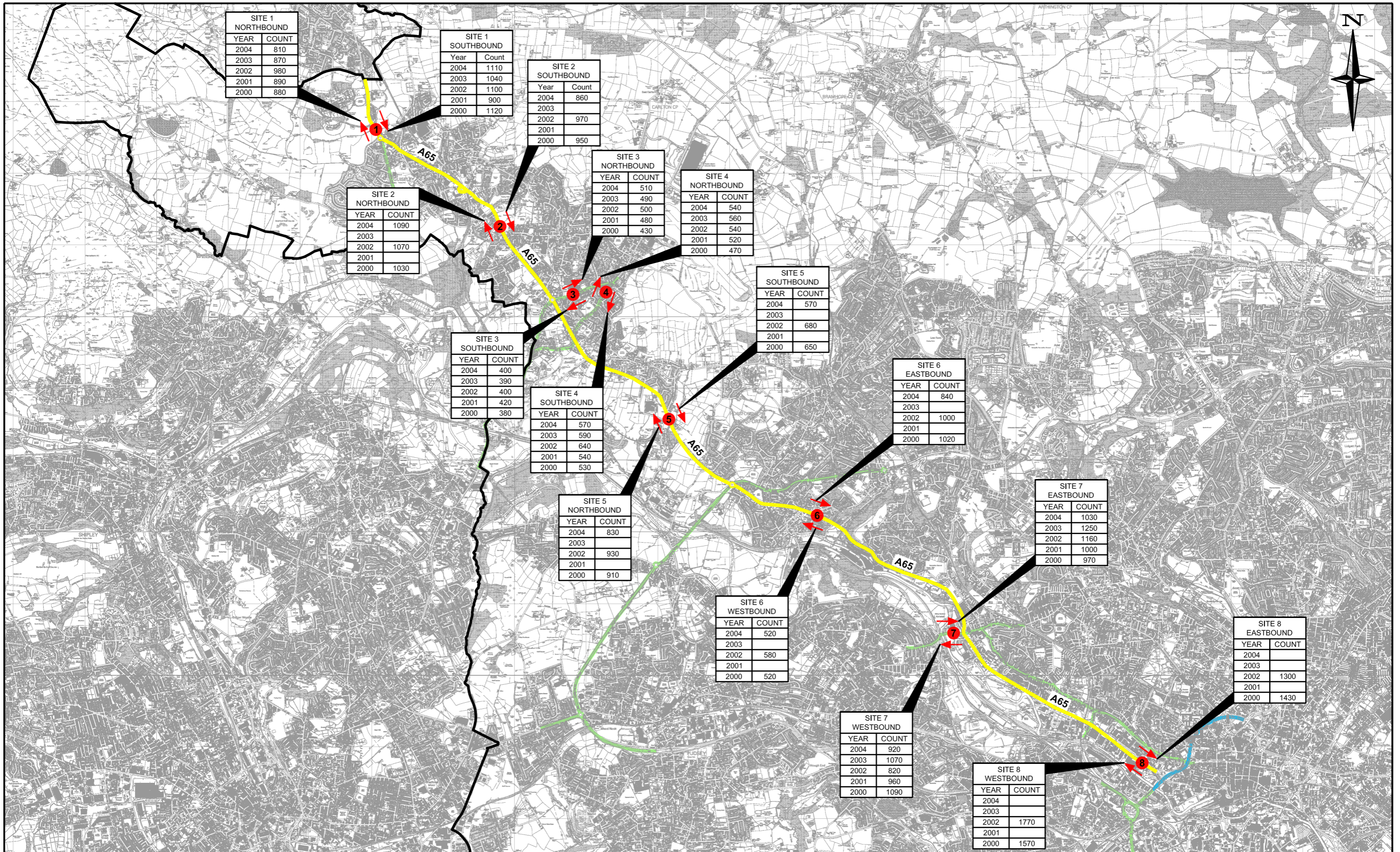
LEEDS CITY COUNCIL

DEVELOPMENT DEPARTMENT
PLANNING & DEVELOPMENT SERVICES

DRAWING NUMBER: FS/03/256910/03

FIGURE 3

DATE: May 2005



O.S. SHEET REF.:
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A65 TRANSPORT ASSESSMENT

TRAFFIC VOLUMES

A.M. PEAK YEAR 2000 TO 2004

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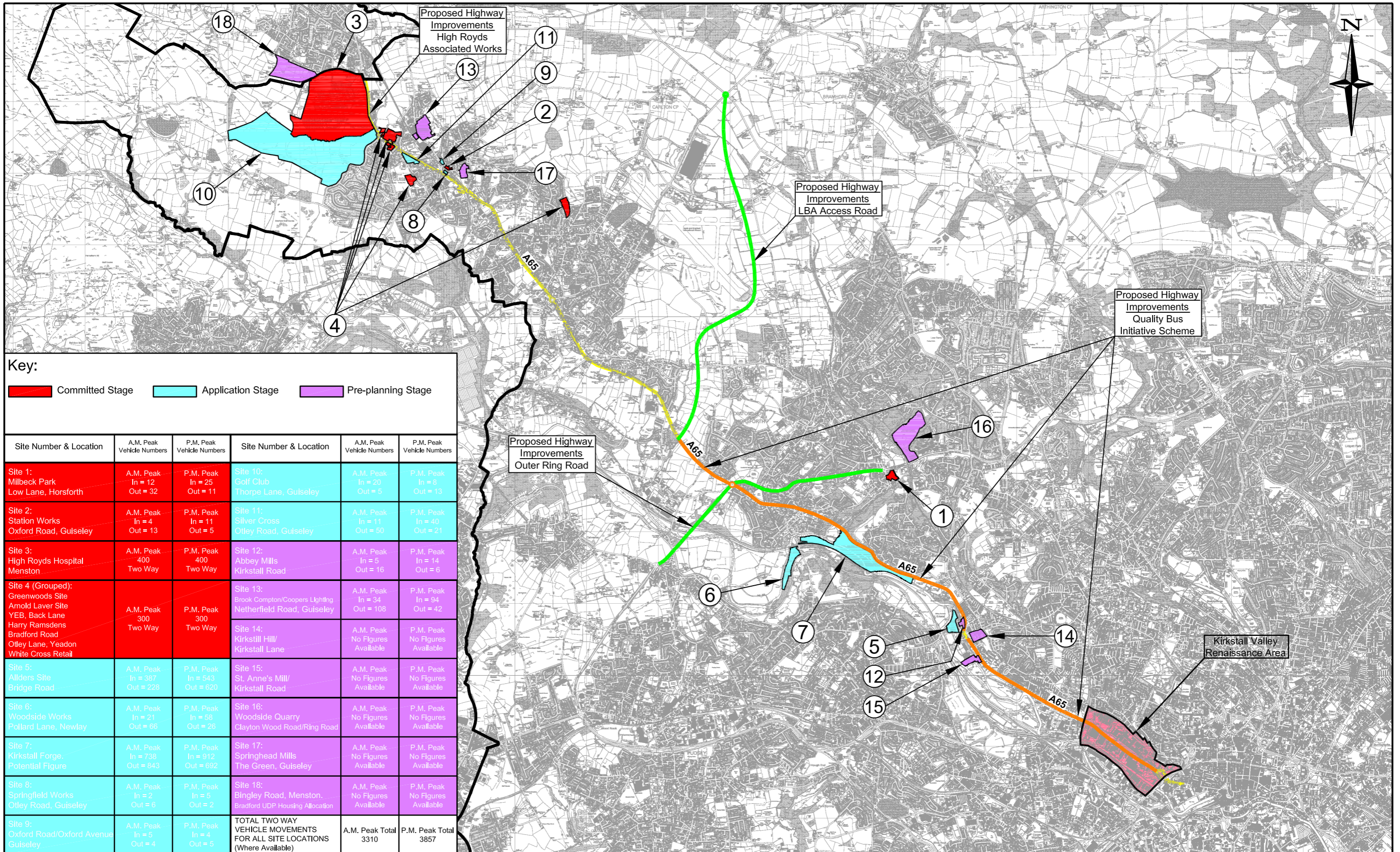
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CHECKED BY	M.T.D.	12/05/05	



DRAWING NUMBER: FS/03/256910/04

FIGURE 4

DATE: May 2005



Key:
■ Committed Stage ■ Application Stage ■ Pre-planning Stage

Site Number & Location	A.M. Peak Vehicle Numbers	P.M. Peak Vehicle Numbers	Site Number & Location	A.M. Peak Vehicle Numbers	P.M. Peak Vehicle Numbers
Site 1: Milbeck Park Low Lane, Horsforth	A.M. Peak In = 12 Out = 32	P.M. Peak In = 25 Out = 11	Site 10: Golf Club Thorpe Lane, Guiseley	A.M. Peak In = 20 Out = 5	P.M. Peak In = 8 Out = 13
Site 2: Station Works Oxford Road, Guiseley	A.M. Peak In = 4 Out = 13	P.M. Peak In = 5 Out = 5	Site 11: Silver Cross Otley Road, Guiseley	A.M. Peak In = 11 Out = 50	P.M. Peak In = 40 Out = 21
Site 3: High Royds Hospital Menston	A.M. Peak 400 Two Way	P.M. Peak 400 Two Way	Site 12: Abbey Mills Kirkstall Road	A.M. Peak In = 5 Out = 16	P.M. Peak In = 14 Out = 6
Site 4 (Grouped): Greenwoods Site Arnold Laver Site YEB, Back Lane Harry Ramsdens Bradford Road Otley Lane, Yeadon White Cross Retail	A.M. Peak 300 Two Way	P.M. Peak 300 Two Way	Site 13: Brook Compton/Coopers Lighting Netherfield Road, Guiseley	A.M. Peak In = 34 Out = 108	P.M. Peak In = 94 Out = 42
Site 5: Alders Site Bridge Road	A.M. Peak In = 387 Out = 228	P.M. Peak In = 543 Out = 620	Site 14: Kirkstall Hill/ Kirkstall Lane	A.M. Peak No Figures Available	P.M. Peak No Figures Available
Site 6: Woodside Works Pollard Lane, Newlay	A.M. Peak In = 21 Out = 66	P.M. Peak In = 58 Out = 26	Site 15: St. Anne's Mill/ Kirkstall Road	A.M. Peak No Figures Available	P.M. Peak No Figures Available
Site 7: Kirkstall Forge, Potential Figure	A.M. Peak In = 738 Out = 843	P.M. Peak In = 912 Out = 692	Site 16: Woodside Quarry Clayton Wood Road/Ring Road	A.M. Peak No Figures Available	P.M. Peak No Figures Available
Site 8: Springfield Works Otley Road, Guiseley	A.M. Peak In = 2 Out = 6	P.M. Peak In = 5 Out = 2	Site 17: Springhead Mills The Green, Guiseley	A.M. Peak No Figures Available	P.M. Peak No Figures Available
Site 9: Oxford Road/Oxford Avenue Guiseley	A.M. Peak In = 5 Out = 4	P.M. Peak In = 4 Out = 5	Site 18: Bingley Road, Menston, Bradford UDP Housing Allocation	A.M. Peak No Figures Available	P.M. Peak No Figures Available
			TOTAL TWO WAY VEHICLE MOVEMENTS FOR ALL SITE LOCATIONS (Where Available)	A.M. Peak Total	P.M. Peak Total
				3310	3857

O.S. SHEET REF.: VARIOUS
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A65 TRANSPORT ASSESSMENT

DEVELOPMENT PROPOSALS AND PROPOSED HIGHWAY IMPROVEMENTS

	INITIALS	DATE	SCALE
DRAWN BY	A.L.S.	12/05/05	1:50000
AutoCAD BY	A.L.S.	12/05/05	
CHECKED BY	MTD/DS	12/05/05	ORIGINAL SHEET SIZE: A3

DEVELOPMENT DEPARTMENT
PLANNING & DEVELOPMENT SERVICES

DRAWING NUMBER: FS/03/256910/07

FIGURE 7

DATE: May 2005

Key:

Committed Stage Application Stage Pre-planning Stage

Note:

+ Excludes Any Queuing Traffic.

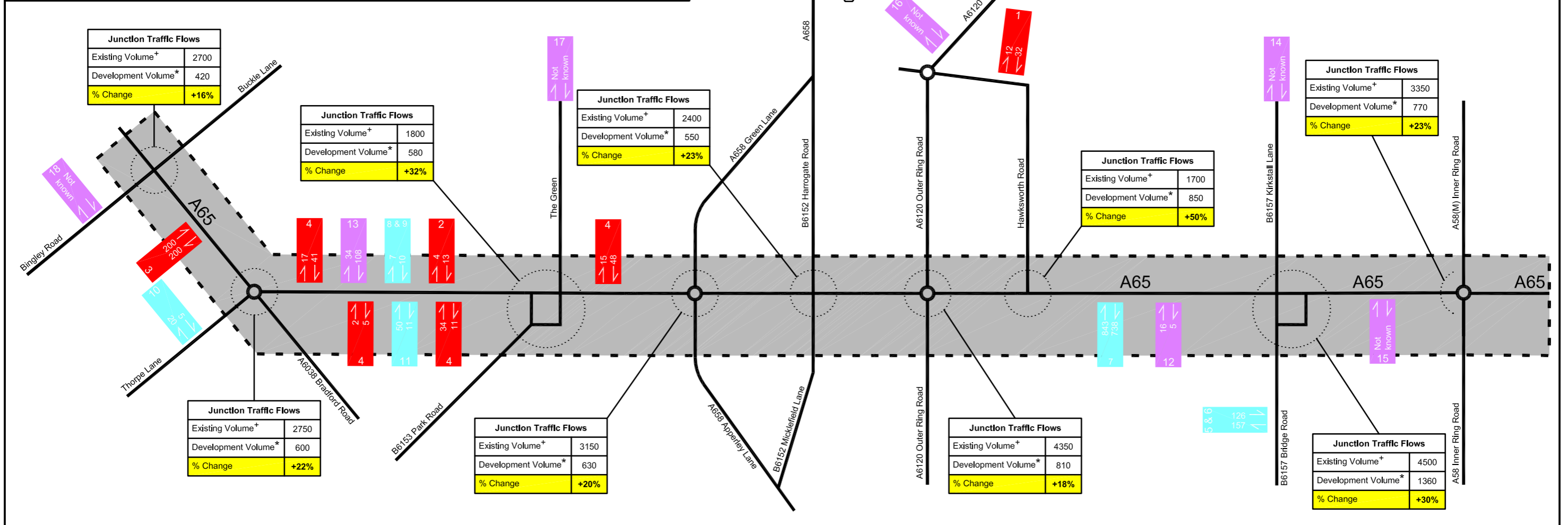
* Assumes All Development Traffic Reaches The Junction.

Key:

A65 Junctions Affected By More Than A 5 % Traffic Increase Due To Cumulative Development.



Site Number & Location	A.M. Peak Vehicle Numbers	P.M. Peak Vehicle Numbers	Site Number & Location	A.M. Peak Vehicle Numbers	P.M. Peak Vehicle Numbers	Site Number & Location	A.M. Peak Vehicle Numbers	P.M. Peak Vehicle Numbers
Site 1: Millbeck Park Low Lane, Horsforth	A.M. Peak In = 12 Out = 32	P.M. Peak In = 25 Out = 11	Site 5: Alders Site Bridge Road	A.M. Peak In = 136 Out = 69	P.M. Peak In = 231 Out = 259	Site 12: Abbey Mills Kirkstall Road	A.M. Peak In = 5 Out = 16	P.M. Peak In = 14 Out = 6
Site 2: Station Works Oxford Road, Guiseley	A.M. Peak In = 4 Out = 13	P.M. Peak In = 11 Out = 5	Site 6: Woodside Works Pollard Lane, Newlay	A.M. Peak In = 21 Out = 66	P.M. Peak In = 55 Out = 26	Site 13: Brook Compton/Coopers Lighting Netherfield Road, Guiseley	A.M. Peak In = 34 Out = 108	P.M. Peak In = 94 Out = 42
Site 3: High Royds Hospital Menston	A.M. Peak 400 Two Way	P.M. Peak 400 Two Way	Site 7: Kirkstall Forge, Potential Figure	A.M. Peak In = 736 Out = 843	P.M. Peak In = 912 Out = 692	Site 14: Kirkstall Hill/ Kirkstall Lane	A.M. Peak No Figures Available	P.M. Peak No Figures Available
Site 4 (Grouped): Greenwood's Site Arnold Laver Site YEB, Back Lane Harry Ramsdens Bradford Road Otley Lane, Yeadon White Cross Retail	A.M. Peak 173 Two Way	P.M. Peak 174 Two Way	Site 8: Springfield Works Otley Road, Guiseley	A.M. Peak In = 2 Out = 6	P.M. Peak In = 2 Out = 2	Site 15: St. Ann's Mills/ Kirkstall Road	A.M. Peak No Figures Available	P.M. Peak No Figures Available
			Site 9: Oxford Road/Oxford Avenue Guiseley	A.M. Peak In = 5 Out = 4	P.M. Peak In = 4 Out = 5	Site 16: Woodside Quarry Clayton Wood Road/Ring Road	A.M. Peak No Figures Available	P.M. Peak No Figures Available
			Site 10: Golf Club Thorpe Lane, Guiseley	A.M. Peak In = 20 Out = 5	P.M. Peak In = 8 Out = 13	Site 17: Springhead Mills The Green, Guiseley	A.M. Peak No Figures Available	P.M. Peak No Figures Available
			Site 11: Silver Cross Otley Road, Guiseley	A.M. Peak In = 11 Out = 59	P.M. Peak In = 40 Out = 21	Site 18: Bingley Road, Menston, Bradford UDP Housing Allocation	A.M. Peak No Figures Available	P.M. Peak No Figures Available
				TOTAL TWO WAY VEHICLE MOVEMENTS FOR ALL SITE LOCATIONS (Where Available)		A.M. Peak Total 2764		P.M. Peak Total 3038



O.S. SHEET REF.: VARIOUS

A65 TRANSPORT ASSESSMENT

CUMULATIVE EFFECT OF DEVELOPMENT TRIPS ON JUNCTION FLOWS – AM

INITIALS	DATE	SCALE
DRAWN BY: A.L.S.	29/06/05	N.T.S.
AutoCAD BY: A.L.S.	05/07/05	
CHECKED BY: DS/MTD	05/07/05	ORIGINAL SHEET SIZE: A3

LEEDS CITY COUNCIL
DEVELOPMENT DEPARTMENT
PLANNING & DEVELOPMENT SERVICES

DRAWING NUMBER: FS/03/256910/09

FIGURE 12

DATE: July 2005