

**DEPARTMENT OF NEIGHBOURHOOD & PLANNING
TRAFFIC & NETWORK MANAGEMENT**

A3102 Hilmarton

Pedestrian Crossing Assessment

Document Control Sheet

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1.0 Introduction and background

This report is in response to a request raised via the Calne Area Board issue system for the provision of a pedestrian crossing on the A3102 Hilmarton in the vicinity of the junction with Church Road. The issue was discussed at a meeting of the Community Area Transport Group, who considered it to be one of their priorities for 2010/11 and allocated funding to enable further investigation.

Hilmarton is a village located to the north of Calne, and is predominantly residential. The A3102 runs adjacent to the main body of the village however a number of properties front onto the A3102 with the road creating a degree of community severance.

The A3102 is a principal road which links a number of towns in Wiltshire, including Calne, Lyneham Wootton Bassett and Swindon.

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 count survey took place on Thursday 21st June 2011 to establish the numbers and locations of pedestrians currently crossing the road. The survey was carried out between 7.00 am to 7.00 pm by the Hilmarton and Goatacre Group Improving Safety. A plan showing the extents of the zones can be found at **Appendix B**.

A summary is shown below:

Both Directions			
ZONE	AM (07.00-12.00)	PM (12.00-19.00)	ZONE TOTAL
A	5	5	10
B	8	27	35
C	2	7	9
TOTAL PEDESTRIANS			54

Table 1: Pedestrian Survey Results

2.3 Traffic speeds and volumes

A traffic counter was placed on the A3102 from 14th April 2011 to 22nd April 2011. Total volumetric flow and speeds were recorded. A summary is shown below.

Both Directions	
Av. Speed (mph)	40.7
85th% le (mph)	46.1
Traffic Volume (vehicles per day)	8182

Table 2: Traffic Speeds and Volumes

2.4 *Collision data*

An interrogation of the Police collision database indicates there have been two recorded personal injury collisions in Hilmarton during the three years prior to this report. The collisions occurred to the south of the area of concern and did not involve pedestrians or cyclists. .

2.5 *Other site observations*

Within the area of concern, there is a public house and two bus stops which are likely to generate pedestrian crossing movements.

In addition, there are two junctions onto the A3102 from Church Road with solid white centre lines present on the A3102 to prevent vehicles overtaking.

It was noted that visibility between pedestrians waiting to cross outside of The Duke public house and vehicles travelling from the Goatacre direction is poor. This is detailed in the site assessment in Appendix A.

3.0 Analysis

3.1 *Formal crossing justification*

Current Wiltshire Council practise requires a minimum level of pedestrian flow before a formal crossing is considered. A minimum average level of 50 pedestrians per hour (counting vulnerable pedestrians as 2) over the four peak hours is required. The results show that the busiest periods of crossing movement took place from 11:00-12:00, 12:00-13:00, 13:00-14:00 and 14:00-15:00.

During these time periods a total of 26 pedestrians crossed the road of which 14 were aged over 65. Counting these as 2 gives a total pedestrian movement of 40. When averaged over the 4 peak hours, this gives a figure of 10 pedestrians per hour and therefore a formal crossing, such as a signalised or zebra crossing cannot be considered.

The assessment table (Table 3) sets out the crossing options available.

Factor	Do nothing	Uncontrolled crossing	Refuge island	Zebra	Signalled crossing
Difficulty of crossing, average wait in seconds	0 – 30 seconds	0 – 30 seconds	0 – 15 seconds (crossing time split in to 2 movements)	1 to 5 seconds	1 to 3 seconds after end of minimum green period
Vehicle delay in peak periods	None	None	None	Limited due to low pedestrian numbers	Limited due to low pedestrian numbers
Road capacity	Not reduced	Not reduced	Not reduced	Will be reduced	Will be reduced
Crossing type appropriate for anticipated pedestrian numbers	N/A	Yes	Yes	No – See previous explanation	No – See previous explanation
Physical constraints	N/A	Location of bus stop lay-by	The carriageway width is not sufficient to accommodate a 1.8m wide refuge island. Constrained also by bus stop lay-by and junctions	N/A	N/A
Budget construction costs*	£0	£3,000	£20,000	£25,000	£80,000
Does solution meet 85%ile speed criteria	N/A	Yes	Yes	No	Yes
Possible solution?	Yes	Yes	Yes	No	No
Appropriate solution?	Yes	No	Yes	No	No

Table 3: Crossing Options Assessment Table

**based on average costs – may vary according to site conditions*

It is felt that due to the width of the carriageway and vehicle speeds, the most appropriate informal crossing option for this location would be to provide a pedestrian refuge island.

4.0 Recommendation

It should be noted that the fundamental and overriding consideration when introducing any new pedestrian crossing is the safety of pedestrians. The justification for any pedestrian facility must be to make crossing the road safer for users. Pedestrian crossings do not automatically make crossing the road safer; moreover badly sited, underused or misused crossings can detract from road safety, as can an inappropriate choice of facility.

Taking into consideration the data collected, the site assessment, the crossing options available and the adopted Wiltshire Council practise for pedestrian crossings it is recommended that a pedestrian refuge sited outside of The Duke public house would provide the most appropriate measure to assist pedestrian movement.

It is recognised that the visibility requirements as set out in Local Transport Note 2/95 The Design of Pedestrian Crossings are not met at this location. However, the visibility requirements set out in the guidance note tend to be tailored toward formal crossings, such as Zebra or signal controlled facilities. It is felt that a refuge island in this location will have sufficient visibility for pedestrians and vehicles such that it does not have a detrimental impact upon pedestrian safety. A Road Safety Audit to formally assess the impact of the proposals on road safety will be undertaken as part of the detailed design process and any recommendations made by the auditor will be taken into consideration.

It must be noted that there are additional physical constraints associated with the construction of a pedestrian refuge at this location. The carriageway is 7.7m wide at this point, which does not allow sufficient space for a standard 1.8m wide pedestrian refuge and the required 3.5m wide vehicle running lanes. However, it is possible to utilise the existing bus lay-by to provide additional carriageway space thus allowing the construction of a 1.2m wide pedestrian refuge. This is the minimum width allowable for such a facility.

The reduction in width of the bus lay-by would cause any buses stopping there to overhang into the carriageway. This is not desirable as it is likely to encourage drivers to attempt to pass the stationary bus despite the restriction to forward visibility both for pedestrians crossing and vehicles exiting Church Road. To prevent this situation, it will be necessary to convert the remaining lay-by to footway thus removing the bus lay-by facility. It is recommended that the stop be retained and the bus boarder kerbs relocated further south to accommodate the bus stopping on carriageway. On a cautionary note, this may lead to a small number of drivers attempting to pass a stationary bus on the off side of the pedestrian refuge, and this action may lead to prosecution by the Police.

There is currently a level difference between the bus lay-by and the adjacent carriageway running lane; therefore it will be necessary to undertake carriageway resurfacing within the area shown on the plan in Appendix D.

A plan outlining the recommendation and extent of the additional waiting restrictions is included in Appendix D.

5.0 Appendix A – Site Assessment Record

Site Location: A3102 Hilmarton

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

No. of Lanes: 2

Carriageway Width: 7.7m

Footway Width: Side one (Bus Stop) : 1.5m
Side two (Public House – no kerb separation) : 3.8m

Refuge Island: Yes/No

Road Lighting Standard – BS5489 classification

Is lighting below/above standard? Below

Full assessment needed? Yes

Are amendments to lighting needed? Yes

Minimum visibility

Pedestrian to vehicle: From Public House To North: 30m To South : 44m

Pedestrian to vehicle: From Bus Stop To North: greater than 60m To South: greater than 60m

Vehicle to crossing: To North: greater than 60m To South: greater than 60m

Waiting/Loading/Stopping restrictions

At prospective site? Yes/No

Within 50m of site? Yes/No

Public Transport stopping points

At prospective site? Yes/No

Within 50m of site? Yes/No

If yes provide details of approx locations etc: Opposite Public House and to north of Public House

Nearby junctions

Distance to significant traffic junction Junction to Hilmarton to north: 20m
Junction to Hilmarton to south: 10m

Other Crossings

Distance to next crossing: N/A

School crossing patrol None

Distance if less than 100m: None

Carriageway skid risk / condition

Does surface meet skid resistance requirements **Yes/No** (Visual only)

Surroundings (entrances within 100m)

Hospital/Sheltered Housing etc **Yes/No**

School **Yes/No**

Post Office **Yes/No**

Railway/Bus Station **Yes/No**

Pedestrian leisure/shopping area **Yes/No**

Sports stadium/entertainment venue **Yes/No**

Junction with cycle route **Yes/No**

Equestrian centre/junction with bridal path **Yes/No**

Others – public house **Yes/No**

CROSSING TRAFFIC INFORMATION

Flow and Composition

Pedestrian Count: 54 crossing movements over 12 hours
Prams/Pushchairs: Not recorded

Elderly: 24 over 12 hours

Unaccompanied young children: Not recorded

Disabled: Not recorded

Crossing cyclist: Not recorded

Equestrians: Not recorded

Others: None

Time to cross road

Able pedestrians	Approx 9 to 11 seconds
Elderly or disabled	Approx 11 to 13 seconds

Difficulty of crossing

Able pedestrians	Low	Average	High
Elderly/Disabled	Low	Average	High

Latent Crossing Demand

Estimate	Unlikely	Likely	Very Likely
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OTHER NOTES

7.0 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 buildouts 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 substandard 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 stand alone 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 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.

8.0 Appendix D – Recommendation Plan



NOTES:
 Location and dimensions of pedestrian refuge island are subject to change dependant upon further design investigations

Extents of carriageway resurfacing



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REV	DATE	DRAWN	CHECK	APPRV	DESCRIPTION

PROJECT: A3102 Hillmarton CATG

DRAWING TITLE: Pedestrian Refuge Island

SCALES:	1:500
DRAWING No.	D001.0
REV:	
FILE REF:	LIITT\Current Schemes\Area Boards\Caine\Hillmarton

9.0 Appendix E – Cost estimate of recommended option

Construction of refuge island and associated Civil works including traffic management	£18,000
Electrical / Street lighting works	£5,000
Design fees (10% of estimated construction costs)	£2,300
Total	£25,300