

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

**A4 Quemerford
Calne**

Pedestrian Crossing Assessment

Document Control Sheet

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2.0 Introduction and background

This report is in response to a request raised via Calne Area Board issue system which has requested the provision of a pedestrian crossing in the vicinity of Quemerford Post Office, Calne. The issue was discussed at the inaugural 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. It is also believed that a petition requesting a crossing facility has been presented to Calne Town Council, however this remains unconfirmed.

Quemerford is located on the eastern fringe of Calne, and is predominantly residential properties which front the A4, with a small number of recent developments accessed from it.

The A4 is a principal road which links a number of towns throughout Wiltshire, including Chippenham, Calne and Marlborough. Prior to the construction of the M4 motorway, the route was used as one of the main links between the West Country and London and consequently has been improved / maintained to a good standard of design. With the construction of the M4 Motorway, the volume of traffic levels remain consistent, with the exception of incidences on the motorway which can result in high peaks in traffic due to its attractive nature as an alternative.

With regards to significant local factors which are likely to affect traffic patterns, either pedestrian or vehicle, it is noted the presence of the Post Office and its proximity to the Compton Basset Waste facility.

2.0 Data Collection

Site observations

A completed site assessment record can be found at **Appendix A**.

Pedestrian numbers

A pedestrian count survey took place on Wednesday 30th March 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. The length of carriageway between properties no. 155 and no. 195 was divided into 3 separate zones. Pedestrian numbers were recorded in each zone for the 12 hour period and the busiest crossing point identified in each zone. A plan showing the extents of the zones and the busiest crossing points can be found at **Appendix B**.

A summary is shown below:

ZONE	Northbound (To Post Office)		Southbound (To Lake View)		ZONE TOTAL
	AM (07.00-12.00)	PM (12.00-19.00)	AM (07.00-12.00)	PM (12.00-19.00)	
A	14	5	8	15	42
B	13	12	16	13	54
C	3	5	2	7	17
				TOTAL PEDESTRIANS	113

Traffic speeds and volumes

A SDR (Speed Detection Radar) device was placed to the east of the Lake View junction from Thursday 10th March 2011 to Thursday 17th March 2011. Total volumetric flow and speeds were recorded. A summary is shown below.

	Eastbound	Westbound
Av. Speed (mph)	32	33.2
85thile (mph)	36.1	39.1
Traffic Volume (vehicles per day)	4838	3474
Total Traffic Volume in both directions (vehicles per day)	9802	

Collision data

An interrogation of the Police collision database indicates there have been no recorded personal injury collisions in the area of interest in the latest three year period up to the end of April 2011.

Other site observations

A large proportion of the properties which front the A4 have taken the opportunity to convert frontage areas for parking purposes, although there remains some doubt as to whether this has been do so in accordance with the correct permissions.

A dropped kerb crossing point, with tactile paving is already in-situ to the west of the post office, at the western edge of the pedestrian count area.

The presence of the post office results in a significant demand for short term on street parking.

No waiting at any time restrictions are present to the west of the Post Office on both the outbound and inbound lanes.

A full right turn facility is present for vehicles wishing to access Lake View.

3.0 Analysis

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. It is considered that any crossing facility located within any of the zones will attract some crossing movements from the other zone. The following analysis is therefore a combination of the data from zones A and B. The results show that the busiest periods of crossing movement took place from 8.00 to 9.00am, 11.00 to 12.00am, 4.00 to 5.00pm, and 5.00 to 6.00pm.

During these time periods a total of 56 pedestrians crossed the road of which 11 were aged 18 and under or over 65. Counting these as 2 gives a total pedestrian movement of 67. When averaged over the 4 peak hours, this gives a figure of 17 pedestrians per hour and therefore a formal crossing cannot be considered.

Crossing location

The busiest recorded crossing point occurred in Zone B to the western side of the junction with Lake View. It should be noted this is the widest point of the carriageway.

Crossing difficulty

During the 4 peak hour periods a total number of 3053 vehicles was recorded. This equates to an average of approximately 13 vehicles per minute or approximately one vehicle every 5 seconds. Given this gap availability in the traffic, the distance which a pedestrian is crossing and the crossing time of 7 to 11 seconds the crossing difficulty is considered to be high.

Crossing types

The assessment table below 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	3 stops per minute of 10 to 11 seconds	2 stops per minute of 13 to 14 seconds
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		Space available, however concern remains re: on street parking impeding flow, particularly HGV's	N/A	N/A
Budget construction costs	£0	£3,000	£20,000	£20,000	£80,000
Does solution meet 85 th ile speed criteria	N/A	Yes	Yes	No	Yes
Possible solution?	Yes	Yes	Yes	No	No
Appropriate solution?			Yes	No.	No.

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 by the SDR and pedestrian counts, the site assessment, and the crossing options available and the adopted Wiltshire Council practise for pedestrian crossings it is recommended that a pedestrian refuge sited to the west of the post office would provide the most appropriate and economical measure to assist pedestrian movement.

The introduction of a pedestrian refuge would require the introduction of signage which requires vehicles to keep to pass on the left hand side, the presence of vehicles parked at the refuge or in close proximity may restrict the ability for vehicles to comply with this requirement and force them to pass contrary to this instruction and can lead to potential prosecution by the Police. It is therefore considered there would be a fundamental requirement to introduce additional lengths of waiting restriction to ensure the passage of vehicles is not impeded by parked vehicles.

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

It should be noted that the introduction of additional waiting restrictions in close proximity to a business which benefits from a high turnover of passing trade is expected to be contentious. It is also expected to be contested by affected residents due to the loss of parking and also due to the potential displacement of parking it can cause.

Into Calne: 22m Type: Dropped kerb crossing

To Marlborough: N/A Type:

School crossing patrol

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 – car park **Yes/No**

CROSSING TRAFFIC INFORMATION

Flow and Composition

Pedestrian Count: 113 crossing movements over 12 hours

Prams/Pushchairs: Not recorded

Elderly: 19 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 7 seconds
Elderly or disabled	Approx 10 to 11 seconds

Difficulty of crossing

Able pedestrians	Low	Average	High
Elderly/Disabled	Low	Average	High

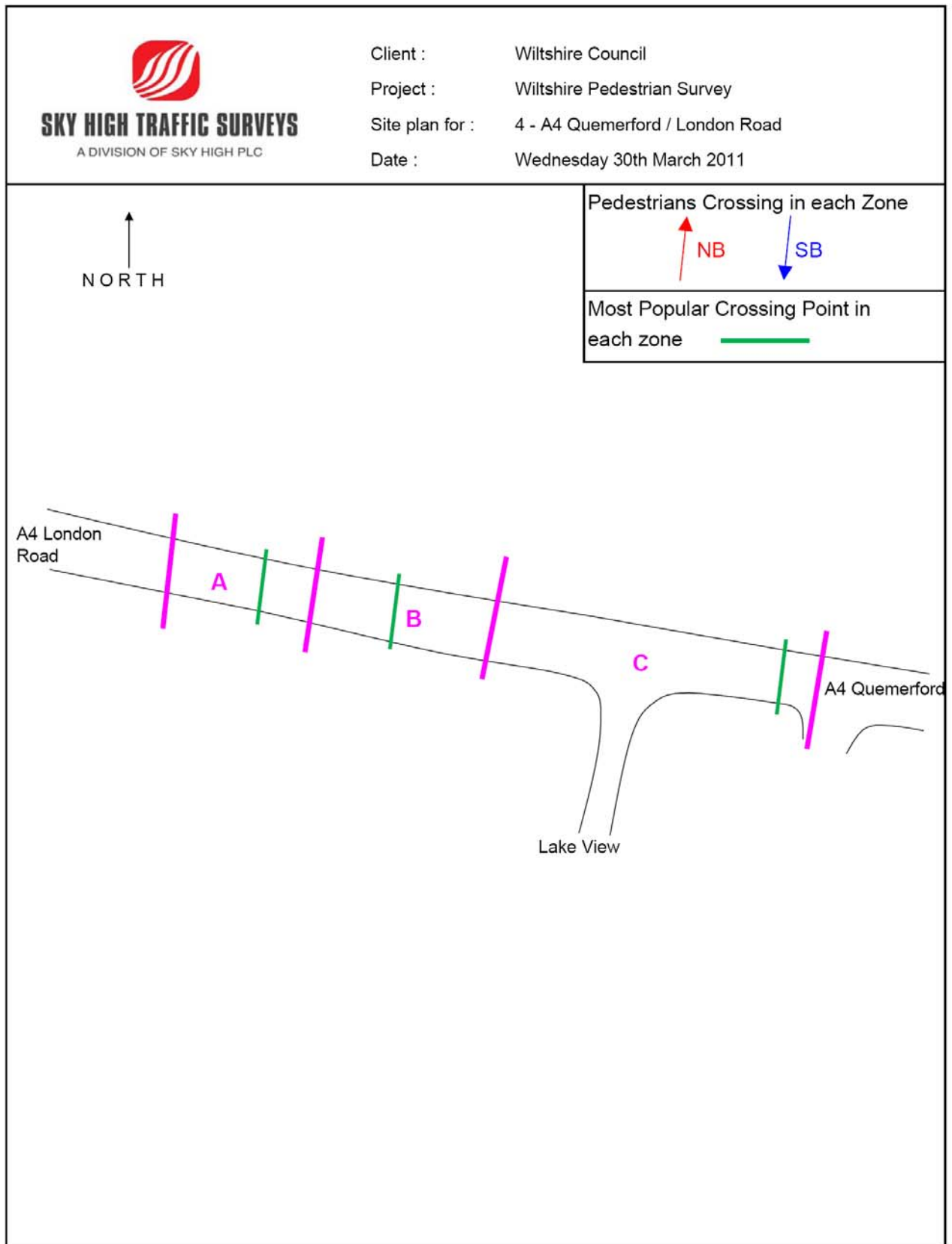
Latent Crossing Demand

Estimate	Unlikely	Likely	Very Likely
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OTHER NOTES

None

Appendix B – Plan of 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 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.

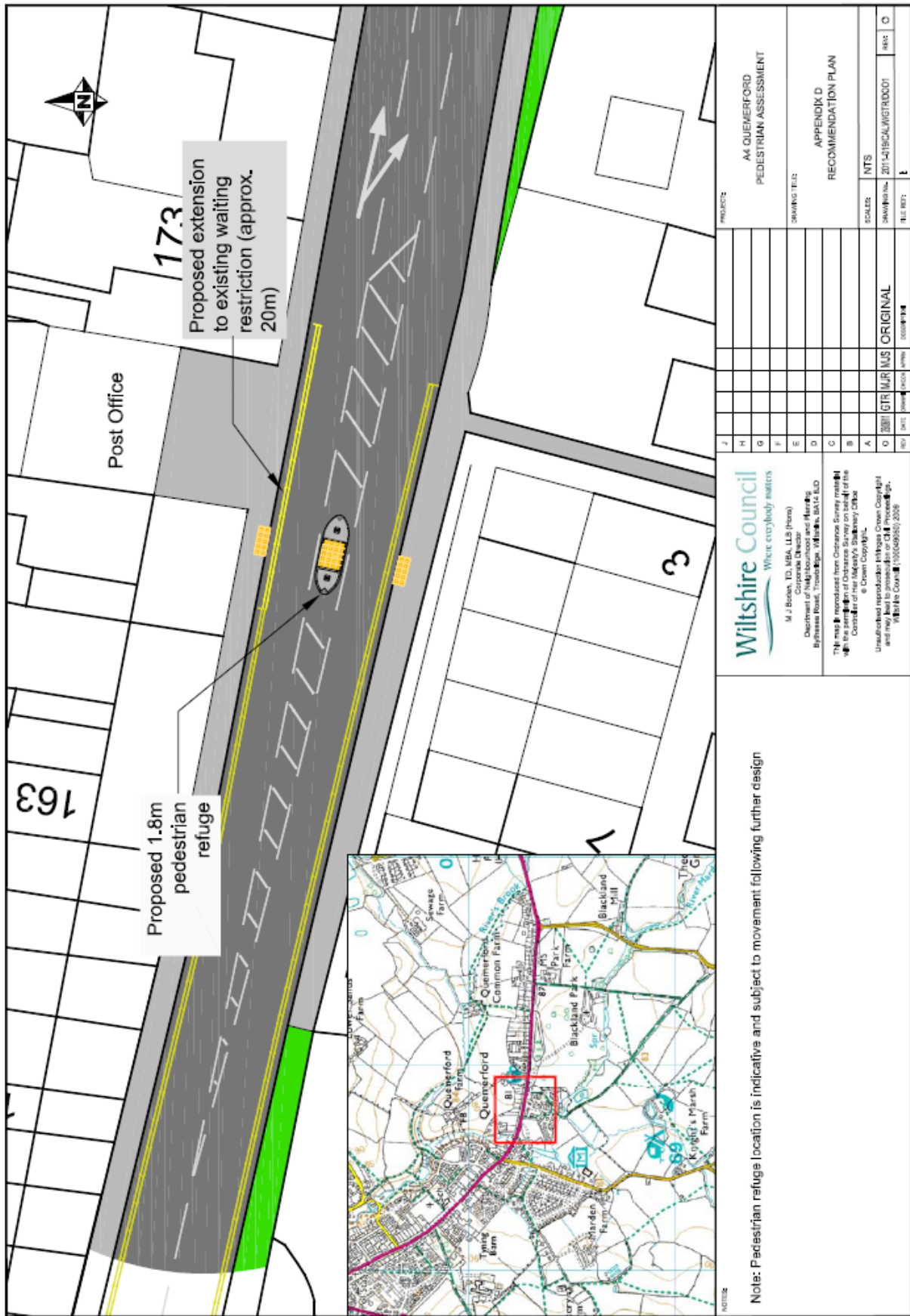
Pelican crossing

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.

Appendix C – Recommendation Plan



Appendix E – Cost estimate of recommended option

Typical standard pedestrian refuge Including drop kerbs, footway amendments, Ducting, road markings & Traffic Management	£10,000
Electrical / Street lighting works	£4,000
Traffic Regulation order / Formal advertisement associated with waiting restrictions.	£3,000
Design fees	£1,700
Total	£18,700