

Carter Jonas LLP

**Proposed Residential Development,
Whalley Road, Hurst Green, Clitheroe
Transport Assessment**

September 2012

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LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CV's are available upon request to demonstrate our experience and credentials.

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PROPOSED RESIDENTIAL DEVELOPMENT WHALLEY ROAD, HURST GREEN, CLITHEROE TRANSPORT ASSESSMENT

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1.0 EXECUTIVE SUMMARY

Local Transport Projects (LTP) Ltd have been commissioned by Carter Jonas LLP to prepare a Transport Assessment (TA) in support of a full planning application for a proposed residential development at Whalley Road, Hurst Green, Clitheroe.

The proposed development consists of 30 new-build dwellings, along with associated access roads and garages. The dwellings are a mix of terrace, detached or semi-detached properties for private sale or to meet local need.

The development will also include the removal of the existing car park / drop off area serving St Joseph's RC Primary School. To mitigate for this, a new drop off area is proposed as part of the development.

A traffic count was conducted between 8 and 9 am, on the morning of Thursday 14th June, 2012. A two-way flow of 309 vehicles per hour was recorded on Whalley Road immediately west of St Joseph's RC Primary School.

Although there are relatively few amenities within the village, Hurst Green offers a reasonably frequent direct bus service to the three local service centres of Longridge, Whalley and Clitheroe.

There is no evidence of any existing personal injury collision problem within the vicinity of the proposed development. Therefore, provided the proposed development is subject to an appropriate Road Safety Audit, there is no reason to believe that the development would result in the deterioration of local road safety conditions.

The expected impact of the proposed development on traffic flows on Whalley Road is small. The additional trips would represent less than a 5% increase on existing morning peak hour traffic flows. The expected access road Annual Average Daily Traffic is 243 vehicles per day (vpd) - significantly less than the 500 vpd threshold for a simple priority junction on urban roads indicated by TA 23/81 (Highways Agency, 1981b). Therefore, a simple priority junction is considered to offer sufficient capacity for the access to the proposed development.

The available visibility to both the left and right of the proposed access was observed to be in excess of the minimum suggested by *Manual for Streets*.

Based on parking survey results, the proposed 19 space drop off area and 4 space lay-by is expected to be sufficient to accommodate the observed usage of the existing car park serving St Joseph's School.

Following discussions with the School and Parish Council it is understood that there is an aspiration for a 20mph speed limit within the village. It is considered that there is good potential for the proposed highway access junction to be designed in such a way as to support the introduction of a 20mph speed limit (or zone), subject to discussions with Lancashire County Council as the Highway Authority.

A draft copy of this report was submitted to Lancashire County Council (ref: M. Nugent) on 4th September, 2012. No comments had been received as of 1st October, 2012.

2.0 BACKGROUND AND SCOPE

2.1 Background

- 2.1.1 Local Transport Projects (LTP) Ltd have been commissioned by Carter Jonas LLP to prepare a Transport Assessment (TA) in support of a full planning application for a proposed residential development at Whalley Road, Hurst Green, Clitheroe.

2.2 Scope

- 2.2.1 The scope of this TA has been agreed with the Client. The requirements are for a TA including the following:

Executive Summary: A non-technical summary of the report outlining the key outcomes of the assessment.

Introduction/Description of Proposals:

A description of the proposed development site and its previous planning history, along with any other relevant planning history at or near to the development site. This includes consideration of the existing use of the site as a private car park for St Joseph's RC Primary School.

Site Assessment & Accessibility

Site assessments will determine existing traffic conditions, access arrangements, visibility issues, junction geometry and relevant features of the surrounding highway network. This includes an assessment of the existing sustainable transport infrastructure (pedestrian, cycle and public transport) local to the site and any proposed improvements (e.g. footpath links).

Traffic surveys will be included to determine peak hour traffic flows and speeds along Whalley Road, and also to determine demand for the existing car park serving St Joseph's RC Primary School.

Road Casualty Appraisal

An examination of road collision records will be used to provide assessment of the road safety impact of the proposed development on the local highway network.

Trip Generation

The report will project the trip generation of the proposed development for both car-borne journeys and also those by sustainable modes such as walking and cycling. This utilises the industry-standard Trip Rate Information Computer System (TRICS) database to provide a projection of the likely level of vehicle trips that the proposed 30 dwellings could be expected to generate.

Traffic Impact Assessment

The likely impact of the vehicle trips expected to be generated by the proposals will then be assessed against the existing traffic flows on the local highway network, as determined by the traffic survey conducted as part of the site assessment.

Access Arrangements & Parking Provision

The report will assess the suitability of the proposed vehicular access junction with Whalley Road (B6243) and advise on the preliminary design, based upon the identified trip generation associated with the proposed development and measured speed surveys. The report will comment on issues relating to the internal layout, and assess the proposed parking provision both in terms of the residential development, and the relocated car park proposed to serve St Joseph's RC Primary School.

3.0 THE PROPOSED DEVELOPMENT

3.1 Site Location

- 3.1.1 The proposed development site is an area of land lying on the north side of Whalley Road, Hurst Green opposite to numbers 12-18 Whalley Road. This lies approximately 190 yards east of Hurst Green village centre.
- 3.1.2 Hurst Green itself lies approximately 5 miles east of Longridge, and 3¼ miles northwest of Whalley.

3.2 Existing Use

- 3.2.1 The development site consists mostly of agricultural land. A small part of the site is used as a car park which, although not formally marked out, has space for approximately 13 vehicles, serving the adjacent St Joseph's RC Primary School.

3.3 Proposed Development

- 3.3.1 The proposed development consists of 30 new dwellings, along with associated access roads and garages. The dwellings are a mix of terrace, detached or semi-detached properties for private sale or to meet local need.
- 3.3.2 The development will also include the removal of the existing car park / drop off area serving St Joseph's RC Primary School. To mitigate for this, a new drop off area is proposed as part of the development – this is proposed to cater for 19 vehicles. One of these spaces is to be reserved for blue badge holders.
- 3.3.3 In addition to this, a lay-by is to be provided adjacent to Whalley Road, which would accommodate 4 vehicles. In total, provision for school pick up and drop off can accommodate 23 vehicles.
- 3.3.4 The proposed development is shown on the drawing included as Appendix 1 to this report.

3.4 Proposed Highway Access Arrangements

- 3.4.1 Access to the development is proposed to be taken from a new simple priority junction off Whalley Road, in place of the existing school car park. Three footpath links are also proposed – two of these will link to the existing footpath of St Joseph's RC Primary School, and a third will link the development to Smithy Row (PROW), which lies approximately 230 yards northwest of the development site.
- 3.4.2 It is proposed, subject to agreement with Lancashire County Council and further local consultation, to provide a raised table at the proposed new highway access.

3.5 Planning History

The Ribble Valley Borough Council's Planning Applications Website (Ribble Valley Borough Council, 2012) was interrogated to determine if there are any extant planning approvals in the vicinity of the proposed development. No consented or currently proposed development was identified by this search.

4.0 SITE ASSESSMENT

4.1 Whalley Road

- 4.1.1 Whalley Road forms part of the B6243 road, which links Longridge to the west with Clitheroe and Whalley to the east. The street is lit, and subject to a 30 mph speed limit. The carriageway is approximately 6.0 metres wide in the vicinity of the proposed development, and footways of approximately 1.3 metres width are provided on both sides of the street.
- 4.1.2 In the vicinity of the proposed development, the street is predominantly residential in nature, a scattering of dwelling houses on both sides of the road. There is a farmyard immediately opposite the proposed development side.

4.2 Local Amenities

- 4.2.1 Hurst Green is a small village, with limited amenities within the settlement itself.
- The nearest primary school is St Joseph's RC Primary School, which is immediately adjacent to the proposed development;
 - The nearest food store is the 'Booths' branch on Station Road, Clitheroe, which lies approximately 6 miles northeast of the proposed development;
 - The nearest general practitioners surgery is located on High Street, Whalley, approximately 5 miles southeast of the proposed development by road; and,
 - A full time post office is located in Whalley, approximately 5 miles east of the proposed development.
- 4.2.2 In addition to those mentioned above, the village supports three public houses (all of which offer accommodation), a village hall, and a football club. The Eagle & Child public house also accommodates a part-time post office.

4.3 Existing Traffic Flows

- 4.3.1 A traffic count was conducted between 8 and 9 am, on the morning of Thursday 14th June, 2012. The recorded two-way traffic flow immediately west of St Joseph's RC Primary School is shown in Table 4.1 below; the full results of the turning count are included as Appendix 2 to this report.

Table 4.1 – Recorded two-way traffic flow on Whalley Road

	8.00 – 8.15 am	8.15 – 8.30 am	8.30 – 8.45 am	8.45 – 9.00 am	Total 8-9 am
Cars	76	59	60	86	281
LGVs	5	2	3	6	16
HGVs	0	0	0	1	1
Buses	2	2	1	3	8
Motorcycles	1	0	1	1	3
Pedal cycles	0	0	0	0	0
Total (vehs)	84	63	65	97	309
Total (PCUs)	88	66	67	104	325

4.4 Existing Traffic Speeds

- 4.4.1 A vehicle speed survey was carried out on Whalley Road at the site frontage. Vehicles travelling in free-flow traffic conditions were measured using a hand-held radar gun, with reference to 'TA 22/81: Guidelines for Vehicle Speed Measurement on All Purpose Roads' (Highways Agency, 1981a). A speed survey was undertaken between 7.55 and 9.45 am on Thursday, 14th May 2012. The speeds of 100 vehicles were recorded in each direction. Weather conditions were dry and fine, and the road surface was dry. The speed survey results are included as Appendix 3 and are summarised in Table 4.2 below.
- 4.4.2 TA 22/81 (HA, 1981) recommends that vehicle speeds measured in dry weather should be converted to 'wet weather' speeds for design purposes. The guidance states that for all-purpose single carriageways, 4kph (or 2.48mph) should be deducted from the dry weather 85th percentile to obtain the wet weather 85th percentile speeds. Accordingly, the calculated wet weather 85th percentile speeds at the access are **35.5mph** westbound and **36.5mph** eastbound.

Table 4.2 – Vehicle Speed Survey Results

Speed Category	Westbound to Longridge	Eastbound to Clitheroe
Mean	33.7	35.8
Combined Mean	34.7	
85 th percentile (dry)	38.0	39.0
Combined 85 th percentile (dry)	39.0	
Wet 85 th percentile	35.5	36.5
Combined Wet 85 th percentile	36.5	

All speeds in miles per hour

4.5 Pedestrian and Cycle Provision

- 4.5.1 Aside from footways, no specific provision exists for pedestrians in the vicinity of the proposed development. No specific provision exists for cyclists.

4.6 Public Transport Provision

- 4.6.1 Advice within *Planning for Public Transport in Development* (Chartered Institution of Highways and Transportation, 1999) states that the generally ‘acceptable’ maximum distance that a bus stop should be located from a development site is 400m. Hurst Green’s bus stops are located at the War Memorial, approximately 210 yards west of the proposed development. One services calls at the village – this is detailed in Table 4.3 below.

Table 4.3 – Bus services operating via Hurst Green

Nº	Route (with times from Hurst Green)	Frequency (each way)	Operator
5	Longridge	25 min	Holmeswood Coaches, Ltd
	Ribchester	10 min	
	Knowle Green	5 min	
	Hurst Green		
	Great Mitton	4 min	
	Whalley	12 min	
	Clitheroe	25 min	
		Monday – Saturday 7.22 am – 7.12 pm Hourly peak time service One service journey every two hours at other times	

4.7 Wider Highway Network

- 4.7.1 The B6243 provides links to the nearby towns of Longridge and Clitheroe, and Whalley can be accessed via the B6243 and B6246. Motorists can join the strategic road network at Whalley, where the A59 Preston to Skipton road meets the A671, which provides links to the M65 and M66 motorways.

4.8 Conclusions

- 4.8.1 Existing traffic flows on Whalley Road are, at 325 PCUs per hour two way in the morning peak, relatively low. The combined wet weather 85th percentile speed was measured to be 36.5 mph.
- 4.8.2 Although there are relatively few amenities within the village, Hurst Green offers a reasonably frequent direct bus service to the three local service centres of Longridge, Whalley and Clitheroe.

5.0 ROAD SAFETY

5.1 Recent Casualty History

- 5.1.1 Full Personal Injury Collision (PIC) data within the area surrounding the proposed development site for the 3 year period 1 Jan '10 - 31 Dec '12 was obtained from Lancashire County Council's 'MARIO' GIS system on-line (Lancashire County Council, 2012).
- 5.1.2 The study area encompasses a 300 yard radius circle, centred on the site of the proposed development.
- 5.1.3 No personal injury collisions have been recorded in the study area for the latest three years for which data is available.

5.2 Implications for Proposed Development

- 5.2.1 There is no evidence of any existing personal injury collision problem within the vicinity of the proposed development. Therefore, provided the proposed development is subject to an appropriate Road Safety Audit, there is no reason to believe that the proposed development would result in the deterioration of local road safety conditions.

6.0 TRAFFIC IMPACT

6.1 Introduction

- 6.1.1 The predicted traffic associated with the proposed residential development has been calculated, with figures obtained from the national TRICS database for comparable developments. The vehicle trips generated by the existing use of the site are established and then subtracted from the calculated traffic generation associated with the proposed residential development. The impact of the additional trips on the adjacent highway network is then assessed.
- 6.1.2 The 'TRICS Good Practice Guide 2011' (JMP Consulting, 2011) and 'Guidance on Transport Assessment' (Department for Transport, 2007a) have been consulted to ensure best practice is undertaken when using the database, ensuring robustness and reliability. The following sections document the key selection criterion employed whilst using the database to identify trip generation associated with each use of the site.

6.2 Trip Generation Associated with Proposed Development

- 6.2.1 The expected trip generation associated with the proposed 30 dwelling development has been obtained by interrogating the TRICs database with the following criteria –

Land use: 03 (Residential)	Location type: Free standing or edge of town
Category: 03A (Houses privately owned)	Survey type: Multi modal
Parameter: No. of dwellings	Days included: Weekdays only
Date range: 1 Jan '04 – 18 Oct '11	Range: 4 to 50 dwellings

- 6.2.2 According to the TRICS Good Practice Guide '*the most important data field in terms of site selection compatibility is the location type*'. The development site is considered to be free standing.
- 6.2.3 It is noted that Ribble Valley's Settlement Hierarchy (Ribble Valley Borough Council, 2008) identifies Hurst Green as having good public transport access to the three Key Service Centres of Longridge, Clitheroe and Whalley (see also Table 4.3). Given this, and that the TRICS good practice guide (JMP Consulting, 2011) identifies that data from 'edge of town' sites is possibly compatible with free standing sites, 'edge of town' sites have been included in the search criteria.
- 6.2.4 Sites located in Greater London or the South East of England were excluded from the search as trip rates in these areas could significantly differ to what could be expected at the development site in Lancashire.
- 6.2.5 A parameter range of 4 to 50 dwellings was adopted to ensure that developments of a similar scale were selected, ensuring that particularly small or excessively large residential developments did not affect the validity of the dataset.

- 6.2.6 To ensure that the most recent developments were selected for comparison, only sites surveyed in the latest 10 years for which surveys were available were used. Weekday surveys were selected to ensure the 'worst case' scenario was assessed. All selected surveys were multi-modal, with the latest surveys selected where sites had been resurveyed.
- 6.2.7 The search criterion ensured that only the most suitable developments were identified, resulting in the selection of eight relevant sites. In accordance with the appropriate guidance as less than 20 surveys were selected, median trip rates have been quoted. A copy of the full TRICS data is included in Appendix 4.
- 6.2.8 The vehicle, pedestrian, cycle and public transport trip rates and predicted trip numbers for the 12-hour (7 am – 7 pm) period are shown in Table 6.1 below.

Table 6.1 – 12-Hour (7 am – 7 pm) trip rates & trip numbers for proposed development

Mode	Arrivals		Departures		Two-way	
	Trip rate per household	No. arrivals for 30 households	Trip rate per household	No. departures for 30 households	Trip rate per household	No. departures for 30 households
Vehicles	2.757	83	2.705	81	5.462	164
Pedestrians	1.019	31	1.118	34	2.137	64
Public transport users	0.060	2	0.055	2	0.115	3
Cyclists	0.090	3	0.075	2	0.165	5

- 6.2.9 The vehicle, pedestrian, cycle and public transport trip rates and predicted trip numbers for the morning (8- 9 am) and evening (5-6 pm) peak hours are shown in Tables 6.2 & 6.3 below.

Table 6.2 – Morning peak (8 – 9 am) trip rates & trip numbers for proposed development

Mode	Arrivals		Departures		Two-way	
	Trip rate per household	No. arrivals for 30 households	Trip rate per household	No. departures for 30 households	Trip rate per household	No. departures for 30 households
Vehicles	0.192	6	0.458	14	0.650	20
Pedestrians	0.094	3	0.379	11	0.473	14
Public transport users	0.000	0	0.015	0	0.015	0
Cyclists	0.010	0	0.030	1	0.040	1

Table 6.3 – Afternoon peak (5 – 6 pm) trip rates & trip numbers for proposed development

Mode	Arrivals		Departures		Two-way	
	Trip rate per household	No. arrivals for 30 households	Trip rate per household	No. departures for 30 households	Trip rate per household	No. departures for 30 households
Vehicles	0.488	15	0.241	7	0.729	22
Pedestrians	0.054	2	0.039	1	0.093	3
Public transport users	0.000	0	0.000	0	0.000	0
Cyclists	0.010	0	0.005	0	0.015	0

6.2.10 The full output from the TRICS database is included as Appendix 4 to this report.

6.3 Impact on Vehicular Traffic

- 6.3.1 In order to assess the likely impact of the additional traffic on the adjacent highway network, a simple network model has been developed for the morning peak hour (8-9 am).
- 6.3.2 This has been constructed based upon the assumption that the directional split for traffic arriving at or leaving the proposed development is the same as the directional split observed immediately west of the school access during the traffic survey – **51%** westbound and **49%** eastbound. The resulting turning movements from the proposed development are indicated in Table 6.4 below.

Table 6.4 – Expected turning movements out of development in AM peak (8-9am)

Movement	PCUs
Left turn into development	3
Right turn into development	3
Total arrivals	6
Left turn out of development	7
Right turn out of development	7
Total departures	14
Total two-way	20

- 6.3.3 Trips associated with the school drop off facility are already extant on the network, and are therefore not counted again.
- 6.3.4 These trips can then be assigned to Whalley Road, to identify the likely change in traffic flows there. The results are shown in Table 6.5 below.

Table 6.5 – Expected traffic flows on Whalley Road after completion of development in AM peak (8-9am)

	West of access	East of access
Existing two way flow (PCUs)	325	325
Additional two way flow (PCUs)	10	10
Total expected two way flow (PCUs)	335	335
Change (%)	+3.1%	+3.1%

- 6.3.5 The expected impact of the proposed development on traffic flows on Whalley Road is small. The additional trips would represent less than a 5% increase on existing traffic flows during the morning peak hour.

7.0 HIGHWAY ACCESS, INTERNAL LAYOUT AND PARKING

7.1 Description of Proposed Vehicular Access

- 7.1.1 The Development Principles Plan (shown in Appendix 1) indicates that vehicular access to the development is to be taken from Whalley Road opposite No 16. The plan is indicative only, and does not show the detailed layout of the proposed access.

7.2 Capacity of Proposed Vehicular Access

- 7.2.1 In order to determine if the access serving the development is designed with adequate capacity, the existing traffic flow figures on Whalley Road, and the expected trip generation associated with the development are compared against the guidance offered by TA 23/81 *Junctions and Accesses – Determination of Size of Roundabouts and Major/Minor Junctions* (Highways Agency, 1981b).
- 7.2.2 The expected two-way side road flow at the access has been estimated at 164 vehicles in the period 7 am – 7pm. For the purposes of capacity analysis, this needs to be converted to Annual Average Daily Traffic (AADT). This has been done with reference to Chapter 9, Part 4 of the COBA Manual (Highways Agency, 2004) – the result is shown in Table 7.1 below. The M factor for May has been used as this was the most frequently occurring survey month in the sites selected from the TRICS database, and the seasonality index is assumed to be 1.0.
- 7.2.3 An additional allowance of 63 vehicles per day has been included to account for trips to and from the proposed school drop off area. This is based on the number of vehicles observed parked in connection with school drop offs (21 – see section 7.7 below), multiplied by 1.5 to give an allowance for turnover, then multiplied by two to account for morning and peak periods.

Table 7.1 – Estimated AADT of access road

Estimated 12 hour flow (A)	164
E Factor (E)	1.15
M Factor (M) for May	349
$A \times E \times M / 365 = \text{AADT}$	180
Allowance for school drop off	63
Total	243

- 7.2.4 The expected AADT of 243 vpd is significantly less than the 500 vpd threshold for a simple priority junction on urban roads indicated by TA 23/81 (Highways Agency, 1981b). Therefore, a simple priority junction is considered to offer sufficient capacity for the access to the proposed development.

7.3 Required Visibility Splays

- 7.3.1 The site was surveyed with reference to *Creating Civilised Streets* (Lancashire County Council, 2010) and *Manual for Streets* (Department for Transport, 2007b). The required visibility splays at the access, based on the two documents above, are shown in Table 7.2 based on the posted speed limit and the actual recorded vehicle speeds. The given 'y' distances need to be achievable from an 'x' distance of 2.4 metres.

Table 7.2 – Visibility Requirements

	Left of access (departure side)	Right of access (approach side)
Posted speed limit	30mph	30 mph
Required 'y' distance to MfS1 based on speed limit	43m	43m
Wet weather 85 th percentile measured speed	35.5mph	36.5mph
Required 'y' distance to MfS1 based on measured speeds	55m	57m

- 7.3.2 Existing visibility splays at the approximate location of the proposed access were measured on site on Thursday 14th June 2012, to determine whether the appropriate visibility splays could be achieved. The measured available visibility splays are summarised in Table 7.3 below.

Table 7.3 – Existing measured visibility splays

	Left of access (departure side)	Right of access (approach side)
Approach wet 85 th %ile speed	35.5mph	36.5mph
Required 'y' distance based upon wet weather speeds (ref MfS1)	55m	57m
Existing achievable 'y' distance at an 'x' distance of 2.4m	55m	57m

- 7.3.3 **Visibility to the left from the proposed access** – At a 2.4m 'x' distance, visibility to the left of the proposed access was observed to be good, with the minimum 'y' distance of 55 metres suggested by Manual for Street achievable.

Photo 1 – Visibility to the left of the proposed access at 2.4m setback



- 7.3.4 **Visibility to the right from the proposed access** – Visibility to the right was observed to be good. However, the hedge had overgrown into the highway at the time of the site visit, and it is anticipated this could be cut back if required. At an 'x' distance of 2.4 metres, the available 'y' distance was 73 metres, well in excess of the required splay suggested by *Manual for Streets*.

Photo 3 – Visibility to the right of the proposed access at 2.4m setback



7.4 Pedestrian & Cycle Access

- 7.4.1 Three pedestrian accesses are proposed. Two link the development to St Joseph's RC Primary School, and a third joins the existing footpath to Smithy Row in the north of the village.

7.5 Comment on Internal Site Layout

- 7.5.1 No detail of the proposed internal street layout was available, although the internal streets of the development are indicatively shown as shared surface roads on the development principle plan. An expected development trip generation of 23 vehicles in the morning peak hour, combined with an allowance of 32 vehicles using the school drop-off (see paragraph 7.2.3), means that two-way flow within the development site should not exceed 55 vehicles in the peak hour – this is considerably less than the 100 vph limit suggested for shared surface streets by *Manual for Streets* (Department for Transport, 2007b).
- 7.5.2 The layout suggested by the development principles plan should therefore operate satisfactorily, subject to the detailed design suitably restraining traffic speeds, and accommodating the needs of disabled people.

7.6 Parking Requirements – Residential Properties

- 7.6.1 The relevant regional and local parking standards have been analysed in relation to the proposed development and the results are summarised below.
- 7.6.2 Lancashire County Council's highway design guide *Creating Civilised Streets* (Lancashire County Council, 2010) offers parking standards in line with the draft North West Partial Plan Review (4NW, 2009). Developments should either be in line with these standards, or should use them as maximum standards.
- 7.6.3 For dwelling houses, the draft regional parking standard for a development away from town centres is for **2 spaces** per dwelling, assuming the houses are to have two or three bedrooms. Thus the total for the proposed development would be 60 spaces. Cycle parking is set at **2 allocated spaces and 1 communal space** per dwelling (again assuming two or three bedrooms); this need not be provided where garages are available.
- 7.6.4 The detailed design of the development will ensure compliance with the required parking standards noted above.

7.7 Parking Requirements – St Josephs School

- 7.7.1 In order to establish the necessary capacity of the proposed drop-off area to serve St Joseph's RC Primary School, beat parking surveys were conducted on Thursday, 14th June 2012. Parked vehicles were recorded at 7.30, 8.15, 8.30, 8.45, 9.00 and 9.15 am, on the following stretches of road:
- Whalley Road between No 33 and the War Memorial;
 - The car park / drop off area serving St Joseph's RC Primary School;
 - Avenue Road between Whalley Road and the public conveniences; and,
 - The full length of Warren Fold.
- 7.7.2 The results of the survey are shown in Table 7.4 below.

Table 7.4 – Summary of parking survey results

Location	Number of cars parked at					
	7.30 am	8.15 am	8.30 am	8.45 am	9.00 am	9.15 am
Car park	2	3	3	7	15	9
Whalley Rd	0	2	2	3	13	3
Avenue Rd	3	3	3	3	3	1
Warren Fold	7	7	5	5	5	5
Total	12	15	13	18	36	18

- 7.7.3 Few vehicles associated with the school were observed to be parked prior to 8.45 am. Therefore, in order to assess the numbers of vehicles waiting in association with the school and thus the required capacity of the car park / drop off area, the average of the parking surveys taken prior to 8.45 am can be taken as a baseline figure. This baseline figure for parking demand not associated with the school is **13 cars**.
- 7.7.4 At the busiest count, 36 cars were observed to be parked within the survey area. When the baseline figure is subtracted, this leaves a figure of **23 cars** parked in association with school movements.
- 7.7.5 In addition to the beat parking surveys, the car park and the adjacent stretch of Whalley Road were continually monitored, so as to identify the peak parking demand. This was observed to occur between 8.45 and 9.00 am, when 16 cars were observed in the car park / drop off area, and 7 were observed to be parked on the adjacent kerbside. These leaves a total parking demand figure of **23 cars**.
- 7.7.6 Based on the parking survey results, the proposed total provision of 23 spaces for drop offs is expected to be sufficient to accommodate the observed parking demand associated with St Joseph's school. The peak demand for parking was observed to exist for a period of approximately 15 minutes.
- 7.7.7 It was also noted that two cars appeared to be parked in the car park / drop off area in the long term, and that these vehicles did not appear to be related to the school. It may be that demand for the parking space can be reduced by two vehicles, through (for example) use of a limited waiting traffic regulation order to prevent long-term parking at the times the facility is required for school drop-off.
- 7.7.8 Based on the above surveys and analysis, it is concluded that the proposed car park / drop off provision of 23 spaces provides sufficient capacity for observed parking demand associated with the school.

8.0 CONCLUSIONS & RECOMMENDATIONS

8.1 Conclusions

- 8.1.1 This TA provides a detailed appraisal of the transport impacts associated with the proposed 30 dwellinghouse development at Whalley Road, Hurst Green, Clitheroe. The impacts associated with the loss of the existing school car park / drop off area, and new proposed 16 space school drop off area are also considered by this report.
- 8.1.2 The proposed development site is located within a village identified by Ribbles Valley Borough Council's Settlement Hierarchy as having public transport access to the key service centres of Longridge, Clitheroe and Whalley. The No 5 bus service offers direct and frequent connections to these towns.
- 8.1.3 The road casualty study for the last 3 years within the vicinity of the site has revealed no existing collision trends within the vicinity.
- 8.1.4 The traffic generation at the development has been projected using trip generation statistics from residential developments of a similar size and location type. These projections indicate that the proposed development site could generate 20 two-way vehicle movements during the AM peak hour, with 22 during the PM peak. This would represent just a 3.1% increase on existing flows on Whalley Road in the morning peak hour.
- 8.1.5 Including for new trips associated with the proposed residential development, and displaced trips associated with the relocation of the school drop-off area, an expected AADT of 243 vpd has been calculated for the access road serving the development. This is significantly less than the 500 vpd threshold for simple priority junction on urban roads indicated by TA 23/81 (Highways Agency, 1981b). Therefore, a simple priority junction is considered to offer sufficient capacity for the access to the proposed development.
- 8.1.6 Based on the parking survey results, the proposed 19 space drop off area and 4 space lay-by are expected to be sufficient to accommodate the observed parking demand associated with St Joseph's school. The peak demand for parking was observed to exist for a period of approximately 15 minutes.
- 8.1.7 It was also noted that two cars appeared to be parked in the car park / drop off area in the long term, and that these vehicles did not appear to be related to the school. It may be that demand for the parking space can be reduced by two vehicles, through (for example) use of a limited waiting traffic regulation order to prevent long-term parking at the times the facility is required for school drop-off.
- 8.1.8 The available visibility to both the left and right of the proposed access was observed to be in excess of the minimum suggested by *Manual for Streets*.
- 8.1.9 It is concluded that, with the implementation of the recommendations outlined in this report (see Section 8.2 below), the proposed development would not be expected to have a detrimental impact in road safety, traffic and highway terms.

8.2 Recommendations

- 8.2.1 It is recommended that the detailed design of the access achieves the minimum visibility splays set out in Table 7.2 of this report. It is anticipated that this could be achieved without difficulty providing the access is carefully located.
- 8.2.2 It is recommended that consideration be given to implementing a limited waiting TRO within the school drop off area, to ensure it is kept clear for users of the school and is not congested by others. It is suggested that a maximum stay of 30 minutes, operating between the hours of 8.15-9.15am, and 2.45-3.45pm, would effectively achieve this. Additional periods of operation may be appropriate to cover pre-school and/or after school clubs etc., in consultation with the school and local residents.

9.0 REFERENCES

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Appendix I – Proposed development

Proposed Residential Development at Whalley Road, Hurst Green



Schedule of Accommodation

5 No. A	2 bed 1 storey Terrace
4 No. B	2 bed 2 storey Terrace
1 No. C	2 bed 1 storey Detached
1 No. D	2 bed 1 storey Detached
6 No. E	3 bed 2 storey Detached
2 No. F	4 bed 2.5 storey Detached
1 No. G	4 bed 2 storey Detached
1 No. H	4 bed 2 storey Detached
2 No. I	4 bed 2 storey Detached
2 No. J	5 bed 2.5 storey Detached
2 No. K	5 bed 2 storey Detached
2 No. L	5 bed 2 storey Detached
1 No. M	4 bed 2 storey Detached

30 Units Total

Frontage Views

Provisional

Rev	By	Note	Date

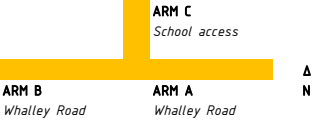


PROJECT	Whalley Road, Hurst Green
TITLE	Proposed Site Layout 30 Units Alternative
DESIGNER	Carter Jonas
DATE	17.08.2012
SCALE	1:500@A1
DRAWING NO.	Y81/842.SK13
DESIGNED BY	CT
CHECKED BY	PJR

Proposed Site Layout with Rear Gardens to Northern Boundary

Appendix 2 – Whalley Road traffic count

SITE PLAN



Thurs 14 June, 2012
8-9 am
Weather: Fine and dry

First quarter turning counts

	A to B	A to C	B to A	B to C	C to B	C to A	Total	%
Car	41	2	34	0	1	0	78	91%
LGV	2	0	3	0	0	0	5	6%
HGV	0	0	0	0	0	0	0	0%
PSV	0	0	2	0	0	0	2	2%
MC	1	0	0	0	0	0	1	1%
PC	0	0	0	0	0	0	0	0%
Total	44	2	39	0	1	0	86	
PCUs	44	2	43	0	1	0	90	

Second quarter turning counts

	A to B	A to C	B to A	B to C	C to B	C to A	Total	%
Car	27	0	31	1	0	0	59	92%
LGV	0	1	2	0	0	0	3	5%
HGV	0	0	0	0	0	0	0	0%
PSV	0	0	2	0	0	0	2	3%
MC	0	0	0	0	0	0	0	0%
PC	0	0	0	0	0	0	0	0%
Total	27	1	35	1	0	0	64	
PCUs	27	2	38	1	0	0	68	

Third quarter turning counts

	A to B	A to C	B to A	B to C	C to B	C to A	Total	%
Car	29	0	30	1	0	0	60	92%
LGV	1	0	1	0	1	0	3	5%
HGV	0	0	0	0	0	0	0	0%
PSV	0	0	1	0	0	0	1	2%
MC	0	0	1	0	0	0	1	2%
PC	0	0	0	0	0	0	0	0%
Total	30	0	33	1	1	0	65	
PCUs	31	0	34	1	2	0	67	

Fourth quarter turning counts

	A to B	A to C	B to A	B to C	C to B	C to A	Total	%
Car	47	0	37	2	0	0	86	89%
LGV	4	0	2	0	0	0	6	6%
HGV	1	0	0	0	0	0	1	1%
PSV	3	0	0	0	0	0	3	3%
MC	0	0	1	0	0	0	1	1%
PC	0	0	0	0	0	0	0	0%
Total	55	0	40	2	0	0	97	
PCUs	61	0	40	2	0	0	104	

Total turning count

	A to B	A to C	B to A	B to C	C to B	C to A	Total	%
Car	144	2	132	4	1	0	283	91%
LGV	7	1	8	0	1	0	17	5%
HGV	1	0	0	0	0	0	1	0%
PSV	3	0	5	0	0	0	8	3%
MC	1	0	2	0	0	0	3	1%
PC	0	0	0	0	0	0	0	0%
Total	156	3	147	4	2	0	312	
PCUs	163	4	155	4	3	0	328	

First quarter inflows

	A	B	C
Car	43	34	1
LGV	2	3	0
HGV	0	0	0
PSV	0	2	0
MC	1	0	0
PC	0	0	0
Total	46	39	1
PCUs	46	43	1

Second quarter inflows

	A	B	C
Car	27	32	0
LGV	1	2	0
HGV	0	0	0
PSV	0	2	0
MC	0	0	0
PC	0	0	0
Total	28	36	0
PCUs	29	39	0

Third quarter inflows

	A	B	C
Car	29	31	0
LGV	1	1	1
HGV	0	0	0
PSV	0	1	0
MC	0	1	0
PC	0	0	0
Total	30	34	1
PCUs	31	35	2

Fourth quarter inflows

	A	B	C
Car	47	39	0
LGV	4	2	0
HGV	1	0	0
PSV	3	0	0
MC	0	1	0
PC	0	0	0
Total	55	42	0
PCUs	61	42	0

Total inflows

	A	B	C
Car	146	136	1
LGV	8	8	1
HGV	1	0	0
PSV	3	5	0
MC	1	2	0
PC	0	0	0
Total	159	151	2
PCUs	167	159	3

First quarter outflows

	A	B	C
Car	34	42	2
LGV	3	2	0
HGV	0	0	0
PSV	2	0	0
MC	0	1	0
PC	0	0	0
Total	39	45	2
PCUs	43	45	2

Second quarter outflows

	A	B	C
Car	31	27	1
LGV	2	0	1
HGV	0	0	0
PSV	2	0	0
MC	0	0	0
PC	0	0	0
Total	35	27	2
PCUs	38	27	3

Third quarter outflows

	A	B	C
Car	30	29	1
LGV	1	2	0
HGV	0	0	0
PSV	1	0	0
MC	1	0	0
PC	0	0	0
Total	33	31	1
PCUs	34	32	1

Fourth quarter outflows

	A	B	C
Car	37	47	2
LGV	2	4	0
HGV	0	1	0
PSV	0	3	0
MC	1	0	0
PC	0	0	0
Total	40	55	2
PCUs	40	61	2

Total outflows

	A	B	C
Car	132	145	6
LGV	8	8	1
HGV	0	1	0
PSV	5	3	0
MC	2	1	0
PC	0	0	0
Total	147	158	7
PCUs	155	166	8

First quarter two-way flows

	A	B	C
Car	77	76	3
LGV	5	5	0
HGV	0	0	0
PSV	2	2	0
MC	1	1	0
PC	0	0	0
Total	85	84	3
PCUs	89	88	3

Second quarter two-way flows

	A	B	C
Car	58	59	1
LGV	3	2	1
HGV	0	0	0
PSV	2	2	0
MC	0	0	0
PC	0	0	0
Total	63	63	2
PCUs	67	66	3

Third quarter two-way flows

	A	B	C
Car	59	60	1
LGV	2	3	1
HGV	0	0	0
PSV	1	1	0
MC	1	1	0
PC	0	0	0
Total	63	65	2
PCUs	64	67	3

Fourth quarter two-way flows

	A	B	C
Car	84	86	2
LGV	6	6	0
HGV	1	1	0
PSV	3	3	0
MC	1	1	0
PC	0	0	0
Total	95	97	2
PCUs	102	104	2

Total two-way flows

	A	B	C
Car	278	281	7
LGV	16	16	2
HGV	1	1	0
PSV	8	8	0
MC	3	3	0
PC	0	0	0
Total	306	309	9
PCUs	322	325	10

Appendix 3 – Whalley Road speed survey

Location: B6243 Whalley Road, Hurst Green

Radar Speed Survey, Date: 15th June 2012 (7.55am-9.45am)

Weather: Fine / Dry / Sunny



	A		B		
	Westbound to Longridge		Eastbound to Clitheroe		
1	39	34	40	36	1
2	36	33	41	32	2
3	27	31	35	26	3
4	29	34	39	26	4
5	38	36	38	34	5
6	30	34	31	29	6
7	38	26	34	33	7
8	36	31	36	31	8
9	35	35	28	30	9
10	39	32	35	36	10
11	42	30	37	25	11
12	33	33	37	26	12
13	44	31	41	34	13
14	29	32	29	36	14
15	34	28	28	266	15
16	39	34	36	39	16
17	36	34	37	26	17
18	32	34	42	35	18
19	35	35	39	33	19
20	35	38	35	37	20
21	28	38	36	36	21
22	46	31	38	33	22
23	24	30	33	29	23
24	31	41	35	32	24
25	38	28	32	32	25
26	37	32	38	30	26
27	42	28	41	33	27
28	29	29	40	33	28
29	39	34	43	27	29
30	35	33	34	39	30
31	36	31	31	43	31
32	37	35	38	31	32
33	28	27	31	40	33
34	34	34	29	30	34
35	36	25	39	26	35
36	44	29	31	28	36
37	43	24	31	34	37
38	36	29	29	37	38
39	34	32	34	31	39
40	30	32	36	28	40
41	38	28	32	28	41
42	34	34	39	25	42
43	36	31	37	28	43
44	32	33	42	31	44
45	39	32	36	27	45
46	40	29	29	37	46
47	44	29	31	29	47
48	38	29	35	30	48
49	35	31	33	29	49
50	35	29	36	29	50
Mean (MPH)	33.7		35.8		
Combined Mean (MPH)			34.7		
85th %ile (MPH)	38.0		39.0		
Combined 85th %ile (MPH)			39.0		
Wet 85th %ile (MPH)	35.5		36.5		

Appendix 4 – Output from TRICS database

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 MULTI-MODAL VEHICLES

Selected regions and areas:

05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	WO WORCESTERSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	GM GREATER MANCHESTER	1 days
09	NORTH	
	CB CUMBRIA	1 days
11	SCOTLAND	
	EA EAST AYRSHIRE	1 days
	HI HIGHLAND	1 days

Filtering Stage 2 selection:

Parameter: Number of dwellings
 Actual Range: 9 to 48 (units:)
 Range Selected by User: 4 to 50 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/04 to 18/10/11

Selected survey days:

Tuesday	3 days
Wednesday	1 days
Thursday	3 days
Friday	1 days

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	8
--------------	---

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	2

Filtering Stage 3 selection:

Use Class:

C3	8 days
----	--------

Population within 1 mile:

5,001 to 10,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
25,001 to 50,000	1 days

Filtering Stage 3 selection (Cont.):

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	4 days
100,001 to 125,000	2 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	6 days

Travel Plan:

No	8 days
----	--------

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	25	0.103	8	25	0.236	8	25	0.339
08:00 - 09:00	8	25	0.192	8	25	0.458	8	25	0.650
09:00 - 10:00	8	25	0.177	8	25	0.266	8	25	0.443
10:00 - 11:00	8	25	0.133	8	25	0.153	8	25	0.286
11:00 - 12:00	8	25	0.177	8	25	0.207	8	25	0.384
12:00 - 13:00	8	25	0.153	8	25	0.133	8	25	0.286
13:00 - 14:00	8	25	0.172	8	25	0.148	8	25	0.320
14:00 - 15:00	8	25	0.236	8	25	0.222	8	25	0.458
15:00 - 16:00	8	25	0.266	8	25	0.227	8	25	0.493
16:00 - 17:00	8	25	0.394	8	25	0.222	8	25	0.616
17:00 - 18:00	8	25	0.488	8	25	0.241	8	25	0.729
18:00 - 19:00	8	25	0.266	8	25	0.192	8	25	0.458
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:			2.757			2.705			5.462

Parameter summary

Trip rate parameter range selected:	9 - 48 (units:)
Survey date date range:	01/01/04 - 18/10/11
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	25	0.005	8	25	0.015	8	25	0.020
08:00 - 09:00	8	25	0.010	8	25	0.030	8	25	0.040
09:00 - 10:00	8	25	0.000	8	25	0.000	8	25	0.000
10:00 - 11:00	8	25	0.005	8	25	0.005	8	25	0.010
11:00 - 12:00	8	25	0.005	8	25	0.000	8	25	0.005
12:00 - 13:00	8	25	0.020	8	25	0.010	8	25	0.030
13:00 - 14:00	8	25	0.005	8	25	0.000	8	25	0.005
14:00 - 15:00	8	25	0.000	8	25	0.000	8	25	0.000
15:00 - 16:00	8	25	0.005	8	25	0.000	8	25	0.005
16:00 - 17:00	8	25	0.010	8	25	0.010	8	25	0.020
17:00 - 18:00	8	25	0.010	8	25	0.005	8	25	0.015
18:00 - 19:00	8	25	0.015	8	25	0.000	8	25	0.015
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:			0.090			0.075			0.165

Parameter summary

Trip rate parameter range selected:	9 - 48 (units:)
Survey date date range:	01/01/04 - 18/10/11
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	25	0.034	8	25	0.034	8	25	0.068
08:00 - 09:00	8	25	0.094	8	25	0.379	8	25	0.473
09:00 - 10:00	8	25	0.113	8	25	0.108	8	25	0.221
10:00 - 11:00	8	25	0.039	8	25	0.074	8	25	0.113
11:00 - 12:00	8	25	0.069	8	25	0.084	8	25	0.153
12:00 - 13:00	8	25	0.064	8	25	0.074	8	25	0.138
13:00 - 14:00	8	25	0.054	8	25	0.069	8	25	0.123
14:00 - 15:00	8	25	0.089	8	25	0.094	8	25	0.183
15:00 - 16:00	8	25	0.241	8	25	0.064	8	25	0.305
16:00 - 17:00	8	25	0.084	8	25	0.069	8	25	0.153
17:00 - 18:00	8	25	0.054	8	25	0.039	8	25	0.093
18:00 - 19:00	8	25	0.084	8	25	0.030	8	25	0.114
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:			1.019			1.118			2.137

Parameter summary

Trip rate parameter range selected:	9 - 48 (units:)
Survey date range:	01/01/04 - 18/10/11
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	25	0.000	8	25	0.010	8	25	0.010
08:00 - 09:00	8	25	0.000	8	25	0.015	8	25	0.015
09:00 - 10:00	8	25	0.000	8	25	0.005	8	25	0.005
10:00 - 11:00	8	25	0.000	8	25	0.010	8	25	0.010
11:00 - 12:00	8	25	0.015	8	25	0.005	8	25	0.020
12:00 - 13:00	8	25	0.010	8	25	0.005	8	25	0.015
13:00 - 14:00	8	25	0.000	8	25	0.005	8	25	0.005
14:00 - 15:00	8	25	0.000	8	25	0.000	8	25	0.000
15:00 - 16:00	8	25	0.020	8	25	0.000	8	25	0.020
16:00 - 17:00	8	25	0.010	8	25	0.000	8	25	0.010
17:00 - 18:00	8	25	0.000	8	25	0.000	8	25	0.000
18:00 - 19:00	8	25	0.005	8	25	0.000	8	25	0.005
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:			0.060			0.055			0.115

Parameter summary

Trip rate parameter range selected:	9 - 48 (units:)
Survey date date range:	01/01/04 - 18/10/11
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1