

**TRAFFIC ENGINEERING TEAM**

**A4 Curzon Street, Calne  
Pedestrian Crossing Assessment**



# **Document Control Sheet**

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## **Record of issue**

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Document Control Sheet.....	2
1.0 Introduction and background.....	4
2.0 Data Collection.....	4
2.1 Site observations.....	4
2.2 Pedestrian numbers.....	4
2.3 Traffic speeds and volumes.....	4
2.4 Collision Data.....	5
3.0 Analysis.....	5
3.1 Formal crossing justification.....	5
3.2 Existing Crossing Provision.....	6
3.3 Crossing Difficulty.....	7
3.4 Summary of Crossing Facilities.....	7
4.0 Recommendation.....	9
Appendix A – Site Assessment Record.....	10
Appendix B – Pedestrian Survey Zones.....	12
Appendix C - Types of crossing.....	13
Table 1 - Pedestrian Survey Results.....	4
Table 2 - Speed & Volumetric Data.....	5
Table 3 - Summary of crossing options.....	8
Photo 1 – Visibility from south side of crossing in an easterly direction.....	6
Photo 2 - Visibility from south side of crossing in a westerly direction.....	6
Photo 3 – Current enhanced advisory crossing facility.....	7

## 1.0 Introduction and background

This report is in response to a request from a member of the public which was supported by Calne Town Council and prioritised by Calne Community Area Transport Group to review pedestrian crossing facilities in the vicinity of Savernake Drive and Springfields Academy.

A similar exercise was undertaken in 2014 which resulted in an enhanced uncontrolled crossing point being installed at this location. The local representatives have stated that pedestrian numbers have steadily increased since the previous study was undertaken.

## 2.0 Data Collection

### 2.1 Site observations

A completed site assessment record can be found at Appendix A

### 2.2 Pedestrian numbers

A pedestrian survey was undertaken in March 2019 between the hours of 0700 and 1900 to establish the numbers and locations of pedestrians currently crossing Curzon Street within the study area. The survey recorded pedestrians crossing the A4 over two zones, each approximately 50 metres in length, to the East and West side of Savernake Drive. A location plan for the study area and zones is shown at Appendix B.

A summary of the survey results is shown in Table 1

	Both Directions		ZONE TOTAL
	AM (0700-1200)	PM (1200-1900)	
Zone A	47	33	80
Zone B	0	6	6

**Table 1 - Pedestrian Survey Results**

The busiest crossing locations in both zones are indicated on the drawing, Appendix B. Encouragingly, the busiest point of Zone A is where the uncontrolled crossing point is positioned.

### 2.3 Traffic speeds and volumes

Speed and volumetric counts were undertaken between the 4<sup>th</sup> and 10<sup>th</sup> May 2019 with the counter device located on the east side of the junction to Savernake Drive. The summary data is shown in Table 2.

	DIRECTION OF TRAVEL	
	Eastbound	Westbound
Mean Speed (mph)	28.9	29.7
85 percentile (mph)	33.8	34.1
Traffic Volume (7 day AADT <sup>1</sup> )	6073	5762

**Table 2 - Speed & Volumetric Data**

## 2.4 Collision Data

An interrogation of the Police collision database within the study area confirms there have been one recorded personal injury collision within the study area during the three year period preceding this report (January 2016 to December 2018).

A 12 year old pedestrian, crossing from North to South at Zone A, was in collision with a car. The incident took place at 07:30 in fine conditions in May 2018. The collision severity was recorded as Slight.

## 3.0 Analysis

### 3.1 Formal crossing justification

The Wiltshire Council practise note requires a minimum threshold of pedestrian flow before a formal crossing can be considered. In general, a minimum average level of 50 pedestrians crossing per hour (counting vulnerable pedestrians<sup>2</sup> as 2) over the four peak hours is required. The survey results show that the busiest periods of crossing movement within Zone A were observed between 07:00 to 08:00, 08:00 to 09:00, 15:00 to 16:00, and 17:00 to 18:00.

During the time periods stated, a total of **54** pedestrians crossed within Zone A of which **22** were considered to be aged 18 and under, or over 65. Counting these pedestrians as '2' provides a total crossing movement of **76**. This figure averaged over the 4 peak hours is approximately **19** pedestrians per hour. This is well below the threshold average of 50 pedestrians per hour for a formal crossing facility.

If we consider the peak pedestrian flow hour only, which was found to be between 07:00 and 08:00, there were **20** pedestrian movements of which **11** were considered to be aged 18 and under, or over 65. Using the same formula as above this gives a figure of **31** pedestrians crossing at the peak time, which is still well below the 50 pedestrians per hour figure for a formal crossing facility.

Stopping sight distance (SSD) is the visibility distance required for a driver to perceive, react and stop safely, before encountering a hazard or object. TD9/93

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<sup>1</sup> Annual Average Daily Traffic

<sup>2</sup> Vulnerable pedestrians - <18 years and 65+

DMRB *Volume 6 - Section 1, Table 2* outlines the requirement for SSD for each respective design speed. In the case of Curzon Street the recorded 85<sup>th</sup> percentile speed is 34 mph. The closest design speed available in Table 2 is 60kph or 37.3mph, whereby the 'desirable minimum' SSD is 90m. In this instance the SSD from either side of the advisory crossing point was measured in excess of 90 metres.



**Photo 1 – Visibility from South side of crossing in an Easterly direction.**



**Photo 2 - Visibility from South side of crossing in a Westerly direction**

### 3.2 Existing Crossing Provision



There is currently an enhanced uncontrolled crossing point located at Zone A. This consists of dropped kerbs, high friction coloured strip, bollards (on the South side) and tactile paving.



### 3.3 Crossing Difficulty

During the period of peak pedestrian movement 07:00 to 08:00, recorded vehicle movements equates to an average vehicle flow of 392 vehicles per hour, approximately 6 vehicles every minute, or one vehicle every 10 seconds. In reality, it is unlikely that vehicles will travel with such uniformity but instead travel in small convoys of 2 to 3 vehicles, thus extending the available gaps in the traffic and provide greater opportunity for pedestrians to cross.

The photographs shown in this report were taken mid-afternoon during a school holiday period. Whilst it is noted that at peak times the volume of traffic is higher, these images and on site observations confirm that there are sufficient gaps in the traffic to cross from either side with relative ease.

### 3.4 Summary of Crossing Facilities

See Table 3 overleaf.

Factor	Do nothing	Uncontrolled crossing	Refuge Island	Zebra	Signalled crossing
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Difficulty of crossing, average wait in seconds	0 – 30 seconds	0 – 30 seconds	0 – 30 seconds	1 to 5 seconds	1 to 3 seconds after end of minimum green period for traffic flow
Vehicle delay in peak periods	None	None	None	1 stop every 3 minutes of 10 to 11 seconds	1 stop per 3 minutes of 13 to 14 seconds
Road capacity	Not reduced	Not reduced	Possibly reduced - (see notes on appropriate solutions below)	Will be reduced	Will be reduced
Crossing type appropriate for anticipated pedestrian numbers	N/A	Yes	Yes	Yes	No. Over-provision for pedestrian numbers
Physical constraints	N/A	N/A	Carriageway width measured at 9.1m. A 2m wide refuge would reduce running lanes to approx. 3.5m	None. Stopping Sight Distance meets the criteria	N/A
Typical construction costs	£0	N/A	£9,500 - £12,500	£30,000	£80,000
Does solution meet 85%ile speed criteria	N/A	N/A	N/A	Yes	Yes
Possible solution?	N/A	Already provided	Yes	Yes	No
Appropriate solution?	No	Yes	Can be considered but is likely to cause disruption to flow when the outbound bus is at the bus stop.	No – low pedestrian numbers might result in drive throughs	Only used where pedestrian and vehicle numbers are high.

**Table 3 - Summary of crossing options**



#### 4.0 Recommendation

The fundamental and overriding consideration prior to the introduction of a new crossing facility is pedestrian safety. The justification for any pedestrian facility is to improve crossing provision and improve safety for users. It is important to note that pedestrian crossings do not automatically make crossing the road safer; moreover badly sited, underused or misused crossings can detract from road safety, as can the incorrect choice of facility.

After analysis of the data and available crossing options alongside the Wiltshire Council practice note, the introduction of a formal crossing within Zone A cannot be recommended.

The remaining options are therefore:

1. To retain the existing enhanced advisory crossing point.
2. To introduce a central refuge island.

Whilst there is sufficient carriageway width to accommodate a refuge island its proximity to the westbound bus stop is likely to cause difficulties in operation. With a bus in the Stop position, following vehicles will almost certainly be required to wait behind as there will be insufficient room to allow them to pass. Some drivers may be tempted to pass illegally to the offside of the refuge island, which in turn may have safety implications for other road users and pedestrians crossing.

Looking at the numbers of pedestrians crossing, the gap availability in the traffic, the time taken to cross the road and the available visibility it is considered that the existing enhanced crossing point facility is appropriate for this location.

## Appendix A – Site Assessment Record

**Site Location:** A4 Curzon Street, Calne

**Carriageway Type:** **Single** Double  
One-Way **Two-Way**

No. of Lanes: 2

**Carriageway Width:** 9.1m

**Footway Width:** Side one (north): approximately 1.8m (existing footway)  
Side two (south): greater than 1.8m (existing footway)

**Refuge Island:** No

### Road Lighting Standard – BS5489 classification

Is lighting below/above standard? Above standard

Full assessment needed? No

Are amendments to lighting needed? No

### Minimum visibility

Pedestrian to vehicle: To East: Greater than 90m To West: Greater than 90m

Vehicle to crossing: To East: Greater than 90m To West: Greater than 90m

### Waiting/Loading/Stopping restrictions

At prospective site? Yes

Within 50m of site? Yes

### Public Transport stopping points

At prospective site? Yes

Within 50m of site? No

Outbound bus stop and shelter located a short distance from the crossing point, on the south side of A4.

### Nearby junctions

Distance to significant traffic junction: Junction with Savernake Drive (residential road) approximately 10m.

### Other Crossings

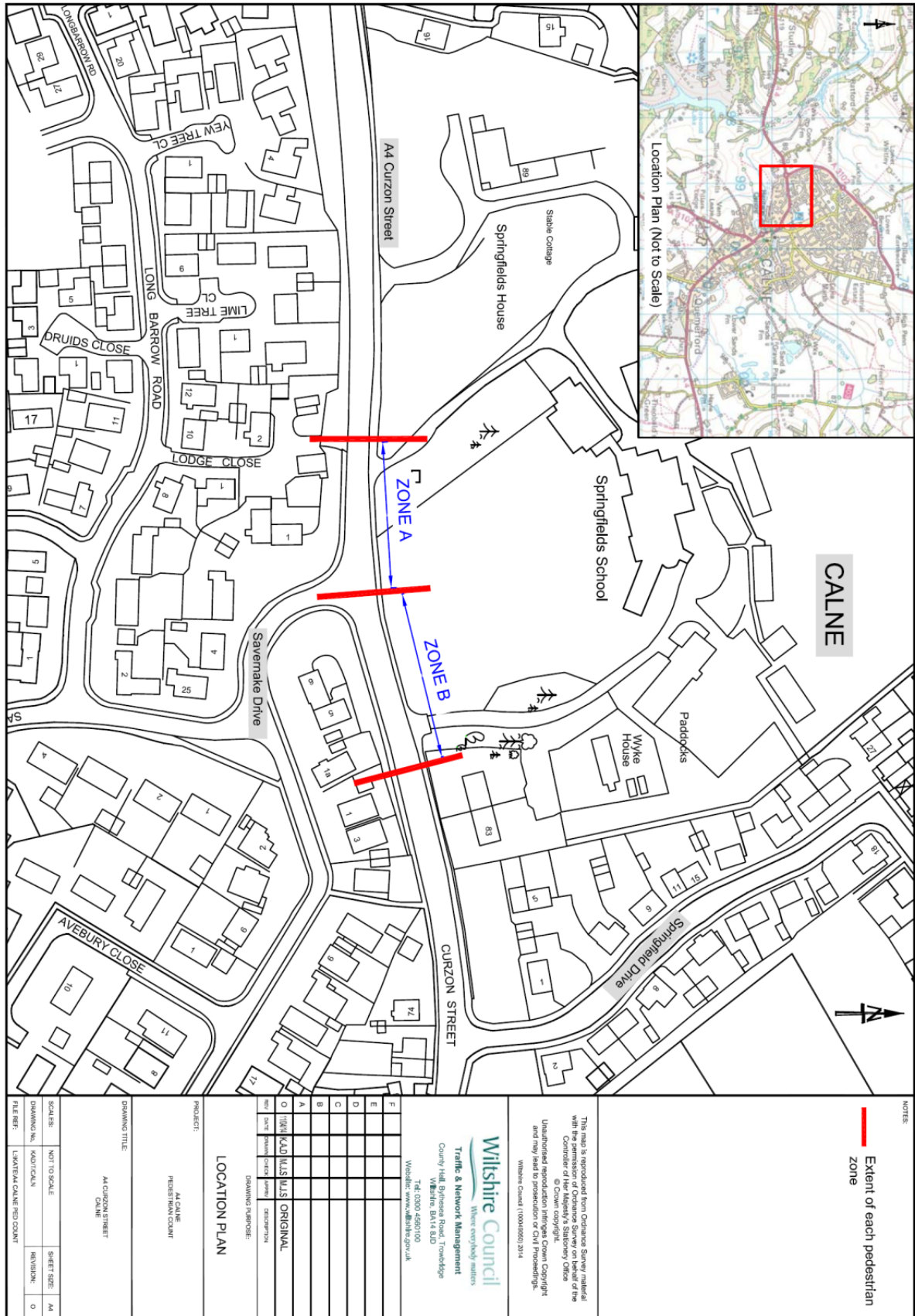
Distance to next crossing: n/a

**School crossing patrol** No

Distance if less than 100m: n/a



# Appendix B – Pedestrian Survey Zones



## Appendix C - Types of crossing

Further detail on crossing types, the advantages and disadvantages of each type, and other details can be found in the Wiltshire Practise for Pedestrian Crossings. Below is a summary of the crossing types.

### Dropped kerb crossing

Dropped Kerb crossings consist of a localised lowering of the footway to carriageway level on either side of the road to provide a defined location for pedestrians to cross. Tactile paving can be provided to assist blind and partially sighted people to align themselves to the crossing direction. Where possible consideration should be given to combining dropped kerb crossings with footway build-outs to minimise the crossing width for pedestrians.

### Enhanced dropped kerb crossing

Enhanced dropped kerb crossings are as the standard dropped kerb crossing but in addition are provided with either or both bollards in the footways and coloured surfacing on the carriageway. The additional features help to define the crossing location to both pedestrians and motorists and highlight its presence. Bollard type and size is site specific to the location. In rural environments timber bollards are the preferred option whilst in urban area bollards can be timber, cast or composite. It is possible for signs to be fixed to the bollards giving road safety advice to pedestrians. The use of footway build-outs should be considered.

### Pedestrian Refuge Island

Pedestrian refuge islands consist of kerbing, bollards and signs in the middle of the road to enable pedestrians to cross more easily in two stages. Pedestrian refuges can provide a series of crossing points along a road where it would be impractical to install Zebras or signal controlled crossings at each crossing location. Pedestrians do not have priority at refuges and therefore the onus is on them to establish a safe gap in the traffic before crossing.

The absolute minimum width (across the road) for a pedestrian refuge is 1.2m, and the recommended minimum is 1.5m, although 2m is preferred to accommodate pushchairs, wheelchairs and cycles. The minimum through lane width for traffic is normally 3 to 3.5m. In certain circumstances, it may be possible locally to widen the road to accommodate a central refuge but this would obviously incur additional expense and should not result in sub-standard footway widths of less than 1.8m.

### Zebra Crossing

Zebra crossings are indicated by black and white bands painted on the road surface and by flashing orange “Belisha” beacons. Zigzag markings are provided on both approaches to alert drivers to the crossing and prevent parking. Drivers are required, under the Highway Code, to stop for pedestrians on Zebra crossings. Legally, pedestrians have to establish precedence by setting foot on the crossing.

Zebra crossings are considered inappropriate on high speed roads or roads with high volumes of traffic. They can also be inappropriate where heavy flows of pedestrians such as children leaving school would cause unacceptable delays to drivers. However, in town centres where the desire might be to discourage through traffic, Zebras are preferred especially as they are considered to be less visually intrusive than signal controlled crossings. Zebra crossings result in reduced delay to pedestrians when compared to signal controlled crossings and are therefore considered to be more pedestrian friendly.



### **Signal controlled crossings**

Signal controlled crossings are particularly useful at locations where it is necessary to interrupt heavy and/or fast traffic flows to allow pedestrians to cross or where the pedestrian flow is so heavy that breaks are needed to allow vehicles to proceed.

Two types of standalone signal controlled crossing are used in the UK. The older type is the Pelican crossing but this is gradually being superseded by the Puffin crossing. All new installations in Wiltshire are of the Puffin type.

### **Pelican crossing**

Pelican crossings are a stand-alone signal controlled crossing where pedestrians wishing to cross push a button to register a demand. The Pelican crossing has a far-side red/green man signal. Pedestrians are given a green man signal to cross the road and towards the end of this period the green man flashes. The advice in the Highway Code is that pedestrians should not begin to cross while the green man is flashing. Drivers are presented with the usual traffic light signals except for a flashing amber light that permits drivers to go if all pedestrians have cleared the crossing.

### **Puffin crossing**

Puffin (Pedestrian User Friendly Intelligent) crossings are the most modern type of signal controlled crossing and have been developed to overcome some of the shortcomings of the Pelican. Puffins have a near-side steady red/green man signal which can more easily be seen by pedestrians with sight difficulties. As the pedestrian signals are located on the near side and not visible to a pedestrian on the crossing, there is no confusion or anxiety caused by a flashing green man signal.