



TRAFNIDIAETH CYMRU  
TRANSPORT FOR WALES



Llywodraeth Cymru  
Welsh Government



# Side Road Zebra Crossing Guidance

April 2026

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# Document status and applicability – April 2026

This document applies to adopted highway environment throughout Wales only.

This guidance is non-statutory and whilst it can assist highway authorities in complying with mandatory requirements it cannot provide a definitive legal interpretation, nor can it override them.

# 1. Introduction

## 1.1 Overview

This document is a guide for planning and designing side road Zebra crossings. It sets out where this type of crossing may be suitable and provides guidance on how they should be designed and installed.

A side road Zebra crossing aims to enable more people cycling and driving to comply with [Rule H2 of the highway code](#) which gives priority to pedestrians crossing a side road.

The side road Zebra crossing uses the prescribed black and white markings and give way lines but does not require the zig-zag markings or the yellow globes (commonly known as Belisha beacons). This offers two significant advantages:

1. By not requiring zig-zag markings, the setback distance of the crossing is reduced, and it becomes possible to install the crossing on users' desire lines, directly across the mouth of the junction.
2. By not including illuminated yellow globes, the design and installation become simpler and more economical, also reducing maintenance costs.

Side road Zebra crossings can only be installed within 5 metres of the junction line and where both the main road and the side road have a speed limit of 20mph.

Allowing the use of side road Zebra crossings supports the Welsh Government's ambition to give greater priority to walking and wheeling and supports an inclusive agenda of 'Travel for All'. The Welsh Government wants to support highway authorities in making walking and wheeling a more attractive option for short trips, thus enabling modal shift. This also supports the objectives of many Welsh Government strategies including [Llwybr Newydd: the Wales Transport Strategy 2021](#) and the goals set out in other legislation such as the [Active Travel \(Wales\) Act 2013](#) and the [Well-being of Future Generations \(Wales\) Act 2015](#).

## 1.2 The Traffic Signs (Amendment) (Wales) Regulations and General Directions 2026 (TSRGD 2026)

[2026 No. 35, ROAD TRAFFIC, WALES, from 11 March 2026](#)

The TSRGD 2026 amends the TSRGD 2016 so that in specified circumstances some of the requirements for Zebra crossings set out within it will not apply. It permits highway authorities to omit the zig-zag markings (controlled area) and yellow globes when a Zebra crossing is placed on a minor road within 5 metres of the junction with a major road and the speed limit on both roads is 20 mph or lower.

The TSRGD 2026 also allows the distance between the limits of the Zebra crossing and the give way line to be reduced from the current 1100mm to 300mm. Furthermore, it provides an exception to the general prohibition against a driver stopping their vehicle within the limits of a Zebra crossing.

Vehicles and cycles must stop to give precedence to people crossing at a side road Zebra crossing in the same way as with traditional Zebra crossings. Side road Zebra crossings are also made pursuant to the [Road Traffic Regulation Act 1984](#), Section 23 (for local authorities) and Section 24 (for the national authority acting as the traffic authority) and the same consultation and giving public notice requirements apply.

## 1.3 Document updates

This guidance will be reviewed periodically and may be updated when required. For example, if significant relevant evidence or safety data becomes available.

This document will likely be incorporated into a future iteration of the [Active Travel Act Guidance](#).

## 2. Suitability of side road Zebra crossings

### 2.1 Introduction

This chapter introduces several variables that impact the suitability, safety and design of side road Zebra crossings.

Only the most universal variables have been identified here. But as ever in the design of streets, because they vary so broadly, such a list can only be a guide and is no substitute for site observations, public engagement and critical thinking. Any relevant site-specific factors must be considered, where they may impact on safety or user experience for people using the crossing.

### 2.2 Traffic volumes and speeds

The speed and volume of traffic at a location are significant variables that impact peoples' ability to cross the carriageway and their safety when crossing.

Side road Zebra crossings may only be considered for areas where the speed limit is 20mph on both the side road and the main road.

It is recommended that speed surveys are conducted on the side road, the main road and at the proposed location for the Zebra crossing, to investigate the actual speed. If the measured 85th percentile speed in the area where the side road Zebra crossing is being proposed is above 25mph, then measures to reduce traffic speeds should be considered, determined through appropriate local investigation, appraisal and approval processes. This might include, but not be limited to, camera enforcement, horizontal or vertical deflection techniques or enhanced road marking or signing.

Geometry should ideally limit the design speed turning in and out of the side road to be lower than 10mph. This is likely to require the junction radii to be smaller than 3m (depending on the geometry and width of the roads). If larger radii are required to accommodate large vehicles or simply to avoid prohibitive junction modification costs, then alternative speed reducing measures may be considered (as above).

As per table 12.1 in the [Active Travel Act Guidance](#), Zebra crossings should be used where the total traffic to be crossed (AADT or the total traffic flow in and out of the junction) is less than 8000. The same AADT value apply for the side road Zebra crossings, the difference in between them is that side road Zebra crossings can only be used in roads with speed limits of 20mph. It is a guide only, and individual locations should be assessed on a case-by-case basis.

Evidence from the [Westminster side road Zebra crossing trials](#) suggests that traffic volumes did not present motor vehicle over-capacity issues in any of the trial locations, suggesting that overcapacity is unlikely to ever be an issue in Wales, nevertheless, it is recommended that scheme monitoring is undertaken to ensure road network performance is retained at acceptable levels.

Side road Zebra crossings zebras impose a legal priority for pedestrians, with TSRGD requiring drivers to give way to anyone on the crossing. People driving and cycling should also give way to anyone waiting to cross. Pedestrians should already have priority on side roads, as per Highway Code rule H2 which sets out that even without a formal crossing, people cycling or driving should give way to people crossing or waiting to cross a road into which or from they are turning. Where pedestrian flows are very high (such as am/pm commuter peaks and school open/closing times) vehicles may have to wait longer to enter/exit a busy side-road, but this tends to be absorbed by the gaps between approaching vehicles (see section 2.5).

The trials across Westminster shown that none of the sites demonstrated any significant network operation impacts, despite pedestrian flows ranging between 200-1500 pedestrians per hour and traffic demand of between 100-500 vehicles per hour.

## 2.3 Lighting

It is important that light levels at the locations where the side road Zebra crossings are being proposed are appropriate. Lighting levels are important to provide intervisibility between road users and people using the crossing.

Side road Zebra crossings may only be installed on a 20mph speed limit road. As this is the default speed limit in Wales for restricted roads, in most cases this will mean that street lighting is present. Side road Zebra crossings are not appropriate where street lighting is not present.

When considering a location, the site should be visited during the night to assess if the lighting levels are reasonable. For example, the pedestrians and the road markings can be easily seen, there are lighting columns nearby and no structures creating a shadow in the crossing path.

It is for the Highway Authority and their street lighting department to decide if a formal lighting assessment is required and to what standard. Neighbouring highway authorities should work together when the projects are in proximity.

A lighting assessment may be undertaken in accordance with the Institution of Lighting [Professionals Technical Report – TR12](#) using the methods described in BS EN 13201 4. The recommended standard of lighting is one usually undertaken for a Zebra crossing or the standard at a conflict point.

## 2.4 Collision Data

Monitoring, evaluation and analysis of any collision data is a pre-requisite for any crossing or junction redesign. If there are collisions involving pedestrians at the location then additional measures should be considered, such as: change of geometry of the junction, traffic calming, additional illumination, or a crossing with more safety features (such as traffic signals). Collision data analysis post scheme installation is also advised.

## 2.5 Modelling

The key objective of installing side road Zebra crossings is to reinforce priority to people walking and wheeling across the side road. At moments when people driving or cycling slow or stop to provide priority, this could be seen as causing greater delays than if priority was not provided to pedestrians.

At low levels of traffic demand and even with moderate pedestrian crossing demand, the additional delay is likely to be absorbed by the gaps between approaching vehicles, and it is unlikely that significant queues will develop. There may be moments of peak interaction, however the queues are likely to disperse within a short space of time and not create any significant impact on road network performance. A simple appraisal of vehicle traffic arrival rate and headway versus pedestrian arrival rate and crossing time will provide a suitable forecast of the likelihood of network performance impacts.

As part of the trials in Westminster, microsimulation modelling was initially used with default behavioural characteristics and assumptions on driver compliance and this showed that long queues and delays could develop, however once observed driver and pedestrian behaviour was used to modify the behavioural characteristics, more accurate forecasts were achieved showing no significant impact. Microsimulation modelling, with appropriate validation, can provide a more detailed, robust analysis of potential network performance impacts.

## 3. Design

### 3.1 Side road Zebra crossing

A side road Zebra crossing uses the prescribed black and white markings and give way lines (one give way line on one-way streets), without the zig-zag markings and the illuminated beacons.

The Zebra markings have a minimum width of 2400mm as per [Traffic Signs Regulations and General Directions](#) (TSRGD) (unless a request for special authorisation is made to the Welsh Government – see 4.3), which should match the width of the adjacent tactile paving (to avoid the transition kerb being a trip hazard). The length and spacing between the lines are also prescribed in the TSRGD.

Studs, paint or metal, are not required.

The Zebra crossing give way line at each side, usually between 1100 and 3000mm, may be reduced to 300mm if the traffic authority sees fit.

### 3.2 Junction geometry

Small side road entrance kerb radii reduce the speed of vehicles as they turn into or out of a side road, which will increase the reaction time and decrease the risk of collision. For this reason, wherever possible, it is preferable to have a small entrance radius by a crossing.

Narrow carriageway widths are another element that will contribute largely to speed reduction and will also shorten the distance to be crossed and reduce the amount of time pedestrians are in the carriageway/at the conflict point. Width and size of radii will factor together into the ability of vehicles to turn into and out the side road. For further information refer to Chapter 12 in the [Active Travel Act Guidance](#).

When vehicle tracking software is used to confirm the geometry, they should be carried out using the whole available carriageway and at low speeds. The aim is that larger vehicles negotiate the junction slowly (no more than 5mph) and using all available carriageway and that smaller vehicles are only able to turn in at no more than 10mph.

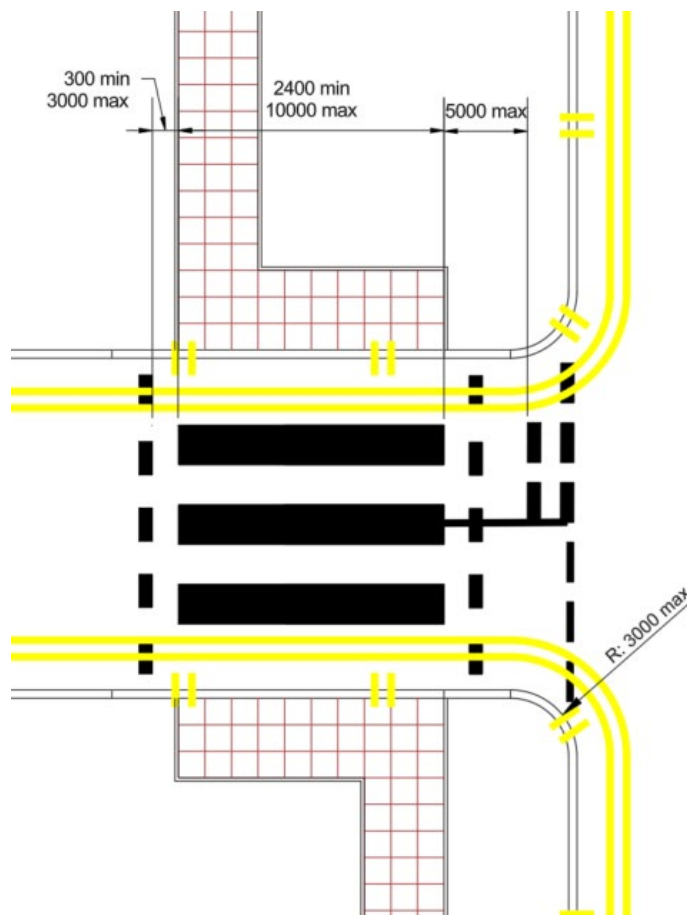
With small corner radii, larger vehicles might need the full carriageway width to turn into and out of the side road (overrunning the centreline or hatches), which is preferable in areas where large vehicles are occasional and suitable where queues are infrequent.

### 3.2.1 New build scenario

The maximum recommended corner radii for new build installations of side road Zebra crossings are 3000mm, but smaller radii are preferable and should be used wherever possible.

Figure 3.1. shows a side road Zebra crossing standard detail when installed on a location with no existing crossing. Dimensions in the drawing are shown in millimetres. It shows that the maximum distance from the junction with the major road is 5000mm, the maximum recommended corner radii for new build installations of side road Zebra crossings are 3000mm, the Zebra markings have a minimum width of 2400mm and a maximum of 10000mm and the Zebra crossing give way line at each side, may be a maximum of 3000mm, but may be reduced to 300mm if the traffic authority sees fit. The tactile paving arrangement shown is of a controlled crossing – red blister tactile paving in L shape. The detail also shows double yellow lines with double blips, which prohibit stopping and loading at any times.

**Figure 3.1.** Side road Zebra crossing standard detail when installed on a location with no existing crossing (dimensions in mm).



### 3.2.2 Retrofit

When retrofitting, keeping an existing wider radii kerb alignment may be appropriate. Highway authority officers should use their judgement to decide if the alignment, the visibility and the speeds in the area are appropriate for the crossing.

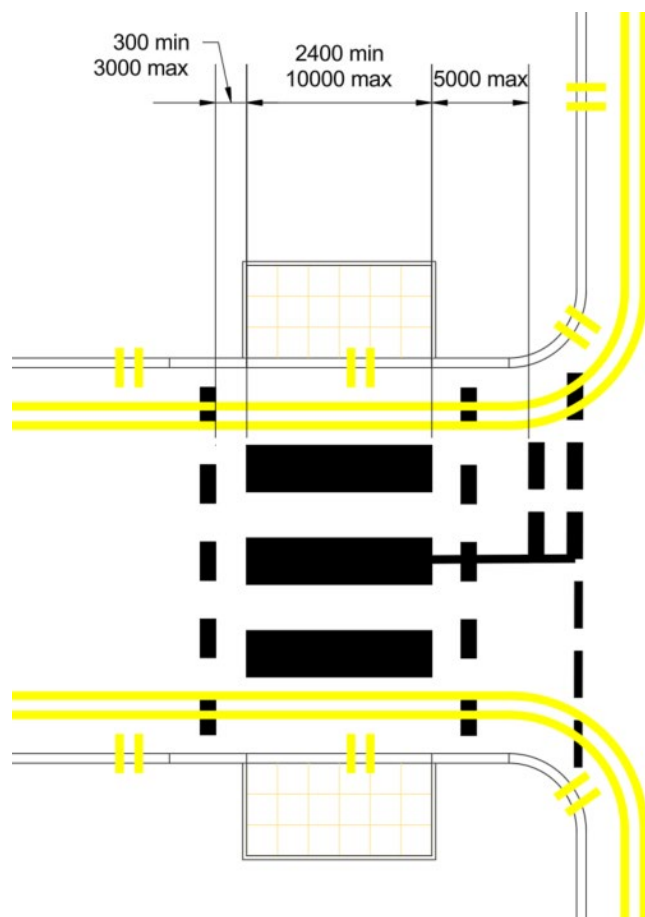
As an alternative, road markings may be used to create hatched areas for a visual reduction of radii to try to lower speeds. This can be supported with bolt-down units or bollards/wands to provide a quicker-to-install solution to tighten entrance radii.

Figure 3.2. shows a side road Zebra crossing standard detail when installed on a location with an existing uncontrolled crossing. Dimensions in the drawing are shown in millimetres. It shows that the maximum distance from the junction with the major road is 5000mm, the Zebra markings have a minimum width of 2400mm and a maximum of 10000mm and the Zebra crossing give way line at each side, may be a maximum of 3000mm, but may be reduced to 300mm if the traffic authority sees fit.

This detail shows buff blister tactile paving in the uncontrolled crossing arrangement as this arrangement may be retrofitted to an existing uncontrolled crossing, where these tactiles are already in place, without the need to change them. The detail also shows double yellow lines with double blips, which prohibit stopping and loading at any times.

Many existing side road uncontrolled crossings across Wales are less than 2400mm wide. If a side road Zebra crossing is being proposed to be retrofitted at one of these locations, the highway authority may widen the dropped kerb and tactile paving to match the 2400 crossing width or may request a dispensation to allow a narrower crossing (refer to 4.3). The dispensations will be analysed on a case-by-case basis. The image on the cover shows one of the trial crossings where a side road Zebra crossing was installed wider than the dropped kerb and tactile paving, without issues being reported, however the recommendation from [Inclusive Mobility](#) is that the widths match.

**Figure 3.2.** Side road Zebra crossing standard detail when upgrading an existing uncontrolled crossing (dimensions in mm).



### 3.3 Accessibility

Side road Zebra crossings, as with any crossing, require flush kerbs and tactile paving, in accordance with [Inclusive Mobility Guidance](#).

Side road Zebra crossings may be installed at existing uncontrolled crossings, which will likely have existing buff or grey tactile paving, without the requirement to change them.

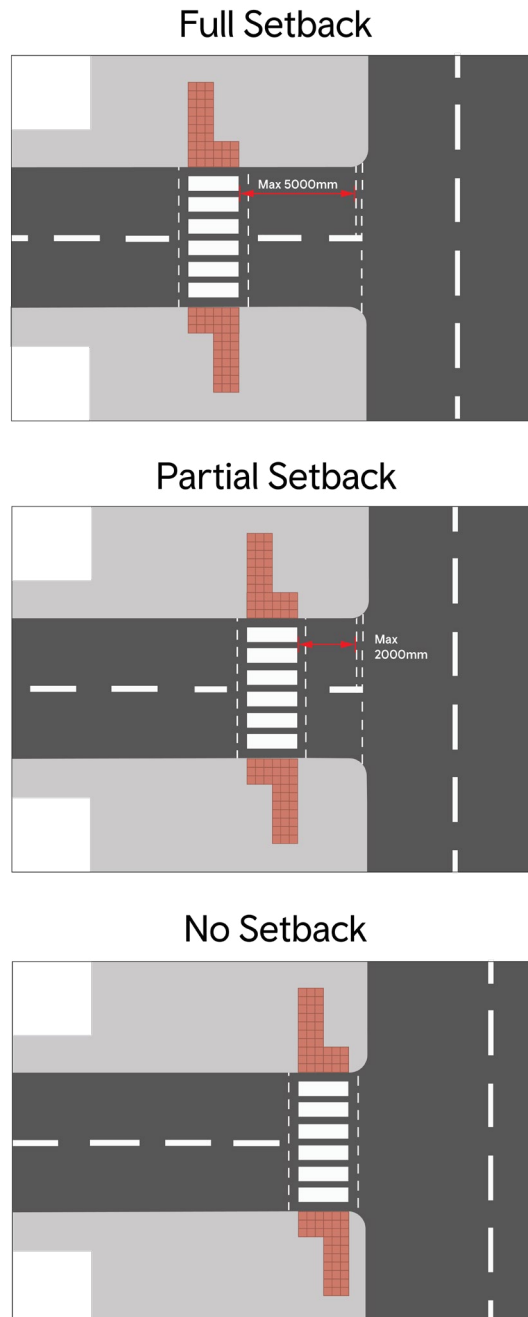
When installing a new side road Zebra crossing at a location where no crossing was available previously, where new dropped kerbs and tactile paving is required, then the tactile paving should match the traditional arrangement for controlled crossings (red blister paving).

These crossings should not be installed without existing or new dropped kerbs and tactile paving on both ends. The tactile paving arrangement in both situations should follow the [guidance on the use of tactile paving surfaces](#).

## 3.4 Setback

To align with desire lines for people walking and wheeling, designers may wish to 'setback' the crossing away from the junction. The three drawings in Figure 3.3. demonstrate full setback, which is the maximum of 5000mm from the junction of the main road, a partial setback, with a maximum distance recommended of 2000mm, or no setback, which means as close as possible to the junction of the main road.

**Figure 3.3.** Full, partial and no setback on a side road Zebra crossing.



The setback is calculated from the nearest transverse line of the junction road marking to the limits of the crossing (start of the Zebra marking).

Desirable maximum setback = 2000mm

Absolute maximum setback = 5000mm

If a setback of more than 5000mm is required, then the Zebra crossing will require yellow globes and zig-zag markings.

## 3.5 Drainage

As in any type of street environment, the crossing location and footways should be clear of ponding water. If the area where the side road Zebra crossing is being proposed shows evidence of ponding, then this should be rectified before the crossing is installed.

Gullies should not be placed in direct line of crossing. If the crossing cannot be moved then anti-slip, heel guard covers should be installed.

## 3.6 Traffic Calming

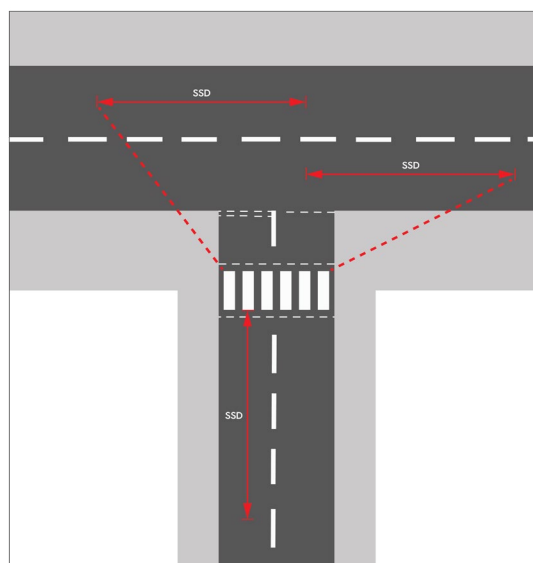
A side road Zebra crossing may be installed on a raised table. Raised table on adopted highways shall conform with the [Road Hump Regulations](#).

## 3.7 Visibility

The positioning of the side road zebra crossing should be informed by the visibility splay assessment as shown in Figure 3.4. below, which shows a side road zebra and the stopping sight distance from both lanes of the main road. It shows that the corner of the side road zebra crossing should be seen from the stopping sight distance in both directions and that the zebra should also be seen from the side road.

[Traffic Signs Manual, Chapter 6](#), sets out the recommended Stopping Sight Distance (SSD) for crossings in accordance to the 85th percentile speeds and [Manual for Streets](#) adjusts these distances to the bonnet length of a vehicle.

**Figure 3.4.** Visibility splays.



The minimum Stopping Sight Distance recommended is 25m where the 85th percentile speed is 20mph and 33m for 85th percentile speed of 25mph.

The closest corner of the crossing (as a minimum) should be visible from the SSD that applies to the speed at the location.

If the closest corner of the crossing at the proposed position is not visible from the SSD, then it is recommended that the crossing is installed closer to the junction line, until the visibility envelope is achieved.

The values above for SSDs are for a level road and gradients will affect them. It is recommended that these distances are increased accordingly as per [Manual for Streets](#).

Obstructions to visibility (such as signs, planters, etc.) that are not large enough to fully obscure a vehicle, or a pedestrian (including a child or wheelchair user) will in general not have significant impact on the safety of the crossing. All obstructions should be assessed and if they permanently impact the visibility then it is recommended that they are repositioned.

### 3.8 Parking and loading restrictions

As side road Zebra crossings do not have zig-zag markings, there will be no controlled area where vehicles are not allowed to stop and load. To increase the safety of the crossings, parking and loading restrictions should be applied.

As a minimum, the junction where the side road Zebra crossing is to be placed should have “no stopping at any time” (double yellow line markings) but preferably should also have “no loading at any time” restrictions (double yellow line markings with double kerb blips). These should extend to no less than 10 metres behind the crossing into the side road and 10m from the kerb alignment of the side road to both sides of the main road. Advice on the use of these markings is given in [Chapter 3 of the Traffic Signs Manual](#).

These are minimum recommended measurements and might need to be extended further to maintain required stopping sight distances between drivers and pedestrians (who would be located 1500mm back from the kerb edge on approach) for all movements out of and into the side road.

### 3.9 Carriageway quality and contrast

The carriageway surface may be used to represent the black stripes if it provides a reasonable contrast with the white. Level of contrast will need to be considered where coloured carriageway surfaces are proposed.

As for any crossing, the carriageway surface should be smooth and free of potholes/trip hazards, and as such the carriageway condition should be assessed and any defects dealt with as part of the installation.

Resurfacing of parts of the carriageway may be required where existing carriageway features/road markings clash with the new crossing (such as non-essential: roundels, give way triangles or “no entry” markings).

### 3.10 Materials

The side road Zebra crossings may consist of white thermoplastic lining. When the carriageway surface materials consist of paving, Methyl Methacrylate is recommended.

Any materials applied are required to comply with TSRGD. It is desirable for the white stripes to be illuminated with retroreflecting material.

### 3.11 Signage

The side road Zebra crossings do not require beacons or any specific signs, however, warning signs according to the TSRGD may be used if the highway authority deems necessary (for example in areas with higher speeds or less visibility), such as temporary “New Zebra crossing ahead” or a Zebra crossing sign. Temporary signs must have a “remove by” date on the back corresponding to the date of installation. The signs must be removed from display no later than 3 months after the completion of the works to which they relate. Where used, it may be preferable to place the signs on a temporary support such as an ‘A’ frame, so that they can be easily removed.

### 3.12 Road Safety Audits

Road Safety Audits (RSA) should be considered when proposing a side road Zebra crossing. This should include a combined Stage 1 & 2 RSA, Stage 3 and Stage 4. Each road safety audit should include two site visits, one at peak use time and one in the night.

Where the side road is at a junction with a trunk road, Road Safety Audits shall be undertaken.

## 4. Other considerations

### 4.1 Engagement

Before developing designs for any crossings, engagement with residents, businesses and local user groups in the area should be carried out, especially with groups supporting people with visual impairments. Additional guidance on engagement and consultation is provided in Chapter 5 from the [Active Travel Act Guidance](#). Under section 23 of the [Road Traffic Regulation Act 1984](#), the traffic authority has the requirement to give public notice and inform local chief of police.

Key questions that can be answered effectively through community engagement on side road Zebra crossings, that can add significant insight and value to a project designers' workflow include:

- What routes are commonly used for school journeys, and for which age group of children?
- What are the routes you walk or wheel along most commonly?
- Where do you feel most unsafe when crossing side roads?
- Which side roads feel safe to cross?
- Are there any access barriers, such as lack of dropped kerbs, that have made it harder for you to walk or wheel?
- Where have you seen illegal parking or pavement parking occur?
- Where excessive vehicle speeds a problem?
- Where are the locations where 'rat-running' is a problem?
- Are there unusually large or dangerous vehicles using the routes being considered (tractors, construction traffic or HGVs)?
- Are there any local factors that make the side roads in your area more dangerous for you to cross?
- Do you have any questions about side road Zebra crossings and how they work?
- Is there anything else you would like to tell us about road safety in your area?
- Do drivers tend to give you priority when crossing side roads, complying with the highway code?

On the other hand, leading questions are likely to be inappropriate or counter-productive at community or stakeholder engagement on local installation of side road Zebra crossings. Some examples are:

- Do you support making it easier to walk or wheel in your area?
- Do you think side road Zebra crossings would work/would not work in your community?
- Do you like/not like the idea of side road Zebra crossings?
- Do you think side road Zebra crossings would work/not work at [insert location] and if not, why not?

## 4.2 Monitoring and evaluation

As side road Zebra crossings are an innovation being led in Wales and are of significant interest to other UK nations (and beyond), monitoring and evaluating the results of their installation is especially important. For this reason, it is fundamental that the data is obtained in the same way so that it is reliable and comparable. For guidance and advice on monitoring and evaluation of side road Zebra crossings please contact Transport for Wales: [activetravel@tfw.wales](mailto:activetravel@tfw.wales).

## 4.3 Non Prescribed Signs and Lines Authorisation

If a traffic sign or road marking is **not included in TSRGD 2016 or further amendments**, a highway authority **must apply to the Welsh Government** for authorisation before it can be lawfully installed.

### 4.3.1 When authorisation is required

- No suitable prescribed sign or road marking exists in TSRGD.
- A sign or road marking requires non permitted variations (colour, layout, wording, this also includes bilingual signs in Wales unless the text is standardised and has already been approved for use).

### 4.3.2 What must be submitted

An application must include:

- A **site plan** showing exact sign and road marking location/orientation.
- A **sign and road marking drawing** with colours, dimensions, x height, Transport Alphabet font.
- Any other useful information, including: a **statement of purpose**, or TRO details for regulatory signs, a **designer's checklist** confirming no prescribed alternative exists.

### 4.3.3 Submission

Applications are currently sent to the Welsh Government at: [EST-NMDMailbox@gov.wales](mailto:EST-NMDMailbox@gov.wales) for review, this includes technical and Welsh language review carried out by the WG Translation Service.

### 4.3.4 Approval

If approved, the Welsh Government issues a legally binding **Authorisation** under sections 64/65 of the [Road Traffic Regulation Act 1984](#), specifying:

- The approved sign or road marking design.
- Conditions of use.
- Permitted variants.

Approved signs are then added to the archive of traffic sign authorisations.

## 5. Useful resources

**Welsh Statutory Instruments** (2026) The Traffic Signs (Amendment) (Wales) Regulations and General Directions 2026 No 35. Available at [The Traffic Signs \(Amendment\) \(Wales\) Regulations and General Directions 2026](#)

**Statutory Instruments** (2016) The Traffic Signs Regulations and General Directions 2016 No. 362. Available at [The Traffic Signs Regulations and General Directions 2016](#)

**Department for Transport** (2022) The highway code, rule H2. Available at [The Highway Code – Introduction – Guidance – GOV.UK](#)

**Acts of National Assembly for Wales** (2015) Well-being of Future Generations (Wales) Act 2015. Available at [Well-being of future generations | Sub-topic | GOV.WALES](#)

**Acts of the National Assembly for Wales** (2013) Active Travel (Wales) Act 2013. Available at: [Active Travel \(Wales\) Act 2013](#)

**Welsh Government** (2025) Active Travel Act Guidance – Consultation. Available at [Active Travel Act Guidance](#)

**Department for Transport** (2019) Traffic Signs Manual Chapter 3. Available at [Traffic Signs Manual – Chapter 3 – Traffic Control](#)

**Department for Transport** (2019) Traffic Signs Manual Chapter 6. Available at [Traffic Signs Manual – Chapter 6 – Traffic Control](#)

**Department for Transport** (2021) Guidance on the use of tactile paving surfaces. Available at [Guidance on the Use of Tactile Paving Surfaces](#)

**Department for Transport** (2021) Inclusive Mobility. Available at [Inclusive Mobility. A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure](#)

**Institution of Lighting Professionals** (2007) TR12 Lighting of Pedestrian Crossings. Available for members at [TR12 Lighting of Pedestrian Crossings](#)

**Welsh Government** (2021) Llwybr Newydd: the Wales transport strategy. Available at [Llwybr Newydd: the Wales transport strategy 2021 | GOV.WALES](#)

**UK Statutory Instruments** (1999) The highways (road humps) regulations 1999. Available at [The Highways \(Road Humps\) Regulations 1999](#)

**Transport Research Laboratory for Welsh Government** (2023) Side Road Zebra Crossings Trials in Wales: Road User Behaviour and Perceptions Report. Available at [side-road-zebra-crossing-trial-report.pdf](#)

**Transport Research Laboratory for Transport for Greater Manchester** (2021) Non-prescribed zebra crossings at side roads. Available at: [TRL Report](#)

**London Councils Transport and Environment Committee** (2025), 4 December 2025, NRP presentation, Westminster Side Road Crossing Study. Available on pages 40-49: [Group Agenda](#)

**Flower, J. and Parkin, J.** (2025) Effect of side road junction design enhancements and flows on priority for crossing pedestrians and cyclists, *Transportation Planning and Technology*, 48(4), pp. 693–711. Available at: [Effect of side road junction design enhancements and flows on priority for crossing pedestrians and cyclists](#)

**Department of Transport (Ireland)** (2024) Traffic Signs Advice Note TSAN 2024 01: Zebra Crossings without Belisha Beacons (includes permitted alternative zebra configurations). Available at [TSAN-2024-01 – Zebra Crossings without Belisha Beacons](#)

**Zhang, C., Sprenger, J., Ni, Z. and Berger, C.** (2024) Predicting and Analysing Pedestrian Crossing Behaviour at Unsignalized Crossings (preprint). Available at: [2404.09574](#)

**Statutory Instruments** (1984) Road Traffic Regulation Act 1984. Available at: [Road Traffic Regulation Act 1984](#)

**Department for Transport** (2007) Manual for Streets. Available at: [Designing and modifying residential streets: Manual for streets – GOV.UK](#)

# Appendix A – Lessons learned from on-street trials

The [trial in Cardiff](#) and the research on road user perception and behaviour commissioned by the Welsh Government from Transport Research Laboratory, showed that after the side road Zebra crossing markings were applied, there was a substantial and statistically significant drop in the number of cases where the pedestrian went second, providing strong evidence that there was a significant increase in propensity to give way.

Other positive outcomes were a statistically significant increase in the number of pedestrians that crossed at the desire line; an overall reduction in vehicle speeds as they approached the crossing; and an increase in the distance between a vehicle and pedestrian at the crossing. The presence of the trial crossing was recognised by a majority of all user groups as a crossing, and there was a clear acknowledgement that the pedestrian had the right of way; although some users raised concerns that other road users may not be aware of the priority.

The study recommended that consideration is given during scheme design to the concerns raised by people with disabilities, and that alternative crossing provision is available away from the junction for those who would generally prefer not to cross at side roads, in particular those with visual impairment

The [trial in Westminster](#) found that comparing the driver compliance levels for side road Zebra crossings against the different types of standard side road entry treatments, side road Zebra crossings perform at least as well as continuous footways for all turning movements. They also perform as well as standard Zebra crossings for turning movements out of the side road. Compliance levels for the right turn in movement were the lowest (at around 70%). This is probably because drivers are more anxious and unwilling to stop across the path of oncoming traffic, so it's perhaps reasonable to expect this – nevertheless it presents a particular challenge to see how this might be improved further.

The [trial in Manchester](#) found that propensity of drivers to give way increased significantly in the two on-street trials; the majority of drivers gave way with the crossing, while less than half did so without. However, compliance when turning into the side road was substantially lower than when turning out, especially when turning right, which was also indicated in earlier studies.



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