Pedestrian Crossing Assessments

To:	**Ashford Joint Transportation Board – 6 June 2023**
By:	**Tim Read, Head of Transportation, Kent County Council**
Classification:	**Unrestricted**
Ward:	Ashford District

Summary: **This report provides information on the assessment of requests for pedestrian crossings.**

For Information

1.0 Introduction and Background

1.1 There are three main types of crossing facility, and the type chosen should be appropriate for the circumstances of the site and all road users' needs. These are:

- Uncontrolled/informal crossings – for example a pedestrian refuge island or dropped kerbs.
- Zebra and Parallel crossings (controlled) – which give pedestrians and cyclists (as appropriate) a right of way over vehicles when on a crossing, and at which drivers must give-way, and
- Signal-controlled crossings – which require drivers to stop at red lights, and which give users a push button to register the demand for a green signal.

1.2 Kent County Council (KCC) do not have a policy specifically on the provision of pedestrian crossings and every request we receive is considered on its own merits using national design guidelines and traffic regulation standards. The purpose of this report is to provide a brief outline of the main criteria considered when making feasibility assessments for the provision of new or upgraded pedestrian crossings.

1.3 One of the key documents providing guidance on this is the Department for Transport's Traffic Signs Manual, Chapter 6 – on Traffic Control (2019). It notes that *'Pedestrians are free to cross the road where they like and, where there are sufficient gaps in traffic and speed is reasonably low, many people are able to cross without needing a specific crossing point. However, as vehicle flow and speed increase pedestrians, particularly more vulnerable people, may find it harder to establish themselves on the carriageway and are likely to need a dedicated facility in order to feel secure enough to cross.'*

1.4 Each assessment will allow engineers to make informed decisions about whether a crossing is needed and if so, what type and to identify any site constraints that may prohibit a scheme being safely delivered or highlight additional adjustments that may be required. There are criteria on both the principal of a scheme as well as the physical buildability with specific design standards to be met.

2.0 Site Assessment

2.1 In order to fully appraise a site for suitability and crossing type we need to gather some information by carrying out site visits, undertaking traffic surveys and desktop studies. Data gathering includes:

- A site survey – to identify the local environment (including speed limit, level of roadside development, existing street furniture, lighting, trees, bus stops and parking), road geometry (bends and dips) and layout (including road and footway widths) and any site constraints that could affect forward visibility or placement of a crossing. To get a feel for traffic volumes, pedestrian, and cycle flows and to establish if there are nearby facilities or buildings likely to generate significant pedestrian and vehicle movements. For example, schools, shops, bus stops, rail stations, hospitals, seaside facilities, day-car centres, and tourist/ leisure attractions.
- A pedestrian survey – to quantify existing pedestrian demands and proportion of people with characteristics that may make it more difficult for them to cross the road. Such groups include visually and mobility impaired, children, older people and people with pushchairs.
- A traffic survey – to quantify existing traffic volumes and speed of motor traffic using the route. Zebra crossings are not suitable on roads with existing 85th percentile traffic speeds exceeding 35mph. Similarly signalised pedestrian crossings are not suitable on roads with speed limits above 50mph.
- Crash data for the area – to determine if there an existing pattern of pedestrian crashes that could be addressed by improving pedestrian crossing facilities. If a crossing is being considered because of a high number of Personal Injury Collisions (PICs) a separate investigation may be carried out to help establish the cause and identify any other remedial measures that may be necessary. It may be that other measures are needed, either instead of or in conjunction with a formal crossing. If there are no existing crashes at a location it must be borne in mind that there is a risk of introducing a new crash record where one may not have previously existed with any new road layout or facility provision.

2.2 Other factors to consider include:

- Crossing difficulty – based upon the number of gaps in the traffic flow which are acceptable to pedestrians, and the delay to pedestrians caused by having to wait for an acceptable gap.
- Average crossing time and speed - Measuring the average crossing speed for pedestrians may reveal whether there is a large number of people who may be slower, and therefore need extra time to cross. Where a signal-controlled crossing is installed, the timings may need adjusting based on these crossing speeds.
- Carriageway capacity – impact on the local network in terms of traffic delay.
- Representations – To better understand the problems being encountered and level of local community support for a facility.
- Cost and the availability of services to facilitate a new crossing facility.

2.3 Assessments are made by experienced engineers who will consider all factors in any request including need, buildability and priority against other highway measures across the county, taking into consideration availability of budgets and the County Councils key outcomes.

3.0 Pedestrian crossing assessment (PV^2)

3.1 Guidance on assessments for pedestrian crossings in the Design Manual for Roads and Bridges (DMRB) is also considered. A numerical criterion against which the requirement for a pedestrian crossing is assessed is provided by looking at the degree of conflict between pedestrians and vehicles and is determined using the PV^2 calculation. Data collected in the traffic surveys and pedestrian counts is used in this calculation. This requires a minimum demand number of people to cross at the suggested location as well as a minimum number of vehicles passing to determine whether it is a suitable location.

3.2 In the calculation, 'V' is the 2-way total hourly flow of vehicles and 'P' is the two-way total hourly flow of pedestrians crossing the road within 50m on either side of the proposed site at the busiest times. The average of the four highest hourly rates are used in the calculation.

3.3 An average value exceeding 10^8 for an undivided road (and 2×10^8 for a divided road) will meet this criterion. Where there are seasonal variations, pedestrian crossings may be considered appropriate where the requirement for provision of a facility is likely to be met for at least 4 months of the year.

3.4 Although the numerical calculations of the degree of conflict between pedestrians and vehicles (PV^2) provide a basis for assessing the need for a pedestrian crossing, all the other factors set out above and detailed in national guidance and design standards must also be taken into account.

3.5 If there is insufficient evidence and/or demand for a crossing this means that the crossing will be underutilised and can cause drivers to become desensitised by its presence. This is why controlled crossings require a minimum number of people to cross at any specified location (in excess of 200 people per day) as well as a minimum number of vehicles passing to determine whether the crossing would be value for money and widely used.

3.6 Although pedestrians obviously feel safer crossing where there is a formal crossing point (signalised or zebra crossing), this can often cause a false sense of security and it can encourage pedestrians to be less cautious.

4.0 Design standards

4.1 There are many design standards to be met once the principal of providing a crossing has been approved. National standards apply to provisions for consistency and ease of understanding, as well as to minimise safety risks. Specifications vary depending on the type of crossing to be provided and the speed limit of the road/ observed traffic speeds.

4.2 Crossing design requirements cover (but are not limited to) the following:

- The type of crossing suitable for a particular setting and characteristics – determined by posted speed limit, vehicle speeds, volume of vehicle to pedestrian flows, other nearby facilities.
- Accessibility – links to a facility and at a facility. To include needs of visually and mobility impaired users.
- Location – in relation to desire lines but also proximity to other highway facilities and junctions/ accesses.

- Visibility – minimum distances for forward visibility for both approaching traffic and pedestrians using the crossing need to be met.
- Width – minimum widths for adjoining footways and crossing provisions and maximum widths for carriageways need to be met.
- Road markings and controlled areas (zig-zag markings) are a requirement of controlled crossings and may be affected by nearby junctions and on street parking demands, bus stops and loading bays.
- Lighting levels at a crossing - those using it needs to be easily seen.
- Signal operation and type of detectors (for signalised crossings).

5.0 Financial and VAT

5.1. None for Ashford Borough Council.

6.0 Legal

6.1 None for Ashford Borough Council.

7.0 Corporate

7.1 None for Ashford Borough Council

8.0 Recommendation(s)

8.1 That Members note the contents of the report.

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9.0 Referencing

9.1 Department for Transport (DfT) Traffic Signs Manual, Chapter 6: Traffic control (2019)
9.2 Design Manual for Roads and Bridges (DMRB) CD 143: Designing for walking, cycling and horse-riding
9.3 DfT Local Transport Note (LTN) 1/95: The assessment of pedestrian crossings
9.4 DfT LTN 2/95: The design of pedestrian crossings