

PLANNING INSPECTORATE REF. : APP/T2350/A/12/2181354/NWF

TOWN AND COUNTRY PLANNING ACT 1990

RIBBLE VALLEY BOROUGH COUNCIL

PLANNING APPLICATION No. 3/2011/0892

PROPOSED RESIDENTIAL DEVELOPMENT :
LAND OFF MILTON AVENUE, CLITHEROE, LANCASHIRE BB7 2HX

**HIGHWAY STATEMENT TO SUPPORT THE REFUSAL OF
PLANNING PERMISSION**

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*Planning Appeal for a Proposed Residential Development :
Land off Milton Avenue, Clitheroe, Lancashire BB7 2HX
Highway Statement to Support the Refusal of Planning Permission
Prepared by Mr J C Carruthers BSc, MSc, CEng, MICE, MCIHT*

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References

- Appendix 1 - Planning Application Refusal Notice
- Appendix 2 - Ribble Valley Districtwide Local Plan Policy G1
- Appendix 3 - Traffic Speed Survey Results on B6478 Waddington Road

Photographs

1. Qualifications and Professional Experience

- 1.1 My name is John Carruthers. I am a Chartered Civil Engineer (C.Eng.) and a Highway and Transport Consultant. I hold a Degree in Civil Engineering (BSc. Hons.), and a Master of Science Degree in Transport Engineering and Planning (MSc). I am a Member of the Institution of Civil Engineers (MICE) and a Member of the Chartered Institution of Highways and Transportation (MCIHT).
- 1.2 I have over 27 years of professional highway, traffic and transport experience that has been gained whilst working continuously in the public and private sectors. Between 1985 and 1993 I worked in the Highway and Traffic Departments of Oldham Metropolitan Borough Council, Preston Borough Council and Lancashire County Council (LCC). I was a Senior Engineer and Principal Engineer in the Traffic and Road Safety Section of LCC between 1988 and 1993 being responsible for the investigation of traffic and road safety matters in Ribble Valley, Burnley, Pendle and Wyre Districts of the County.
- 1.3 Since 1993 I have been an independent highway and transport consultant in my role as Director of VTC Limited, of Preston. During this time I have been engaged on a wide variety of highway and traffic projects throughout the U.K. for both public and private sector clients. I have also provided highway and traffic evidence to Planning Appeals and Planning Inquiries during the last twenty-seven years.

2. Scope of Evidence

2.1 This planning appeal has been made The Huntroyde Estate against the decision by Ribble Valley Borough Council ('the Council'), to refuse to grant planning permission for a proposed residential development on land served by Milton Avenue in Clitheroe.

2.2 The Council gave the following reason for refusal of the planning application :

The proposed development is considered contrary to Policy G1 of the Ribble Valley Districtwide Local Plan in that it would have an adverse impact on the operation of the highway network to the detriment of highway safety and to the general amenities of the area.

Ribble Valley Borough Council Reason for Refusal (Appendix 1)

20.7.2012

Policy G1 of the Ribble Valley Districtwide Local Plan states :

All development proposals will be expected to provide a high standard of building design and landscape quality. Development which does so will be permitted, unless it adversely affects the amenities of the surrounding area.

The policy lists 13 criteria that will be applied and other additional factors that may be taken into account (Appendix 2). The main criteria that are relevant to this planning appeal are :

- (b) The likely scale and type of traffic generation will be assessed in relationship to the highway infrastructure and the proposed and existing public transport network. This will include safety, operational efficiency, amenity and environmental considerations.*
- (d) A safe access should be provided which is suitable to accommodate the scale and type of traffic likely to be generated.*

- 2.3 I have been asked by the Council to consider the highway reason for refusal of the planning application and to present their case against the planning appeal. During the preparation of this statement I have examined the information that was submitted with the planning application and the consultation responses that were received. I have also examined the proposed development site and the local highway network including the existing parking along Milton Avenue at different times of the day and week. I have also carried out a traffic speed survey on Waddington Road to assess the standard of the visibility splays at its junction with Milton Avenue. Based on these investigations I consider that the Council's highway reason for refusal is fully justified and that the traffic that would be generated by the proposed development would have a significant and adverse impact on highway safety and the general amenities of the area.
- 2.4 I consider that the net impact of the proposed development traffic would be severe in terms of road safety risk and the impact on residential amenity even with the proposed Section 106 highway measures that have been requested by the Highway Authority - Lancashire County Council (LCC). Accordingly, I have prepared this Highway Statement to support the Council's Highway Reason for Refusal.

3. Site Location and Existing Use

- 3.1 The proposed development site is located approximately 500 metres north west of Clitheroe town centre in Ribble Valley. The site is a greenfield site with an area of 1.23 hectares.
- 3.2 There are residential properties to the south west of the site at Corbridge Court and also to the north-east with the end terraces and semi-detached dwellings fronting Milton Avenue and Cowper Avenue. There is a public car park to the south east of the site, off Chester Avenue, and a children's playground and to the north west of the site there are open fields.

4. Existing Highway Network

- 4.1 The proposed development site is served from Milton Avenue which is a residential access road serving just 16 properties. The road has a length of 88 metres from its junction with the B6478 Waddington Road. The road has a carriageway width of approximately 7.3 metres and footways on each side. There is street lighting along Milton Avenue and a 20 miles per hour speed limit.
- 4.2 On-street parking takes place along both sides of Milton Avenue and there is a high demand for parking throughout the day and night, as shown in Photograph 1. During a typical weekday there is parking by residents and commuter parking and in the evenings there is a higher level of parking by residents when they have returned from work. Commuters park in the street to avoid paying charges on the town centre car parks. At weekends the road is used for parking by residents and their visitors and some shoppers who can avoid paying charges on the car parks.

- 4.3 The properties along the east side of Milton Avenue do not have any off-road parking at the front. Several of the properties have rear garages which are not always used because of the narrow cobbled access route to the rear. The semi-detached properties on the west side of the road have some parking space within their curtilage and a garage but most residents park on Milton Avenue itself or park one car within the curtilage and one (or more), cars on the road.
- 4.4 The pattern of parking on both sides of the road reduces the effective carriageway width to less than 3.5 metres which is too narrow for two cars to pass and the road operates as a single lane for two-way traffic (single lane working). This is shown in Photograph 2. Because the road is lightly trafficked this does not create any significant highway problems at the present time. The traffic survey information submitted in the Transport Assessment with the planning application shows maximum traffic flows along Milton Avenue of 9 vehicles during the morning peak hour (0800 – 0900 hrs.), and 16 vehicles during the afternoon peak period (1645 – 1745 hrs.) (Ref. 1).
- 4.5 At the limit of Milton Avenue there is an un-adopted road that runs parallel to Waddington Road and connects Milton Avenue with Cowper Avenue and Chester Avenue. The road continues under the railway line to join Railway View Road, as shown in Photograph 3. This road has a width of approximately 3.8 metres between Milton Avenue and Cowper Avenue and this is too narrow for two cars to pass. Parking takes place along this road. The road has pot holes and an uneven surface which make it difficult, and potentially hazardous, for some pedestrians to use and discourages cyclists, as shown in Photograph 4.

- 4.6 The junction of Milton Avenue and Waddington Road is a priority (Give Way), junction with restricted sightlines of 2.4 metres by 24 metres to the right and 2.4 metres by 16 metres to the left when there are no vehicles parked near the junction. The visibility for drivers emerging from the junction is often reduced by the presence of parked cars which park on Waddington Road, as shown in Photograph 5. The visibility to the right for drivers emerging with a parked car near the junction is only 6 metres and the driver has to emerge out into Waddington Road to obtain a clear view. This creates a risk of a collision. The existing visibility to the left at the junction is shown in Photograph 6 with no cars parked on Waddington Road, however, parking does occur on this side of the junction.
- 4.7 The presence of parked vehicles on both sides of Milton Avenue and parking on Waddington Road make conditions difficult for drivers emerging, as shown in Photographs 7 and 8. The junction is a crossroads with Eastham Street on the opposite side. The speed limit along this section of Waddington Road has recently been reduced to 20 mph but the majority of drivers travel at speeds in excess of this as confirmed by the results of a traffic speed survey that I have carried out (Appendix 1). The traffic speed survey recorded traffic speeds up to 39 miles per hour in a north westerly direction (towards Waddington), and 38 mph towards Clitheroe. The 85th percentile (wet weather) speed of traffic is 30.8 mph (towards Waddington), and 29.3 mph (towards Clitheroe). These traffic speeds are significantly above the 20 mph speed limit.

5. Proposed Development

- 5.1 The planning application is in outline only with the details of access included. The proposed residential development would comprise 50 residential properties with a mix of detached, semi-detached and terraced properties of varying sizes. A total of 100 parking spaces would be provided within the development.
- 5.2 Whilst the proposed development layout is a matter reserved for consideration at a later date, a masterplan has been submitted with the planning application and shows a single point of access leading from Milton Avenue. The layout is in the form of a cul-de-sac and retains an access route to the farmland to the north west of the site. There is a footway connection shown from the development to the unadopted road that connects Milton Avenue and Railway View Road.

6. Assessment of the Impact of the Proposed Development on Highway Safety and Amenity

Traffic Generation

- 6.1 The proposed development would have 50 dwellings and the generated traffic would have to use Milton Avenue or the unadopted road leading to Railway View Road to access the wider highway network because there is no alternative means of vehicular access.
- 6.2 The proposed development would generate 276 additional vehicle movements per day along Milton Avenue based on the traffic generation analysis that has been submitted in the Transport Assessment with a daily trip rate of 5.525 trips per dwelling (Ref. 1). The weekday peak hour traffic flows would increase by 33 vehicles during the a.m. peak hour and 31 vehicles during the p.m. peak hour, corresponding to a 460% increase during the morning peak and a 290% increase during the afternoon peak. Because of the existing pattern of parking Milton Street, the predicted increase in traffic flow in terms of actual vehicles will be significant and noticeable and will have a severe impact on the operation and safety of the road.

Highway Access Problems Along Milton Avenue due to Parking

- 6.3 Milton Avenue is considered to be unsuitable to accommodate the additional traffic because the road has a high level of parking on both sides, and particularly at evenings and weekends. This means that the road has single lane working over most of its length and this will prevent the free and safe movement of vehicles whilst drivers are travelling between the development and Waddington Road. Because of the higher probability of drivers meeting whilst travelling along the road, there would be a higher incidence of reversing by drivers when they meet an on-coming vehicle as they pass along Milton Avenue. This will result in drivers reversing back to the junction at Waddington Road or back towards the development if there are no suitable passing places along Milton Avenue and this will increase the risk of collisions with other vehicles and road users.
- 6.4 Because Milton Avenue has single lane working over long sections of the road at most times of the day and week, there could be a high level of confrontation between drivers who will become frustrated at the difficulties involved in travelling along the road. This is likely to result in regular altercations between drivers, verbal abuse and horns being sounded etc. to the detriment of the amenity of the existing residents of the street.

Impact on Road Safety

- 6.5 An examination of the road safety records that are available from LCC (Ref. 2), shows that there have been no recorded injury accidents along Milton Avenue during the period January 2007 – March 2012. This good road safety record is because the road only serves a low number of residential properties (16), and has a low traffic flow. It is not possible to predict that this good road safety record will continue if the number of dwellings that are served by the road increases by 50 (400%). It is likely that the road safety of the street will deteriorate because of the unsuitable standard of Milton Avenue to accommodate the traffic that will be generated by an additional 50 dwellings. There will be a greater probability of a collision between two vehicles or between a car and a vulnerable road user such as cyclists or pedestrian because of the higher traffic flows along the road and the high number of parked cars.

- 6.6 The Manual for Streets (Ref. 3), confirms that parking can create safety problems along a street in Section 2.3.9 :

... poorly designed parking can create safety problems and reduce the visual quality of a street.

Manual for Streets Section 2.3.9

The Manual for Streets also states that on-street parking can introduce a road safety problem, particularly if traffic speeds are above 20 mph and there are few places for pedestrians to cross with adequate visibility.

Manual for Streets p.105

The existing on-street parking along Milton Avenue and the single lane working mean that the road is not suitable to carry an increased volume of traffic. The increased flow of traffic will also increase the risk to pedestrians who cross Milton Avenue with restricted visibility because of parked vehicles. It is not possible to calculate the traffic capacity of the single lane working sections along Milton Avenue and a subjective assessment has to be made. It is my view that the generated traffic from 50 additional dwellings would severely affect the safety and operation of this residential street.

Impact on Cyclists

- 6.7 The significant increase in traffic flows along the road, coupled with a higher number of cyclists who will use Milton Avenue whilst cycling to, and from the development, will increase the risk of collisions involving cyclists. The existing section of Milton Avenue would not be cycle friendly because cyclists would regularly meet, or be passed by, cars on the single lane between the parked cars. This will be intimidating and potentially hazardous and will discourage cyclists using the road.

Junction of B6478 Waddington Road / Milton Avenue

- 6.8 The proposed yellow lines at the junction of Milton Avenue and Waddington Road will displace parking on Milton Avenue and increase the occurrence of parking on both sides of the road in front of the existing residential properties. This will increase the periods when single lane working occurs for traffic along the access road serving the proposed development.
- 6.9 The traffic capacity analysis in the Transport Assessment (PICADY), for the proposed operation of the junction of Milton Avenue and Waddington Road assumes that the junction will be kept clear of parked vehicles using double yellow lines. It is not certain that double yellow lines could be implemented at the junction because there could be objections during the statutory advertisement of the proposed Traffic Regulation Order (TRO), and, therefore, the traffic capacity analysis is unreliable. If parking continues on both sides of Milton Avenue at the junction it would significantly reduce the capacity of the junction and increase the risk of drivers meeting as they turn at the junction creating hazardous conditions.
- 6.10 The visibility splays at the junction of Milton Avenue and Waddington Road are below the recommended standard for a 20 miles per hour speed limit even if the double yellow lines can be provided. The Manual for Streets recommends visibility splays of 2.4 metres by 25 metres for a 20 mph speed (Table 7.1, Ref. 3). The available visibility splays are below this as described in paragraph 4.5, of this statement. The fact that the surveyed traffic speeds along Waddington Road are significantly above 20 mph means that there is a higher risk of collisions. The measurement of the visibility splays in the Transport Assessment that was submitted with the planning application is not in accordance with Figure 7.18 (a) in the Manual for Streets and, therefore, over-estimates the standard of visibility at the junction. The fact that the junction does not have the recommended standard of visibility splays, even if the proposed double yellow lines can be implemented, mean that it is unsuitable to serve a new development of 50 dwellings.

Access for Emergency Vehicles

- 6.11 Whilst the internal layout of the proposed development is not yet known it is likely that it will be a cul-de-sac from Milton Avenue. This will be a poor layout for emergency vehicle access because it will be a relatively long distance from the main highway network and the route via Milton Avenue has a high number of parked vehicles at certain times of the day and week. The Manual for Streets (Ref. 4), states the following in relation to emergency vehicle access :

Parked cars can have a significant influence on response times. Developments should have adequate provision for parking to reduce its impact on response times.

Manual for Streets Section 6.7.3

- 6.12 Whilst the new development would have adequate provision for parking there would be parked vehicles on both sides of the emergency vehicle access route via Milton Avenue and this could delay response times. The emergency vehicle response time could also be adversely affected if an emergency vehicle encounters a car (or cars), travelling in the opposite direction along Milton Avenue and it is delayed whilst the car (s) have to reverse for a distance to allow the emergency vehicle to access the new development.

Highway Safety Problems due to Increased Use of Unadopted Road

- 6.13 The proposed development would increase the number of vehicle movements along the unadopted road that leads to Railway View Road. This will increase the risk of collisions between vehicles along this narrow road and increase the risk of collisions between vehicles and vulnerable road users such as pedestrians and cyclists. There is a children's playground located adjacent to the unadopted access road and an increase in traffic volume will increase the risk of collisions involving children. The junction of the unadopted access road and Railway View Road is poor with a narrow width and poor visibility to the left for emerging drivers at the junction. The unadopted access road has a poor walking surface and pot holes etc. which make it hazardous for pedestrians to use, especially at night.

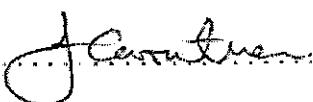
- 6.14 There is no pedestrian crossing for pedestrians to use where the unadopted access road meets Railway View Road and there will be an increased risk of pedestrian collisions if residents of the proposed development use this route to walk to, and from, the town centre. The access road has no footway provision at the point where it meets Railway View Road and where cars are turning at the access which is potentially hazardous for pedestrians. The walking route between the proposed development site and the town centre, via Chester Avenue, also requires pedestrians to cross this busy route without the benefit of a pedestrian crossing. The walking routes between the proposed development site and the town centre are not pedestrian friendly and Railway View Road is a hazardous road to cross for pedestrians, especially children, elderly persons or those with a disability.

7. Conclusions and Recommendation

- 7.1 This Highway Statement has been prepared to support the highway reason for refusal of Ribble Valley Borough Council (the Council), for a proposed residential development of 50 dwellings on land off Milton Avenue in Clitheroe.
- 7.2 The statement shows that the proposed development of 50 dwellings off Milton Avenue would significantly increase the traffic flow along Milton Avenue which has a high level of on-street parking throughout the day and night and which does not allow two-way traffic flow along the street. This would create highway safety and operational problems along the street and would be contrary to Policy G1 of the Ribble Valley Districtwide Local Plan.
- 7.3 The proposed use of Milton Avenue to serve the additional 50 dwellings could create a poor access route for emergency vehicles. Their response time could be adversely affected by on-street parking along Milton Avenue and by any vehicles that are travelling along the single traffic lane along the street.
- 7.4 The statement shows that the existing junction of Milton Avenue and the B6478 Waddington Road does not have the recommended safe visibility splays for the measured speed of traffic on Waddington Road or for a 20 mph speed limit. The proposed parking restrictions that have been put forward by the applicants to mitigate the impact of additional traffic at the junction would not increase the visibility splays to the recommended safe standard and there is no certainty that they could be implemented by the Highway Authority on behalf of the applicant. The introduction of parking restrictions at the junction of Waddington Road and Milton Avenue would displace additional parking into Milton Avenue and exacerbate the on-street parking and access problems along the street that would be created by development traffic.

- 7.5 The proposed development would increase the use of the unadopted access road that connects Milton Avenue and Railway View Road and this would increase the risk of vehicular collisions along this narrow road and increase the risk of collisions between vehicles and vulnerable road users such as pedestrians and cyclists. The unadopted road passes a children's playground and any increase in traffic flow would increase the risk of collisions involving children.
- 7.6 The pedestrian routes between the proposed development site and Clitheroe town centre are not considered to be pedestrian friendly because of the poor walking surface along the unadopted road that leads onto Railway View Road and the lack of a pedestrian crossing on Railway View Road which is a busy traffic route in the town.
- 7.7 The cycling routes between the proposed development site and Clitheroe town centre are not considered to be cycle friendly because of the poor cycling surface along the unadopted road and the single track operation for vehicles along Milton Avenue that would result in cyclists feeling squeezed or facing on-coming vehicles.
- 7.8 Overall, I consider that the proposed development would have a severe impact on the safety and operation of the local highway network and this would be contrary to Policy G1 of the Ribble Valley Districtwide Local Plan. It is, therefore, respectfully recommended that the appeal should be dismissed.

Prepared by : Mr J C Carruthers BSc , MSc , CEng , MICE , MCIHT
Highway and Transport Consultant

Signed : 

Date : 15.10.2012

REFERENCES :

1. Transport Assessment
Proposed Residential Development
Waddow View, Land off Milton Avenue, Clitheroe
DTPC
August 2011
2. Lancashire County Council
Maps and Related Information Online (MARIO)
Highways and Transportation
Collisions : January 2007 to April 2012
www.mario.lancashire.gov.uk
3. Manual for Streets
Department for Transport
2007
ISBN : 978-0-7277-3501-0

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DTPC

Report No J087/TA
August 2011

PROPOSED RESIDENTIAL DEVELOPMENT
WADDOW VIEW, LAND OFF MILTON AVENUE, CLITHEROE

TRANSPORT ASSESSMENT

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Peak Period	Trip Rate per Household		50 Household Development Trip Generation	
	Arr	Dep	Arr	Dep
AM	0.15	0.50	8	25
PM	0.44	0.17	22	9

Table 1: Residential Trip Rates and Development Trips

For a check a general TRICs review has also been undertaken to show that the rates are robust, Appendix D

Utilising Figure 3 and the development trips above, Figure 4 detail the development trips distributed across the network

Traffic Growth

In order to assess the capacity of the junctions in a future year, i.e. 2016, growth rates for the weekday AM and PM Peaks have been obtained from the TEMPRO V6 2 program. TEMPRO utilises National Trip End Model (NTEM) 6.2 dataset and National Trip Model (NTM) Annual Forecasts (AF) 09. As of the 19 July 2011 the Department of Transport reaffirmed the use of the aforementioned dataset and AF09 in a circular email update.

Table 2 details the 2011 to 2016 growth rates for Clitheroe, Ribble Valley, Lancashire and the wider area. The site is located in the Clitheroe area.

Level	Area	AM	PM
Region	NW	1.034564	1.034564
County	Lancashire	1.028353	1.028649
Authority	Ribble Valley	1.03412	1.035845
30UL2	Clitheroe	1.03417	1.035895

Table 2: TEMPRO Growth Rates

The Clitheroe growth rates are the highest and therefore have been used to derive robust base traffic flows for the local highway network in the AM and PM periods for 2016. Figure 6 shows the 2016 AM and PM base flows.

2011 and 2016 Base Traffic Flows Plus Development

Utilising the 2011 base traffic flows in Figure 1, the 2016 base traffic flows in Figure 6 and the development trips shown in Figure 4, the following 2011 and 2016 base traffic flows plus development figures have been derived:

- Figure 5 – 2011 AM and PM Peak Base Traffic Flows Plus development – PCU
- Figure 7 – 2016 AM Peak Base Traffic Flows Plus development - PCU

The sensitivity test flows at B6478 / Railway View Road Priority Junction with 50 dwellings is shown in Figure 8 and for 200 dwellings in Figure 9.

Traffic Analysis

The Transport Research Laboratory modelling software PICADY has been used to assess the operation of the priority junctions on the local highway network.

KTP Norfolk Norfolk

Licence No: 550501

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

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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	46	99	0.080	46	99	0.289	46	99	0.369
08:00 - 09:00	46	99	0.163	46	99	0.443	46	99	0.606
09:00 - 10:00	46	99	0.177	46	99	0.233	46	99	0.410
10:00 - 11:00	46	99	0.161	46	99	0.193	46	99	0.354
11:00 - 12:00	46	99	0.185	46	99	0.180	46	99	0.365
12:00 - 13:00	46	99	0.211	46	99	0.191	46	99	0.402
13:00 - 14:00	46	99	0.194	46	99	0.187	46	99	0.381
14:00 - 15:00	46	99	0.198	46	99	0.199	46	99	0.397
15:00 - 16:00	46	99	0.297	46	99	0.212	46	99	0.509
16:00 - 17:00	46	99	0.348	46	99	0.210	46	99	0.558
17:00 - 18:00	46	99	0.416	46	99	0.238	46	99	0.654
18:00 - 19:00	46	99	0.292	46	99	0.228	46	99	0.520
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:			2.722				2.803	5.525	

Parameter summary

Trip rate parameter range selected: 9 - 237 (units:)
 Survey date date range: 01/01/02 - 05/09/10
 Number of weekdays (Monday-Friday): 46
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 3



Department for
Transport



Manual for Streets





Figure 2.4 An example of a sustainable drainage system

Access

2.3.7 Access to buildings and public spaces is another important function of streets. Pedestrian access should be designed for people of all ages and abilities.

2.3.8 Providing frontages that are directly accessible on foot and that are overlooked from the street is highly desirable in most circumstances as this helps to ensure that streets are lively and active places. The access function is covered in Chapters 6 and 7.

Parking

2.3.9 Parking is a key function of many streets, although it is not always a requirement. A well-designed arrangement of on-street parking provides convenient access to frontages and can add to the vitality of a street. Conversely, poorly designed parking can create safety problems and reduce the visual quality of a street. Parking is covered in more detail in Chapter 8.

Drainage, utilities and street lighting

2.3.10 Streets are the main conduits for drainage and utilities. Buried services can have a major impact on the design and maintenance requirements of streets. Sustainable drainage systems can bring environmental benefits, such as flood control, creating wildlife habitats and efficient wastewater recycling (Fig. 2.4). Drainage and utilities are covered in Chapter 11, and street lighting is covered in Chapter 10.

2.4 The balance between place and movement

2.4.1 Of the five functions, place and movement are the most important in determining the character of streets.

2.4.2 In the past, road design hierarchies have been based almost exclusively on the importance attributed to vehicular movement. This has led to the marginalisation of pedestrians and cyclists in the upper tiers where vehicular capacity requirements predominate. The principle that a road was primarily for motor traffic has tended to filter down into the design of streets in the bottom tiers of the hierarchy.

2.4.3 This approach has created disjointed patterns of development. High-speed roads often have poor provision for pedestrian activity, cutting residential areas off from each other and from other parts of a settlement. In addition, the hierarchy does not allow for busy arterial streets, which feature in most towns and cities.

2.4.4 Streets should no longer be designed by assuming 'place' to be automatically subservient to 'movement'. Both should be considered in combination, with their relative importance depending on the street's function within a network. It is only by considering both aspects that the right balance will be achieved. It is seldom appropriate to focus solely on one to the exclusion of the other, even in streets carrying heavier volumes of traffic, such as high streets.

2.4.5 Place status denotes the relative significance of a street, junction or section of a street in human terms. The most important places will usually be near the centre of any settlement or built-up area, but important places will also exist along arterial routes, in district centres, local centres and within neighbourhoods.

2.4.6 Movement status can be expressed in terms of traffic volume and the importance of the street, or section of street, within a network – either for general traffic or within a mode-specific (e.g. bus or cycle) network. It can vary along the length of a route, such as where a street passes through a town centre.

6.7 Emergency vehicles

6.7.1 The requirements for emergency vehicles are generally dictated by the fire service requirements. Providing access for large fire appliances (including the need to be able to work around them where appropriate) will cater for police vehicles and ambulances

6.7.2 The Building Regulation requirement B5 (2000)¹⁰ concerns 'Access and Facilities for the Fire Service'. Section 17, 'Vehicle Access', includes the following advice on access from the highway:

- there should be a minimum carriageway width of 3.7 m between kerbs;
- there should be vehicle access for a pump appliance within 45 m of single family houses;
- there should be vehicle access for a pump appliance within 45 m of every dwelling entrance for flats/maisonettes;
- a vehicle access route may be a road or other route; and
- fire service vehicles should not have to reverse more than 20 m

6.7.3 The Association of Chief Fire Officers has expanded upon and clarified these requirements as follows:

- a 3.7 m carriageway (kerb to kerb) is required for *operating space at the scene of a fire*. Simply to reach a fire, the access route could be reduced to 2.75 m over short distances, provided the pump appliance can get to within 45 m of dwelling entrances;
- if an authority or developer wishes to reduce the running carriageway width to below 3.7 m, they should consult the local Fire Safety Officer;
- the length of cul-de-sacs or the number of dwellings have been used by local authorities as criteria for limiting the size of a development served by a single access route. Authorities have often argued that the larger the site, the more likely it is that a single access could be blocked for whatever reason. The fire services adopt a less numbers-driven approach and consider each application based on a risk assessment for the site, and response time requirements. Since the introduction of the Fire and Rescue Services Act 2004,¹¹ all regions have had to produce an Integrated Management Plan

setting out response time targets (Wales: Risk Reduction Plans¹²). These targets depend on the time required to get fire appliances to a particular area, together with the ease of movement within it. It is therefore possible that a layout acceptable to the Fire and Rescue Service (FRS) in one area, might be objected to in a more remote location; parked cars can have a significant influence on response times. Developments should have adequate provision for parking to reduce its impact on response times; and residential sprinkler systems are highly regarded by the FRS and their presence allows a longer response time to be used. A site layout which has been rejected on the grounds of accessibility for fire appliances may become acceptable if its buildings are equipped with these systems

6.8 Service vehicles

6.8.1 The design of local roads should accommodate service vehicles without allowing their requirements to dominate the layout. On streets with low traffic flows and speeds, it may be assumed that they will be able to use the full width of the carriageway to manoeuvre. Larger vehicles which are only expected to use a street infrequently, such as pantechnicons, need not be fully accommodated – designers could assume that they will have to reverse or undertake multi-point turns to turn around for the relatively small number of times they will require access

6.8.2 Well-connected street networks have significant advantages for service vehicles. A shorter route can be used to cover a given area, and reversing may be avoided altogether. They also minimise land-take by avoiding the need for wasteful turning areas at the ends of cul-de-sacs

6.8.3 However, some sites cannot facilitate such ease of movement (e.g. linear sites and those with difficult topography), and use cul-de-sacs to make the best use of the land available. For cul-de-sacs longer than 20 m, a turning area should be provided to cater for vehicles that will regularly need to enter the street. Advice on the design of turning areas is given in Chapter 7

¹⁰ Statutory Instrument 2000 No. 2531, The Building Regulations 2000. London: TSO. Part II, paragraph B5: Access and facilities for the fire service

¹¹ Fire and Rescue Services Act 2004. London: TSO

¹² Risk Reduction Plans required by the Welsh Assembly. See Welsh Assembly Government (2005) *Fire and Rescue National Framework for Wales*. Cardiff: NAFW

Table 7.1 Derived SSDs for streets (figures rounded)

Speed	Kilometres per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles per hour	10	12	15	16	19	20	25	28	30	31	37
SSD (metres)		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length See 7.6.4		11	14	17	18	23	25	33	39	43	45	59

Additional features will be needed to achieve low speeds

7.5.7 The SSD values used in MfS are based on a perception–reaction time of 1.5 seconds and a deceleration rate of 0.45g (4.41 m/s²). Table 7.1 uses these values to show the effect of speed on SSD.

7.5.8 Below around 20 m, shorter SSDs themselves will not achieve low vehicle speeds: speed-reducing features will be needed. For higher speed roads, i.e. with an 85th percentile speed over 60 km/h, it may be appropriate to use longer SSDs, as set out in the *Design Manual for Roads and Bridges*.

7.5.9 Gradients affect stopping distances. The deceleration rate of 0.45g used to calculate the figures in Table 7.1 is for a level road. A 10% gradient will increase (or decrease) the rate by around 0.1g.

7.6 Visibility requirements

7.6.1 Visibility should be checked at junctions and along the street. Visibility is measured horizontally and vertically.

7.6.2 Using plan views of proposed layouts, checks for visibility in the horizontal plane ensure that views are not obscured by vertical obstructions.

7.6.3 Checking visibility in the vertical plane is then carried out to ensure that views in the horizontal plane are not compromised by obstructions such as the crest of a hill, or a bridge at a dip in the road ahead. It also takes into account the variation in driver eye height and the height range of obstructions. Eye height is assumed to range from 1.05 m (for car drivers) to 2 m (for lorry drivers). Drivers need to be able to see obstructions 2 m high down to a point 600 mm above the carriageway. The latter dimension is used to ensure small children can be seen (Fig. 7.17).

7.6.4 The SSD figure relates to the position of the driver. However, the distance between the driver and the front of the vehicle is typically up to 2.4 m, which is a significant proportion of shorter stopping distances. It is therefore recommended that an allowance is made by adding 2.4 m to the SSD.

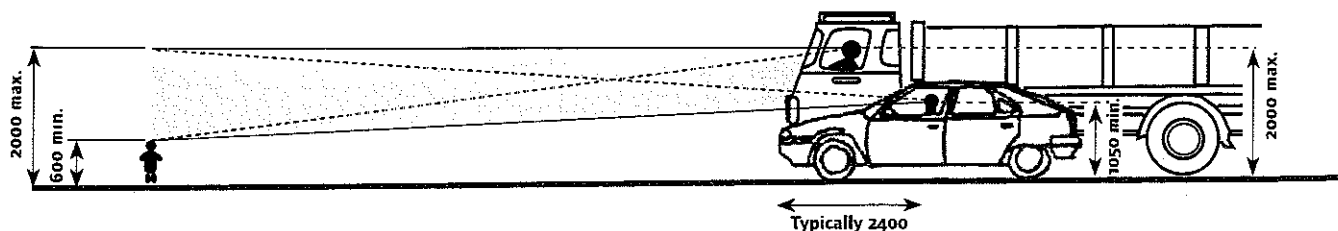


Figure 7.17 Vertical visibility envelope

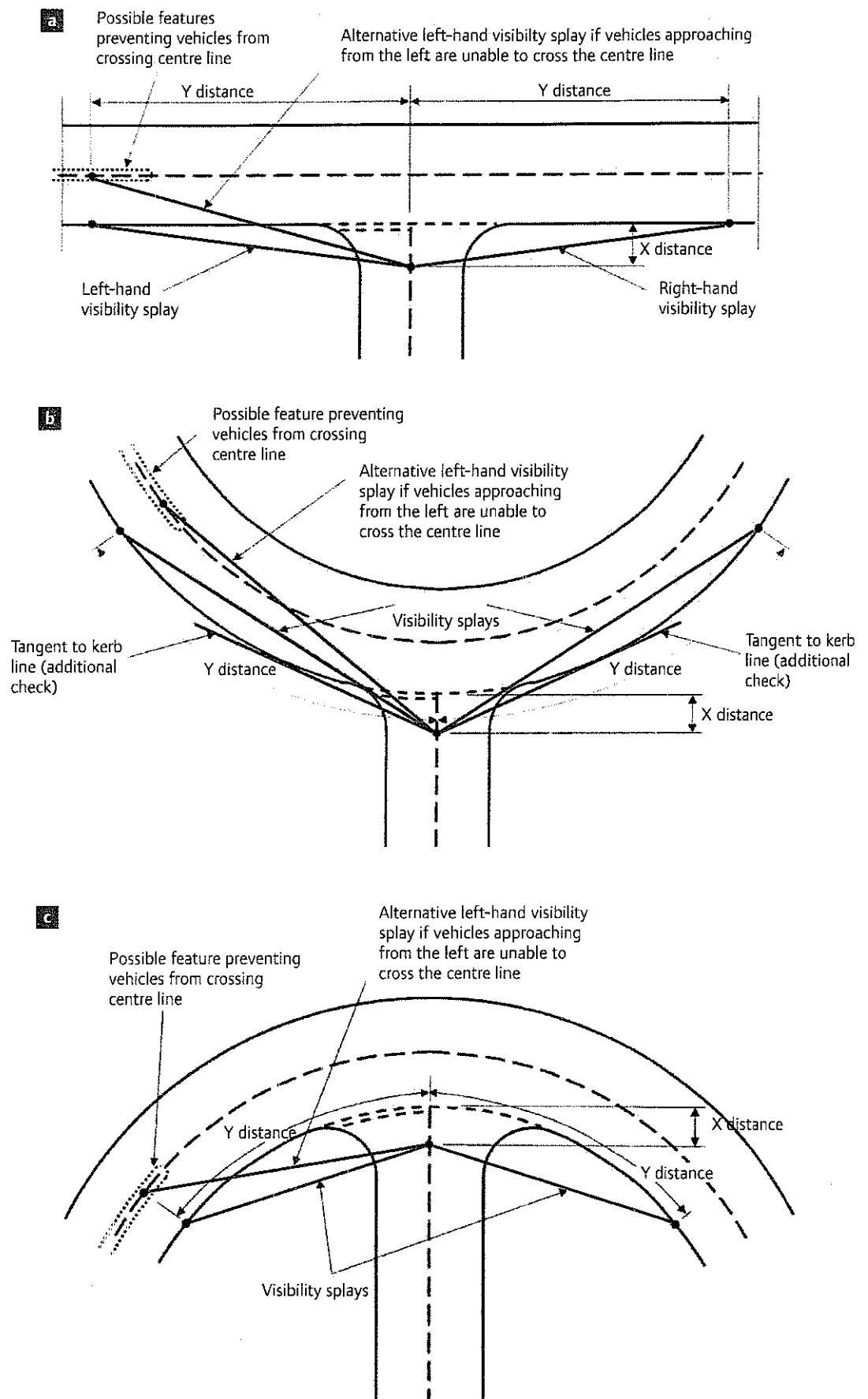


Figure 7.18 Measurement of junction visibility splays (a) on a straight road, (b) and (c) on bends.



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Figure 8.10 On-street parking in Crown Street, Glasgow.

demand on-street. This could be the case, for example, with a small infill development where adjacent streets are able to easily accommodate the increase in parking, or where a low car-ownership development is proposed. Crown Street, Glasgow, is an example of a large scheme that has accommodated all parking on-street (Fig 8.10).

8.3.16 Where regulated on-street parking is provided, it is important to note that it cannot be allocated to individual dwellings, although such spaces can be reserved for particular types of user, such as disabled people.

8.3.17 In deciding how much on-street parking is appropriate, it is recommended that the positive and negative effects listed in the 'On-street parking box' are considered.

On-street parking – positive and negative effects

Positive effects

- A common resource, catering for residents', visitors' and service vehicles in an efficient manner
- Able to cater for peak demands from various users at different times of the day, for example people at work or residents
- Adds activity to the street.
- Typically well overlooked, providing improved security.
- Popular and likely to be well-used
- Can provide a useful buffer between pedestrians and traffic
- Potentially allows the creation of areas within perimeter blocks that are free of cars.

Negative effects

- Can introduce a road safety problem, particularly if traffic speeds are above 20 mph and there are few places for pedestrians to cross with adequate visibility
- Can be visually dominant within a street scene and can undermine the established character (Fig 8.11)
- May lead to footway parking unless the street is properly designed to accommodate parked vehicles
- Vehicles parked indiscriminately can block vehicular accesses to dwellings.
- Cars parked on-street can be more vulnerable to opportunistic crime than off-street spaces



Una McCaughin, Llewelyn Davies Young

Figure 8.11 Street detailing and pedestrian provision dominated by car-parking considerations

Appendix 1

Planning Application Refusal Notice

RIBBLE VALLEY BOROUGH COUNCIL

Development Department

Council Offices, Church Walk, Clitheroe, Lancashire, BB7 2RA

Telephone: 01200 425111

Fax: 01200 414488

Planning Fax: 01200 414487

Town and Country Planning Act 1990

REFUSAL OF PLANNING PERMISSION

APPLICATION NO: 3/2011/0892

DECISION DATE: 20 July 2012

DATE RECEIVED: 17/11/2011

APPLICANT:

The Huntroyde Estate
Huntroyde Estate Office
Padiham
Lancs
BB12 7QX

AGENT:

Dickman Associates Ltd
PO BOX 97
Bolton
Lancs
BL1 9PT

DEVELOPMENT PROPOSED: Proposed residential development.

AT: land off Milton Avenue Clitheroe Lancashire BB7 2HX

Ribble Valley Borough Council hereby give notice in pursuance of the provisions of the Town and Country Planning Act 1990 that permission has been refused for the carrying out of the above development for the following reason(s):

- 1 The proposed development is considered contrary to Policy G1 of the Ribble Valley Districtwide Local Plan in that it would have an adverse impact on the operation of the highway network to the detriment of highway safety and to the general amenities of the area

Note(s)

- 1 For rights of appeal in respect of any reason(s) attached to the decision see the attached notes


JOHN HEAP
DIRECTOR OF COMMUNITY SERVICES

*Planning Appeal for a Proposed Residential Development :
Land off Milton Avenue, Clitheroe, Lancashire BB7 2HX*

*Highway Statement to Support the Refusal of Planning Permission
Prepared by Mr J C Carruthers BSc ,MSc.,CEng.,MICE.,MCIHT*

Appendix 2

Policy G1 of the Ribble Valley Districtwide Local Plan

3. GENERAL POLICIES

3.1 DEVELOPMENT CONTROL

- 3.1.1 An important function of the Local Plan will be to provide a detailed basis for development control decisions. This will be of benefit to all concerned in the development process, from builders through to people who may wish to object to certain developments. Government guidance stresses that the Council should be positive in its determination of planning applications. Consent should only be refused where there are clearly defined reasons for it to be withheld. The criteria which the Council will apply in determining all planning applications are set out in Policy G1

3.1.2 **POLICY G1**

All development proposals will be expected to provide a high standard of building design and landscape quality. Development which does so will be permitted, unless it adversely affects the amenities of the surrounding area.

In determining planning applications the following criteria will be applied:

- (a) Development should be sympathetic to existing and proposed land uses in terms of its size, intensity and nature.
- (b) The likely scale and type of traffic generation will be assessed in relationship to the highway infrastructure and the proposed and existing public transport network. This will include safety, operational efficiency, amenity and environmental considerations.
- (c) Developments should make adequate arrangements for car parking (see Policy T7).
- (d) A safe access should be provided which is suitable to accommodate the scale and type of traffic likely to be generated.
- (e) The density, layout and relationship between buildings is of major importance. Particular emphasis will be placed on visual appearance and the relationship to surroundings as well as the effects of development on existing amenities.
- (f) Developments should provide adequate arrangements for servicing and public utilities.
- (g) Developments should provide adequate daylighting and privacy.
- (h) Materials used should be sympathetic to the character of the area.
- (i) Developments should not result in the loss of important open space including public and private playing fields.
- (j) Developments should not damage SSSI's, County Heritage Sites, Local Nature Reserves or other sites of nature conservation importance.
- (k) Development should not require culverting, artificial channelling or destruction of a watercourse. Wherever possible watercourses should be maintained within a reasonable corridor of native vegetation.
- (l) Developments should be economic in the use of land, water and aggregates and should not prejudice future development which would provide significant environmental and amenity improvements.

- (m) Where it is the intention to rely upon a private water supply, developments should provide an adequate means of water supply, which will not derogate existing users.

In certain cases additional factors may be taken into account.

- 3.1.3 This policy is important in order to safeguard the amenities of the Borough and also of those properties adjacent to proposed developments. The various criteria will not be of equal importance in all cases. The Borough Council will also weigh the economic benefits arising from the development against the environmental impact when making decisions. There should be adequate arrangements for sewerage and the disposal of effluent waste. In addition, other factors may be taken into account in specific cases; these will be covered in the following sections of this plan.
- 3.1.4 In respect of part (i) of this policy the Borough Council will have regard to the following in assessing the importance of open space:
- (a) the level of provision and standard of public open space in the area;
 - (b) playing fields, whether owned publicly or privately are of special significance;
 - (c) the need to protect school playing fields to meet future needs is important
- 3.1.5 In many cases the fact that access is available to an area of open land is just as important as the size and nature of the space provided. In other cases the physical existence of open space can be an important factor in the landscape or townscape of an area. This is not dependent on the availability of public access.
- 3.1.6 Developments should not adversely affect open breaks which contribute to the identity of the plan area or, open land which is visually dominant in the plan area.
- 3.1.7 This policy will be implemented through the development control process.

Appendix 3

**Traffic Speed Survey Results
On B6478 Waddington Road**

TRAFFIC SPEED SURVEY

Location : B6478 Waddington Road, Clitheroe (near Milton Avenue)

Date : Friday 5th October 2012

Time Period : 0800 - 1000 hrs.

Weather : Rain showers

Road surface : Wet

Direction of Travel : North westbound (towards Waddington)

Vehicle Speed (mph)	No. of Vehicles (n)	Sum of Speeds (v x n)	Sum of Speeds Squared (v ² x n)
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	1	18	324
19	0	0	0
20	3	60	1200
21	8	168	3528
22	10	220	4840
23	12	276	6348
24	18	432	10368
25	23	575	14375
26	17	442	11492
27	19	513	13851
28	21	588	16464
29	15	435	12615
30	19	570	17100
31	14	434	13454
32	8	256	8192
33	6	198	6534
34	1	34	1156
35	0	0	0
36	2	72	2592
37	1	37	1369
38	1	38	1444
39	1	39	1521
40	0	0	0
41	0	0	0
42	0	0	0
43	0	0	0
44	0	0	0
45	0	0	0
46	0	0	0
47	0	0	0
48	0	0	0
49	0	0	0
TOTAL	200	5405	148767

Mean Speed (m) = 27.0 mph

Standard Deviation (s) = 3.7

85th Percentile Spot Speed = m + 1.037 s =

30.9 mph

85th Percentile Wet Weather Journey Speed =

30.9 mph

TRAFFIC SPEED SURVEY

Location : B6478 Waddington Road, Clitheroe (near Milton Avenue)

Date : Friday 5th October 2012

Time Period : 0830 - 1000 hrs.

Weather : Rain showers

Road surface : Wet

Direction of Travel : South eastbound (towards Clitheroe)

Vehicle Speed (mph)	No. of Vehicles (n)	Sum of Speeds (v x n)	Sum of Speeds Squared (v ² x n)
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	1	17	289
18	2	36	648
19	8	152	2888
20	10	200	4000
21	19	399	8379
22	15	330	7260
23	22	506	11638
24	15	360	8640
25	16	400	10000
26	19	494	12844
27	16	432	11664
28	11	308	8624
29	9	261	7569
30	10	300	9000
31	7	217	6727
32	5	160	5120
33	4	132	4356
34	2	68	2312
35	3	105	3675
36	2	72	2592
37	1	37	1369
38	2	76	2888
39	1	39	1521
40	0	0	0
41	0	0	0
42	0	0	0
43	0	0	0
44	0	0	0
45	0	0	0
46	0	0	0
47	0	0	0
48	0	0	0
49	0	0	0
TOTAL	200	5101	134003

Mean Speed (m) = 25.5 mph

Standard Deviation (s) = 3.7

85th Percentile Spot Speed = m + 1.037 s =

29.3 mph

85th Percentile Wet Weather Journey Speed =

29.3 mph

Photographs

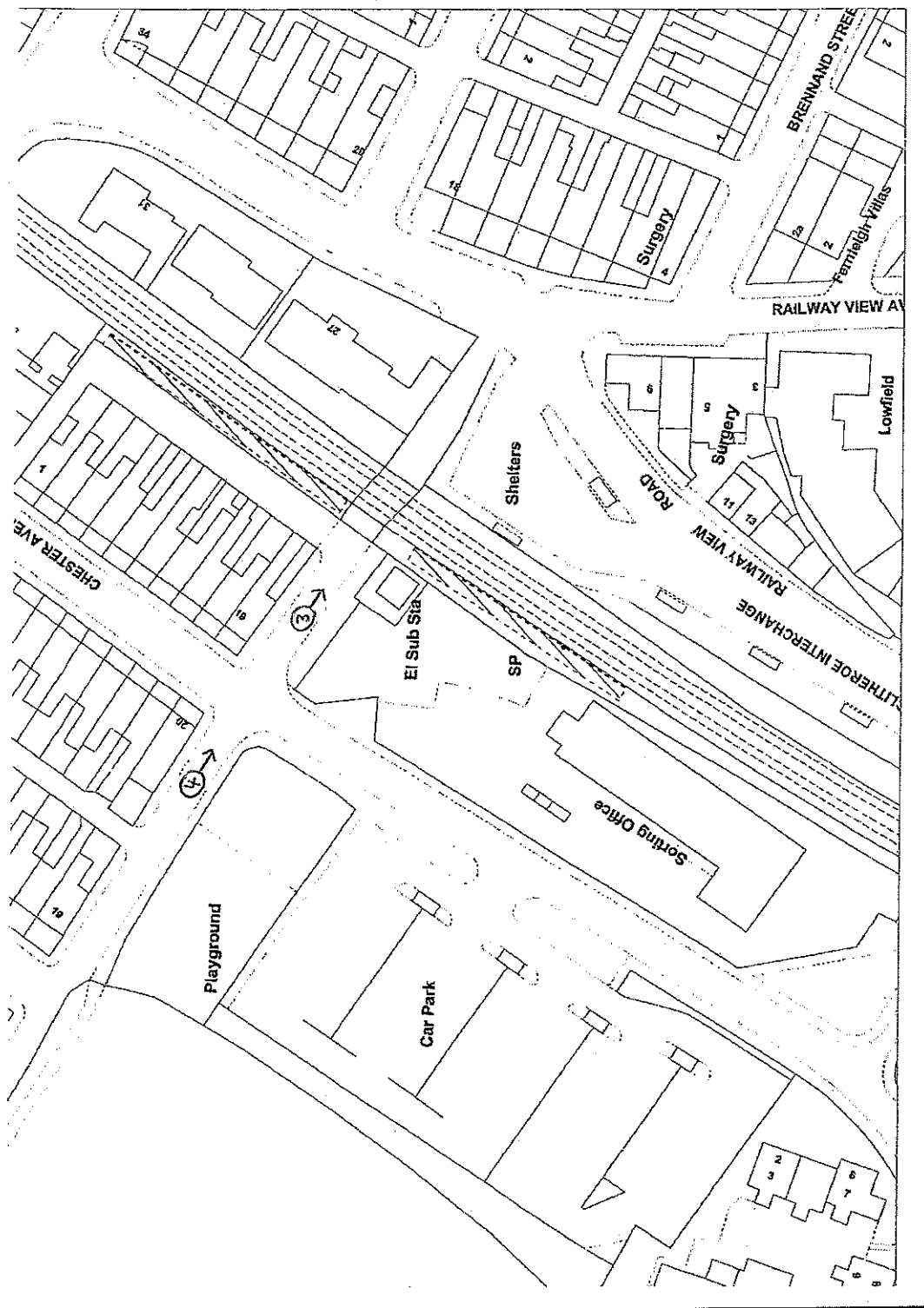
N



Photograph Locations

1, 2, 5, 6, 7, 8

N



Photograph Locations

3,4



Photograph 1

Typical parking pattern along Milton Avenue
(Friday 5.10.12 @ 0752 hrs.)



Photograph 2

Milton Avenue showing single lane working for traffic
(Monday 1.10.12 @ 1514 hrs.)



Photograph 3

Unadopted road leading to Railway View Road
(Monday 1.10.12 @ 1528 hrs.)



Photograph 4

Pot holes on the unadopted road between Milton Avenue and Railway View Road
(Friday 5.10.12 @ 0742 hrs.)



Photograph 5

Visibility to the right at the junction of B6478 Waddington Road / Milton Avenue
(Friday 5 10.12 @ 0750 hrs.)



Photograph 6

Visibility to the left at the junction of B6478 Waddington Road / Milton Avenue
(Friday 5 10.12 @ 0751 hrs.)



Photograph 7

Parking on both sides of Milton Avenue near its junction with B6478 Waddington Road
(Monday 1.10.12 @ 1510 hrs.)



Photograph 8

Car waiting to emerge from Milton Avenue into B6478 Waddington Road
(Monday 1.10.12 @ 1512 hrs.)