

Welton, Melton & Wauldby Parish Council  
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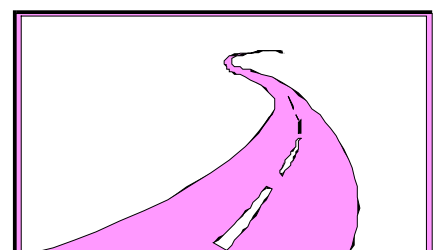
# **Traffic Calming, Welton and Melton, East Riding of Yorkshire**

## **Final Report**

19<sup>th</sup> December 2012

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## **1 INTRODUCTION AND SCOPE OF REPORT**

- 1.1 CA Traffic Solutions has been commissioned to provide a report into the existing traffic calming provision in the villages of Welton and Melton, East Riding of Yorkshire. The report discusses the existing traffic calming and 20 mph speed limit provision, the alternative types of traffic calming available and suggests alternative schemes, with estimates of costs. The report also suggests additional proposals to address other identified issues within Welton and Melton.
- 1.2 The report has been carried out at the request of Welton, Melton & Wauldby Parish Council.
- 1.3 This report has been prepared by Clive Ashby BA, CMS, I.Eng, FIHE, FCIHT, FSoRSA.
- 1.4 A number of site visits were made at various times during daylight and darkness on Monday 1st and Tuesday 2nd October 2012.
- 1.5 Section 2 provides an Executive Summary to the report with recommendations for action. Section 3 provides a history of the existing traffic calming and 20 mph speed limit provision together with issues discussed at various County and Parish Council meetings. Section 4 identifies general site details and issues and Section 5 details specific site issues. Collision analysis of 'before' and 'after' collisions, with brief descriptions of the collisions, is discussed in Section 6. Section 7 discusses issues identified within the traffic-calmed and 20 mph speed limit areas and Section 8 details other identified issues within the local road network. Alternative types of traffic calming, with estimated costs for each are discussed in Section 9. Section 10 examines other information and discusses the existing and potential provision, and Section 11 discusses conclusions and makes recommendations for improved facilities within the villages.

## 2 EXECUTIVE SUMMARY

Welton, Melton & Wauldby Parish Council and local residents and have been campaigning for several years to have the existing speed cushions removed or replaced with other forms of traffic calming due to problems arising mainly from vehicle damage.

As the majority of the speed cushions desperately require essential maintenance an opportunity exists to review the existing traffic calming and speed limit provision as part of the overall maintenance cost.

Provision of more appropriate speed-reducing features which will affect the speed of all vehicles is likely to further maintain low collision and casualty numbers and be less detrimental to vehicles and the health and welfare of residents.

Where this report addresses existing speed limit and traffic calming provision it suggests a modified scheme, the main elements of which are as follows:

- i) The existing 20 mph speed limit should be re-defined over a smaller area, and correctly signed, to encourage better compliance to the speed limit;
- ii) A 20 mph Zone along Welton Old Road and East Dale Road should be introduced to deter rat running and to improve safety for students travelling to and from South Hunsley School;
- iii) Speed cushions in Cowgate, Chapel Hill and Holly Hill should be removed;
- iv) Sinusoidal speed humps, to replace the existing speed cushion provision along Welton Old Road and East Dale Road, should be provided;
- v) A raised Zebra crossing facility in the vicinity of the South Hunsley School should be provided.

A number of other issues have been identified within the report and additional works suggested and recommendations made.

### **3 BACKGROUND AND HISTORY**

- 3.1 Local residents and Welton, Melton & Wauldby Parish Council have been campaigning for several years to have the existing speed cushions removed or replaced with other forms of traffic calming within Welton and Melton due to problems arising mainly from damage taking place to light vehicles passing over these features.
- 3.2 The traffic calming measures in Welton and Melton were installed in 2000 as a direct result of a 'poor' personal injury collision record, both in the village and in the vicinity of South Hunsley High School. Speed surveys carried out at that time throughout the village section supported the measures. It was also hoped that the traffic calming measures would discourage traffic from using the village route as a short cut to and from the A63 instead of using the traffic signals at Melton crossroads to gain access to the A63. This scheme was implemented following extensive public consultation where both the public and parish council had been supportive of the proposals.
- 3.3 In total there are some twenty-eight sites with forty-nine 'physical' speed cushions and a further four sites with eight 'pseudo' cushions (carriageway markings giving the impression of being a physical feature). The locations of the speed cushions are shown in Appendix B.
- 3.4 As a further measure to help reduce traffic speeds, a 20 mph Speed Limit Order was introduced in the central area of the village in June 2001. The extent of the 20 mph speed limit is also shown in Appendix B.
- 3.5 A petition, signed by over 600 residents, was presented to the East Riding of Yorkshire Council's (ERYC) Environment and Transport Overview and Scrutiny Committee on 28 October 2009 requesting that the large number of speed cushions throughout the village be removed in favour of flashing speed warnings. It was agreed that officers consider the issues raised within the petition and the issues raised at the meeting and report back to a future meeting with possible outcomes. The request was discussed at Committee on the 24<sup>th</sup> March 2010 (Council Committee Minute 696 refers).
- 3.6 The Welton ward councillors, noted that although they recognised that a number of residents wished the speed bumps to be removed, they were an important safety feature in the village and they therefore, supported the retention of the traffic calming. The Committee felt that they were unable to support the removal of the existing speed-reducing measures as this could result in an increase in vehicle speeds and consequently return to the previously 'poor' casualty record of the village. The removal of the traffic calming measures could also reintroduce the volume of traffic travelling through the village instead of using the main roads. Additionally the estimated cost of removing the speed reduction cushions would be in the region of £25,000 and officers felt that these resources could be better used to help address collision casualties in other locations where speed-reducing measures had been requested.

- 3.7 A 'conditions' survey of the majority of the speed cushions was undertaken by the East Riding of Yorkshire Council in February 2012. (Note: Six sites, three in Holly Hill and three in Chapel Hill where not inspected.)
- 3.8 Speed surveys were carried out in February 2010 at two locations within the traffic-calmed lengths of road to gain a current indication of the speed in the traffic-calmed area. It was considered that the average traffic speed was likely to increase should the traffic calming measures be removed.

## 4 GENERAL SITE DETAILS

- 4.1 Welton and Melton are adjoining villages approximately 10 miles west of Hull north of the A63 which carries more than 50,000 vehicles per day.
- 4.2 There is a large area-wide '7.5T weight limit - Except for loading' which includes both Welton and Melton. This restriction appears to operate well. Although a number of smaller heavy goods vehicles were observed, these seem to be linked to the extensive amount of building maintenance ongoing in the area. Only one articulated heavy goods vehicle was observed. That vehicle was unlikely to have been needing access to Welton or Melton but, due to the large area covered by the weight restriction, could have been associated with other premises within the area.
- 4.3 A significant number of vehicles were observed passing through the villages without stopping, using the villages as a short cut to Brough, Beverley or north Hull. The road through the villages is also an alternative route for 'diverted' traffic from the A63 during periods of maintenance, congestion or if an incident has occurred.
- 4.4 Welton village centre is within a conservation area.
- 4.5 Low pressure sodium street lighting is present throughout the villages.
- 4.6 Existing Traffic calming
  - 4.6.1 Of the 43 speed cushions inspected in February 2012, 26 were recommended for replacement. The October 2012 survey undertaken as part of this report recommends that 44 of the 49 speed cushions should be replaced if no other forms of traffic calming are to be adopted.
  - 4.6.2 Many of the speed cushions are of inappropriate height compared to the surrounding carriageway level, and this is known to have caused damage to a number of vehicles. The presence of such a large number of speed cushions will also exacerbate certain health problems (i.e. bad backs, arthritis etc).
  - 4.6.3 'Pseudo' cushions have been used at several locations. These type of features are not effective at reducing speed on routes used by regular users. Their presence therefore makes the distances in-between physical features greater and is therefore detrimental at maintaining low constant vehicle speeds.
  - 4.6.4 It is understood that in the past snow ploughs have been brought into the village to clear roads but have been inefficient due to the speed cushions. The main routes through Melton and Welton are on the County's 'precautionary route' network and are routinely treated in case of ice and snow.

#### 4.7 Existing 20 mph speed 'limit'

- 4.7.1 There are conflicting 20 mph signs on entry and exit from the 20 mph speed limit area. 20 mph area speed limit signs are provided on entry to the area (although the used addition of the word 'SLOW' is not permitted), but from the area 20 mph Zone signs are provided on exit. It is understood that a speed limit order was originally introduced in 2001 although there are no 20 mph speed limit repeater signs present which is a requirement for a speed limit.
- 4.7.2 The Estate accessed along Park Road is within the 20 mph speed limit but is not provided with speed-reducing features.

#### 4.8 Bus Services

- 4.8.1 There are three bus services, Nos. 143, 153 and 155, passing through the villages, which provide a service along East Dale Road, Welton Old Road, Ladywell Gate, Church Street, The Green, Cowgate and Parliament Street. Service 155 operates seven days a week with, on average, at least one bus every two hours, with limited services at weekends. Service 153 operates limited services throughout the week with three buses operating daily on weekdays. Service 143 operates only on a Saturday when there are two operating through the day.
- 4.8.2 Although the local scheduled bus services accommodate some of the students to and from South Hunsley School there is also an extensive transport regime in place to commute student to the school, with some 24 bus bays for this purpose at the rear of the school, off Lowfield Lane.

#### 4.9 Cycling

- 4.9.1 There are two cycle routes through Welton and Melton, a National Byways route and National Cycling Route No. 65. A number of cyclists were observed, including one group of a dozen or so travelling eastbound along Welton Old Road.
- 4.9.2 Many of the students travel to the school on cycles, mostly on the footway for their own safety but with potential to conflict with pedestrians. Students who prefer to ride on the carriageway are at risk due to the parking problems at the start and end of the school day, which cause them to have to pull out into the centre of the carriageway to overtake parked vehicles.

#### 4.10 Pedestrians

- 4.10.1 Although there is no specific information available on pedestrians walking to and from the South Hunsley School, 65 no. students were observed walking along East Dale Road towards Welton Old Road at the end of the school day.
- 4.10.2 A significant number of students walk along East Dale Road into Melton Old Road and cross the A63 pedestrian bridge to Ferriby.



#### **4.11     Future Development**

- 4.11.1    There is potential for development in East Dale Road on the north side between the entry and exit access roads to the school.
- 4.11.2    There is also potential for a 4.5 acre development (suitable for up to some 40 homes) off Welton Old Road opposite the Holly Hill junction.
- 4.11.3    Brough airport also has potential for development. It is understood that a transport assessment has been undertaken which reports unacceptable queuing at the Welton Road / Cowgate junction. Any improvements to the junction would see a significant rise in vehicles passing through Welton and Melton.

## 5 SPECIFIC SITE DETAILS

This section provides detailed information of the roads where the traffic calming and 20 mph speed limit operate, the existing traffic calming provision and the condition and geometry of the speed cushions. Speed cushion upstands, (the difference in height from the top of the speed cushion to the surrounding carriageway), which generally are one of the main reasons for inflicting vehicle (and driver) damage, are also detailed. Generally these upstands should be 75 mm, but up to 100 mm may be acceptable. Where inappropriate heights exist their dimensions are high lit in blue (i.e. 115 mm).

### 5.1 East Dale Road

- 5.1.1 East Dale Road is approximately 420 metres long between Melton Bottom / Melton Old Road traffic-signalised junction and Lowfield Lane. The road is an unclassified urban all-purpose road. Although there are no minor road junctions there are two entrance / exit access roads for South Hunsley School and a number of private accesses to private curtilage parking.
- 5.1.2 East Dale Road is mainly residential, with houses on the south side of the carriageway, with woodland and a reservoir / old water-filled quarry on the north side.
- 5.1.3 South Hunsley School is an oversubscribed and popular 11-18 school and Sixth Form College located at the western end of East Dale Road, again on the south side of the carriageway. The school and College has some 2000 students. The school and College complex has a frontage along East Dale Road of approximately 400 metres and has two vehicular access points, the eastern access for vehicles entering the site and the western access for those emerging from the site. The majority of students arrive and depart the site by bus provided by EYRC.
- 5.1.4 South Hunsley School has parking on site for over 200 cars, of which approximately 150 are accessed from East Dale Road, and approximately 50 spaces are accessed off Lowfield Lane.
- 5.1.5 South Hunsley Youth Centre is located immediately west of the Melton Bottom / Melton Old Road traffic-signalised junction.
- 5.1.6 Despite the fact that the school has some 2000 students there are no controlled or uncontrolled pedestrian crossing facilities along the road.

#### Carriageway

- 5.1.7 The carriageway width is approximately 7.3 metres along its entire length.
- 5.1.8 The carriageway appears to have been resurfaced over the last couple of years and is generally in a good state of repair.

- 5.1.9 Central hatch marking is provided from approximately 85 metres west of the Melton Bottom / Melton Old Road traffic-signalised junction to the Lowfield Lane junction and continues into Welton Old Road. The marking is approximately 1.0 metre wide which results in the running carriageway widths being approximately 3.0 metres. No break is provided in the hatching where right turn movements are permitted at the eastern access road to the school, and at the Lowfield Lane junction. The central hatch markings are a good state of repair.
- 5.1.10 Although there are no waiting restrictions present along East Dale Road, there are lengths of yellow 'School No Waiting' carriageway markings on both sides of the carriageway. The markings on the south side of the carriageway are continuous for approximately 115 metres from east of the easternmost access road. On the north side there is a gap of approximately 45 metres between the two sets of markings. Generally the zig-zag markings are respected by drivers.
- 5.1.11 There are cycle advance Stop lines around the East Dale Road / Melton Bottom / Melton Old Road traffic-signalised junction suggesting a number of cyclists pass through the junction.

#### Traffic Calming

- 5.1.12 There is a non-illuminated 'Humps for ¾ mile' sign approximately 65 metres prior to the first speed cushion, which is almost obscured by tree foliage.
- 5.1.13 'SLOW' carriageway markings and boundary markings to the physical speed cushions are partly or completely worn away.
- 5.1.14 There are four sites where physical speed cushions are located and one site where there are 'pseudo' speed cushions (although there appear to have been two such sites in the past). Details and conditions of the physical speed cushions are as follows

##### 5.1.14.1 Site 1

Located approximately 140 metres west of the Melton Bottom / Melton Old Road traffic-signalised junction. The southern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 115 mm and the northern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 80 mm and the gap between the two cushions is 1.0 metre. The gap between the southern footway and the southern cushion is 1.0 metres and the gap between the northern footway and the northern cushion is 1.0 metres. The kerb height of the southern footway is 75 mm and the northern footway is 100 mm.



February 2012 condition survey comments: [Gouge to southern plateau otherwise OK.](#)

October 2012 condition survey comments: [Replace southern plateau, renew markings.](#)

#### 5.1.14.2 **Site 2**

Located approximately 35 metres west of Site 1. The southern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of [115 mm](#) and the northern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 95 mm and the gap between the two cushions is 1.2 metres. The gap between the southern footway and the southern cushion is 1.1 metres and the gap between the northern footway and the northern cushion is 1.2 metres. The kerb height of the southern footway is 90 mm and the northern footway is 100 mm.



February 2012 condition survey comments: [Eroded edge replace southern.](#)

October 2012 condition survey comments: [Eroded edge replace southern.](#)

#### 5.1.14.3 **Site 3**

Located approximately 120 metres west of Site 2. The southern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of [115 mm](#) and the northern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of [110 mm](#) and the gap between the two cushions is 1.1 metres. The gap between the southern footway and the southern cushion is 1.1 metres and the gap between the northern footway and the northern cushion is 1.1 metres. The kerb height of the southern footway is 100 mm and the northern footway is 90 mm.



February 2012 condition survey comments: [Eroded edge replace southern.](#)

October 2012 condition survey comments: [Eroded edge replace southern.](#)

#### 5.1.14.4 **Site 4**

Located approximately 100 metres west of Site 3. The southern cushion measures 2.8 metres long by 2.2 metres wide with a maximum upstand of 100 mm and the northern cushion measures 2.8 metres long by 2.1 metres wide with a maximum upstand of 80 mm and the gap between the two cushions is 1.1 metres. The gap between the southern footway



and the southern cushion is 1.0 metres and the gap between the northern footway and the northern cushion is 0.8 metres. The kerb height of the southern footway is 125 mm and the northern footway is 90 mm.

February 2012 condition survey comments: [Eroded edge replace northern.](#)  
[Gouge to southern plateau otherwise OK.](#)

October 2012 condition survey comments: [Replace northern, gouges to southern.](#)

5.1.15 The carriageway markings for the 'pseudo' speed cushion in-between Site 2 and Site 3 are in a good state of repair, although they are less conspicuous than they could be due to other carriageway markings in the vicinity.

5.1.16 The 'pseudo' speed cushion carriageway markings as shown on EYRC drawings in-between Site 3 and Site 4 were not present.

#### Vehicle speeds

5.1.17 East Dale Road has a 30 mph speed limit in force.

5.1.18 Vehicle speeds are significantly reduced during the morning and afternoon start and finish times of the school due to the volume of traffic and parked vehicles.

#### Traffic Flow

5.1.19 During the site visits traffic flows outside of the school hours is light to medium but during school times there was severe congestion, mainly caused by parents of students waiting to pick up their children. Generally there was good respect for not parking on the 'School Keep Clear' yellow zig-zag carriageway markings. Parents were seen parking some distance away from the school, waiting in Welton Old

Road and Melton Old Road. Additional congestion was observed to be caused by residents / visitors to properties between the school and the Melton Old Road / Melton Bottom signalised junction.

### **Collisions and Casualties**

- 5.1.20 The following data refers to collisions within the traffic-calmed area and excludes the section of East Dale Road between the start of the traffic-calmed area and the East Dale Road / Melton Bottom / Melton Old Road traffic-signalised junction.

5.1.20.1 1995 to 1999

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming, there were two recorded personal injury collisions along East Dale Road. Both were classified as slight.

Two casualties resulted from the two collisions.

Both collisions occurred outside the school. One collision involved a 12 year old pedestrian chasing a football into the carriageway and being hit. The other involved a 13 year old cyclist emerging from the school in front of a car.

5.1.20.2 2000 to 2011

During the period 2000 to 2011, there were two recorded personal injury collisions along East Dale Road. Both were classified as slight.

Three casualties resulted from the two collisions.

Both collisions occurred outside the school. One collision involved two cars colliding head-on. The other involved a 14 year old cyclist entering the carriageway from the footway in front of a car turning right.

5.1.21 Other Collisions

The following data refers to collisions between the traffic-calmed area and the East Dale Road / Melton Bottom / Melton Old Road traffic-signalised junction.

During the period 1995 to 1999 inclusive, there were two recorded personal injury collisions. Both were classified as slight. Two casualties resulted from the two collisions. One collision involved a heavy goods vehicle skidding into two cars. The other collision involved a car hitting the rear of a stationary heavy goods vehicle.

During the period 2000 to 2011, there was one recorded personal injury collision, which was classified as slight. One casualty resulted from the collision. The collision involved a car colliding with the rear of another while waiting to overtake a parked vehicle.

## **5.2      Welton Old Road**

- 5.2.1 Welton Old Road is approximately 650 metres long between Lowfield Lane and the Ladywell Gate / Parliament Street junction. The road is an unclassified urban all-purpose road. There are five minor road junctions and a number of private accesses to private curtilage parking.
- 5.2.2 Welton Old Road is residential on both sides of the carriageway except between Lowfield Lane and Temple Lane where there is woodland on the north side of the carriageway.
- 5.2.3 There is a slight downhill gradient eastbound to the school and westbound into Ladywell Gate, starting at the Holly Hill junction.

### Carriageway

- 5.2.4 The carriageway width varies over its length from 6.8 metres to 7.4 metres.
- 5.2.5 The westbound carriageway is in a poor state of repair with numerous trench reinstatements. The eastbound carriageway is generally in a good state of repair.
- 5.2.6 There is continuous central hatch marking from East Dale Road along Welton Old Road to the Temple Close junction (a distance of approximately 325 metres). The central hatch marking is approximately 1.2 metres wide along its length, which results in the running carriageway widths of between 2.8 metres and 3.1 metres. No break is provided in the central hatching at Temple Lane where right turn movements are permitted. The hatch markings are generally in a good state of repair except at the speed cushion locations, where they are mostly worn away.
- 5.2.7 There is another length of central hatch markings which starts approximately 45 metres west of Temple Walk and continues to Ladywell Gate / Parliament Street junction (approximately 85 metres). The central hatch marking is 1.2 metres wide which results in the running carriageway widths of approximately 3.2 metres. No break is provided in the central hatching at Park Road where right turn movements are permitted. The hatch markings are generally in a good state of repair.
- 5.2.8 There are no waiting restrictions present along Welton Old Road.

### Traffic Calming

- 5.2.9 There are seven sites where physical speed cushions are located and three sites where there are 'pseudo' speed cushions. Details and conditions of the physical speed cushions are as follows:



#### 5.2.9.1 **Site 5**

Located approximately 65 metres west of Site 4 in East Dale Road. The southern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 112mm and the northern cushion measures 3.0 metres long by 2.1 metres wide with a maximum upstand of 85 mm and the gap between the two cushions is 1.2 metres. The gap between the southern footway and the southern cushion is 0.9 metres and the gap between the northern footway and the northern cushion is 1.1 metres. The kerb height of the southern footway is 140 mm and the northern footway is 100 mm.



February 2012 condition survey comments: [Eroded edge replace northern.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.2.9.2 **Site 6**

Located approximately 55 metres west of Site 5. The southern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 120 mm and the northern cushion measures 3.1 metres long by 2.1 metres wide with a maximum upstand of 115 mm and the gap between the two cushions is 1.3 metres. The gap between the southern footway and the southern cushion is 0.9 metres and the gap between the northern footway and the northern cushion is 1.1 metres. The kerb height of the southern footway is 75 mm and the northern footway is 100 mm.



February 2012 condition survey comments: [Eroded edges replace both.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)



### 5.2.9.3 **Site 7**

Located approximately 120 metres west of Site 6. The southern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 120 mm and the northern cushion measures 3.1 metres long by 2.1 metres wide with a maximum upstand of 115 mm and the gap between the two cushions is 1.2 metres. The gap between the southern footway and the southern cushion is 1.3 metres and the gap between the northern footway and the northern cushion is 1.1 metres. The kerb height of the southern footway is 75 mm and the northern footway is 100 mm.



February 2012 condition survey comments: Replace both and 1 metre around perimeter.

October 2012 condition survey comments: Replace both speed cushions and 1 metre around perimeter.

### 5.2.9.4 **Site 8**

Located approximately 185 metres west of Site 7. The southern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of 190 mm and the northern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 50 mm and the gap between the two cushions is 0.7 metres. The gap between the southern footway and the southern cushion is 0.7 metres and the gap between the northern footway and the northern cushion is 0.7 metres. The kerb height of the southern footway is 60 mm and the northern footway is 110 mm.



February 2012 condition survey comments: Eroded edges replace both.

October 2012 condition survey comments: Replace both speed cushions.

#### 5.2.9.5 **Site 9**

Located approximately 35 metres west of Site 8. The southern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of 90 mm and the northern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 135 mm and the gap between the two cushions is 0.6 metres. The gap between the southern footway and the southern cushion is 0.7 metres and the gap between the northern footway and the northern cushion is 0.7 metres. The kerb height of the southern footway is 60 mm and the northern footway is 110 mm.



February 2012 condition survey comments: [Eroded edges replace both.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.2.9.6 **Site 10**

Located approximately 75 metres west of Site 9. The southern cushion measures 3.0 metres long by 2.0 metres wide with a maximum upstand of 110 mm and the northern cushion measures 3.0 metres long by 2.0 metres wide with a maximum upstand of 90 mm and the gap between the two cushions is 0.9 metres. The gap between the southern footway and the southern cushion is 0.8 metres and the gap between the northern footway and the northern cushion is 0.8 metres. The kerb height of the southern footway is 90 mm and the northern footway is 150 mm.



February 2012 condition survey comments: [Eroded edges replace both.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.2.9.7 **Site 11**

Located approximately 95 metres west of Site 10. The southern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 95 mm and the northern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 85 mm and the gap between the two cushions is 1.3 metres. The gap between the southern footway and the southern cushion is 1.0 metres and the gap between the northern footway and the northern cushion is 1.0 metres. The kerb height of the southern footway is 90 mm and the northern footway is 100 mm.



February 2012 condition survey comments: [Eroded edges replace both.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

5.2.10 The pseudo cushion carriageway markings are in a good state of repair.

#### Vehicle speeds

5.2.11 Welton Old Road has a 30 mph speed limit in force between Lowfield Lane and immediately east of Holly Hill where a 20 mph speed limit is in force.

5.2.12 During the site visits between 18.10hrs and 19.10hrs a speed survey was undertaken in Welton Old Road, immediately to the east of Temple Lane. The 85 percentile speed (which is generally used to set a speed limit) was 34 mph (sample 100 vehicles) for eastbound vehicles and 33 mph (sample 100 vehicles) for westbound vehicles. The highest speed recorded was 63 mph (a young motorcyclist travelling eastbound).

#### Traffic Flow

5.2.13 Traffic flows were similar to those observed at the Ladywell Gate / Parliament Street junction although there were a number of vehicle movements into and out of Park Road, particularly during start and end of the school day at St Anne's School in St Helen's Drive.

## **Collisions and Casualties**

### **5.2.14      1995-1999**

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming and the 20 mph speed limit, there were two recorded personal injury collisions along Welton Old Road. One was classified as serious and one was classified as slight.

Two casualties resulted from the two collisions. One casualty was classified as serious and one was classified as slight.

The serious collision involved a pedestrian crossing the carriageway at the junction with Temple Close being hit by a motorcyclist. The other collision involved a pedestrian standing next to his vehicle being hit by the wing mirror of a passing vehicle.

### **5.2.15      2000 to 2011**

During the period 2000 to 2011, there were five recorded personal injury collisions along Welton Old Road. All were classified as slight.

Five casualties resulted from the five collisions.

Two of the collisions occurred at the Park Road junction. One collision involved a mini-bus turning out of Park Road in front of a 13 year old cyclist. The other involved a 14 year old pedestrian crossing the carriageway and hit by a bus.

One collision occurred just west of the Park Road junction when a 13 year old pedestrian crossing the carriageway was hit by a car.

One collision occurred at the junction with Temple Walk when a 15 year old pedestrian crossing the road was hit by a bus.

The other collision occurred at the junction with Lowfield Lane when a vehicle turning right into Lowfield Lane was hit from behind.

### **5.3 Ladywell Gate**

- 5.3.1 Ladywell Gate is approximately 80 metres long between Church Street and Parliament Street junction. The road is an unclassified urban all-purpose road. There are several private accesses to private curtilage parking.
- 5.3.2 Ladywell Gate is residential on both sides of the carriageway.
- 5.3.3 Ladywell Gate is on a slight downhill gradient from Park Road, with an adverse camber to the south side of the carriageway at the Parliament Street / Ladywell Gate junction.

#### Carriageway

- 5.3.4 The carriageway width at the speed cushion is 5.2 metres, and is a similar width along its entire length from Parliament Street to Church Street. Between Park Road and the Parliament Street junction the carriageway is wider although the central and southern hatch markings reduce the running lane to approximately 3.0 metres.
- 5.3.5 The carriageway is in a good state of repair.
- 5.3.6 There is hatch marking on the western side from the Parliament Street junction to the Church Street junction, and a designated parking bay, 1.7 metres wide, on the eastern side between the two junctions. The hatching and designated parking reduce the running carriageway width at the speed cushion to 2.8 metres. The carriageway markings are in a good state of repair, except where they have been worn away due to drivers overrunning the southern hatch markings.
- 5.3.7 There is an arrow markings on both sides of the speed cushion which is misleading as this suggests that vehicles can travel in both directions, which is not the case at this location.

#### Traffic Calming

- 5.3.8 There is only one site where a physical speed cushion is located. Detail and condition of the physical speed cushion is as follows:

##### **5.3.8.1 Site 12**

Located approximately 95 metres west of Site 11. There is a single speed cushion at this site, measuring 2.9 metres long by 1.8 metres wide with a maximum upstand of 90 mm. The gap between the eastern footway and the cushion is 1.7 metres and the gap between the western footway and the cushion is 1.6 metres.



The kerb height of the western footway is 100 mm and the eastern footway is 75 mm.

February 2012 condition survey comments: [OK](#).

October 2012 condition survey comments: [Western side eroded, replace \(In different position\)](#).

#### Vehicle speeds

5.3.9 Ladywell Gate is within a 20 mph speed limit.

5.3.10 During the site visits, between 07:30hrs and 08:40hrs, a speed survey was undertaken in Ladywell Gate. The 85 percentile speed (which is generally used to set a speed limit) was 26 mph (sample 100 vehicles). The highest speed recorded was 29 mph.

#### Traffic Flow

5.3.11 During the site visits, morning, evening and off-peak traffic counts were undertaken at the Ladywell Gate / Welton Old Road / Parliament Street junction.

5.3.11.1 Morning Peak Hour (08:00 – 09:00)

Results showed 235 vehicles travelling westbound from Welton Old Road (and from Park Road) into Ladywell Gate and 10 vehicles turning right from Parliament Street into Ladywell Gate.

5.3.11.2 Off-Peak Hour (11:00 – 12:00)

Results showed 90 vehicles travelling westbound from Welton Old Road (and from Park Road) into Ladywell Gate and 2 vehicles turning right from Parliament Street into Ladywell Gate.

5.3.11.3 Evening Peak Hour (17:00 – 18:00)

Results showed 262 vehicles travelling westbound from Welton Old Road (and from Park Road) into Ladywell Gate and 6 vehicles turning right from Parliament Street into Ladywell Gate.

### **Collisions and Casualties**

#### **5.3.12      1995-1999**

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming and the 20 mph speed limit, there were two recorded personal injury collisions along Ladywell gate. One was classified as serious and one was classified as slight.

Eleven casualties resulted from the two collisions. One casualty was classified as serious and the others were classified as slight.

The serious injury collision involved a car with four young people all 18 years old or younger. Although the collision information available does not give a description of the cause of the collision it occurred during the hours of darkness on a wet road surface.

The other collision involved a bus, which lost control on ice and collided with a house.

#### **5.3.13      2000 to 2011**

During the period 2000 to 2011, there were no personal injury collisions along Ladywell Gate.



## 5.4 **Church Street**

- 5.4.1 Church Street is approximately 125 metres long between The Green and the Ladywell Gate junction. The road is an unclassified urban all-purpose road. There are several private accesses to private curtilage parking.
- 5.4.2 Church Street is mainly residential. The Village Church is situated on the northern side of the carriageway. There is a footway along the entire southern side of the carriageway but only a partial footway on the north side.

### Carriageway

- 5.4.3 The carriageway width varies over its length from 8.0 metres at its eastern end to 6.5 metres at its western end.
- 5.4.4 Generally the carriageway is in a good state of repair.
- 5.4.5 There is hatch marking on the northern side and designated parking bays on the southern side. The hatch marking provides a 'barrier' between the edge of the carriageway and the open drainage channel and Church boundary stone wall. The hatching and designated parking reduce the running carriageway width to approximately 4.0 metres. The markings are generally in a good state of repair although the boundary lines for the designated parking bays and near to the speed cushions are worn.
- 5.4.6 There are no waiting restrictions present along Church Street.

### Traffic Calming

- 5.4.7 There are two sites where physical speed cushions are located and no sites where there are 'pseudo' speed cushions. Details and conditions of the physical speed cushions are as follows:

#### 5.4.7.1 **Site 13**

Located approximately 80 metres northwest of Site 12 in Ladywell Gate. The southern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 65 mm and the northern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of 110 mm and the gap between the two cushions is 1.4 metres. The gap between the southern footway and the southern cushion is 1.3 metres and the gap between the northern drainage channel and the northern cushion is 1.4 metres. The kerb height of the southern footway is 100 mm.





February 2012 condition survey comments: [OK renew lines only.](#)

October 2012 condition survey comments: [The speed cushions should be replaced.](#)

#### 5.4.7.2 **Site 14**

Located approximately 60 metres west of Site 13. The southern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 70 mm and the northern cushion measures 2.9 metres long by 1.9 metres wide with a maximum upstand of 95 mm and the gap between the two cushions is 0.9 metres. The gap between the southern footway and the southern cushion is 0.8 metres and the gap between the northern footway and the northern cushion is 0.9 metres. The kerb height of the southern footway is 30 mm and the northern footway is 25 mm.



February 2012 condition survey comments: [OK renew lines only.](#)

October 2012 condition survey comments: [Edge of northern speed cushion eroded, replace.](#)

#### Vehicle speeds

5.4.8 Church Street is within a 20 mph speed limit.

5.4.9 Observed speeds during the site visits appeared to be generally within the 20 mph speed limit.

#### Traffic Flow

5.4.10 Traffic flow is similar to that of Ladywell Gate, as follows:

5.4.10.1 Morning Peak Hour (08:00 – 09:00)  
Results showed 241 vehicles travelling along Ladywell Gate.

5.4.10.2 Off-Peak Hour (11:00 – 12:00)  
Results showed 92 vehicles travelling along Ladywell Gate.

5.4.10.3 Evening Peak Hour (17:00 – 18:00)  
Results showed 269 vehicles travelling westbound along Ladywell Gate.

### **Collisions and Casualties**

#### **5.4.11      1995 to 1999**

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming and the 20 mph speed limit, there were no recorded personal injury collisions along Church Street.

#### **5.4.12      2000 to 2011**

During the period 2000 to 2011, there were no recorded personal injury collisions along Church Street. **(Note:** During the site visits a resident of Church Street (an ex-policeman) indicated that he had been hit by a vehicle as he was emerging from his vehicle as a result of a driver trying to avoid the westernmost set of speed cushions).

## **5.5     The Green**

- 5.5.1     The Green is approximately 50 metres long between Cowgate and Church Street junctions. The road is an unclassified urban all-purpose road. There is an access to 'The Green Dragon' car park. At the Church Street junction, access is available to approximately six residential properties in Beckside and approximately 12 residential properties in Creyke Lane. A new small development is under construction in Creyke Lane.
- 5.5.2     The Green, has several residential properties and 'The Green Dragon' public house, together with the village green on the east side of the carriageway.
- 5.5.3     There is a length of 'No Waiting at Any Time' restriction from the Cowgate junction extending along the west side of the carriageway for approximately 30 metres. Perpendicular parking is permitted on the east side of the carriageway to accommodate approximately 8 vehicles.

### Carriageway

- 5.5.4     The carriageway width is excessive (15+ metres) but is reduced by approximately 5 metres by the perpendicular parking bays.
- 5.5.5     The carriageway is in a good state of repair. The 'Give Way' markings for the right turn from The Green into Creyke Lane are worn, and so too are the 'Give Way' markings at the Cowgate junction.

### Traffic Calming

- 5.5.6     There are no physical speed cushions in The Green.
- 5.5.7     Traffic flows are similar to Ladywell Gate.

### Collisions and Casualties

#### 5.5.8     1995 to 1999

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming and the 20 mph speed limit, there were no recorded personal injury collisions along The Green.

#### 5.5.9     2000 to 2011

During the period 2000 to 2011, there were no recorded personal injury collisions along The Green.

## 5.6 Cowgate

- 5.6.1 Cowgate is approximately 500 metres long between Welton Road and the Kidd Lane / Parliament Street junctions. The road is an unclassified urban all-purpose road. There are six minor road junctions between Welton Road and Kidd Lane and a number of private accesses to private curtilage parking.
- 5.6.2 Cowgate, between Cowgate cul-de-sac and The Green is mainly residential with 'The Green Dragon' public house at the The Green junction. Cowgate between The Green and Kidd Lane is mainly residential on the northern side with the Welton Memorial Hall and Club. On the south side there is a stream and the village pond. Cowgate between Welton Road and the Cowgate cul-de-sac junction is grass verge and hedging.
- 5.6.3 On-street parking occurs throughout the day and night in the vicinity of the Memorial Hall and Club. This narrows the carriageway sufficiently so as not to be able to accommodate two-way traffic.

### Carriageway

- 5.6.4 The carriageway width varies between 6.1 metres at the eastern end and 8.5 metres at the western end.
- 5.6.5 The carriageway in general is in a good state of repair, except in the vicinity of the speed cushions. The carriageway markings are in a good state of repair except those markings associated with the speed cushions, which are mostly worn.
- 5.6.6 There are 'No Waiting at Any Time' restrictions from a point immediately east of the The Green junction westwards to a point west of the Cowgate cul-de-sac junction.

### Traffic Calming

- 5.6.7 There are six sites where physical speed cushions are located. Details and conditions of the physical speed cushions are as follows:

#### 5.6.7.1 Site 17

Located approximately 110 metres north of the Welton Road junction. The eastern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 45 mm and the western cushion measures 2.9 metres long by 2.2 metres wide with a maximum upstand of 135 mm and the gap between the two cushions is 1.3 metres. The gap between the eastern footway and the eastern cushion is 1.4 metres and the gap between the western footway and the western cushion is



1.5 metres. The kerb height of the western footway is 100 mm and the eastern footway is 125 mm.

February 2012 condition survey comments: [Replace eastern only plus patch to north side approach.](#)

October 2012 condition survey comments: [Replace both speed cushions plus patch to northbound approach.](#)

#### 5.6.7.2 Site 16

Located approximately 60 metres north of Site 17. The eastern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of 100 mm and the western cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 90 mm and the gap between the two cushions is 1.3 metres. The gap between the



eastern footway and the eastern cushion is 1.1 metres and the gap between the western footway and the western cushion is 1.1 metres. The kerb height of the western footway is 80 mm and the eastern footway is 90 mm.

February 2012 condition survey comments: [Replace eastern only.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.6.7.3 Site 15

Located approximately 70 metres north of Site 16. The southern cushion measures 3.1 metres long by 2.1 metres wide with a maximum upstand of 75 mm and the northern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 80 mm and the gap between the two cushions is 0.6 metres. The gap between the



southern footway and the southern cushion is 0.7 metres and the gap between the northern footway and the northern cushion is 0.8 metres. The

kerb height of the southern footway is 90 mm and the northern footway is 100 mm.

February 2012 condition survey comments: [Replace northern side only.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.6.7.4 Site 18

Located approximately 60 metres east of Site 15. The southern cushion measures 3.0 metres long by 2.1 metres wide with a maximum upstand of 115 mm and the northern cushion measures 3.1 metres long by 1.9 metres wide with a maximum upstand of 65 mm and the gap between the two cushions is 1.1 metres. The gap between the southern footway and the southern cushion is 1.2 metres and the gap between the northern footway and the northern cushion is 1.2 metres. The kerb height of the southern footway is 115 mm and the northern footway is 125 mm.



February 2012 condition survey comments: [Replace both.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.6.7.5 Site 19

Located approximately 50 metres east of Site 18. The southern cushion measures 3.0 metres long by 2.1 metres wide with a maximum upstand of 65 mm and the northern cushion measures 2.9 metres long by 2.0 metres wide with a maximum upstand of 115 mm and the gap between the two cushions is 0.7 metres. The gap between the southern footway and the southern cushion is 0.6 metres and the gap between the northern footway and the northern cushion is 0.7 metres. The kerb height of the southern footway is 120 mm and the northern footway is 75 mm.



February 2012 condition survey comments: [Replace both cushions.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### 5.6.7.6 **Site 20**

Located approximately 120 metres east of Site 19. The southern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 70 mm and the northern cushion measures 2.9 metres long by 2.1 metres wide with a maximum upstand of 85 mm and the gap between the two cushions is 0.9 metres. The gap between the southern footway and the southern cushion is 0.8 metres and the gap between the northern footway and the northern cushion is 0.8 metres. The kerb height of the southern footway is 70 mm and the northern footway is 75 mm.



February 2012 condition survey comments: [Replace northern only.](#)

October 2012 condition survey comments: [Replace both speed cushions.](#)

#### Vehicle speeds

- 5.6.8 Cowgate has a 20 mph speed limit which commences / terminates approximately 25 metres east of the Welton Road junction. The first 25 metres of Cowgate has a derestricted speed limit (60 mph). Immediately to the north of the Cowgate / Welton Road junction, Welton Road has a 40 mph speed limit. The speed limit through the junction is derestricted.
- 5.6.9 A vehicle-activated speed sign has recently been provided on the bend in the vicinity of the Cowgate cul-de-sac.
- 5.6.10 During the site visits between 13.00hrs and 14.10hrs a speed survey was undertaken in Cowgate, opposite the Memorial Hall. The 85 percentile speed was 27 mph (sample 100 vehicles) for eastbound vehicles and 25 mph (sample 26 vehicles) for westbound vehicles. The highest speed recorded was 36 mph (a car travelling eastbound).



### **Collisions and Casualties**

#### **5.6.11      1995 to 1999**

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming and the 20 mph speed limit, there were three recorded personal injury collisions along Cowgate. One was classified as serious and two were classified as slight.

Three casualties resulted from the three collisions. One casualty was classified as serious and two were classified as slight.

The serious collision occurred when a car stopped for ducks in the carriageway and was hit from behind by another car.

One of the slight collisions involved a 14 year old pedestrian standing in the carriageway and hit by a car. The other slight collision involved a parked vehicle being hit by a heavy goods vehicle.

#### **5.6.12      2000 to 2011**

During the period 2000 to 2011, there were three recorded personal injury collisions along Cowgate. One was classified as serious and two were classified as slight.

Three casualties resulted from the collisions. One casualty was classified as serious and two were classified as slight.

The serious collision involved a 14 year old cyclist who was hit by a heavy goods vehicle emerging at speed in front of the cyclist at the junction with Kidd Lane.

One of the slight collisions involved a 15 year old cyclist at the junction with the Cowgate cul-de-sac near Welton Road. The cyclist turned right into the cul-de-sac and hit a stationary vehicle waiting to emerge onto Cowgate.

The other slight collision involved a car entering the carriageway immediately south of the junction with The Green (The Green Dragon access), on the bend, in front of a motorcyclist.

#### **5.6.13      Other Collisions**

During the period 2005-2011 there were two recorded personal injury collisions at the Cowgate / Welton Road junction, resulting in two casualties, both classified as slight. Both collisions involved two vehicles.



## **5.7 Brookside**

- 5.7.1 Brookside is one-way southbound from the Cowgate / Dale Road / Kidd Lane / Chapel Hill / Parliament Street junction to Ladywell Gate and is approximately 75 metres long. The road is an unclassified urban all-purpose road.
- 5.7.2 Residents of Church Street are likely to use Brookside when entering the village from the west and from Brough.
- 5.7.3 Brookside is residential.

### **Carriageway**

- 5.7.4 The carriageway is narrow, approximately 3.5 metres to 5 metres wide along its entire length.
- 5.7.5 On-street parking occurs throughout the day and night which narrows the carriageway down to approximately 3.5 metres, making the passage of large vehicles difficult.
- 5.7.6 Generally the carriageway is in a good state of repair.

## **Collisions and Casualties**

### **5.7.7 1995 to 1999**

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming and the 20 mph speed limit, there were no recorded personal injury collisions along Brookside.

### **5.7.8 2000 to 2011**

During the period 2000 to 2011, there were no recorded personal injury collisions along Brookside.

## 5.8 **Parliament Street**

- 5.8.1 Parliament Street is one-way southbound from the Cowgate / Dale Road / Kidd Lane / Chapel Hill junction to the Ladywell Gate / Welton Old Road junction and is approximately 125 metres long. The road is an unclassified urban all-purpose road.
- 5.8.2 Any vehicle entering the village from the west along Cowgate has to travel along Parliament Street to access the eastern part of the village and Melton. There is one minor road junction and several private accesses off Parliament Street.
- 5.8.3 Parliament Street is residential.

### Carriageway

- 5.8.4 The carriageway is narrow, approximately 5.3 metres wide along its entire length.
- 5.8.5 On-street parking occurs throughout the day and night which narrows the carriageway down to approximately 3.5 metres, which makes the passage of large vehicles, particularly buses, difficult.
- 5.8.6 The carriageway is generally in a good state of repair.

### Traffic Calming

- 5.8.7 There are two sites where physical speed cushions are located. Details and conditions of the physical speed cushion are as follows:

#### 5.8.7.1 **Site 21**

Located approximately 60 metres north of Site 22, and 35 metres south of the Cowgate / Kidd Lane junction. The western cushion measures 3.1 metres long by 2.1 metres wide with a maximum upstand of 130 mm and the eastern cushion measures 3.1 metres long by 1.1 metres wide with a maximum upstand of 40 mm and the gap between the two cushions is 0.7 metres. The gap between the eastern footway and the eastern cushion is 0.7 metres and the gap between the western footway and the western cushion is 0.7 metres. The kerb height of the western footway is 125 mm and the eastern footway is 30 mm. There are two arrow markings on the cushions, incorrectly indicating two-way traffic.



February 2012 condition survey comments: [Replace full \(larger\) cushion only.](#)

October 2012 condition survey comments: Both speed cushions should be replaced.

#### 5.8.7.2 **Site 22**

Located approximately 60 metres south of Site 21, and 20 metres north of the Ladywell Gate / Welton Old Road junction. The western cushion measures 3.0 metres long by 2.0 metres wide with a maximum upstand of 105 mm and the eastern cushion measures 2.9 metres long by 1.2 metres wide with a maximum upstand of 35 mm and the gap between the two cushions is 0.8 metres.



The gap between the eastern footway and the eastern cushion is 0.5 metres and the gap between the western footway and the western cushion is 0.7 metres. The kerb height of the western footway is 30 mm and the eastern footway is 180 mm. There are two arrow markings on the cushions, incorrectly indicating two-way traffic.

February 2012 condition survey comments: Replace full (larger) hump only.

October 2012 condition survey comments: Both speed cushions should be replaced.

#### Vehicle speeds

5.8.8 Parliament Street has a 20 mph speed limit in force.

5.8.9 Observed speeds during the site visits appeared to be generally within the 20 mph speed limit.

#### Traffic Flow

5.8.10 During the site visits, morning, evening and off-peak traffic counts were undertaken at the Parliament Street / Welton Old Road / Ladywell Gate junction.

##### 5.8.10.1 Morning Peak Hour (08:00 – 09:00)

Results showed 389 vehicles travelling along Parliament Street with 379 vehicles turning left towards Welton Old Road and 10 vehicles turning right into Ladywell Gate.

5.8.10.2      Off-Peak Hour (11:00 – 12:00)

Results showed 107 vehicles travelling along Parliament Street with 105 vehicles turning left towards Welton Old Road and 2 vehicles turning right into Ladywell Gate.

5.8.10.3      Evening Peak Hour (17:00 – 18:00)

Results showed 224 vehicles travelling along Parliament Street with 218 vehicles turning left towards Welton Old Road and 6 vehicles turning right into Ladywell Gate.

**Collisions and Casualties**

5.8.11          1995 to 1999

During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming, there were no recorded personal injury collisions along Parliament Street.

5.8.12          2000 to 2011

During the period 2000 to 2011 inclusive, there were no recorded personal injury collisions along Parliament Street.

## 5.9 Chapel Hill

- 5.9.1 Chapel Hill is approximately 190 metres long. The road is a single track unclassified urban all-purpose road, with a footway on the south side only and grass verge on the north side. There are several private accesses to private curtilage parking and an access road into Humber View Stables.
- 5.9.2 Chapel Hill is residential on the south side with woodland and fields on the north side.

### Carriageway

- 5.9.3 The carriageway width is approximately 3.9 metres over most of its length from Holly Hill southwards and widens out significantly towards the Cowgate / Parliament Street junction.
- 5.9.4 The carriageway is in a poor state of repair. The northern side of the carriageway, adjacent to the verge towards the western end has failed completely leaving raised ironwork and concrete.
- 5.9.5 There are no waiting restrictions present along Chapel Hill.

### Traffic Calming

- 5.9.6 There are three sites where physical speed cushions are located. Details and conditions of the physical speed cushions are as follows:

#### 5.9.6.1 Site 23

Located approximately 100 metres east of Site 20 and approximately 35 metres northeast of the Parliament Street junction. There is a single speed cushion at this site, measuring 2.9 metres long by 2.1 metres wide with a maximum upstand of 75 mm. The gap between the southern footway and the cushion is 1.4 metres and the gap between the northern verge and the cushion is 1.5 metres. The kerb height of the southern footway is 90 mm.



February 2012 condition survey comments: [Not included in survey.](#)

October 2012 condition survey comments: [The cushion should be replaced.](#)

#### 5.9.6.2 **Site 24**

Located approximately 60 metres east of Site 23. There is a single speed cushion at this site, measuring 2.8 metres long by 2.1 metres wide with a maximum upstand of 95 mm. The gap between the southern footway and the cushion is 1.2 metres and the gap between the northern verge and the cushion is 1.2 metres. The kerb height of the southern footway is 100 mm.



February 2012 condition survey comments: [Not included in survey.](#)

October 2012 condition survey comments: [The cushion should be replaced.](#)

#### 5.9.6.3 **Site 25**

Located approximately 60 metres east of Site 24, and approximately 35 metres from the speed limit terminal sign at the Holly Hill junction. There is a single speed cushion at this site, measuring 2.9 metres long by 2.2 metres wide with a maximum upstand of 80 mm. The gap between the southern footway and the cushion is 0.8 metres and the gap between the northern verge and the cushion is 1.1 metres. The kerb height of the southern footway is 100 mm.



February 2012 condition survey comments: [Not included in survey.](#)

October 2012 condition survey comments: [The cushion should be replaced.](#)

#### Vehicle speeds

5.9.7 Chapel Hill is within a 20 mph speed limit.

5.9.8 Observed speeds during the site visits appeared to be within the 20 mph speed limit.

### Traffic Flow

- 5.9.9 Traffic flow is very low along Chapel Hill.

### **Collisions and Casualties**

#### 1995 to 1999

- 5.9.10 During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming, there were no recorded personal injury collisions along Parliament Street.

#### 2000 to 2011

- 5.9.11 During the period 2000 to 2011 inclusive, there were no recorded personal injury collisions along Parliament Street.

## **5.10 Holly Hill**

5.10.1 Holly Hill is approximately 225 metres long. The road is an unclassified urban all-purpose road. There are a number of private accesses to private curtilage parking.

5.10.2 Holly Hill is residential along its length.

### Carriageway

5.10.3 The carriageway width is between 4.8 metres and 5.2 metres over its length.

5.10.4 The carriageway is in a poor state of repair along its entire length.

5.10.5 There are no waiting restrictions present along Holly Hill.

### Traffic Calming

5.10.6 There are three sites where physical speed cushions are located. Details and conditions of the physical speed cushions are as follows:

#### **5.10.6.1 Site 26**

Located approximately 45 metres south of the Chapel Hill junction. There is a single speed cushion at this site, measuring 3.1 metres long by 2.1 metres wide with a maximum upstand of 70 mm. The gap between the western footway and the cushion is 1.5 metres and the gap between the eastern footway and the cushion is 1.6 metres. The kerb height of the western footway is 100 mm and the kerb height of the eastern footway is 110 mm.



February 2012 condition survey comments: [Not included in survey.](#)

October 2012 condition survey comments: [The cushion should be replaced.](#)



#### 5.10.6.2 **Site 27**

Located approximately 45 metres south of Site 26. There is a single speed cushion at this site, measuring 3.0 metres long by 2.2 metres wide with a maximum upstand of 100 mm. The gap between the eastern footway and the cushion is 1.3 metres and the gap between the western footway and the cushion is 1.3 metres. The kerb height of the western footway is 80 mm and the eastern footway is 100 mm.



February 2012 condition survey comments: [Not included in survey.](#)

October 2012 condition survey comments: [Carriageway markings need renewing.](#)

#### 5.10.6.3 **Site 28**

Located approximately 65 metres south of Site 27 and approximately 65 metres north of Welton Old Road junction. There is a single speed cushion at this site, measuring 2.9 metres long by 2.2 metres wide with a maximum upstand of 85 mm. The gap between the eastern footway and the cushion is 1.3 metres and the gap between the western footway and the cushion is 1.3 metres. The kerb height of the western footway is 60 mm and the eastern footway is 75 mm.



February 2012 condition survey comments: [Not included in survey.](#)

October 2012 condition survey comments: [The cushion should be replaced.](#)

#### Vehicle speeds

5.10.7 Holly Hill is within a 20 mph speed limit.

### Traffic Flow

5.10.8 Traffic flow is very low along Holly Hill.

### **Collisions and Casualties**

#### 1995 to 1999

5.10.9 During the period 1995 to 1999 inclusive, prior to the introduction of the traffic calming, there were no recorded personal injury collisions along Parliament Street.

#### 2000 to 2011

5.10.10 During the period 2000 to 2011 inclusive, there were no recorded personal injury collisions along Parliament Street.

## 6 COLLISION ANALYSIS

### 6.1 Collisions within the traffic-calmed and 20 mph speed limit areas

A summary of the before and after collisions, and casualties arising from those collisions are as follows:

#### 6.1.1 1995 – 1999 (5-years)

- 9 no. recorded personal injury collisions
- 6 no. wet road collisions
- 1 no. bus collision
- n/a attributed to speeding (Lack of collision detail)
- 4 no. dark collisions
  
- 3 no. serious casualties
- 15 no. slight casualties\*
- 3 no. vulnerable-user casualties (<16 years old, 1 cyclist / 2 peds)
- 1 no. cyclist casualties
- 4 no. pedestrian casualties
- 1 no. motorcyclist casualty

\*10 of the casualties resulted from 2 single-vehicle collisions (7 no. on a bus and 3 no. in a car, in which a serious casualty also resulted).

6.1.2 The length of carriageway within the traffic-calmed and 20 mph speed limit area is approximately 4.2 kilometres. This equates to 1.8 collisions per year and 2.2 casualties per year (excluding the bus collision). Consequently it can be seen that there is an accident rate and casualty rate from 1995 to 1999 of 0.43 and 0.52 per km/year respectively.

6.1.3 It is important to note that 67% of the recorded collisions occurred on a wet or icy road surface; (compared to approximately 17% of recorded collisions in Greater London). This is likely to suggest that the state of the carriageway surface may have been a factor in some of the collisions;

#### 6.1.4 2000 – 2011 (12-years)

- 10 no. recorded personal injury collisions
- 4 no. wet road collisions
- 2 no. bus collisions (1 bus and 1 mini-bus)
- 1 no. attributed to speeding (a cyclist)
- 0 no. dark collisions
  
- 1 no. serious casualty
- 9 no. slight casualties
- 7 no. vulnerable-user casualties (<16 years old, 5 cyclists / 2 peds)
- 5 no. cyclist casualties
- 2 no. pedestrian casualties
- 1 no. motorcyclist casualty

- 6.1.5 This equates to 1.2 collisions and casualties per year. Consequently it can be seen that there is an accident rate and casualty rate from 2000 to 2011 of 0.29 per km/year.
- 6.1.6 It is important to note that 70% of the recorded casualties were vulnerable road users, all of which were aged 16 years old or less (5 no. cyclists and 2 no. pedestrians); (compared to approximately 9% of recorded collisions in Greater London).
- 6.1.7 The existing traffic calming and 20 mph speed area were introduced to address the 'poor' road traffic accident record in Welton and Melton. Analysis of the 'before' collisions (occurring between 1995 and 1999) suggest that, had the existing traffic calming been in place during that period, it might have prevented only one collision.

## **6.2 Collisions outside of the traffic-calmed area and the 20 mph speed limit area**

### **6.2.1 Dale Road**

#### 1995 to 1999

During the period 1995 to 1999 inclusive, there were no recorded personal injury collisions along Dale Road.

#### 2000 to 2011

During the period 2000 to 2011 inclusive, there have been two recorded personal injury collisions along Dale Road, resulting in two casualties, both of which were classified as slight.

### **6.2.2 Melton Old Road**

#### 1995 to 1999

During the period 1995 to 1999 inclusive, there were no recorded personal injury collisions along Melton Old Road.

#### 2000 to 2011

During the period 2000 to 2011 inclusive, there have been two recorded personal injury collisions along Melton Old Road, resulting in two casualties, both of which were classified as slight. One of the collisions involved a 15 year old cyclist.

### 6.2.3 **Melton Bottom**

#### 1995 to 1999

During the period 1995 to 1999 inclusive, there was one recorded personal injury collision along Melton Bottom between South Lawn Road and East Dale Road / Melton Old Road traffic-signalised junction, resulting in two casualties, one classified as a serious injury and the other as a slight injury.

#### 2000 to 2011

During the period 2000 to 2011 inclusive, there were no recorded personal injury collisions along Melton Bottom.

### 6.2.4 **Kidd Lane**

#### 1995 to 1999

During the period 1995 to 1999 inclusive, there was one recorded personal injury collision along Kidd Lane, resulting in one slight casualty and involving a horse.

#### 2000 to 2011

During the period 2000 to 2011 inclusive, there were no recorded personal injury collisions along Kidd Lane.

### 6.2.5 **Gibson Lane North**

#### 1995 to 1999

During the period 1995 to 1999 inclusive, there was one recorded personal injury collision along Gibson Lane North, resulting in one slight casualty.

#### 2000 to 2011

During the period 2000 to 2011 inclusive, there were no recorded personal injury collisions along Gibson Lane North.

## 7 IDENTIFIED ISSUES IN TRAFFIC-CALMED AND 20 MPH SPEED LIMIT AREAS

7.1 There are a number of identified issues in the traffic-calmed and 20 mph speed limit areas, mainly relating to road safety, and these concerns are detailed below.

7.1.1 **Summary:** *Poor condition of speed cushions.*

Of the 43 speed cushions inspected in February 2012, 26 were recommended for replacement. The October 2012 survey undertaken as part of this report recommends 41 of the 49 speed cushions should be replaced based on their condition.

7.1.2 **Summary:** *Excessive spacings between speed cushions.*

The spacing between some of the speed cushions is excessive, particularly along lengths of road where 'pseudo' cushions have been used, and where greater than 60-70 metres will result in vehicles speeding up in-between the features and consequently more noise due to accelerating and braking.

7.1.3 **Summary:** *Poor lane discipline.*

A number of vehicles were seen being driven down the centre of the carriageway either straddling the centre line marking or the central hatch marking. This could result in potential head-on collisions.

7.1.4 **Summary:** *Difficulties caused by parking.*

Although the speed cushions were likely to originally have been chosen to accommodate bus services, kerbside parking results in buses having to pass over the speed cushions at awkward angles, which is likely to be causing unnecessary discomfort to passengers and drivers. Similarly other vehicles are forced to pass over or in-between the cushions rather than having the option to straddle them.

7.1.5 **Summary:** *Inappropriate overtaking manoeuvres.*

One instance of a vehicle passing slowly over a speed cushion being overtaken by a faster vehicle was observed during the site visits. Apparently this is not an uncommon occurrence.

7.1.6 **Summary:** *Poor location of speed cushion.*

To straddle the speed cushion in Ladywell Gate one has to enter the designated parking bay, which could result in conflicts with parked vehicles. Generally drivers pass to the southern side and many can avoid any vertical deflection from the speed cushion.

**7.1.7 Summary:** Drivers manoeuvring to avoid speed cushions endanger other road users.

Drivers who avoid, or try to avoid, passing over the speed cushions are putting other road users at risk as they swerve to avoid the cushions or travel along the centre of the carriageway. One instance of this which was reported by a resident during a site visit was caused by such a vehicle hitting him as he emerged from his parked car. (NOTE: This incident is not on the Council's collision database.)

**7.1.8 Summary:** Inconsistent warning of speed cushions.

'SLOW' carriageway markings are provided inconsistently on the approach to speed cushions. Inconsistent or lack of warning at some of the speed cushion sites could result in vehicles approaching the cushions at inappropriate speeds particularly during hours of darkness.

**7.1.9 Summary:** Lack of pedestrian crossing facilities.

There is a lack of controlled pedestrian crossing facilities, particularly in the vicinity of the school for the use of students. Students are crossing East Dale Road at all times of the day and are at risk of conflicts with vehicles. At the start and end of the school day students cross in-between slow-moving or stationary vehicles, putting themselves at greater risk of conflicts. Furthermore, the Melton Old Road / Melton Bottom traffic-signalised junction does not incorporate a pedestrian stage and students cross in-between stages with insufficient intergreen time to perform the manoeuvre safely.

**7.1.10 Summary:** Obstructions at side of carriageway.

Drivers trying to avoid the speed cushions in Chapel Hill are at risk of hitting a protruding drainage gully and a concrete slab. This could result in a serious hazard for riders of two-wheeled vehicles and could result in damage to vehicle tyres.

**7.1.11 Summary:** Potential for conflicts with a wall.

Some drivers travelling along Church Street were observed to pass to the north of the easternmost speed cushions to avoid passing over them. There is potential for drivers to enter the open drainage, and hit / collide with the Church boundary stone wall.

**7.1.12 Summary:** Confusing 20 mph Speed Limit / Zone signing.

A 20 mph speed limit is signed on entry to the village but a 20 mph Zone is signed on exit. These are quite different types of statutory orders and cannot be mixed within the same area. Additionally if the 20 mph is a speed limit and not a Zone then 20 mph repeater signs must be provided. The existing speed limit could therefore be potentially unenforceable.

**7.1.13 Summary:** Poor conspicuity of speed cushion warning signs.

A 'Humps for ¾ mile' warning sign is provided in East Dale Rd immediately west of the Melton Bottom / Melton Old Road traffic-signalised junction. The sign is obscured by tree branches and foliage which could result in some drivers unfamiliar with the road travelling at inappropriate speeds on the approach to the speed cushions.

**7.1.14 Summary:** Poor conspicuity of terminal signs.

The conspicuity of the existing terminal speed limit signing in Welton Old Road immediately west of Holly Hill is poor, with only one of the four signs clearly visible to drivers entering or leaving the 20 mph speed limit area.

**7.1.15 Summary:** Plethora of signs reduces impact of entry signing.

There are a number of signs visible to drivers as they enter Cowgate from Welton Road (3 no. flag direction signs; 2 No. 7.5T – Except for loading'; 1 no. Welton village sign and 2 no. 20 mph 'SLOW' signs). There are also some 10 other signs visible to drivers at the junction when travelling from Brough, including two de-restriction speed limit signs. Such a large number of signs is likely to detract from the impact of the 20 mph speed limit signs. Additionally, a vehicle is still turning at the point where it passes the '20' speed limit signs.

**7.1.16 Summary:** Poorly located advisory sign.

The vehicle-activated sign (VAS) in Cowgate, opposite the Cowgate cul-de-sac junction, is poorly located and is not clearly visible to approaching drivers being located on the apex of a 90 degree bend, it is outside of their sight lines.

**7.1.17 Summary:** Poor visibility to speed limit signing.

Drivers in Kidd Lane approaching the Cowgate junction are unable to see the 20 mph speed limit sign. Although there is a '20' roundel carriageway marking provided this is in close proximity to the 'Give Way' triangle marking and both are worn. This could result in drivers entering the area unaware of the presence of traffic calming features.

**7.1.18 Summary:** Reduced visibility.

One of the two 'The Green Dragon' advertising boards is located in the visibility splay for drivers emerging from The Green. This restricts visibility to and from drivers, particularly those turning right from The Green.

**7.1.19 Summary:** Potential for turning conflicts.

The majority of drivers turning left from The Green into Cowgate do so without stopping, and cross to the opposite carriageway whilst performing the manoeuvre with potential for head-on conflicts.



7.1.20 **Summary:** Potential for turning conflicts.

The 'Give Way' markings for the right turn from The Green into Creyke Lane are worn due to overrunning of the markings by numerous vehicles turning right from Church Street into The Green. Additionally, with drivers 'cutting' the corner there is potential for head-on conflicts with vehicles waiting to turn right into Creyke Lane.

7.1.21 **Summary:** Hazards for cyclists.

A number of cyclists many of whom cycle to South Hunsley School were observed along East Dale Road and Welton Old Road. Many of the student cyclists ride along the footway, with potential for conflicts with pedestrians. Others who use the carriageway have to negotiate large numbers of parked vehicles and pass through the gap between the cushions in the centre of the carriageway, rather than the gaps between the kerb and the cushions. This puts cyclists at high risk of being in conflict with other vehicles.

7.1.22 **Summary:** Foliage overhanging carriageway.

Tree branches overhanging the carriageway on the north side of Cowgate in the immediate vicinity of The Green force high-sided vehicles to pull away from the kerb line with potential for conflicts with vehicles turning left from The Green.

7.1.23 **Summary:** No illumination provided to some signs.

A number of regulatory and warning signs which due to the presence of street lighting should be provided with illumination during the hours of darkness, have not been. These signs therefore fail to conform to the Government's Statutory Instrument 'Traffic Signs Regulations and General Directions' (TSRGD) and technically are not permitted on the highway unless approved for use without lighting by the Secretary of State. The following signs have been observed, at the stated locations, without illumination:

- i) 'Humps to the left for 240yds and straight on for 175yds' warning signs in Crossall Lane immediately north of Holly Hill;
- ii) 'Humps for ¾ mile' warning sign in trees in East Dale Rd, westbound approach. (NOTE: Sign has been illuminated in the past);
- iii) 'Give Way' regulatory sign in Lowfield Lane at the junction of East Dale Road;
- iv) 'Pedestrians in carriageway' warning sign in Lowfield Lane at the junction of East Dale Road;
- v) 'One-way traffic' regulatory sign at the Brookside / Cowgate junction;
- vi) 'One-way traffic' regulatory sign at the Parliament Street / Chapel Hill / Cowgate junction;

- vii) 'Two-way traffic' warning sign at Parliament Street / Ladywell Gate junction;
- viii) 'One-way traffic' regulatory sign for drivers turning from Raikes Court into Parliament Street;
- ix) 'Two-way traffic' warning sign at Church Street / The Green junction;
- x) 'Elderly people crossing' warning sign, on west side of Cowgate, north of Welton Road;
- xi) 'Elderly people crossing' warning sign, on east side of Cowgate, south of Ingmires;
- xii) 'Bend to right' warning sign, east of Park Road, for westbound drivers;
- xiii) 'One-way traffic' regulatory sign for Ladywell Gate at the Parliament Street junction;
- xiv) 'Humps for  $\frac{3}{4}$  mile' warning sign in Melton Bottom immediately after the primary traffic signal head for the junction. (NOTE: Sign has been illuminated in the past).

## 7.2 **OTHER ISSUES**

Other issues identified in the traffic-calmed and 20 mph speed limit areas are as follows:

- 7.2.1 The 'Give Way' carriageway markings over Chapel Hill at the junction with Cowgate are worn.
- 7.2.2 In Parliament Street the southernmost chevron markings on each of the four speed cushions are misleading, implying that vehicles can travel in both directions over them which is not the case as Parliament Street is one-way.
- 7.2.3 In Ladywell Gate the northernmost chevron marking on the speed cushions is misleading, implying vehicles can travel over it in both directions which is not the case as Ladywell Gate is one-way.
- 7.2.4 The 'Give Way' carriageway markings over Brookside at the Church Street junction are worn.
- 7.2.5 The 'Give Way' sign in Lowfield lane at the junction with East Dale Road is poorly located.
- 7.2.6 Advance direction type signs are incorrectly provided in East Dale Road on the westbound approach to the Lowfield Lane junction. The signs should be of the chevron type or relocated farther back from the junction.
- 7.2.7 The 'Keep Right' bollard in Church Street protecting the kerb build-out did not appear to illuminate during the hours of darkness.

- 7.2.8 Immediately west of speed cushion site No. 19 (in Cowgate outside the Memorial Club) the carriageway around the manhole cover has failed.
- 7.2.9 There is a superfluous 'Humps to the Right' warning sign in Park Road on the approach to the Welton Old Road junction.
- 7.2.10 In Crossall Hill Lane immediately north of the Holly Hill junction there is a 'Hump' warning sign which is masked by tree foliage, and which has two distance plates, both of which appear to be incorrect.
- 7.2.11 There is a superfluous '20' speed limit terminal sign opposite Holly Hill.
- 7.2.12 The previous, narrower central hatch markings, are still visible at some locations along East Dale Road and Welton Old Road.
- 7.2.13 There is only one 'One-way street' regulatory sign as drivers enter Brookside. TSRGD requires two such signs to be provided on entry to a one-way street. Additionally the sign in its present location is confusing as it is not clear to non-local drivers whether the sign relates to Brookside or to Cowgate.
- 7.2.14 The layout of the Cowgate / Kidd Lane / Chapel Hill / Dale Lane junction is very poor, with poor definition particularly during the hours of darkness.
- 7.2.15 The Lowfield Lane junction has a large area of carriageway and makes a wide crossing point for students travelling by foot or cycle. Additionally the 'dropped' kerbs at the pedestrian crossing points are too high and form a trip hazard to visually and mobility impaired pedestrians and a hazard for wheelchairs, mobility scooter users and parents with buggies. There is also there is evidence that large vehicles 'u'-turn within the bell-mouth.
- 7.2.16 There is only one 'One-way street' regulatory sign as drivers enter Parliament Street. TSRGD requires two such signs to be provided on entry to a one-way street.
- 7.2.17 There is only one 'One-way street' regulatory sign as drivers enter Ladywell Gate. TSRGD requires two such signs to be provided on entry to a one-way street.
- 7.2.18 The red reflector on the posts visible to drivers in Brookside around the bend should be white as they are on the drivers' offside.
- 7.2.19 The red reflector on the post visible to drivers in Parliament Street approaching the Ladywell Gate junction should be white as it is on the drivers' offside.
- 7.2.20 The 'School' sign on the eastbound approach to the South Hunsley School is masked by tree branches.
- 7.2.21 There is a 'rocking' manhole cover in Ladywell Gate, at the right turning lane from Parliament Street, which is a hazard to riders of two-wheeled vehicles and likely to be a noise nuisance to adjacent residents.
- 7.2.22 The 'Welton' village sign immediately west of Lowfield Lane is partially masked by posts holding another sign.

- 7.2.23 The nearside 'Derestricted speed limit' terminal sign is partially obscured by vegetation, and also partially obscures the 'Give Way' regulatory sign at the Cowgate / Welton Road junction.
- 7.2.24 The standard type of 'No Entry' signs provided at the South Hunsley school exit road are not permitted as this appears not to be public highway. The correct signs should be 'No Entry', white legend on a blue background, similar to those used on the entry access road.
- 7.2.25 The VAS in Cowgate has been attached to a street lighting column, which are not normally designed to accommodate additional weight.
- 7.2.26 There is poor carriageway and carriageway marking alignment along Cowgate over The Green junction.
- 7.2.27 Tree branches overhanging the northern footway in Welton Old Road, immediately west of Lowfield Lane, are a hazard to pedestrians.

## 8 OTHER IDENTIFIED ISSUES

There are a number of issues in areas outside of the traffic-calmed and 20 mph speed limit areas, as follows:

- 8.1 Parking in East Dale Road near the Melton Bottom / Melton Old Road traffic-signalised junction during the daytime, and particularly at the end of the school day, causes congestion through the junction. Intervisibility for drivers turning right from Melton Bottom to vehicles held up in East Dale Road is poor and there is potential for shunt-type conflicts.
- 8.2 The carriageway is failing on the eastern kerb line at the easternmost school access road where local carriageway widening has been undertaken.
- 8.3 The carriageway at the Dale Road East / Melton Old Road / Melton Bottom traffic-signalised junction is in a poor state of repair and is hazardous, particularly to riders of two-wheeled vehicles turning left into Melton Bottom.
- 8.4 It appears that street lighting has recently been introduced in Melton Bottom between the South Lawn Way junction and the Dale Road East / Melton Old Road / Melton Bottom traffic-signalised junction. Prior to that, the 30 mph speed limit was indicated with '30' repeater signs. Now that a system of street lighting has been introduced the presence of repeater signs is not permitted.
- 8.5 The primary traffic signal head in Melton Bottom at the traffic-signalised junction is partially hidden by vegetation.
- 8.6 The advance 'Give Way 60 yds' warning sign in Kidd Lane on the approach to Cowgate is partially obscured by vegetation.
- 8.7 The 'Give Way' regulatory sign in Kidd Lane at the Cowgate junction is hidden by a wall.
- 8.8 The 'Give Way', '20' roundel and centre line markings in Kidd Lane at the Cowgate / Dale Road junction are worn.
- 8.9 The layout of the Cowgate / Welton Road / A63 junction is very poor, particularly for vehicles leaving the A63 which may immediately encounter potential queuing for Cowgate. The speed limit through the junction is derestricted (60 mph) and reduces to 40 mph immediately north of the Cowgate junction. The large-radius kerb line on the northern side of Cowgate allows drivers to enter Cowgate at speed.

## 9 ALTERNATIVE TYPES OF TRAFFIC CALMING

This section discusses the existing traffic calming provision and the alternative options, with approximate costs, to those presently used.

### 9.1 Existing provision

#### 9.1.1 20 mph Speed Limit

A 20 mph speed limit is indicated by entry signs to the area subject to the limit, with a number of smaller repeater signs provided at appropriate intervals along all streets covered by the speed limit. The 20 mph speed limit can be introduced without the need for additional traffic calming where traffic speeds are already restricted by natural constraints, (i.e. the layout and alignment of the road). Repeater signs must be provided to prevent confusion with 30 mph speed limits imposed by the presence of street lighting. A Traffic Regulation Order (TRO) is required to give effect to the limit. However the absence of additional traffic calming reduces the self-enforcement effects of the calming features and relies on enforcement by the Police.



Cost = £8,000 (signing only)

#### 9.1.2 20 mph Zone

A 20 mph Zone has signs at the entry points together with suitable traffic calming measures to provide a self-enforcing element by reducing the speed of most traffic to average speeds of 20 mph throughout the Zone.



Cost = £10,000 (excludes traffic calming features)

#### 9.1.3 Speed cushions

Vertical deflections are the most effective and reliable traffic-calming feature, although road humps are more effective than speed cushions. Speed cushions restrict car speeds but are less effective for reducing speeds of vehicles with wider wheel tracks or two-wheeled vehicles.



Cost = £500 (per cushion)

#### 9.1.4 Pseudo traffic calming features

Pseudo traffic calming features are simply carriageway markings which are laid and coloured as though they were a speed cushion, road hump, speed table etc. Can reduce speeds of drivers, particularly those unfamiliar with a particular site.

Cost = £100 per 'feature'

#### 9.1.5 Vehicle-Activated Signs

Vehicle-activated speed signs can be used to remind drivers of the speed limit. A simple legend such as '30' can be displayed if a threshold speed is contravened or a more complicated sign giving individual vehicle speeds and 'SLOW DOWN' if above the threshold speed, or 'THANK YOU' if driving below the threshold speed. These signs are simple, clear and easy to understand.

Cost = £7,000 (per sign)



### 9.2 Alternative provision

#### 9.2.1 Sinusoidal Road Humps

Vertical deflections are the most effective and reliable traffic-calming feature, although road humps are more effective than speed cushions. Sinusoidal humps are effective in slowing down cars and cause less discomfort to cyclists

Cost = £3,000 (per hump)



#### 9.2.2 Vehicle-Activated Signs outside Schools

Signs display a 20 mph limit and the words 'school Zone' at times when children are travelling to and from school. They may show the speed a vehicle is travelling, thanking those who are travelling within the speed limit (20 mph during school travelling times, 30 mph at all other times), and ask those exceeding the limit to slow down.

The speed signs act as a visual reminder to drivers that they need to slow down and keep to the speed limit. The signs reflect the different speed limits throughout the day and warn motorists of the 20 mph limit when school is starting or finishing, and then a 30 mph at all other times.

Cost = £10,000 (per sign)



### 9.2.3 Flashing School Signs

The traditional 'School' signs are complemented with flashing warning lights. Usually the flashing amber lights would be operated automatically and activated some 30 minutes before the school start time and de-activated 15 minutes after the school start time, and in the afternoons activated 15 minutes before the school end time and de-activated 30 minutes after the school end time.



Cost = £2,000 (per sign)

### 9.2.4 Trial period of removing existing speed cushions

This could be undertaken and speeds then monitored to see what change, if any, occurs. There is an obvious cost of either putting them back or replacing with an alternative, if speeds were seen to rise significantly. Normally if a Local Authority has introduced traffic calming features to reduce the number of collisions occurring they would not wish to remove such features without the provision of a suitable alternative to maintain low speeds as this could result in legal action were a collision to occur after the removal of a feature.

Cost = £250 (per cushion removed)

### 9.2.5 Gateways

Identified by road markings, build outs, coloured surfacing and / or signs indicating that the driver is entering an area where road conditions change, for example entering an urban area or a change of speed limit. They are most effective on those drivers who only use the road occasionally.



Cost = £5,000 (signing and carriageway markings).



#### 9.2.6 Speed tables (plateaus)

Speed tables can reduce all vehicle speeds and, if associated with build-outs to narrow down the carriageway, can also be utilised by pedestrians and cyclists as an uncontrolled crossing point. If used on a bus route they should be appropriately designed to minimise discomfort to bus drivers and passengers.



Cost = £7,500 - £10,000

#### 9.2.7 Alternate narrowing (chicanes) and central islands

Chicanes and central islands require relatively long lengths of road in order to be effective. Provision would require narrowing of the carriageway, followed by a long central island. The width of the running-lane past the islands can also be reduced, although this is not ideal for cyclists. Long lengths of reduced carriageway widths for the provision of central islands can be problematic should a breakdown occur. Chicanes on their own can be effective at reducing vehicle speeds, but if required to accommodate long vehicles, speeds of smaller vehicles may not necessarily be affected.

Cost = £10,000 (per chicane including build-outs)  
£1,000 (per island)

#### 9.2.8 Road narrowings (shuttle-working)

Shuttle-working allows one direction of traffic through at any one time. Effective at reducing speeds if the road has similar traffic flows in each direction. Provision of a speed cushion further reduces speeds of smaller vehicles, and the provision of a speed table reduces all vehicle speeds even when traffic flows are not similar.



Cost = £10,000

### 9.2.9 **Carriageway markings**

Carriageway markings such as hatching, '30' roundels; 'SLOW' laid on a red-coloured surface can have a speed-reducing effect.

Cost = Low cost (Roundel = £100, 'SLOW' on coloured surface = £500)

### 9.2.10 **Speed cameras**

There are generally strict criteria on the use of fixed safety cameras at sites where there is a known personal-injury collision problem. They are effective at reducing speeds in the vicinity of the camera.

Cost = £30,000 - £50,000

### 9.2.11 **Community Speed Watch**

A typical scheme would be as follows:

Volunteers wear high-visibility vests and use a speed gun to measure vehicle speeds. Information concerning speeding vehicles is passed to the Police. The first time a driver is caught breaking the limit they will be sent a warning letter. If they are caught again they will be sent a final warning letter and their details will be passed to officers for further action. Extreme cases will be acted on immediately. The initiative gives Parish / Town Councils and residents the opportunity to play an active role in tackling the issue by working alongside their local officers and also helps to raise awareness locally.



Cost = Free - £150

### 9.2.12 **Refuges / Central islands**

Narrowing lanes, use of traffic islands and / or road markings can give the impression of a more confined carriageway width and result in reduced speeds.

Cost = £5,000 - £8,000

### 9.3 **Traffic Regulation Order (TRO) Process**

- 9.3.1 A TRO is the legal instrument by which traffic authorities implement most traffic management controls on their roads. Under the provisions of the Road Traffic Regulation Act 1984, local authorities can implement TROs, designed to regulate, restrict or prohibit the use of a road or any part of the width of a road by vehicular traffic or pedestrians on the roads for which they are responsible. A TRO may take effect at all times or during specified periods, and certain classes of traffic may be exempted.

Cost = £1,500 (excluding any works)

## 10 DISCUSSION

### 10.1 Identified Issues

10.1.1 There are a number of important issues which have been identified and should be addressed within Welton and Melton as follows:

- i) The legal standing of the 20 mph speed limit / Zone;
- ii) The existing traffic calming provision is damaging to both vehicles and residents;
- iii) High incidence of collisions involving young vulnerable road users;
- iv) Challenge to the sustainability and integrity of the Welton Conservation Area;
- v) Access requirements for South Hunsley School and Sixth Form College;
- vi) Apparent 'rat running' to avoid the A63 / A164;
- vii) Future development in the area.

10.1.2 Minutes from previous EYRC meetings suggest that a 20 mph speed limit was introduced through Welton Village in 2001. The existing terminal speed limit signing is confusing as there are conflicting 20 mph signs on entry and exit from the 20 mph speed 'limit' area. 20 mph area speed limit signs are provided on entry to the area (although the addition of the word 'SLOW' which has been used is not permitted (and therefore technically illegal)), but on exit from the area 20 mph Zone signs are provided on exit. The lack of 20 mph speed limit repeater signs suggests the area is a 20 mph Zone. It is important to clarify what TRO has been introduced, and provide the correct signing as a matter of urgency.

The Department for Transport (DfT) encourages Local Highway Authorities to introduce 20 mph Zones or limits into streets which while these are not part of any major through route are primarily residential in nature, with high pedestrian and cycle movements, such as around schools, shops, markets, playgrounds and other areas;. They also make it clear that highway authorities have flexibility in the use of 20 mph Zones and limits, and should apply the option best suited to the local circumstances, and which brings most benefits in terms of casualty reductions and wider community benefits.

Evidence nationally has shown that signed-only 20 mph speed limits (i.e. no physical speed-reducing features) can help to reduce average speeds and improve safety.

- 10.1.3 Although the general design of the speed cushions is good and in line with best practice, a cross-section of the carriageway reveals a pronounced 'crown' (along the centreline of the carriageway) which a number of the sites have, with the road sloping towards the kerb lines producing high upstands well above the Department for Transport 75 mm recommended maximum. It is these cushions which are likely to be resulting in vehicle damage to smaller vehicles.

The existing 'pseudo' cushions are not effective at reducing speed on routes used by regular users. Their presence therefore makes the distances in-between physical features greater and is therefore detrimental at maintaining low constant vehicle speeds.

Vehicle parking which forces through traffic to pass obliquely over cushions is damaging to vehicles and causes additional discomfort to drivers and passengers.

Eighteen of the existing speed cushions have upstands of more than 100 mm. Un-laden ground clearance heights shown below illustrate how susceptible some vehicles are to speed cushions with excessive upstands. When laden the clearance heights shown can be reduced by some 30%.

• Volkswagen Golf	127 mm;	(e.g. -30% = 89 mm)
• Renault Clio	120 mm;	(e.g. -30% = 84 mm)
• Vauxhall Corsa	131 mm;	(e.g. -30% = 92 mm)
• Volkswagen Bug	120 mm;	(e.g. -30% = 84 mm)
• Mini	125 mm;	(e.g. -30% = 88 mm)
• Lotus Evora	125 mm;	(e.g. -30% = 88 mm)
• Range Rover	281 mm.	(e.g. -30% = 197 mm)

Many vehicle types (including heavy goods vehicles, buses, mini-buses, some transit vans, motorcyclists and cyclists) are not affected by the existing traffic calming provision. The highest vehicle speed registered during the speed surveys carried out for this report was 63 mph in Welton Old Road by a young motorcyclist in the vicinity of the School, travelling along the centre of the carriageway and easily avoiding the cushions. Similarly other smaller vehicles can travel along the centre of the carriageway to avoid the cushions during periods of low traffic flow.

Residents, who regularly traverse the area, are also affected by the excessive number of speed cushions which they are unable to avoid, which, even at low speeds, can exacerbate certain health problems (i.e. bad backs, arthritis etc).

- 10.1.4 Between 2000 and 2011 **70%** of the recorded casualties were vulnerable road users, all of which were aged 16 years old or less. The lack of any controlled crossing points and few cycle facilities in an area where there is a significant demand needs to be addressed to reduce vulnerable road users casualties;

- 10.1.5 A large area of Welton village is designated a Conservation Area, and the presence of speed cushions is a visual intrusion and impacts on the aesthetic look of the village. The nature of the roads within the village centre is such that they ought not to need speed-reducing features provided that a 20 mph speed limit is correctly signed with repeater signs.
- 10.1.6 There are a number of issues relating to the lack of pedestrian and cycle provision for the 2000+ students of South Hunsley School and Sixth Form College. Students, particularly from the Sixth Form College, travel to and from the School and cross East Dale Road at various times of the day, due to the timings of their study periods which do not necessarily coincide with the start and end of a normal school day. It is therefore advisable that any traffic calming provision or speed limit should accommodate these pedestrian and cycle movements.
- 10.1.7 The apparent 'rat-running' through Welton and Melton is likely to be significantly reduced if a more appropriate speed limit and more appropriate speed-reducing features, which restrict speeds of all vehicles, are introduced. Additionally drivers accessing the school from the west of Welton, particularly from Brough, may be deterred by these methods from using their existing route, and may instead use the A63 / South Lawn Way / Melton Bottom.
- 10.1.8 Future development is proposed in the area, with two potential sites in Welton and Melton, and in Brough. These will generate additional traffic and are likely to increase 'rat-running' and school trips. Again appropriate measures, are also likely to divert traffic onto the more suitable alternative A63 route.

## **11 CONCLUSIONS AND RECOMMENDATIONS**

### **11.1 CONCLUSIONS**

11.1.1 There is sufficient national information which supports the effectiveness of speed and casualty reduction by the introduction of traffic calming and 20 mph speed limits / Zones. It is likely that the removal of all the traffic calming along the route is likely to see an increase in vehicle speeds with potential for an increase in the number and severity of collisions and casualties.

11.1.2 The need to carry out significant maintenance to the existing traffic calming provision gives the ideal opportunity to provide improved speed-reducing features which restrict speeds of all vehicle types yet reduce damage to vehicles and driver / passenger discomfort, for a cost comparable to that of the necessary maintenance required. The locations of many of the suggested features can be located at existing sites which further reduces costs.

11.1.3 As discussed in the last Section, any area-wide modification to the traffic calming scheme needs to address the following issues:

- i) The damaging effect to both vehicles and individuals, particularly residents;
- ii) The access requirements for South Hunsley School and Sixth Form College;
- iii) The apparent 'rat running' to avoid the A63 / A164;
- iv) The sustainability and integrity of the Welton Conservation Area;
- v) Collisions involving vulnerable road users;

The above issues are taken into account in the following recommendations.

### **11.2 RECOMMENDATIONS**

The following scheme is suggested for initial consultation with EYRC to ensure they support the proposals prior to consultation with the local residents, businesses and schools.

#### **11.2.1 Existing Speed Limit / Zone**

- i) The exact nature of the 20 mph speed limit or Zone should be determined.
- ii) A 20 mph speed limit should be maintained / adopted to cover a smaller area than at present by;

- a) Providing 20 mph / 30 mph speed limit terminal signs on Welton Old Road at a point immediately east of Park Road all of which should be clearly visible to approaching drivers;
- b) Providing 20 mph / 30 mph speed limit terminal signs in Cowgate further eastwards from the Welton Road junction, but prior to the bend, located so that they do not conflict with other important signs at the junction;
- c) Relocating the existing VAS so that it is operating on a straight approach so that drivers can clearly see it;
- d) Providing 20 mph / 30 mph speed limit terminal signs in Chapel Hill at a point adjacent to the existing speed cushion (Site 23), all of which should be clearly visible to approaching drivers;
- e) Relocating the existing signing in Kidd Lane and providing additional signs, so that they are clearly visible to approaching drivers;
- f) Reverting to a 30 mph speed limit in Holly Hill and Chapel Hill;
- g) Providing 20 mph speed limit repeater signs on all roads within the 20 mph speed limit area at appropriate intervals, to comply with regulations;
- h) Providing a 40 mph speed limit in Welton Road between the 20 mph / 30 mph speed limit terminal signs and Welton Road including the junction, and extending the 40 mph speed limit in Welton Road back to immediately southwest of the Welton Road / Cowgate junction (in consultation with the Highways Agency responsible for the A63);
- i) Providing correct and prescribed signs in support of the required Traffic Regulation Order for the above. If non-prescribed signs are deemed appropriate (as per the existing signs), approval should be sought from the Secretary of State for their use.



### 11.2.2 **Existing Traffic Calming**

- i) The existing speed cushions within the suggested re-defined 20 mph speed limit area should be removed and speed monitoring undertaken;
- ii) The existing speed cushions within Holly Hill and Chapel Hill should be removed.

### 11.2.3 **Suggested 20 mph Zone and Associated Traffic Calming**

A 20 mph Zone could be established along Welton Old Road and East Dale Road as follows:

- i) Exit from the 20 mph speed limit in Welton Old Road from Welton village centre would be directly into the 20 mph Zone and continue for the whole length of East Dale Road terminating immediately west of the Melton Bottom / Melton Old Road traffic-signalised junction;
- ii) Provide appropriately designed sinusoidal road humps at intervals not exceeding 70 metres, to replace the existing speed cushion provision in Welton Old Road and East Dale Road;
- iii) Provide a junction speed 'plateau' at the Welton Old Road / Ladywell Gate / Park Road junction to complement the transition between 20 mph speed limit and 20 mph Zone;
- iii) Provide a raised controlled pedestrian crossing (Zebra crossing) in the vicinity of the school, as part of the traffic calming features. (This is likely to require the existing bus stop provision to be relocated further to the east.)

### 11.2.4 **Other Initiatives / Suggested Works**

Other initiatives and suggested additional works are as follows

- i) Investigate with the Humberside Police the potential for operating a Community Speed Watch campaign, particularly if speed cushions are removed along Cowgate, as suggested;
- ii) Illumination should be provided to those warning and regulatory signs listed in Section 7.1 so that they conform to the legal requirement of the 'Traffic Signs Regulations and General Directions';

- iii) All regulatory and warning signs should be clearly visible to approaching drivers;
- iv) Remedial works should be undertaken in Chapel Hill to remove the potential hazards created by the protruding iron work and concrete block;
- v) An appropriate length of 'No Waiting at Any Time' restriction should be introduced in East Dale Lane in the vicinity of the Melton Bottom / Melton Old Road traffic-signalised junction;
- vi) The Kidd Lane / Cowgate / Chapel Hill / Dale Road / Parliament Street / Brookside junction should be redesigned to remove conflict points within the junction;
- vii) Lengths of carriageway where the existing road surface is in a poor state of repair, notably Welton Old Road, should be resurfaced to an appropriate standard;
- viii) Further investigate the vulnerable-user collisions and, if not already in place an Education, Training and Publicity (ETP) strategy should be developed for the School, particularly targeting students who ride or drive to School to increase their awareness of their vulnerability;
- ix) The carriageway area in the bell-mouth of Lowfield Lane should be reduced and the crossing width narrowed to improve crossing facilities for students travelling to and from School. Provision of a traffic island should be considered to give pedestrians a safe refuge whilst crossing.

11.2.5 In the longer term due attention should be given to other issues raised in the report in Sections 7 and 8.

## **APPENDIX A:**

### **SITE PHOTOGRAPHS**





Photo 3 – Cowgate 20 mph entry signing



Photo 4 – Cowgate / Welton Road 20mph exit signing and junction











Photo 9 – Holly Hill / Chapel Hill junction



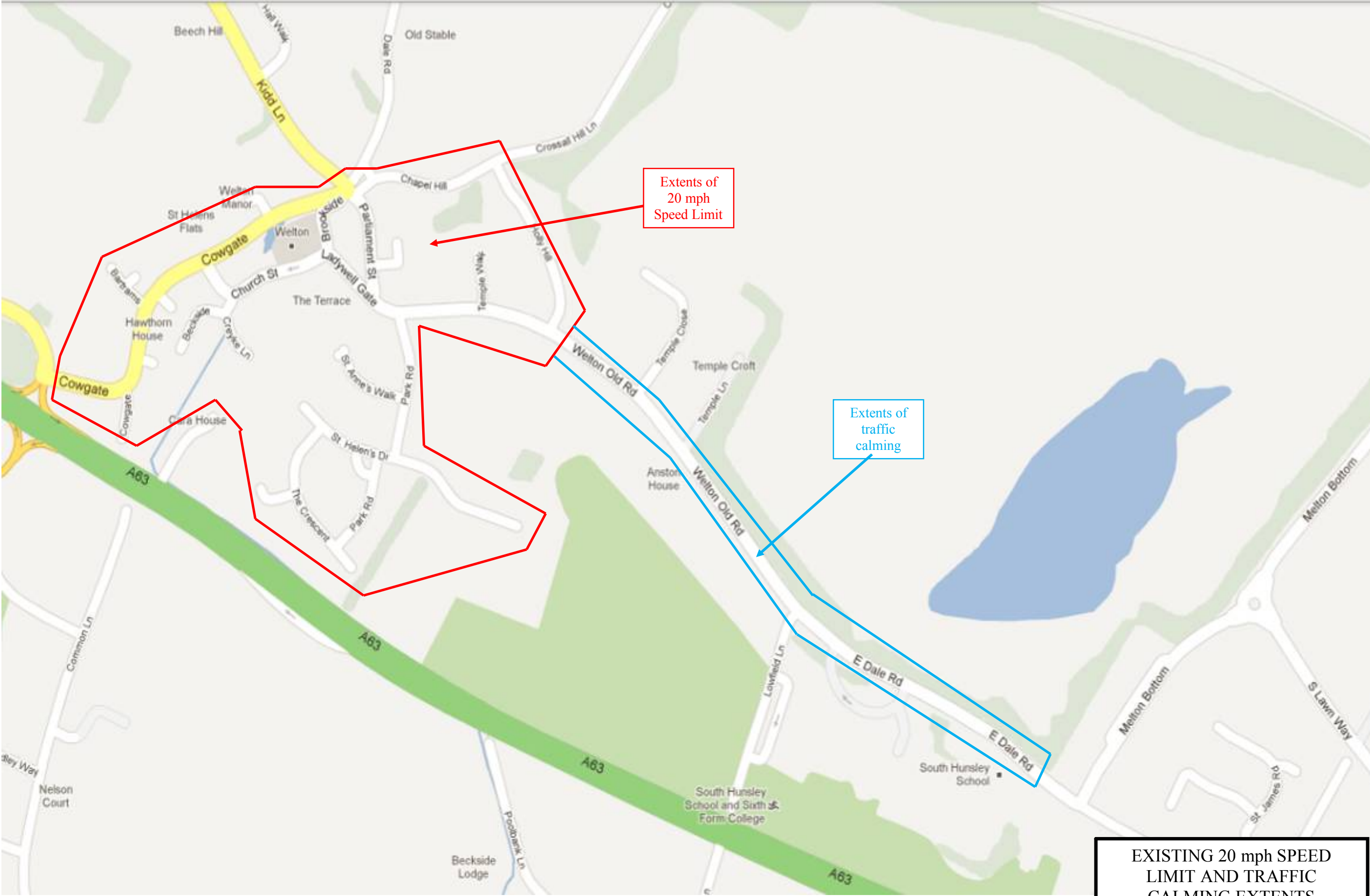
Photo 10 – Chapel Hill





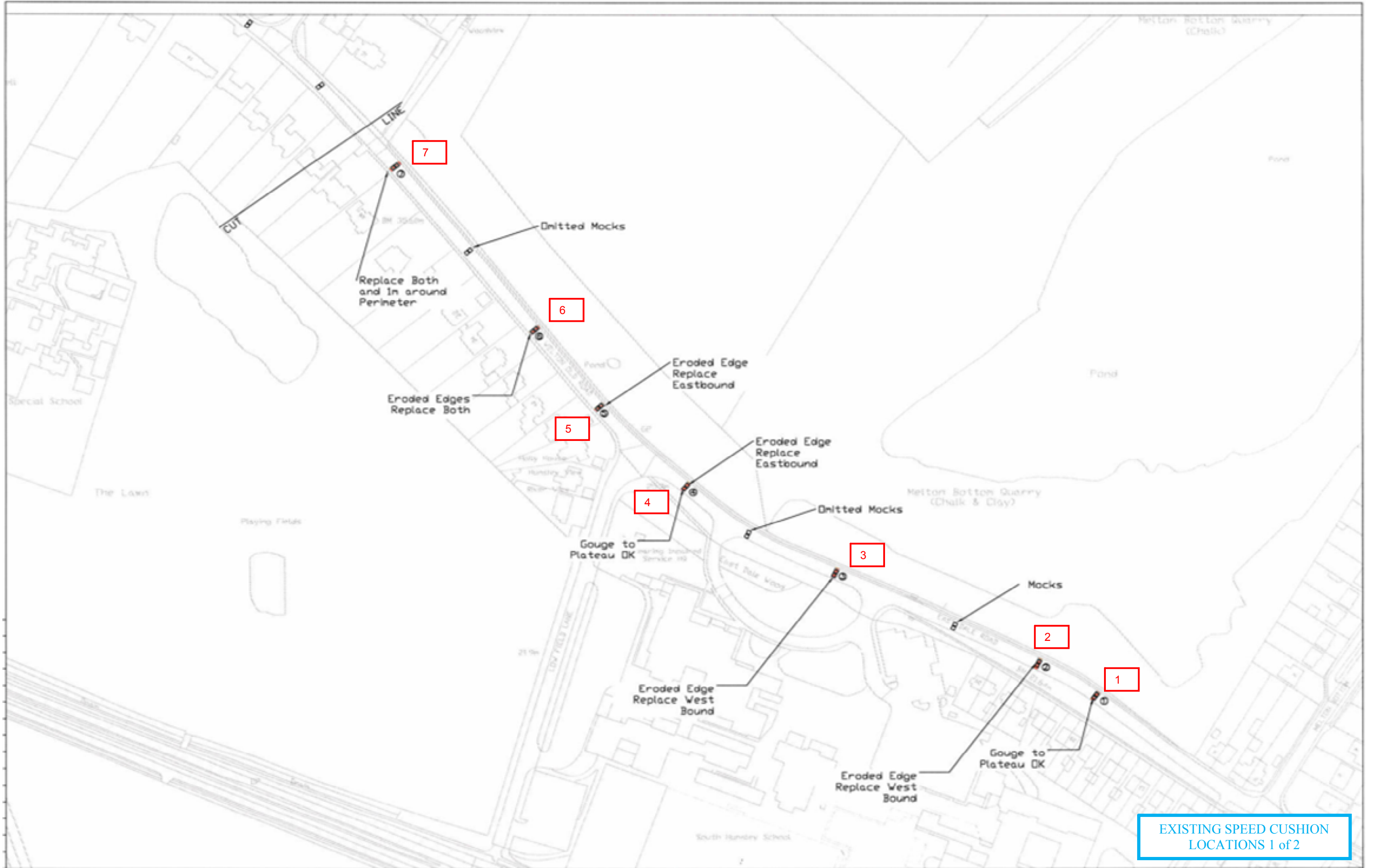
## **APPENDIX B:**

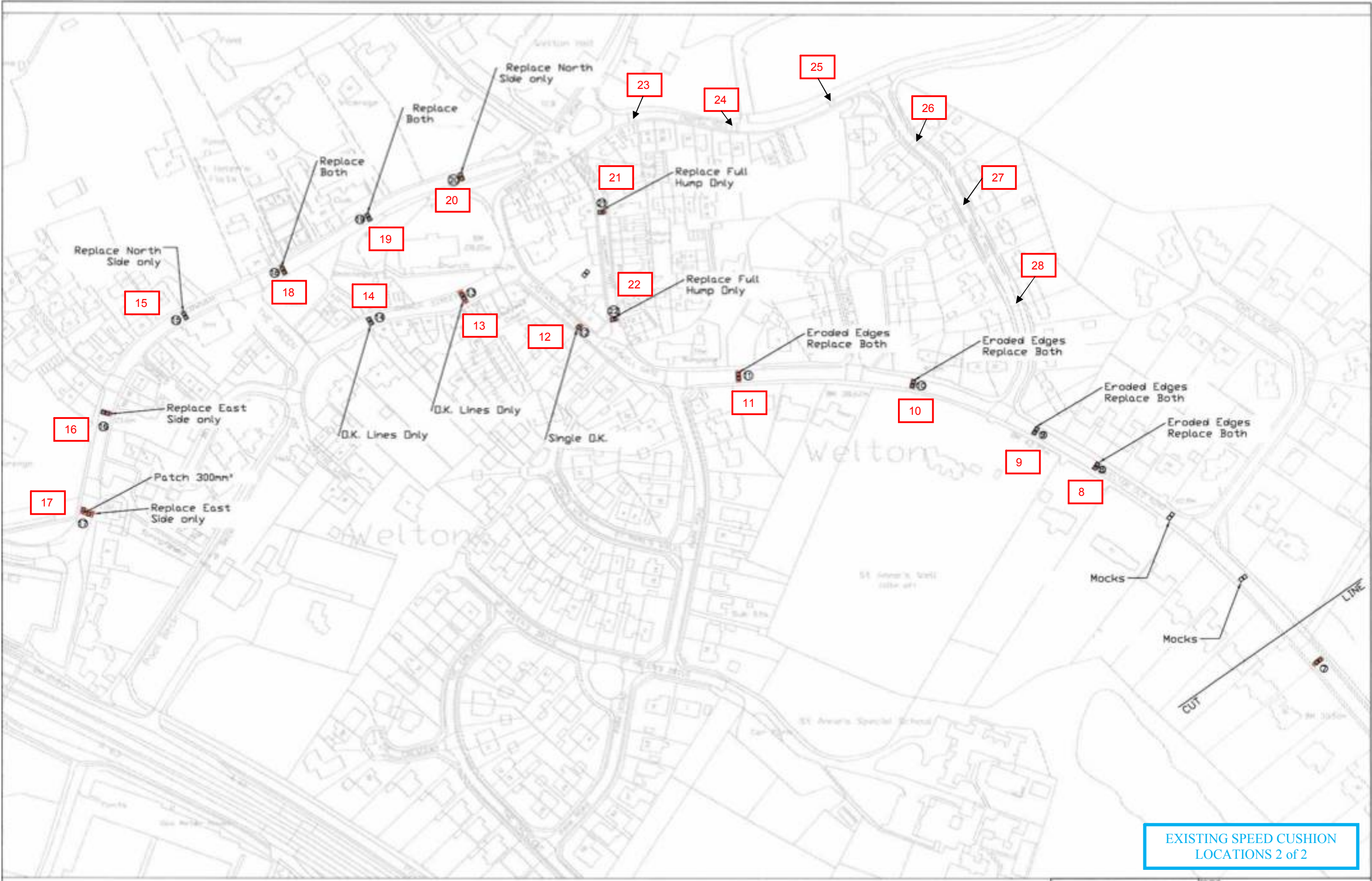
### **EXTENTS OF 20 MPH SPEED LIMIT AND TRAFFIC CALMING**



EXISTING 20 mph SPEED  
LIMIT AND TRAFFIC  
CALMING EXTENTS







## **APPENDIX C:**

### **SPACINGS BETWEEN PHYSICAL SPEED CUSHIONS**

### **SPACINGS BETWEEN PHYSICAL HUMPS**

<b><u>Site</u></b>	<b><u>Approximate distance</u></b>
Melton Bottom Junction to Speed cushion Site 1	140 metres
Speed cushion Site 1 to 2	35 metres
Speed cushion Site 2 to 3	120 metres
Speed cushion Site 3 to 4	100 metres
Speed cushion Site 4 to 5	65 metres
Speed cushion Site 5 to 6	55 metres
Speed cushion Site 6 to 7	120 metres
Speed cushion Site 7 to 8	185 metres
Speed cushion Site 8 to 9	35 metres
Speed cushion Site 9 to 10	75 metres
Speed cushion Site 10 to 11	95 metres
Speed cushion Site 11 to 12	95 metres
Speed cushion Site 12 to 13	80 metres
Speed cushion Site 13 to 14	60 metres
Speed cushion Site 14 to Cowgate Junction	85 metres
The Green Junction to Speed cushion Site 15	25 metres
Speed cushions Site 15 to 16	70 metres
Speed cushions Site 16 to 17	60 metres
Speed cushions Site 17 to Welton Road Junction	110 metres
The Green Junction to Speed cushion Site 18	35 metres
Speed cushion Site 15 to 18	60 metres
Speed cushion Site 18 to 19	50 metres
Speed cushion Site 19 to 20	65 metres
Speed cushion Site 20 to 21	95 metres
Speed cushion Site 21 to 22	60 metres
Speed cushion Site 22 to 11	85 metres

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<b><u>Site</u></b>	<b><u>Approximate distance</u></b>
Speed cushion Site 20 to 23	100 metres
Speed cushion Site 23 to 24	60 metres
Speed cushion Site 24 to 25	60 metres
Speed cushion Site 25 to Holly Hill Junction	30 metres
Chapel Hill Junction to Speed cushion Site 26	45 metres
Speed cushion Site 26 to 27	45 metres
Speed cushion Site 27 to 28	65 metres
Speed cushion Site 28 to Welton Old Road Junction	65 metres

Locations of speed cushion sites shown in Appendix B.



## **APPENDIX D: TRAFFIC FLOWS**

## **TRAFFIC SURVEYS**

### **Ladywell Gate / Parliament Street junction**

#### **1 Traffic Count 07.30 – 08.00**

##### **A From Parliament Street towards Welton Old Road**

94 cars/vans    1 cycle            3 Bus

Total 98 vehicles

##### **B From Parliament Street towards Church Street**

6 cars/vans

Total 6 vehicles

##### **C From Welton Old Road / Park Road into Ladywell Gate**

40 cars/vans    3 cycles            1 Powered two-wheeler

Total 44 vehicles

TOTAL FLOW IN PARLIAMENT STREET 104 vehicles

TOTAL FLOW IN LADYWELL GATE (ONE-WAY SECTION) 50 vehicles  
(TWO-WAY SECTION) 142 vehicles

#### **2 Traffic Count 08.00 – 08.30**

##### **A From Parliament Street towards Welton Old Road**

231 cars/vans    2 cycles            2 Powered two-wheeler            2 Buses

Total 237 vehicles

##### **B From Parliament Street towards Church Street**

4 cars/vans

Total 4 vehicles

##### **C From Welton Old Road / Park Road into Ladywell Gate**

87 cars/vans    1 cycle

Total 88 vehicles

TOTAL FLOW IN PARLIAMENT STREET 241 vehicles

TOTAL FLOW IN LADYWELL GATE (ONE-WAY SECTION) 92 vehicles  
(TWO-WAY SECTION) 325 vehicles





7 **Traffic Count 17.30 – 18.00**

A From Parliament Street towards Welton Old Road

69 cars/vans    2 cycles    1 Powered two-wheeler    1 Bus

Total 73 vehicles

B From Parliament Street towards Church Street

4 cars/vans

Total 4 vehicles

C From Welton Old Road / Park Road into Ladywell Gate

88 cars/vans    1 Powered two-wheeler

Total 89 vehicles

TOTAL FLOW IN PARLIAMENT STREET

77 vehicles

TOTAL FLOW IN LADYWELL GATE (ONE-WAY SECTION)  
(TWO-WAY SECTION)

93 vehicles  
162 vehicles

**APPENDIX E:**  
**ADDITIONAL PHOTO LOG**









Pulling out to miss tree 26mph



Parked on bend





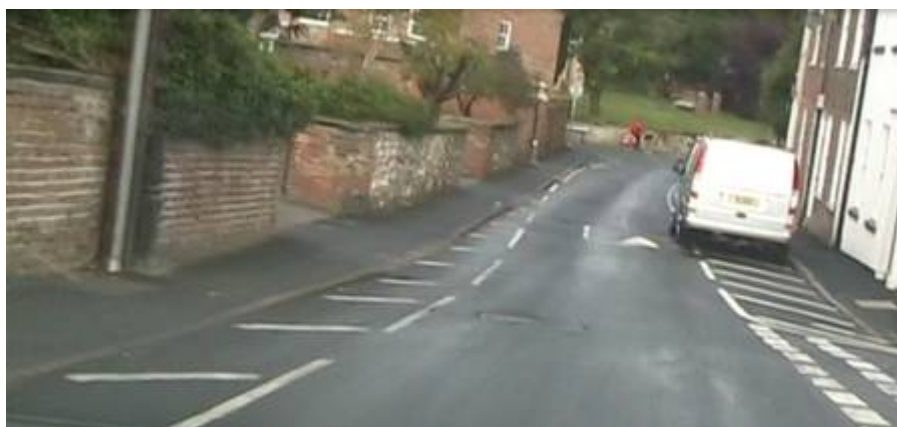








Reversing out of one-way street



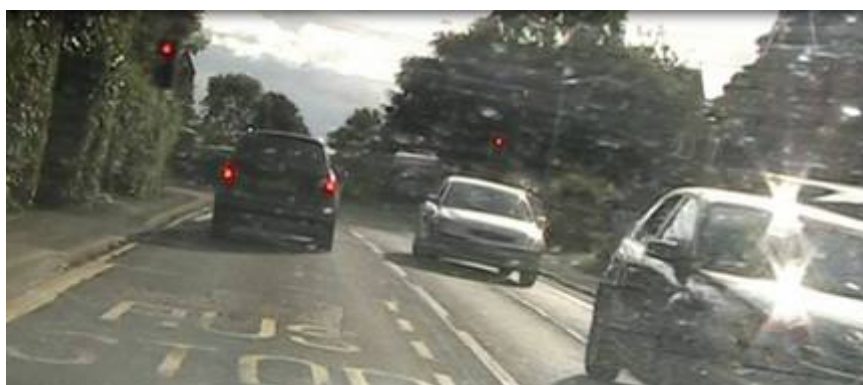
Cyclist going wrong way







Tree overhanging footway



Signal head masked from further back humps for 3/4 mile sign hidden









Van turning right from In access road and mounting footway



Platoons of vehicles at end of school day



Rat running ??

