

HS2

HS2 Traffic Calming Study at Woore Village - Additional Options (2)

Security classification: OFFICIAL

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1 Executive Summary

1.1.1 This study summarises the results of a high-level desk study examining the potential provision of:

- Pedestrian guardrailing in the vicinity of the existing signal-controlled pedestrian crossing on the A51 London Road adjacent to Woore Primary and Nursery School; and
- A new crossing and/or signage and other potential safety upgrades in the vicinity of the existing school bus drop-off/pick-up point on the A525 Newcastle Road located just east of the A51 London Road/A525 Newcastle Road junction.

1.1.2 The study is in response to a request from Woore Parish Council (WPC) at a stakeholder meeting between the Parish Council and HS2 on 23rd October 2019. The requests were made during discussions on potential further measures that should be considered in addition to those within the Woore Traffic Calming Report¹.

1.1.3 The views of the WPC and Shropshire County Council (SCC) as the Local Highway Authority have not been included, and will be sought by HS2 on outcomes of this study.

Pedestrian guardrailing

1.1.4 Potential locations have been identified in the vicinity of the existing signal-controlled pedestrian crossing adjacent to Woore Primary and Nursery School, where pedestrian guardrailing could be accommodated.

1.1.5 The tight site constraints restrict the ability to provide guardrailing that would be fully effective in preventing pedestrians from crossing the A51 away from the designated crossing location.

1.1.6 It was also identified that, in accordance with the latest design guidance, the provision of pedestrian guardrailing may not be considered desirable at this location because it would inhibit the movements of pedestrians (including wheelchair users and parents with prams and pushchairs) by reducing the effective footway width on the existing narrow footways by approximately 0.5m. It may also be considered to have a negative impact on the heritage characteristics of Woore village.

1.1.7 Alternative road safety measures, such as the traffic calming measures and upgrading of the existing signal-controlled crossing, put forward in the

¹ HS2 Traffic Calming and Road Safety Provision Options - Woore Village (HS2 Ltd, 2019)

recommended design package in the 'Traffic Calming and Road Safety Provision Options – Woore Village' report² sent to WPC in January, 2019, may be considered to be a more appropriate means of improving road safety in Woore.

New crossing on A525 Newcastle Road

- 1.1.8 There are a number of road safety issues associated with the existing uncontrolled A525 pedestrian crossing near the existing school bus drop-off and pick-up point on the A525 Newcastle Road including poor visibility to and from the crossing.
- 1.1.9 The following list summarises the potential measures that could be considered to improve safe access to and from the school bus drop off point:
- Option 1 - Upgrade existing uncontrolled crossing on A525
 - Option 2 - Provision of a new pedestrian crossing on A525
 - Option 3 - Relocate bus stop from A525 onto A51
 - Option 4 - Upgrade A51/A525 junction to signalised junction with signal-controlled pedestrian crossing facilities.
 - Option 5 - School Crossing Patrol Officer on A525 Crossing
- 1.1.10 A brief description of each option along with an assessment of the advantages and disadvantages is provided in the report. It is recommended that further consultation be undertaken with the local highway authority to confirm which measures they would support. Consideration would then be given to incorporating any measures that are acceptable to the local highway authority into the recommended design package in the 'Traffic Calming and Road Safety Provision Options – Woore Village' report.

2 Introduction

2.1 Background

- 2.1.1 This report summarises the results of a high-level desk study examining the potential provision of:
- pedestrian guardrailing in the vicinity of the existing signal-controlled pedestrian crossing on the A51 London Road adjacent to Woore Primary and Nursery School; and
 - a new crossing and/or signage and other potential safety upgrades in the vicinity of the existing school bus drop-off/pick-up point on the A525 Newcastle Road located just east of the A51 London Road/A525 Newcastle Road junction.
- 2.1.2 The report is a supplement to the following reports:
- Traffic Calming and Road Safety Provision Options – Woore Village (January 2019) and
 - Woore Village Traffic Calming and Footway Provision (June 2019)
- 2.1.3 These reports provide additional information on the HS2 scheme and context for this report.
- 2.1.4 Detailed site surveys in particular in relation to the existing carriageway widths, property boundaries, topography, and utility locations would be required to attain more design certainty.
- 2.1.5 A Road Safety Audit would also be required if any of the measures described in this report were to be taken forward.
- 2.1.6 The provision of any of the highway modifications described in this report would require the approval of the local highway authority.
- 2.1.7 It is assumed that any alterations to the Non-Motorised User (NMU) infrastructure through Woore would need to be achieved within the existing highway boundary.
- 2.1.8 It is assumed that any modifications to the existing school bus drop-off/pick-up point and/or provision of new pedestrian guardrailing in Woore would be incorporated into a broader package of traffic calming measures in line with the principles set out in the 'Traffic Calming and Road Safety Provision Options – Woore Village' report.

3 Pedestrian Guardrailing at A51 Signal-Controlled Pedestrian Crossing

3.1 Background

Design guidance summary

3.1.1 Key extracts from a number of relevant design guidance documents have been provided below to summarise the current guidance in relation to the provision of pedestrian guardrailing.

3.1.2 LTN 2/09 'Pedestrian Guardrailing' summarises the main purpose of guardrailing and states that alternative safety measures should be considered first:³

- Paragraph 1.3.5 - *"The main purpose of guardrailing is to improve safety by trying to prevent pedestrians from crossing the road at an inappropriate place or from straying into the road inadvertently. Guardrailing can also be used to offer some protection to pedestrians at locations where the swept path of large vehicles, such as buses and heavy goods vehicles, takes the vehicles close to the footway, sometimes overhanging it."*
- Paragraph 2.1.10 - *"In general, it is recommended that the installation of new guardrailing should not be considered if alternative safety measures could be used"*
- Paragraph 2.2.2 - *"There are increasing calls for the reduction in the use of guardrailing.... Work to improve the streetscape has been carried out at locations such as Kensington High Street, London, where, as part of the overall enhancement of the streetscape, over 700 metres of guardrailing was removed."*

3.1.3 Transport in the Urban Environment (CIHT, 1997) offers the following advice on installing guardrailing:

- *"The installation of pedestrian guardrails should be considered only where there are real risks of accidents should pedestrians walk onto the carriageway. Guardrails are intrusive and unsightly. Their purpose is to restrict people's freedom of movement. This will be resented unless the installation is self-evidently necessary. The use of guardrails should be avoided unless there is no alternative in terms of pedestrian safety."*

³ Department for Transport Local Transport Note 2/09 – Pedestrian Guardrailing

3.1.4 The Department for Transport, Local Government and the Regions report 'A Road Safety Good Practice Guide' (DTLR, 2001b), suggests a cautious approach to the installation of pedestrian guardrailing:

- *"Guardrail or fencing to channel pedestrians to the designated crossing may be deemed necessary on busy roads. However, their use should only be considered where the risks of walking onto the carriageway are very high, as they have a number of disadvantages. They are visually intrusive, reduce footway width, can obscure children, and can cause access difficulties to commercial premises."*

3.1.5 Manual for Streets (MfS) (DfT/ CLG/WAG, 2007) identifies the need to bring about a transformation in the quality of streets and advocates the use of guardrailing only where there is a clear need for it:

- *"Guardrailing should not be provided unless a clear need for it has been identified. Introducing measures to reduce traffic flows and speeds may be helpful in removing the need for guardrailing. In most cases, on residential streets within the scope of MfS, it is unlikely that guardrailing will be required."*

3.1.6 DMRB TA 57/87 'Roadside Features' provides the following guidance in relation to minimum length of provision and typical setback distance from the edge of carriageway:

- Paragraph 4.1.2 *"The function of guardrailing is to prevent pedestrians stepping on to the carriageway near locations where safer facilities exist and to guide them on to the crossings. The minimum length of guardrail to achieve this is 10m at each side of the crossing, but longer lengths are effective if circumstances allow"*
- Paragraph 4.3.1 – Pedestrian Guardrailing *"use also constitutes a potential hazard to vehicles and their occupants in a similar manner to other roadside furniture, particularly in view of its continuous linear nature and its proximity to the edge of carriageway (450-600m usually)."*

3.1.7 The provision of any pedestrian guardrailing would require the approval of the local highway authority.

3.2 Existing provision and site constraints

3.2.1 The key features and site constraints related to the existing highway and NMU provision in the vicinity of the existing signal-controlled crossing on the A51 London Road adjacent to Woore Primary and Nursery School are as follows:

- There are existing dropped kerbs at a number of locations in the vicinity of the signal-controlled crossing. Pedestrian guardrailing should not be placed within the extents of dropped kerbs as this would inhibit pedestrians from crossing at

designated pedestrian crossing locations or would inhibit vehicles from accessing/egressing residential and commercial properties at designated vehicle entrances/exits. Given the tight existing site constraints it is not considered feasible to relocate any of the existing dropped kerbs in the vicinity of the signal-controlled crossing. As such, pedestrian guardrailling should not be provided at the following locations:

- Within the extents of the dropped kerbs on the A51 for the signal-controlled pedestrian crossing;
 - Within the extents of the footway dropped kerbs on both sides of the Woore Primary and Nursery School access road; and
 - Within the extents of dropped kerbs for residential and commercial property accesses along the A51 London Road.
- The existing footway width on the western side of the A51 varies between approximately 1.3m and 2.2m wide. The existing footway width on the eastern side of the A51 varies between approximately 1.7m and 2.2m wide. As outlined in previous traffic calming reports examining this location⁴, it is not considered feasible to increase the footway widths at this location on the basis of the existing site constraints (In particular as a result of the narrow existing A51 carriageway width at this location and the proximity to existing residential property boundaries). The desirable minimum footway width specified in the HS2 Technical Standard – Roads is 1.5m with an absolute minimum of 1.2m unobstructed width over short distances.
 - The existing A51 London Road / Woore Primary and Nursery School access road junction has tight corner radii that inhibits ease of access for larger vehicles (e.g. refuse vehicles). Any highway modifications in close proximity to the access junction would need to ensure that safe vehicular access to/from the access road is carefully considered.
 - The junctions along the A51 London Road (A51/The Green, A51/The Chalway and A51/ Woore Primary and Nursery School access road junctions)
 - A number of items of street furniture (including utility cabinets, utility poles, lighting columns and traffic signal poles) reduce the effective footway width and restrict pedestrian movements on the footways.
 - There is no existing pedestrian guardrailling provision in the vicinity of the crossing under consideration or at any other location in Woore village.

3.3 Accident Data

- 3.3.1 A UK-wide accident data source 'Crashmap' shows that for the 5 year period from 2014 – 2018 there have been three recorded accidents along the A51 within Woore village. This includes two slight incidents at the A51/A525 junction and one slight incident further north of the village centre. There are no records of accidents in the

⁴ 'Traffic Calming and Road Safety Provision Options – Woore Village' Report (HS2 Ltd, 2019); and 'Woore Village Traffic Calming and Footway Provision' Report (HS2 Ltd, 2019)

vicinity of the signal-controlled pedestrian crossing adjacent to Woore Primary and Nursery School.

3.3.2 The data indicates that there are no accident clusters (nine or more accidents in three years) on roads in Woore.

3.4 Potential guardrailing provision

3.4.1 As outlined in DMRB TA 57/87⁵, pedestrian guardrailing is typically set back minimum 450mm from the edge of carriageway. Based on an assumed 50mm guardrailing width, if guardrailing were to be introduced along the full length of the A51 footways in the vicinity of the A51 signal-controlled pedestrian crossing, the effective footway widths would be reduced by a total of 500mm to:

- Between approximately 0.8m - 1.7m on the western side of the A51.
- Between approximately 1.2m - 1.7m on the eastern side of the A51.

3.4.2 Locations where the effective width would be reduced to less than 1.2m were not taken forward for further consideration on the basis that they would not provide the absolute minimum widths required under HS2 technical standards.

Design Overview

3.4.3 An overview of the potential locations where pedestrian guardrailing could be provided is illustrated in Figure 1. Further illustrations based on photographs of the site are provided in Figures 2 and 3 for context. The key features of this potential design measure can be summarised as follows:

- It may be possible to provide two sections of pedestrian guardrailing on the eastern side of the A51, consisting of an approximately 19.5m long section to the north of the existing signal-controlled pedestrian crossing and an approximately 2m long section to the south of the existing signal-controlled pedestrian.
- It may be possible to provide one section of pedestrian guardrailing on the western side of the A51, consisting of an approximately 10m long section to the south of the existing signal-controlled pedestrian crossing.
- Based on an assumed guardrailing set back distance of 450mm from the edge of carriageway and an assumed 50mm guardrailing width, minimum unobstructed footway widths of between approximately 1.2m and 1.7m would be provided on both sides of the carriageway.
- Utility protection and/or diversion works may be required to accommodate the guardrailing foundations. This would have implications for cost, construction

⁵ DMRB TA 57/87 'Roadside Features' Paragraph 4.3.1

programme and disruption to road users. Further design development and site investigation would be required to confirm the scope of any utility works required.

Figure 1: Potential pedestrian guardrailling provision on A51 London Road

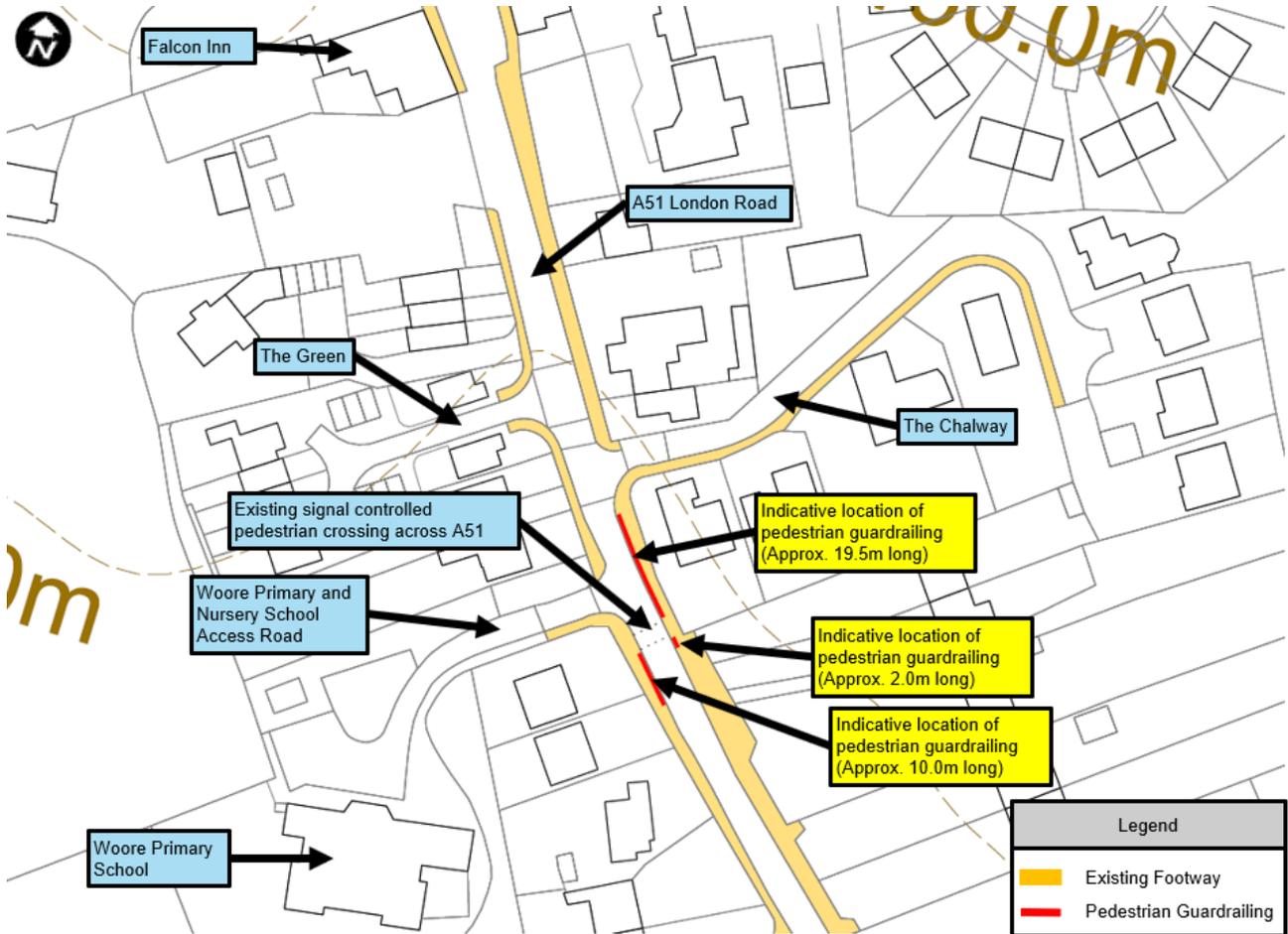


Figure 2: Potential pedestrian guardrailling provision (View looking North on the A51)

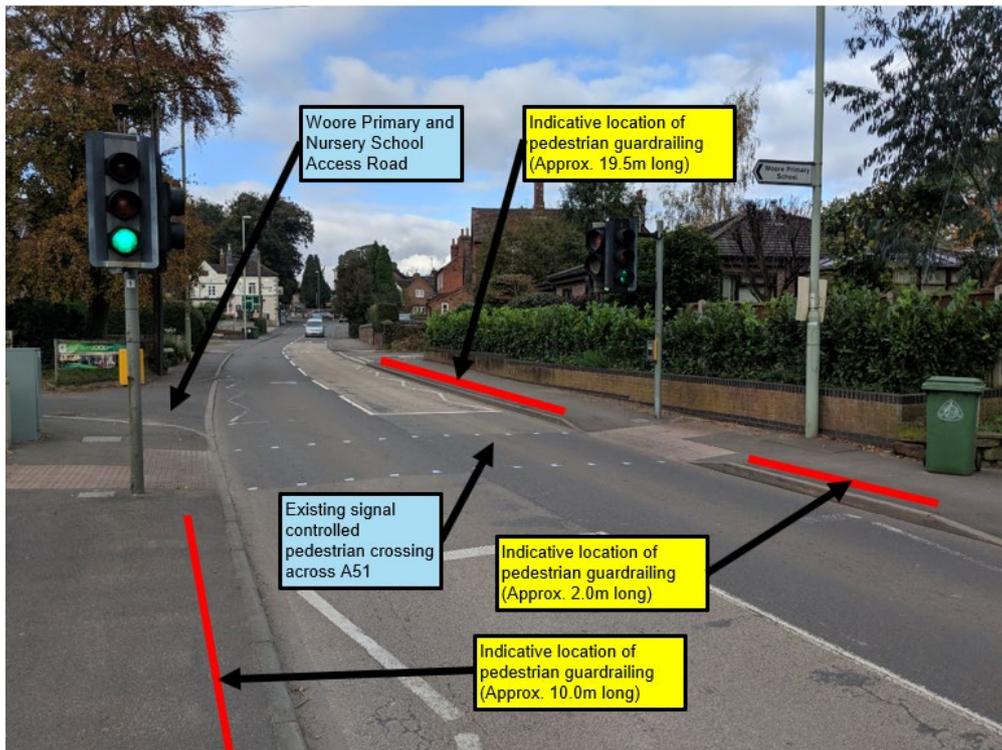


Figure 3: Potential pedestrian guardrailling provision (View looking South on the A51)



Advantages

3.4.4 The key potential advantages of this potential pedestrian guardrailling provision can be summarised as follows:

- The guardrailling may encourage pedestrians (including school children) to cross at the designated signal-controlled crossing point across the A51.

- The guardrailing would prevent pedestrians (including school children) from straying into the road inadvertently at these locations.

Disadvantages

3.4.5 The key potential disadvantages of this potential guardrailing provision can be summarised as follows:

- The existing site constraints (primarily dropped kerbs, narrow footways and junctions) restrict the ability to provide continuous sections of guardrailing to the north and south of the crossing on both sides of the carriageway for the desirable minimum length of 10m. This would substantially reduce their effectiveness as a means of preventing pedestrians from crossing the A51 away from the signal-controlled crossing.
- Pedestrian guardrailing can be considered to have an “urbanising” effect that may have a negative impact on the rural heritage characteristics of Woore village.
- The provision of guardrailing would lead to a substantial reduction in the effective footway width (by approximately 0.5m) along the length of provision. This would inhibit the movements of pedestrians, wheelchair users and parents with prams/pushchairs etc. on the narrow existing footways particularly in peak times outside Woore Primary and Nursery School.
- Pedestrian guardrailing can reduce visibility to/from vehicles for small children on the footways. This would have negative road safety implications.
- In accordance with the design guidance summarised in Section 4.1 of this report, alternative road safety improvements may be considered more appropriate design solutions at this location.
- The provision of guardrailing may not be supported by the local highway authority for reasons that may include the potential disadvantages outlined above.

Assessment Summary

3.4.6 It may be possible to provide a limited length of pedestrian guardrailing in the vicinity of the A51 signal controlled pedestrian crossing in Woore village. However, it may not be considered desirable.

3.4.7 As a result of the existing site constraints, it would not be possible to provide continuous guardrailing on both sides of the carriageway for the desirable minimum lengths. This would reduce the effectiveness of any guardrailing provision. Any pedestrian guardrailing provision at this location would also further inhibit pedestrian movements on the existing narrow footways and may be considered to have a negative visual impact on the heritage characteristics of the Woore village.

- 3.4.8 The traffic calming measures proposed in 'Traffic Calming and Road Safety Provision Options – Woore Village' report⁶ would seek to reduce vehicle speeds through Woore village and improve safety for pedestrians (e.g. through the provision of an upgraded 'Puffin' type pedestrian crossing.) In accordance with the latest design guidance, these traffic calming measures may be considered more appropriate safety upgrades at this location compared to pedestrian guardrailing.
- 3.4.9 Further consultation with the local highway authority would be required to confirm whether they would consider approving the introduction of pedestrian guardrailing at this location.

⁶ Document No. C861-ARP-PT-REP-000-100224

- 4.1.4 There is no existing tactile paving at the crossing. There are also no existing traffic signs at this location to highlight the presence of a crossing point and/or warning of the presence of school children crossing.
- 4.1.5 Visibility to/from the full width of a crossing is considered to be a key design feature for any pedestrian crossing point. Particular consideration needs to be given to the use of the crossing by small children, ensuring that drivers have clear visibility of children at the crossing and that children have clear visibility of approaching vehicles.
- 4.1.6 Visibility to/from the existing crossing from the A51 southbound is severely restricted by a number of existing obstructions. Visibility to/from pedestrians waiting on the existing northern side of the A525 crossing is particularly restricted. A list of the key existing obstructions to visibility is provided below:
- The existing raised decking, planting, commercial signage and railings outside the 'Coopers Arms' pub;
 - The existing utility cabinet on the northern side of the A525 Newcastle Road; and
 - Any vehicles occupying the existing parking space on the A51 London Road outside the 'Coopers Arms' pub.

4.2 Potential measures

- 4.2.1 Potential measures that could be considered to improve safe access to/from the school bus drop off point in Woore are as follows:
1. Upgrade existing uncontrolled crossing on A525
 2. Provision of a new pedestrian crossing on A525
 3. Relocate bus stop from A525 onto A51
 4. Upgrade A51/A525 junction to signalised junction with signal-controlled pedestrian crossing facilities.
 5. School Crossing Patrol Officer on A525 Crossing
- 4.2.2 A brief description of each option together with a list of the key potential advantages and disadvantages of each option is provided below. Any recommended option would be subject to agreement with WPC and approval of the local highway authority.
- 4.2.3 It is assumed that any measures taken forward would be incorporated into a broader package of traffic calming measures in line with the principles set out in the 'Traffic Calming and Road Safety Provision Options – Woore Village' report⁷.

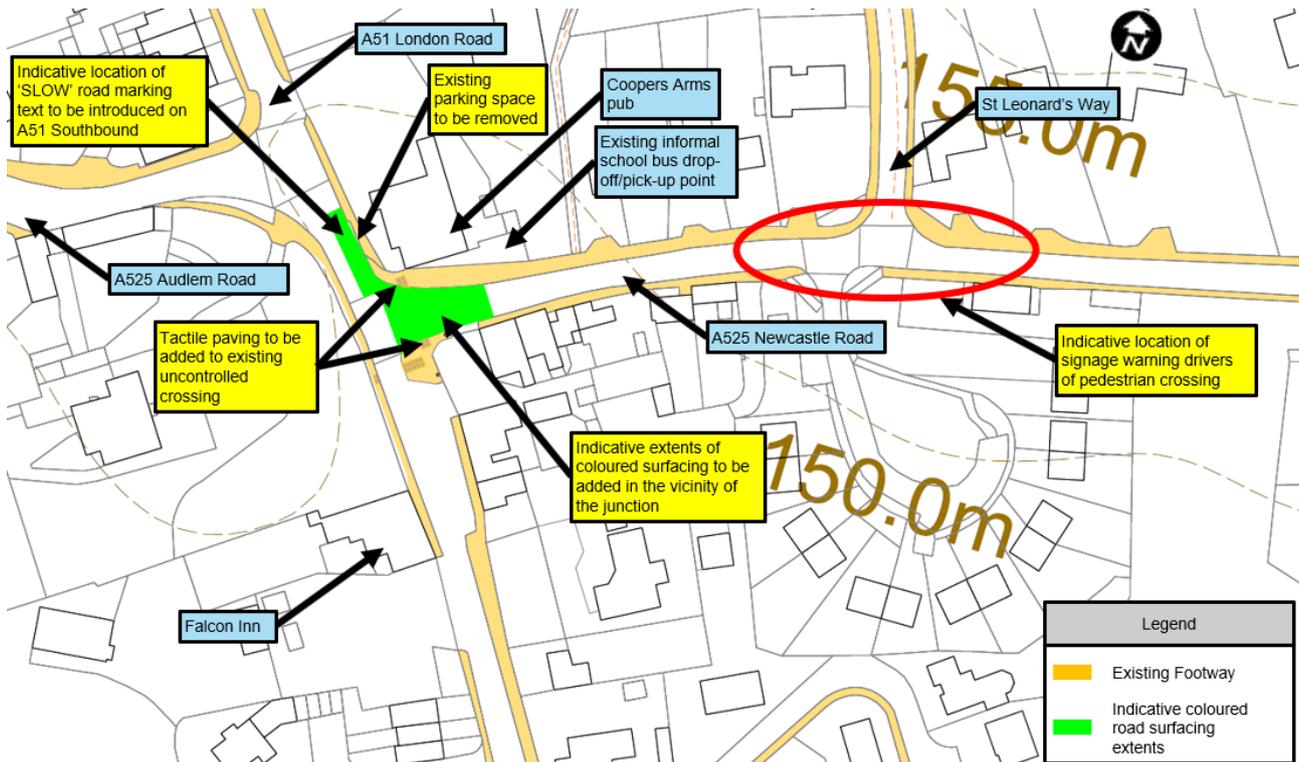
⁷ Document No. C861-ARP-PT-REP-000-100224

Option 1 – Upgrade existing uncontrolled crossing on A525

Description

4.2.4 An overview of the indicative option 1 design is illustrated in Figure 5 below.

Figure 5: Overview of Option 1 design measures



4.2.5 The key design features for this option can be summarised as follows:

- Warning signage highlighting the presence of pedestrians and/or school children crossing would be introduced on the A525 in advance of the crossing point. (E.g. Signage to Diagram 545 (S2-2-25) from Traffic Signs Manual Chapter 4) This may need to be mounted to existing utility poles to minimise street clutter.
- The existing parking space on the A51 London Road would be removed to provide improved visibility to/from the crossing to/from A51 southbound vehicles;
- The existing crossing length of approximately 12.5m would be retained.
- Tactile paving would be introduced at the crossing point.
- Coloured road surfacing would be introduced on the A525 on the junction approach This measure would be introduced to encourage reduced vehicle speeds in the vicinity of the crossing and would further build on the other measures such as Vehicle Activated Signs and A51 southbound coloured

surfacing/'Slow' road marking text proposed as part of the recommended design package described in the 'Traffic Calming and Road Safety Provision Options – Woore Village' report.

- 4.2.6 Alternative measures, such as introducing kerb build-outs and/or pedestrian refuge islands, were considered. These were however ruled out at this location due to the tight existing site constraints and the need to accommodate the turning movements of large articulated vehicles through the A51/A525 junction.
- 4.2.7 The introduction of pedestrian guardrailling in the vicinity of the crossing to guide pedestrians to the designated crossing location was also considered. However, this was ruled out due to the presence of existing accesses, existing parking provision and narrow existing footways along the A525 that all restrict the ability to provide a length of guardrailling that would have any substantial road safety benefits.

Advantages

- 4.2.8 The key potential advantages of the measures outlined as part of this design option can be summarised as follows:
- The measures would increase driver awareness of the presence of a crossing at this location.
 - The measures would encourage reduced vehicle speeds.
 - Visibility to/from the crossing would be improved through the removal of the parking space.
 - The introduction of tactile paving would represent an improvement for visually impaired pedestrians.

Disadvantages

- 4.2.9 The key potential disadvantages of the measures outlined as part of this design option can be summarised as follows:
- The measures would not fully address the existing visibility issues to/from the crossing.
 - The existing large crossing length would be retained.
 - The measures may be considered to have an “urbanising” effect that may have a negative impact on the rural heritage characteristics of Woore village.
 - Parking provision in the village would be reduced by one space.

Assessment Summary

- 4.2.10 This option includes measures that would have road safety benefits for the existing uncontrolled pedestrian crossing by increasing driver awareness of the presence of

a crossing, encouraging reduced traffic speeds and improving visibility to the crossing from the A51.

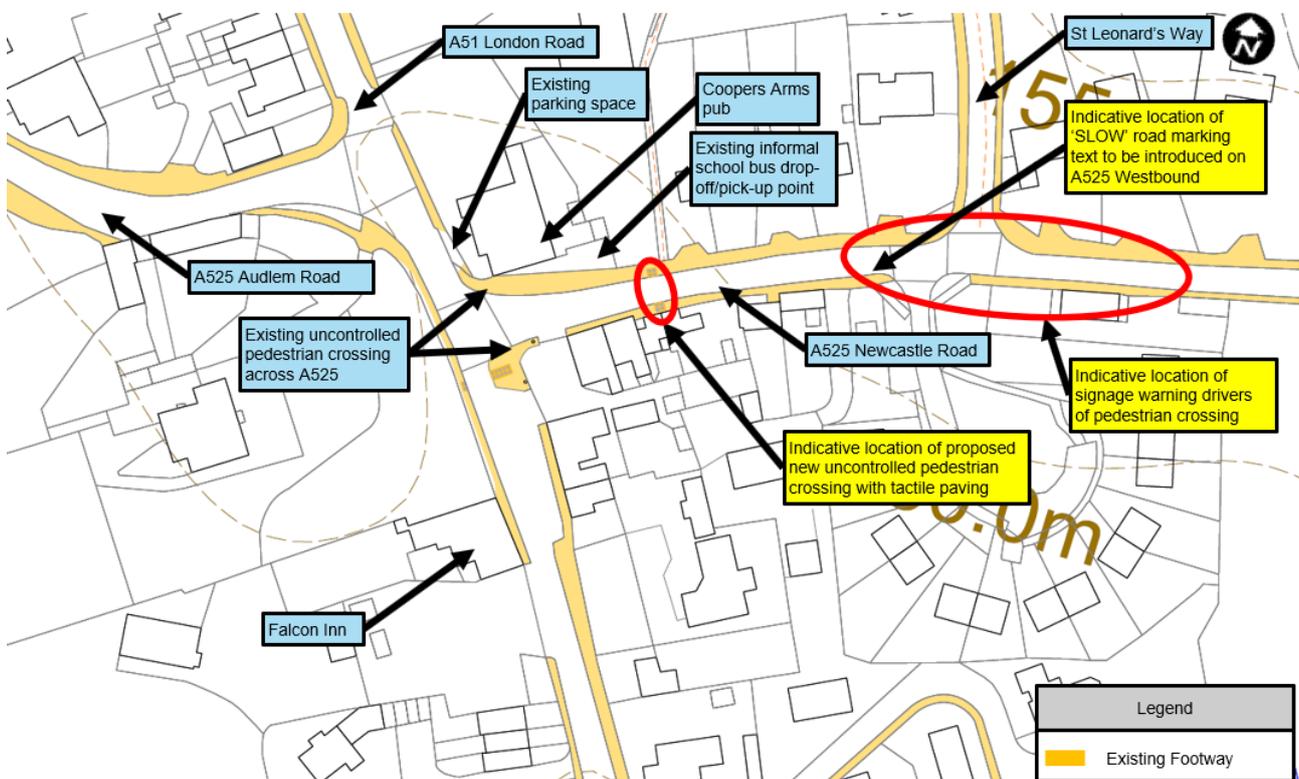
4.2.11 The proposed measures would not entirely address the existing visibility issues at the crossing and the proposed measures may be considered to have a negative impact on the heritage characteristics of Woore village.

Option 2 – Provision of a new pedestrian crossing on A525

Description

4.2.12 An overview of the indicative option 2 design is illustrated in Figure 6 below.

Figure 6: Overview of Option 2 design measures



4.2.13 The key design features for this option can be summarised as follows:

- A new uncontrolled pedestrian crossing across the A525 would be introduced approximately 32m to the east of the existing uncontrolled crossing point. The existing kerb would be modified to accommodate dropped kerbs at this location.
- The crossing would be located beyond the limits of the junction radii and the crossing length at this location would be approximately 6.5m.

- Warning signage highlighting the presence of pedestrians and/or school children crossing would be introduced on the A525 in advance of the crossing point. (E.g. Signage to Diagram 545 (S2-2-25) from Traffic Signs Manual Chapter 4) This may need to be mounted to existing utility poles to minimise street clutter.
- Tactile paving would be introduced at the crossing point.
- 'Slow' text road marking would be introduced on the A525 westbound carriageway to encourage reduced vehicle speeds in advance of the crossing.
- The existing uncontrolled A525 crossing located 4.5m to the east of the A51 would be retained.

4.2.14 It would not be possible to locate the new crossing closer to the A51/A525 junction due to the existing site constraints such as existing accesses and parking provision along the A525.

Advantages

4.2.15 The key potential advantages of the measures outlined as part of this design option can be summarised as follows:

- The introduction of a new crossing away from the junction would provide the following road safety benefits to pedestrians:
 - The crossing length would be reduced compared to crossing at the existing uncontrolled crossing at the junction;
 - Visibility to/from A525 eastbound traffic (including A51 southbound traffic turning left onto the A525) would be better than the existing visibility to/from the existing uncontrolled crossing as there would be fewer obstructions to visibility at this location.
- The traffic signs would increase driver awareness of the presence of a crossing at this location.
- The introduction of tactile paving would represent an improvement for visually impaired pedestrians.

Disadvantages

4.2.16 The key potential disadvantages of the measures outlined as part of this design option can be summarised as follows:

- The new crossing location would not be on the desire line for most pedestrians (e.g. pedestrians crossing the A525 to/from the existing corner shop) so many pedestrians including school children going to/from the drop-off/pick-up location may not use the new crossing.

- Drivers may not be expecting a pedestrian crossing at this location, over 36m from the existing A51/A525 junction, which may have negative road safety implications.
- Traffic speeds would be higher at this crossing location further away from the junction compared to traffic speeds at the existing crossing on the immediate junction approach. This may have negative road safety implications.
- The new crossing location would be directly adjacent to the front doors of residential properties on the southern side of the A525, which may be objected to by the owners of these properties.

Assessment Summary

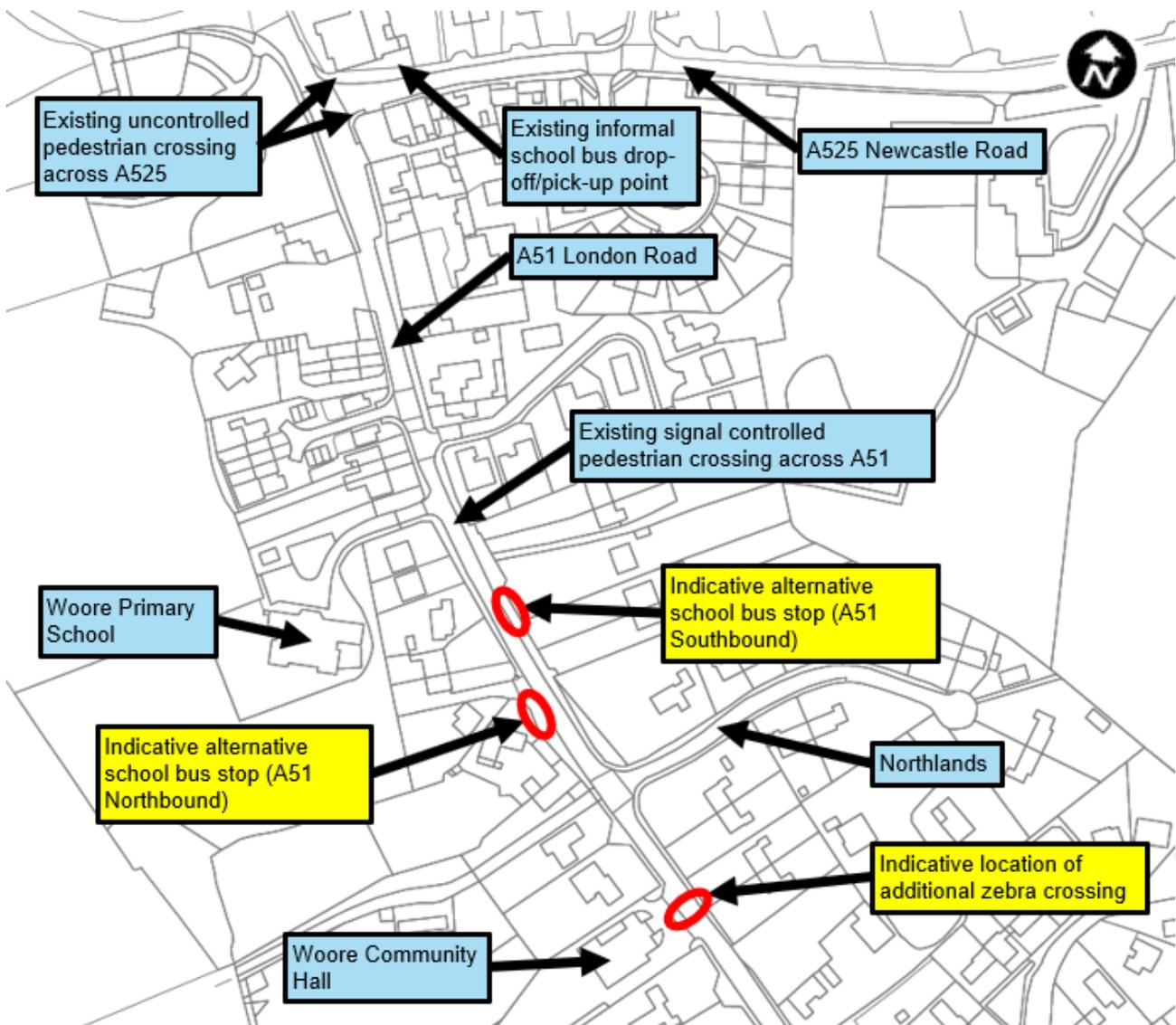
- 4.2.17 Whilst there may be some road safety benefits associated with the introduction of a new crossing at this location, it is likely that many pedestrians would not use it as it is too far from the pedestrian desire line. The potential negative road safety implications of introducing a crossing away from the junction, where drivers may not be expecting a crossing, would also need to be carefully considered if this option were to be taken forward. It may therefore not be considered to be an effective measure to improve safe access to/from the school bus drop-off/pick-up point.
- 4.2.18 The safety improvements described for Option 1 could be incorporated into this option if it were to be taken forward.

Option 3 – Relocate bus stop from A525 onto A51

Description

- 4.2.19 An overview of the indicative option 3 design is illustrated in Figure 7 below.

Figure 7: Overview of Option 3 design measures



4.2.20 The key design features for this option can be summarised as follows:

- The school drop-off/pick-up point would be relocated and replaced by two formal on-carriageway bus stops as follows:
 - One bus stop for the A51 southbound direction located approximately 210m to the south of the existing school drop-off/pick-up point
 - One bus stop for the A51 northbound direction located approximately 255m to the south of the existing school drop-off/pick-up point
 These locations were selected on the basis of the relatively wide existing footway provision at these locations. On-carriageway bus stops would be provided as there is insufficient spatial provision within the highway boundary to provide full width bus bays adjacent to the A51 carriageway.
- Appropriate road marking and bus top signage would be introduced.
- An additional zebra crossing would be introduced on the A51 London Road to provide a safe crossing facility to/from the south of Woore village to access

either bus stop. School children would cross the A51 to the north of the proposed bus stop locations using the existing signal-controlled crossing adjacent to Woore Primary and Nursey School. School children would cross the A525 using the existing uncontrolled crossing on the A51/A525 junction approach.

Advantages

4.2.21 The key potential advantages of the measures outlined as part of this design option can be summarised as follows:

- The proposed alternative bus stop locations in proximity to the existing A51 signal controlled crossing and the proposed new zebra crossing may increase the likelihood that school children would cross at designated crossing locations including across the A525 as these crossing locations would be nearer the desire lines for most pedestrian movements compared to the existing arrangement.
- Travel distances to/from the relocated school drop-off/pick-up points would be reduced by up to approximately 210m-255m for pedestrians travelling to/from the south of Woore village.
- Children would not be waiting for the bus in the vicinity of the existing parking provision on the A525 at the Coopers Arms pub and the existing parking provision outside the corner shop. This would reduce the exposure of school children to potential reversing vehicle conflicts.

Disadvantages

4.2.22 The key potential disadvantages of the measures outlined as part of this design option can be summarised as follows:

- School children travelling to/from the northeast of the village would still need to use the existing uncontrolled crossing across the A525 at the A51/A525 junction, which has restricted visibility to/from the A51 southbound and a large crossing length.
- The provision of on-carriageway bus stops would lead to occasional disruption to road users at drop-off/pick-up times as school children get on/off the bus.
- Travel distances to/from the relocated school drop-off/pick-up points would be increased by up to approximately 210m-255m for pedestrians travelling to/from the north of Woore village. This may not be supported by parents of children travelling to/from the north of the village.
- The provision of a bus stops and a zebra crossing on the A51 London Road may be considered to have a negative impact on the heritage characteristics of Woore village and these measures also may not be supported by the local highway authority.

Assessment Summary

- 4.2.23 This option may lead to road safety benefits as school children may be more likely to use designated crossing points as the crossing points would be closer to the pedestrian desire lines travelling to and from the relocated drop-off/pick-up points. School children would also no longer be waiting for school buses in the vicinity of moving vehicles in car parks. Further consultation with the local highway authority would be required if this option were to be taken forward.
- 4.2.24 The safety improvements described for Option 1 could be incorporated into this option if it were to be taken forward to improve the safety of the existing uncontrolled A525 crossing at the A51/A525 junction.

Option 4 – Upgrade A51/A525 junction to signalised junction with signal-controlled pedestrian crossing facilities

Description

- 4.2.25 The key design features for this option can be summarised as follows:
- The full A51/A525 staggered junction would be signalised and a signal-controlled pedestrian crossing would be introduced across the A525 carriageway. A signal-controlled pedestrian crossing across the A51 London Road would be introduced to replace the zebra crossing proposed as part of the recommended design package described in the 'Traffic Calming and Road Safety Provision Options – Woore Village' report (Document No. C861-ARP-PT-REP-000-100224).
 - The existing parking space on the A51 London Road would be removed from within the extents of the signal-controlled staggered junction.
 - Additional highway modifications (including adjustments to kerblines etc.) would likely be required to accommodate traffic signal heads and signal-controlled junction geometry requirements.

Advantages

- 4.2.26 The key potential advantages of the measures outlined as part of this design option can be summarised as follows:
- The safety of the A525 pedestrian crossing would be improved under signal controls with dedicated crossing phases provided for pedestrians. Driver awareness of the presence of a crossing would be increased through the presence of traffic signal heads and signage.

Disadvantages

4.2.27 The key potential disadvantages of the measures outlined as part of this design option can be summarised as follows:

- Departures for junction inter-visibility would likely be required as a result of obstructions to visibility such as the existing decking and signage outside the Coopers Arms pub.
- There is a risk that school children may continue to cross the A525 away from the junction and not use the signal-controlled pedestrian crossing, following the desire line to the drop-off/pick-up point to/from the corner shop.
- This option would lead to a substantial increase in the scope of highway modifications in Woore village, including a likely increase in the scope of utility diversions and relocations. This would lead to increased costs, prolonged duration of construction works in Woore village and increased disruption to road users during construction. Additional land may also be required to deliver this option. Further design development would be required to attain more certainty on the impacts of this option.
- The provision of a signal-controlled junction with signal-controlled pedestrian crossing may be considered to have a negative impact on the heritage characteristics of Woore village.
- Parking provision in the village would be reduced by one space.
- The introduction of a signal-controlled junction may lead to increased journey times for road users on the A51 and A525.
- This option may not be supported by the local highway authority.

Assessment Summary

4.2.28 Whilst this option would lead to safety improvements for pedestrians crossing at the designated signal-controlled crossing point, there is a risk that school children may continue to cross the A525 away from the junction and not use the signal-controlled pedestrian crossing. This option would also lead to significant increases in cost, duration of construction activities and disruption to road users during construction; increased travel times on the A51 and A525 and would have an impact on the heritage characteristics of the village.

4.2.29 This option would require further consultation with the local highway authority if it were to be taken forward.

Option 5 – School Crossing Patrol Officer on A525 Crossing

Description

4.2.30 The key features for this option can be summarised as follows:

- A school crossing patrol would be introduced on the A525 in the vicinity of the crossing location proposed for Option 2. The school crossing patrol officer would remain in place for the duration of HS2 construction works during school term time at school bus drop/off and pick/up times.
- Warning signage highlighting the presence of a school crossing patrol would be introduced on the A525 in advance of the crossing point.
- As for the Option 2 design:
 - The existing kerb would be modified to accommodate dropped kerbs at this location;
 - The crossing would be located beyond the limits of the junction radii and the crossing length at this location would be approximately 6.5m;
 - Tactile paving would be introduced at the crossing point.
 - ‘Slow’ text road marking would be introduced on the A525 westbound carriageway to encourage reduced vehicle speeds in advance of the crossing.
 - The existing crossing located 4.5m to the east of the A51 would be retained.
- The existing uncontrolled A525 crossing located 4.5m to the east of the A51 would be retained.

4.2.31 It would not be possible to locate the new crossing closer to the A51/A525 junction as a result of the existing site constraints (e.g. existing accesses and parking provision along the A525.) It is not considered practicable to locate the school crossing patrol at the existing A525 uncontrolled crossing location as a result of the complexities associated with a school crossing patrol officer stopping turning traffic on the A51 London Road as well as traffic on the A525 Newcastle Road.

Advantages

4.2.32 The key potential advantages of the measures outlined as part of this design option can be summarised as follows:

- The signage measures and presence of a school crossing patrol officer would increase driver awareness of the presence of school children crossing at this location.
- The presence of a school crossing patrol officer would likely increase school children compliance with crossing at a designated crossing location across the A525.

- The introduction of a new crossing away from the junction would provide the following road safety benefits to pedestrians:
 - The crossing length would be reduced compared to crossing at the existing uncontrolled crossing at the junction;
 - Visibility to/from A525 eastbound traffic (including A51 southbound traffic turning left onto the A525) would be better than the existing visibility to/from the existing uncontrolled crossing as there would be fewer obstructions to visibility at this location.
- The introduction of tactile paving would represent an improvement for visually impaired pedestrians.

Disadvantages

4.2.33 The key potential disadvantages of the measures outlined as part of this design option can be summarised as follows:

- When the school crossing patrol officer is not on duty:
 - The new crossing location would not be on the desire line for many pedestrians so many pedestrians may not use the new crossing.
 - Drivers may not be expecting a pedestrian crossing at this location, over 36m from the existing A51/A525 junction, which may have negative road safety implications.
- Traffic speeds would be higher at this crossing location further away from the junction compared to traffic speeds at the existing crossing on the immediate junction approach. This may have negative road safety implications.
- The new crossing location would be directly adjacent to the front doors of residential properties on the southern side of the A525, which may be objected to by the owners of these properties.
- School crossing patrol officers are not common in Shropshire County.

Assessment Summary

- 4.2.34 This option would likely lead to road safety improvements for school children crossing the A525. The measures would increase driver awareness of the presence of school children crossing on the A525 and the school crossing patrol officer may assist in encouraging school children to cross at a designated crossing location.
- 4.2.35 The potential negative road safety implications of introducing a crossing away from the junction where drivers may not be expecting a crossing would also need to be carefully considered if this option were to be taken forward, particularly in relation to times when a school crossing patrol officer would not be on duty.
- 4.2.36 The safety improvements described for Option 1 could be incorporated into this option if it were to be taken forward.