Ashby Road, Daventry, Northamptonshire

Road Safety Assessment

on behalf of Daventry District Council

TMS Project No: 1662
Date: February - April 2016
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Appendix A – Plan of Ashby Road

Appendix B1 – Sketch of Suggested Scheme

Appendix B2 – Sketch of Alternative Scheme
1.0 Introduction

1.1 TMS Consultancy has been commissioned by Daventry District Council to carry out an independent road safety assessment of Ashby Road in Daventry. The purpose of the commission is to provide the Council with advice on how the road currently performs in terms of road safety and suggest measures for improvement where deemed necessary.

1.2 TMS Consultancy has extensive experience in providing specialist consultancy, research and training services in traffic management and road safety engineering to a wide client base in both the public and private sectors in the UK and overseas.

2.0 Background

2.1 It is understood that concerns have been raised by local people to the District Council regarding road safety along the road. There were four areas of concern, which were as follows:

1. The speed of traffic using Ashby Road.
2. The volume of traffic using Ashby Road.
3. The degree of conflict that occurs between vehicular traffic and pedestrians at school opening and closing times.
4. The degree of traffic congestion that occurs as a result of the pedestrian flows on the zebra crossings at school opening and closing times.

2.2 To address concerns 1 & 2, Northamptonshire Highways designed a traffic calming scheme, which consisted of a variety of measures, including a controlled crossing, mini-roundabouts, vehicle actuated signs, priority road narrowings and chicanes. However, the designed scheme was not implemented by Northamptonshire Highways due to the cost and competing schemes taking higher priority.
2.3 Since the design was produced, other development has taken place, including the Daventry University Technical College (UTC), Dennetts Close residential development and the granting of planning permission for a Special Needs School. Two new zebra crossings have also been installed since the scheme was designed.

2.4 Also at the time the traffic calming scheme was designed, concerns 3 and 4 had not emerged. However, these have now been raised and have been growing in prominence since a collision between a vehicle and an infant in 2013 and anecdotal claims of many near misses. It is understood that Northamptonshire Highways has received requests to replace the existing zebra crossings at the schools with light controlled crossings.

2.5 Therefore, as the original traffic calming scheme designed by Northamptonshire Highways does not reflect the changes that have occurred along Ashby Road and other subsequent concerns have been raised regarding road safety outside the schools, Daventry District Council have commissioned this independent study to assess the performance of the road in safety terms. The report will help to determine whether there is a real road safety problem along Ashby Road, and if so, what type of measures would be appropriate to address the concerns.
3.0 Methodology

3.1 This safety assessment has been carried out by Harminder Aulak (Technical Director) and Darren Newbold (Senior Engineer) at TMS Consultancy. The assessment has been carried out using engineering judgement based on the assessors experience in road safety engineering, risk assessment and accident analysis.

3.2 An inception meeting was held between Mr Aulak, Mr Newbold and Gary Underhill (Construction and Development Manager at Daventry District Council). During the meeting, the background to the road safety issues along Ashby Road were discussed and the methodology for carrying out the study formulated.

3.3 The methodology involved carrying out numerous site visits along Ashby Road at various times of the day to assess the road in both peak and non-peak periods. The road geometry was also measured where appropriate and site characteristics noted.

3.4 Traffic volume and speed data was obtained from three sources (Northamptonshire County Council, Daventry District Council and by deploying automatic traffic counters). These were studied to assess traffic volumes, types of vehicles using the road and the speed of vehicles at various locations.

3.5 Injury accident data for the road was obtained from the Council and analysed to determine whether there were any common contributory factors, cluster sites and patterns in vehicle movements. These were compared with control data where possible.

3.6 The above data was used to determine whether there was a real road safety problem along the road. The data also helped to determine the types of remedial measures that would be considered appropriate to address any real problems.
4.0 **Site Description**

4.1 Ashby Road is a single carriageway residential collector road, approximately 1.1 miles (1.75km) in length. It has a 30mph speed limit and is lit throughout by a system of street lighting. A map of the road is shown in Appendix A of this report.

4.2 It has a north / south alignment and connects to the A361 Drayton Way in the north, where it forms a priority T-junction. At the southern end, it ties into a four arm normal roundabout at the Eastern Way / Braunston Road junction. The horizontal alignment generally consists of straight sections and gentle bends. The vertical alignment varies with smooth undulations, though there is a moderately steep hill at its southern end (downhill southbound). The road also rises and falls at a bridge over a disused railway line along the northern section.

4.3 The road width varies and allows for the easy passage for two way traffic, though it appears narrow at the bridge over the disused railway line, due to the presence of bridge parapets and boundary fences at the back of footway.

4.4 The road environment is largely residential and there are footways on both sides of the road along the majority of its entire length. A cycle track/footway crosses the road at its northern end at an uncontrolled facility. There are three existing schools and a Technical College along the southern section of the road. These are as follows:

   i. The Parker E-ACT Academy (Secondary);

   ii. Falcons Hill Academy (Junior);

   iii. Falcons Hill Infant School;

   iv. Daventry University Technical College (UTC), which shares an access with Daventry Community Centre, The Phoenix Youth Centre and Gymnastics Club.
4.5 A Special Educational Needs School has recently been granted planning permission on an adjacent site to the south of the UTC and this is programmed to be opened in January 2017. There is a CO-OP convenience food store located approximately mid-way along the road on the western side.

4.6 There are four zebra crossings along the road, with one to the south of the UTC exit, two in the vicinity of the schools and one just south of the junction with Dennetts Close. There are vehicle actuated speed warning signs on both approaches to the schools, which display School Children/20mph/Slow Down at school times and 30mph/Slow Down at other times. The road has blue information signs promoting only local access for HGV’s.

4.7 The road forms part of a bus route operated by Stagecoach (Service 11 “Ashby Fields”) which has an hourly service during the day. Some other local bus services also operate along the road.

4.8 Since completion of the road safety study and compilation of this report, TMS has been made aware that Ashby Road has been classified as a Fire Service Category 1 route which has potential implications for the recommendations made in Chapter 9 and the conclusions in Chapter 10.
5.0 Analysis of Traffic Volume and Speed Data

5.1 Traffic volume and speed data was recorded by using automatic traffic counters (ATCs) placed in the carriageway of Ashby Road. The counters were placed in three locations as follows:

Site 1 - North of the New Forest Way junction;
Site 2 - North of The Firs junction;
Site 3 - North of the Daventry UTC Access.

Figure 1 – ATC Survey Sites
5.2 Vehicle data was recorded over seven days between Tuesday 1\textsuperscript{st} and Monday 7\textsuperscript{th} March 2016. The results for each site are summarised below:

**Table 1: Site 1 ATC Results**

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Location</th>
<th>Direction</th>
<th>Start Date</th>
<th>End Date</th>
<th>Posted Speed Limit (PSL)</th>
<th>Total Vehicles</th>
<th>5 Day Ave.</th>
<th>7 Day Ave.</th>
<th>Average 85\textsuperscript{th}</th>
<th>Average Mean Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>200901</td>
<td>Site 1, Ashby Road, Daventry (LC 27)</td>
<td>Northbound</td>
<td>Tue 01-Mar-16</td>
<td>Mon 07-Mar-16</td>
<td>30</td>
<td>22410</td>
<td>3441</td>
<td>3201</td>
<td>39.8</td>
<td>33.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Southbound</td>
<td>Tue 01-Mar-16</td>
<td>Mon 07-Mar-16</td>
<td>21591</td>
<td>3321</td>
<td>3064</td>
<td>38.8</td>
<td>32.2</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: Site 2 ATC Results**

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Location</th>
<th>Direction</th>
<th>Start Date</th>
<th>End Date</th>
<th>Posted Speed Limit (PSL)</th>
<th>Total Vehicles</th>
<th>5 Day Ave.</th>
<th>7 Day Ave.</th>
<th>Average 85\textsuperscript{th}</th>
<th>Average Mean Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>200902</td>
<td>Site 2, Ashby Road, Daventry (30mph Bips)</td>
<td>Northbound</td>
<td>Tue 01-Mar-16</td>
<td>Mon 07-Mar-16</td>
<td>30</td>
<td>2657</td>
<td>3153</td>
<td>2952</td>
<td>39.3</td>
<td>33.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Southbound</td>
<td>Tue 01-Mar-16</td>
<td>Mon 07-Mar-16</td>
<td>26521</td>
<td>3131</td>
<td>2932</td>
<td>38.5</td>
<td>31.5</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3: Site 3 ATC Results**

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Location</th>
<th>Direction</th>
<th>Start Date</th>
<th>End Date</th>
<th>Posted Speed Limit (PSL)</th>
<th>Total Vehicles</th>
<th>5 Day Ave.</th>
<th>7 Day Ave.</th>
<th>Average 85\textsuperscript{th}</th>
<th>Average Mean Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>200903</td>
<td>Site 3, Ashby Road, Daventry (LC 9)</td>
<td>Northbound</td>
<td>Tue 01-Mar-16</td>
<td>Mon 07-Mar-16</td>
<td>30</td>
<td>22188</td>
<td>3387</td>
<td>3170</td>
<td>38.6</td>
<td>31.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Southbound</td>
<td>Tue 01-Mar-16</td>
<td>Mon 07-Mar-16</td>
<td>22239</td>
<td>3468</td>
<td>3177</td>
<td>37.8</td>
<td>32.2</td>
<td></td>
</tr>
</tbody>
</table>

5.3 The results show that both average mean and 85\textsuperscript{th} speeds are above the posted speed limit of 30mph. In particular, the 85\textsuperscript{th} speeds are closer to 40mph, rather than the speed limit. The large difference between the average and 85\textsuperscript{th} speeds indicates that speeding is an issue along the road.
5.4 The data from the ATC surveys supports the information provided by Daventry District Council, which states that surveys undertaken in March 2013 indicated 85%ile speeds of 37.8mph measured about 1km north of the schools. In addition, data provided by Northamptonshire County Council stated 85%ile speeds were 41mph at a survey undertaken near Shackleton Drive in November 2015.

5.5 The vehicle volume data from the ATC surveys indicates that Ashby Road operates within capacity for a single carriageway road, with daily two-way flows in the region of 6,700 vehicles (5 day average). The 7 day average was lower in the region of 6,300 vehicles. At peak periods, the busiest hour tended to be 5-6pm when two-way flows were about 680 vehicles. This would not be considered high for a single carriageway road as average headways between vehicles would be on average 5-6 seconds.

5.6 In terms of vehicle composition, the vast majority of vehicles were cars, which represented approximately 92% of traffic flow. Light goods vehicles represented about 6%, heavy goods vehicles were 1%, motorcycles were 0.5% and buses were 0.4%. Pedal cycle movements were not recorded by the ATC equipment, but during the site visits, few cyclists were observed travelling along the road.
6.0 Analysis of Injury Accident Data

6.1 Injury accident data was obtained for the five year period from 01/01/2011 to 31/12/2015. This showed that there have been five injury accidents along Ashby Road over the period, which equates to one accident per year on average.

6.2 The accidents are scattered along the length of the road, though more occurred along the southern section (from Daneholme Avenue southwards) than the northern section. A plot of the accident locations is shown below:

Figure 2 – Injury Accident Locations
6.3 A description of each accident is as follows:

i) **Ref WD002014** – Saturday 4th January 2014, 05:55hrs – Serious Injury.
The accident involved a northbound car colliding with the front offside of a motorcycle travelling in the opposite direction. The causation factors were not recorded and so the cause of the collision is not known. The motorcyclist was seriously injured. The accident occurred in darkness (though street lighting was present) and the weather conditions were raining with a wet road surface.

The accident involved a northbound car colliding into the rear of a taxi waiting to turn right into Daneholme Avenue. The causation factors were not recorded and so the cause of the collision is not known. The driver of the taxi was slightly injured. The accident occurred in darkness (though street lighting was present) and the weather conditions were fine with a dry road surface.

The accident occurred on a zebra crossing outside the schools and involved a five year old running child running out (westbound) onto the crossing into the path of a northbound car. The causation factor was “failed to look properly” by both the car driver and the pedestrian. The child was slightly injured. The accident occurred in daylight and the weather conditions were fine with a dry road surface.

iv) **WD056912** – Thursday 1st March 2012, 17:30hrs – Serious Injury.
The accident involved a southbound light goods vehicle crossing the centre line and colliding head-on with an oncoming car. It is understand that the driver of the light goods vehicle fell asleep and the causation factor was listed as “fatigue.” A passenger in the goods vehicle was seriously injured and the driver of the other vehicle sustained slight injuries. The accident occurred when street lighting was on and the weather conditions were fine with a dry road surface.
v) **WD320814** – Friday 12<sup>th</sup> December 2014, 15:00hrs – Slight Injury.

The accident involved a car rolling down a driveway on the western side of Ashby Road into the path of northbound vehicle on the road, though no impact was recorded. The causation factor was stated as “defective brakes.” The driver of the northbound vehicle was slightly injured. The accident occurred in daylight and the weather conditions were fine with a dry road surface.

6.4 It can be concluded that the accident numbers are quite small with just five injury accidents in five years over the whole length of Ashby Road. There are no discernible common factors in the injury accidents as there were different circumstances in each collision. There were two head-on type collisions, but one involved a driver falling asleep. Both of these head-on collisions resulted in serious injury but this was not statistically significant when compared with control data*, due to the small number of accidents involved. One of the accidents was an anomaly as it involved a vehicle rolling down a driveway into the carriageway of Ashby Road.

6.5 The accidents occurred on various days and at various times of the day. However, all occurred in the winter months and the majority happened at night time when street lights were switched on. However, due to the small accident numbers involved, the number of accidents at night time were not statistically significant when compared with control data*. In terms of weather conditions, the greatest numbers occurred in fine and dry weather conditions.

6.6 Overall, it can be deduced that the accidents were random in nature with no clear pattern in the collisions types. Though the majority occurred in winter months when street lighting was present, this was not statistically significant when compared with control data due to the small number of accidents involved.

(*Control data from Tables RAS 10007 & 20001 in Reported Road Casualties Great Britain: 2014).
7.0 Site Visit Observations

7.1 The site was visited at various times and dates to assess conditions for all road users and pedestrians. Visits were carried out on the following dates:

i. Tuesday 23rd February 2016 – 11:30 to 12:30hrs;
ii. Wednesday 2nd March 2016 – 14:30 to 17:00hrs;
iii. Thursday 3rd March 2016 – 08:00 to 09:00hrs;
iv. Friday 4rd March 2016 – 08:00 to 09:00hrs;
v. Monday 7th March 2016 – 14:45 to 16:00hrs;

7.2 It was observed that traffic flows were generally low at off-peak periods along Ashby Road with no congestion observed along the road. There were also few pedestrians using the zebra crossings. However, due to the low traffic volumes, vehicle speeds were observed to be higher at these times.

7.3 In the morning peak period (08:00 to 09:00hrs) the busiest time period tended to be between 08:40 and 08:55hrs, with a concentrated peak at approximately 08:45hrs when the two zebra crossings near the schools were in continual use by school children and other pedestrians. The delays to vehicles at the zebra crossings in this short period were up to 60 seconds (at other times, delays to vehicles were in the region of 5 – 15 seconds at the crossings). Vehicle queue lengths at the concentrated peak were up to 12 car lengths. However, there was minimal delay to pedestrians as the majority of drivers did give way to pedestrians at the zebra crossings, though there were some occasions when drivers did not stop.

7.4 In the afternoon school peak period (15:00 to 15:45hrs) there was a similar pattern of pedestrian and vehicle movements, with the busiest times being between 15:20 and 15:30hrs, with a concentrated peak at approximately 15:25hrs. At this time, there were delays to vehicles of up to 80 seconds when there was a continual flow of pedestrians across the zebra crossings.
7.5 After the school peak periods, vehicle queues and pedestrian numbers quickly dissipated and minimal congestion was observed during these periods.

7.6 It is considered that although delays do occur at the two zebra crossings near the Infant, Junior and Secondary schools, they are concentrated within small 10 to 15 minute periods in the morning and afternoon peak periods. Outside of these periods, delays are a lot lower and traffic generally flows smoothly along the road. It is understood that there have been some requests to convert the zebra crossings to light controlled pelican crossings to reduce delays to vehicles.

7.7 It is considered that this would be disproportionate to the actual problem, which only occurs during short periods in the day. There has also been just one injury accident at a zebra crossing over a five year period, which resulted in slight injury. In addition, during the majority of the day, the vehicle and pedestrian flows are likely to be too low to justify light controlled crossings and the expenditure (£50,000 per crossing approximately) is not recommended at this stage. There is no conclusive national data that suggests pelican crossings are safer than zebra crossings. It should also be borne in mind that some pedestrians may not be willing to wait for a green man signal at pelican crossings and may instead attempt to cross during gaps in traffic. Zebra crossings on the other hand can afford almost instantaneous priority for pedestrians.
8.0 Statement of Problems

8.1 The injury accident data suggests that collision numbers are low with just five accidents over a five year period. In addition, the accidents are scattered along the road with no discernible common factors in the accident types. However, vehicle speeds are high with average mean and 85%ile speeds in excess of the 30mph speed limit. At the surveyed ATC sites, 85%ile speeds were closer to 40mph. At these speeds, injuries as a result of accidents are likely to be more serious, especially if collisions involve vulnerable road users such as pedestrians and cyclists.

8.2 On the approach to the schools, there are speed actuated warning signs, which display School Children/20mph/Slow Down symbols at school times and 30mph/Slow Down at other times. To assess whether drivers observed the advisory 20mph speed limit, the ATC data was analysed for the school peak periods. This indicated that at Sites 2 and 3 (approaching the schools) both average mean and 85%ile speeds were in excess of the advisory 20mph speed limit. At Site 2, average mean speeds were between 26 and 30mph and 85%ile speeds were 30 to 35mph approximately. At Site 3, average mean speeds were about 26 to 28mph and 85%ile speeds were about 33 to 35mph.

8.3 Therefore, the ATC data indicates that the advisory 20mph speed limit at school times is not well observed by drivers and so there could be an increased risk of more serious injury at the zebra crossings if pedestrians are hit by vehicles. However, the injury accident data shows that just one collision occurred at a zebra crossing, which resulted in slight injury to a child.
8.4 The reason for the high speeds could be because the alignment of Ashby Road is fairly relaxed with straight sections and gentle bends. The majority of the properties along the road are set quite far back with little frontage development, giving an “open feel” to the road. Along the northern section between the A361 and Daneholme Avenue, there is a double white line system with road studs along the centre line. This is unusual for an urban setting, as this type of system is normally associated with unlit rural sections of road. This misleading perception of the road could be an additional contributory factor in drivers travelling in excess of the speed limit.

8.5 It was noted during the site visits that the majority of the road markings along Ashby Road are very worn offering little lane definition for drivers. This is likely to be worse at night or during poor weather conditions as the reflectively of the road markings is likely to be below standard. However, it is difficult to determine whether the worn markings are a contributory factor in the high speeds, as there is an argument that the absence of markings could lead to a more cautious approach by drivers and thus lower speeds could be expected. There have been trials involving removing road markings, but the subject can be controversial.
9.0 **Recommended Measures**

9.1 It would be difficult to justify a comprehensive traffic calming and speed management scheme along the whole length of Ashby Road on injury accident numbers alone. This is because accident savings would be small due to the low numbers involved and so traditional economic calculations (such as “First Year Rate of Return”) would indicate that only modest amounts of money would be justified. For example, if a 33% accident saving is predicted in the first year with a traffic calming scheme, a sum of approximately £29,500 could be justified (based on an average urban injury accident cost of £89,180; ref WebTAG Document 2015, DfT).

9.2 However, it is considered that measures would be desirable along Ashby Road to address the high speeds along the road, which are close to 40mph (85%ile speeds) and greatly in excess of the 30mph speed limit. At these speeds, injuries as a result of collisions are likely to be more serious, especially if they involve vulnerable road users such as pedestrians and cyclists.

9.3 If a speed reduction scheme is implemented, it is recommended that it is targeted along the southern section of Ashby Road in the vicinity of the schools and other educational establishments, where vulnerable road user numbers are higher and more concentrated. This area of the road is also where greatest concerns have been expressed as it is the focal point where school children cross the road. In addition, the majority of the injury accidents occurred along the southern section of road.

9.4 Although there is a speeding issue along the northern section of Ashby Road (north of Daneholme Avenue) it is recommended that “softer” speed management devices are implemented on this section as vulnerable road user movements are lower on this section and the number of accidents that have occurred does not justify disproportionate expenditure.
9.5 In terms of specific scheme measures along Ashby Road, it is recommended that the following elements are considered:

i) **Raised Zebra Crossings:** The three zebra crossing on the southern section of Ashby Road near the schools and college could be raised on to full width flat top road humps. This would ensure that vehicle speeds are lowest at the most critical conflict point (i.e. at the striped crossing area of the zebras). This would ensure safety for pedestrians as vehicle speeds would be low and drivers would be more inclined to concede priority to pedestrians. To achieve desirable maximum vehicle speeds at the crossings of 20mph, it is recommended that the road humps at the crossings are at least 75mm high and have ramp slopes no shallower that 1:15. With these geometric dimensions, the humps should not cause undue problems for the emergency services and bus operators, whilst still offering good speed reduction potential.

ii) **Vertical Deflection Traffic Calming Measures:** To ensure drivers maintain a lower speed between the raised zebra crossings, additional traffic calming measures are recommended. The use of vertical deflection measures is recommended as these are proven to be most effective in controlling speeds and tend to perform better than horizontal deflection measures (such as road narrowings and chicanes). The low two-way traffic flow along Ashby Road during off-peak periods would also limit the effectiveness of horizontal measures. The types of vertical deflection measures that could be implemented between the schools and college could consist of either speed cushions or 6m long flat top tapered sided road humps. These features tend to be suitable for emergency vehicles and buses and they can be easy to install as existing carriageway drainage systems would not be affected.
iii) **School Gateway Treatments:** To implement the raised zebra crossings and vertical deflection measures mentioned earlier, speed reducing measures are recommended on the approaches. These could consist of gateway treatments to define the start and end of a “School Safety Zone” which encompasses all the schools and UTC College. The gateway treatments could consist of signing, road markings and coloured surfacing treatments. The existing school signs (static and electronic) would need to be relocated to take into account the gateway locations.

iv) **Vehicle Actuated Electronic Speed Awareness Signs:** Along the northern section of Ashby Road (between Daneholme Avenue and the A361) it is recommended that electronic speed awareness signs are provided. The signs that depict “30mph” and “SLOW” when drivers travel above the speed limit are recommended. These signs can be easy to install as they can be erected onto existing lamp columns. The signs would act as a warning and provide awareness to drivers, encouraging them to slow down in the urban area.

v) **Road Marking Adjustments:** In addition to the electronic speed awareness signs, it is recommended that the road markings are adjusted along the northern section of Ashby Road. The existing double white line system and reflective road studs give a false impression of the road, as these features are normally associated with high speed unlit rural roads. To change the perception for drivers, it is recommended that the road studs are removed and the double white line system changed to a single warning line system (4m line with a 2m gap), which is common in urban areas. The warning line should also be extended to cover the southern section of Ashby Road where markings are currently worn. This would provide a consistent message to drivers along the road that they are in an urban area, which should help to reduce the 85%ile speeds closer to 30mph.
9.6 In terms of expenditure, the cost of the scheme is estimated below:

**Table 4: Estimated Scheme Cost**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Cost</th>
<th>Number</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Raised Zebra Crossings</td>
<td>£10,000</td>
<td>3</td>
<td>£30,000</td>
</tr>
<tr>
<td>2 Vertical Deflection Measures:</td>
<td>£5,000</td>
<td>2</td>
<td>£10,000</td>
</tr>
<tr>
<td>(Speed Cushions or 6m Flat top road humps)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 School Gateway Treatments</td>
<td>£6,000</td>
<td>2</td>
<td>£12,000</td>
</tr>
<tr>
<td>4 Electronic VA Speed Signs</td>
<td>£6,000</td>
<td>4</td>
<td>£24,000</td>
</tr>
<tr>
<td>5 Road Marking Adjustments</td>
<td>Lump sum</td>
<td></td>
<td>£10,000</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td></td>
<td><strong>£86,000</strong></td>
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</tbody>
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9.7 A sketch of a suggested scheme is shown in Appendix B1 of this report.

9.8 Since completion of the road safety study and compilation of this report, TMS has been made aware that Ashby Road has been classified as a Fire Service Category 1 route which has potential implications for the recommendations made in this chapter and the conclusions in Chapter 10.

9.9 TMS considers that the raised zebra crossings proposed as part of the vertical traffic calming measures recommended would be the most effective at reducing vehicle speeds and any consequential severity of injuries to vulnerable road users should accidents occur. If they cannot be implemented due to objections from the emergency services, then the Council would have to consider implementing measures which would be less effective at reducing speed in that area.
9.10 Measures that the Council could consider could include providing speed cushions near the zebra crossings, instead of raising the crossings onto flat top road humps. These would help to limit very high speeds at the crossings, but would not be as effective as raising the actual crossings to control speeds at the conflict point between pedestrians and vehicles.

9.11 Other measures could consist of horizontal traffic calming measures, such as priority road narrowings, whereby one stream of traffic gives way to an opposing stream. This would involve constructing footway buildouts (pinch-points) and introducing a priority system. However, it should be noted that road narrowings would not be very effective at off-peak times when two-way traffic flows would be low and so the requirement to give way and slow down would be reduced. The road narrowings, if implemented, would be best located near the School Gateway treatments mentioned earlier, but care would be needed to ensure they are not positioned where they could interfere with the vehicle queues that occur at school times or be blocked by queuing vehicles at that time adding to congestion.

9.12 An alternative measure instead of the priority road narrowings would be to provide mini-roundabouts in the vicinity of the school gateway treatments. These would need to be designed with sufficient deflection to slow down vehicles approaching along Ashby Road, especially if right turn movements at the selected junctions will be low. It is recommended that the mini-roundabouts are provided at the Ashby Road/The Firs and/or Ashby Road/Daneholme Avenue junctions, and the Ashby Road junction near the Special Needs Educational School. The mini-roundabouts are likely to be less problematic to queuing traffic than the priority road narrowings.

9.13 A sketch of an alternative scheme is shown in Appendix B2 of this report.
10.0 Summary and Conclusions

10.1 This report has assessed how Ashby Road performs in terms of road safety. It has been an independent study to provide advice to Daventry District Council on whether there is a real problem along the road and suggest improvement measures if deemed necessary.

10.2 It can be concluded that there is a speeding problem along the road as both average mean and 85%ile speeds are above the speed limit of 30mph. In fact, 85%ile speeds are closer to 40mph than the speed limit. At these speeds, there is a greater risk of road users being more seriously injured as a result of vehicle collisions, especially if they involve vulnerable road users such as pedestrians and cyclists.

10.3 However, the injury accident rate along the road is low with five accidents over the five-year period 2011 to 2015. There were no discernible common factors in the accidents and the number and types of collisions were not statistically significant when compared with control data.

10.4 During the site surveys, it was observed that vehicle congestion did occur at the two zebra crossings near the schools, but this was concentrated during short 10 to 15 minute peak periods during school opening and closing times. At other times of the day, traffic flowed freely and the zebra crossings were lightly used. Therefore, it is considered that the conversion of the zebra crossings into pelican crossings (which has been requested locally) would be a disproportionate investment and is not recommended at this stage.

10.5 Overall, it is recommended that a scheme is introduced along Ashby Road to address the speeding issue. This should be concentrated along the southern section of Ashby Road in the vicinity of the schools, college and other public establishments. This is because vulnerable road user numbers are higher along this section and there were a higher number of injury accidents in this area.
A suggested scheme could consist of measures including raising the zebra crossings onto flat top road humps, providing other vertical deflection measures such as speed cushions or 6m long tapered sided humps, together with school gateway treatments. Along the northern section of Ashby Road (north of Daneholme Avenue) vehicle actuated electronic speed awareness signs and adjustments to road markings is recommended.

The estimated cost of the scheme is £86,000. This sum is higher than can be justified on injury accident savings alone (which would indicate a budget of approximately £30,000 using traditional First Year Rate of Return calculations). It is considered that this would offer a good investment to address the identified road safety problems along Ashby Road.

TMS considers that the raised zebra crossings measures recommended would be the most effective at reducing vehicle speeds and any consequential severity of injuries to vulnerable road users should accidents occur. If they cannot be implemented due to objections from the emergency services, then the Council would have to consider implementing measures which would be less effective at reducing speed in that area.

Measures that the Council could consider include replacing the raised crossings with speed cushions either side of the zebras and possibly introducing priority road narrowings in the vicinity of the School Gateway Treatments. The priority road narrowings could be problematic to queuing traffic and so an alternative measure could be to provide mini-roundabouts at junctions in advance of the speed cushions. These measures would help to limit very high speeds, but would not be as effective as raising the zebra crossings and may only have a limited effect at off-peak periods.
11.0 **TMS Assessors and Contact Details:**

This road safety assessment has been carried out by:

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Appendix A - Plan of Ashby Road:
Appendix B1 – Sketch of Recommended Scheme

- Raised Zebra Crossings
- Speed Awareness Electronic Signs
- Speed Cushions or 6m Long Road Humps
- School Gateway Treatment
- Remove double white line system and road studs; provide single warning line system
Appendix B2 – Sketch of Alternative Scheme

- Speed Awareness Electronic Signs
- Mini-roundabouts (instead of priority road narrowings)
- School Gateway Treatment, with possible priority road narrowing
- Speed Cushions
- Remove double white line system and road studs; provide single warning line system
- School Gateway Treatment, with possible priority road narrowing