



Active
Travel
England

Active Travel England Crossing Selector Tool User Manual



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Crossing Selector Tool User Manual

Publication date: February

All Active Travel England tools and user manuals will be reviewed regularly and updated as needed.

1. Introduction

- 1.1 This user manual is a desktop guide for the **Crossing Selector Tool**. The tool is a 'design assistance' tool which provides a range of suitable design options for connecting walking, wheeling and cycling routes over a 'main' road, between two side roads. ATE refers to a crossing in this context as an 'interzonal crossing'.
- 1.2 Currently, the tool only helps users with selecting interzonal crossings. In future, extra functionality may be added to help when selecting other crossing types, such as standalone crossings and side road crossings.
- 1.3 The Crossing Selector Tool is intended for use by anyone involved in highway planning and design. It is not intended for assessment purposes, but as an aid to design. Design responsibility stays with the designer, who should already be up to speed with current guidance and standards.
- 1.4 This document explains the structure of the tool in Chapter 2. Chapter 3 gives details on the tool's inputs and outputs. Chapter 4 is a quick-reference guide on how to use the tool and Chapter 5 gives more information on the tool's background.

2. Crossing Selector Tool Structure

- 2.1 The Crossing Selector Tool is a Microsoft Excel spreadsheet with two tabs.
- 2.2 The first tab is called 'Interzonal Crossing Selector.' In this tab, there is an inputs table and an outputs table. The inputs table consists of a series of dropdown menus for you to select input options for the scenario you are investigating. The outputs table below then gives potential crossing designs as outline drawings or as real-life constructed examples of the potential layout from Google Streetview. These outline drawings and examples are purely illustrative and may need to be adapted to constraints at the site. Some examples may not conform to guidance or standards, as every location is unique and should be assessed on its own merits. Reference should be made to Inclusive Mobility and LTN 1/20, among other relevant guidance, before proceeding with any design.
- 2.3 The second tab is called 'Interzonal Crossing Diagrams'. Here, you can find the diagrams referred to in the outputs table (by following the reference number).

3. Interzonal Crossing Selector Inputs and Outputs

The Interzonal Crossing Selector tab requires three inputs:

- **Crossing Geometry**
- **Motor Traffic Flow**
- **Crossing Types**

Once you have made these selections, the tool provides the following outputs:

- **Built Examples**
- **Crossing Diagrams**

Descriptions of each of these inputs and outputs are given below.

3.1 Crossing Geometry

This input is where you select the geometric form of the junction to be treated.

- **Crossroad**

This option should be selected when the side roads are directly opposite one another and connect at the same ‘node’ on the main road.

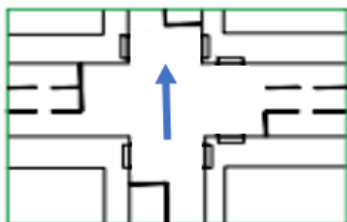
- **Right-Left Dog-Leg**

This option should be selected when the movement from the first side road to the other side road is first by a right turn onto the main road, and then a left turn into the other side road.

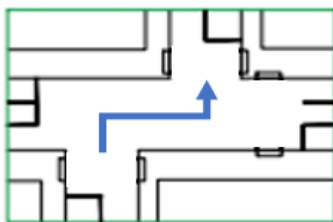
- **Left-Right Dog-Leg**

This option should be selected when the movement from the first side road to the other side road is first by a left turn onto the main road, and then a right turn into the other side road.

Crossroads (Straight Across)



Right-Left Dog-Leg



Left-Right Dog-Leg

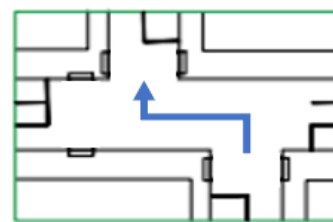


Figure 1 – Crossing geometry types

3.2 Motor Traffic Flow

This input is where you select motor traffic volumes on the main road. The threshold value is 8000 vehicles per day (Vpd). This value can be found or estimated from traffic counts, online resources or spot counts on-site. Full designs should be based on actual traffic counts. The two options you can select are:

- <8000Vpd
- >8000Vpd

3.3 Crossing Types

This input is where you choose the crossing type. Your choice should be based on consideration of factors such as:

- **Parallel Crossing**

Choose this if you want to investigate parallel crossing options. Parallel crossings are similar to zebra crossings but have a cycle route next to the zebra pedestrian element. You should not select this option if the speed of traffic on the side or main roads is >37mph and there is no traffic calming to reduce speed. This option may not be appropriate for moderate to high motor traffic volumes, as it is hard for pedestrians and cyclists to establish precedence on the crossing.

- **On-Road**

This option is for when cyclists will be mixed with traffic on side and main roads. You should not choose it if the Motor Traffic Flow selection is >8000vpd. A volume of over 8000vpd is not suitable for cyclists mixed with traffic.

- **Signalised**

This option should be selected if you are considering full or part signalisation of the junction(s). This crossing type may be more suitable where speeds and/or volumes of motor traffic on the main road are higher.

3.4 Interzonal Crossing Diagrams

The tool outputs some example schematic crossing diagrams, which are illustrative only. Reference should be made to Inclusive Mobility and LTN 1/20, among other relevant guidance, before proceeding with designs similar to any examples shown.

3.5 Indicative Examples

The tool also outputs links to Google Streetview to show indicative examples of built crossing types. These examples are illustrative only and may need to be adapted to constraints at the site. Some examples may not conform to guidance or standards in all elements. Reference should be made to Inclusive Mobility and LTN 1/20, among other relevant guidance, before proceeding with designs similar to any examples shown.

4. How to Use the Tool

4.1 Inputs

Start by using the dropdown menus to select the options that best suit the three inputs discussed above.

- **Crossing Geometry**

Decide the geometry of the junction(s) where an intervention is located and pick the most appropriate option from the dropdown menu. The options are ‘Crossroad’, ‘Right-Left Dog-Leg’ and ‘Left-Right Dog-Leg’.

Inputs	
Crossing Geometry	Left-Right Dog-Leg

Figure 2 – Crossing geometry input box location

- **Motor Traffic Flow**

Work out the vehicles per day (vpd) and choose the most appropriate option from the dropdown menu, based on volume being over or under the 8,000 vpd threshold.

Inputs	
Crossing Geometry	Left-Right Dog-Leg
Motor traffic flow	>8000 vpd

Figure 3 – Motor traffic flow input box location

- **Crossing Type**

Input the crossing type: Signalised, Parallel or On-Road. If vehicle flows are greater than 8,000 vpd and you have chosen ‘Parallel’ or ‘On-Road’ you will get a message saying that the “crossing type is not suitable for the motor traffic flow selected”.

Inputs	
Crossing Geometry	Left-Right Dog-Leg
Motor traffic flow	>8000 vpd
Crossing Type	On road

Figure 4 – Crossing type input box location

If you have entered a suitable set of inputs, the tool will show a list of suggested crossing layouts in a table below the input boxes. The first three columns of the table are the input options you just chose.

			Outputs			
			Interzonal Crossing Diagram		Potential for conflict with policy principle: shared use?	Indicative Example
Crossing Geometry	Motor Traffic Flow	Crossing Type	Reference	Arrangement		
Crossroad	>8000 vpd	Signalised	1.11	Signal junction	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.12	Filter both	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.13	Filter one	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.14	Banned turns	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.15	Cycle track offset	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.16	Shared use offset	Yes	Street View Link

Figure 5 – Input options in the outputs table

4.2 Outputs

After going through the input selection process, the tool will give more outputs including:

- **Interzonal Crossing Diagram: Reference/Arrangement**
- **Potential conflict with policy principles**
- **Indicative Examples**
- **Interzonal Crossing Diagram: Reference/Arrangement**

The options you enter will produce a custom-made list of crossing reference diagrams and solutions, grouped by the type of provision for cyclists. You can find this in the tool’s “Interzonal Crossing Diagram” outputs tab.

The Interzonal Crossing Diagram columns give a crossing reference number and a reference name for the arrangement type. These correspond to the diagrams, which you will find on the ‘Interzonal Crossing Diagrams’ tab.

			Outputs			
			Interzonal Crossing Diagram		Potential for conflict with policy principle: shared use?	Indicative Example
Crossing Geometry	Motor Traffic Flow	Crossing Type	Reference	Arrangement		
Crossroad	>8000 vpd	Signalised	1.11	Signal junction	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.12	Filter both	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.13	Filter one	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.14	Banned turns	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.15	Cycle track offset	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.16	Shared use offset	Yes	Street View Link

Figure 5 – Interzonal crossing diagram columns in the outputs table

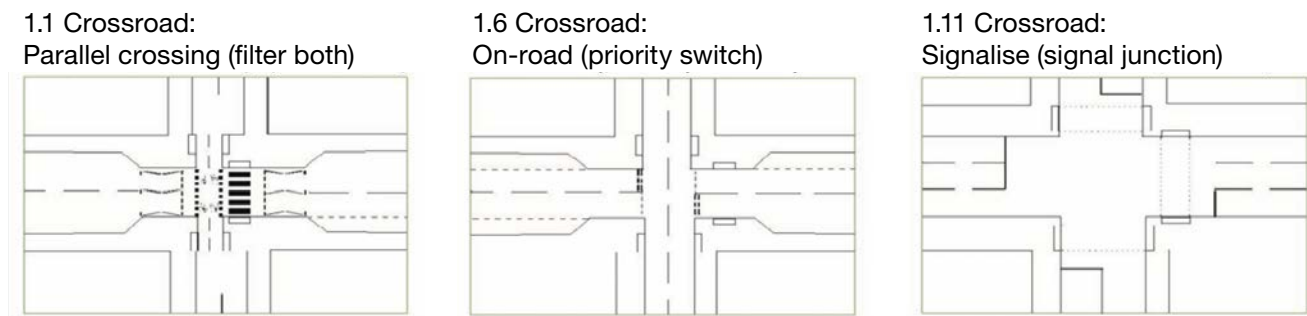


Figure 6 – Example interzonal crossing diagrams from the ‘Interzonal Crossing Diagrams’ tab.

• Potential conflict with policy principles

The sixth column in the outputs table, ‘Potential for conflict with policy principle: shared use?’, returns a yes or no answer. It is a principle within Gear Change and LTN 1/20 that pedestrians and cyclists should be separated wherever possible. A layout incorporating shared use conflicts with this principle and represents a lower level of service for pedestrians and cyclists. This type of layout should be a last resort.

			Outputs			
			Interzonal Crossing Diagram		Potential for conflict with policy principle: shared use?	Indicative Example
Crossing Geometry	Motor Traffic Flow	Crossing Type	Reference	Arrangement		
Crossroad	>8000 vpd	Signalised	1.11	Signal junction	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.12	Filter both	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.13	Filter one	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.14	Banned turns	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.15	Cycle track offset	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.16	Shared use offset	Yes	Street View Link

Figure 7 – The ‘Potential for Conflict with Policy Principle: Shared Use’ column in the outputs table

• Indicative Examples

The seventh column in the outputs table is ‘Indicative Example’, which links to a real-life constructed example in Google Street View. See section 3.5 for more information.

			Outputs			
			Interzonal Crossing Diagram		Potential for conflict with policy principle: shared use?	Indicative Example
Crossing Geometry	Motor Traffic Flow	Crossing Type	Reference	Arrangement		
Crossroad	>8000 vpd	Signalised	1.11	Signal junction	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.12	Filter both	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.13	Filter one	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.14	Banned turns	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.15	Cycle track offset	No	Street View Link
Crossroad	>8000 vpd	Signalised	1.16	Shared use offset	Yes	Street View Link

Figure 8 – Indicative example links

4.3 Crossing Selector Tool Flow Chart

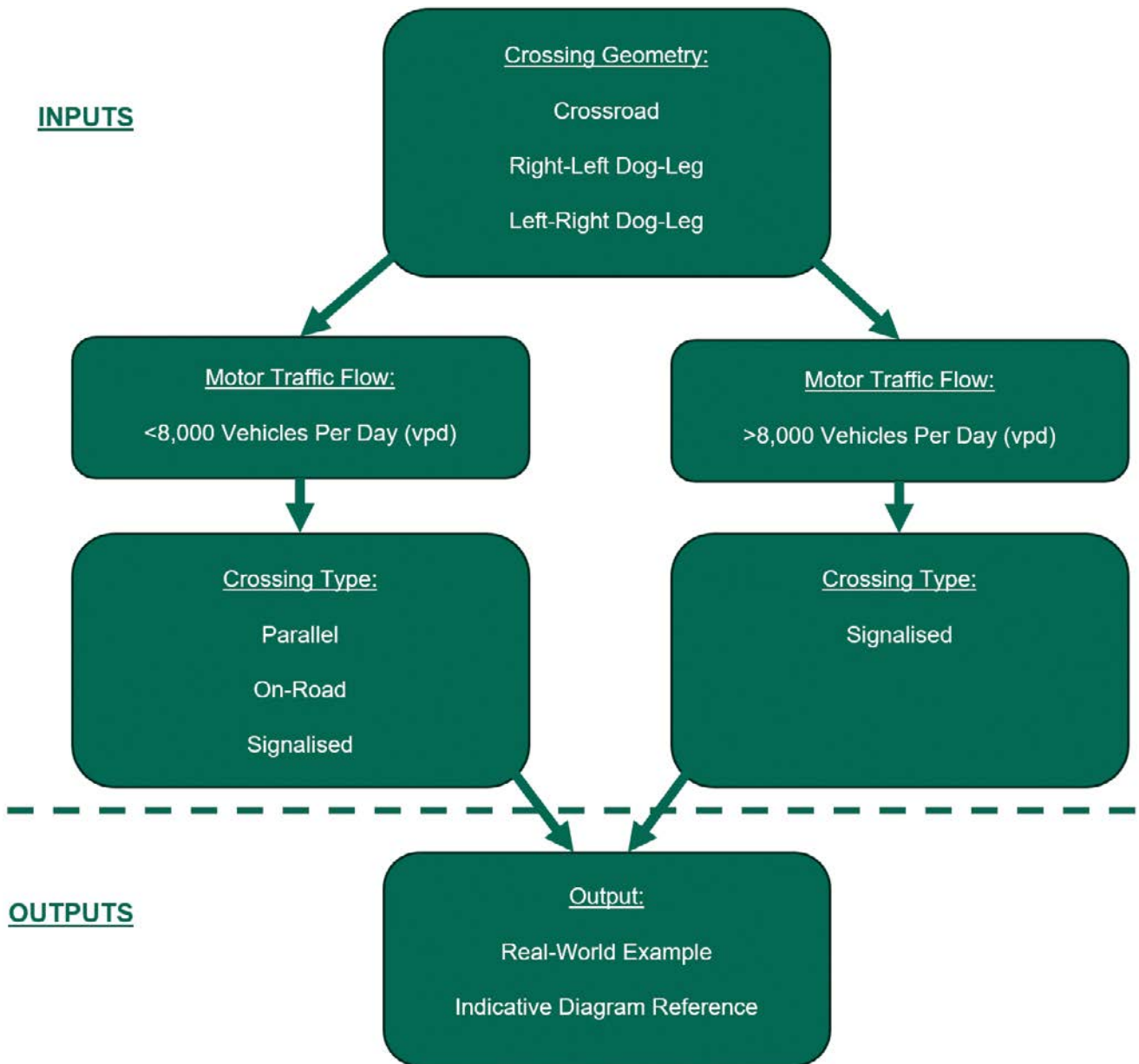


Figure 9 – Crossing Selector Tool flow-chart

5. Further Information

- 5.1 The Crossing Selector Tool has one full element – the ‘Interzonal Crossing Selector’. In future, the tool may be developed to cover other contexts such as roundabouts, midblock and side-road crossings.
- 5.2 This ‘Interzonal Crossing Selector’ function builds on work previously presented in Appendix B of the Greater Manchester Interim Active Travel Design Guide (2021), which was intended to help design the Bee Network. It was created for a specific context, where a connection over a main road was needed to improve active travel between two neighbouring areas. The work in the guide was made up of a flowchart that suggested potentially suitable crossing types that might be suitable in different circumstances. The Interzonal Crossing Selector tab in this tool is an updated version of this flowchart in tool format.

