

GUIDELINES FOR TRAFFIC AND PEDESTRIAN COUNTS

Safer Better Streets: Highway Infrastructure Priority Framework

School Crossing Patrol Assessment Criteria.

January 2023

Introduction

- The heaviest pedestrian and vehicle flows usually occur during morning journeys between 08.15 and 09.15. The site surveys are generally conducted during this period.
- Surveys must be site specific, taking into account the start and finish times and relevant activities of the school(s) served by the SCP. Data is recorded in 15 minute consecutive periods.

The Criteria

The procedure for determining whether an SCP site is justified comprises six parts:

1. Count of pedestrians and vehicles.
2. Calculation of PV_2 Rating.
3. Comparison with adopted criteria threshold level.
4. Consideration of 'Adjustment Factors' and selection of 'Multipliers' (where appropriate).
5. Recalculation and recheck against the adopted criteria threshold level.
6. Consideration of additional facilities (e.g. zebra and light-controlled crossings – where heavy traffic flows or speeding exists).

Often it will be unnecessary to continue beyond Part 3 of the procedure, as there will often be a clear indication about whether an SCP Site can be justified.

Pedestrian and Vehicle Count

- Sites having fewer than 15 children crossing the road in the busiest 30-minute period should not be considered for establishing an SCP.
- A classified count should be taken at the Site to identify the busiest 30-minute period, recording child pedestrians (P) and vehicles (light vehicles, large goods vehicles and PCUs and cycles).
- The count should include child pedestrians who attend an educational establishment and who cross the road at the time of the heaviest traffic flow

Calculation of PV_2 Rating

- Having collected all the necessary data from the site, the calculation PV_2 must be completed. Below is a checklist of the main points to be considered:
 - a) Identify the busiest consecutive 30-minute period (note that vehicles form the most significant part of the equation).
 - b) Calculate the total of child pedestrians (P) and multiply it with the square of the total number of PCU equivalents (V_2) from the same consecutive 30-minute period to provide the product PV_2 .

Comparison with Adopted Criteria Threshold Level

- If a PV_2 of greater than 4 million is achieved, an SCP location can be justified.

Consideration of 'Adjustment factors' and selection of 'Multiplier'.

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- Where the PV₂ criterion threshold level between 2 and 3 million a detailed site investigation should be undertaken using the list of 'Adjustment Factors'.
- The adjustment factors quantify the 'environmental' considerations to be used in assessing the potential risks at the proposed site. Each item must be assessed objectively and appropriate factors assigned.
- Once the number of adjustment factors has been decided, the appropriate multiplier should be obtained from the 10% Compound Multipliers table.

Adjustment factors

The following section highlights environmental factors that may be the cause of potential risk at sites where an SCP already exists or is proposed. Some or all of these may be true for the site under consideration.

Accurate site assessment makes it possible to check each of the items on the following list and establish how many adjustment factors should be allocated (factors being assigned according to the level of difficulty). Using the final total of adjustment factors it is possible to determine a compound multiplier, which is then used to up rate the original PV₂ value to provide a weighted (and more accurate) assessment of the potential risk at the site.

Table of Adjustment Factors

Carriageway Width (single Carriageway) Factor

Carriageway width between 7.5 and 10 metres	+1
Carriageway width in excess of 10 metres	+2
Footpath width less than 2 metres	+1
Down gradient steeper than 12.5% (1 in 8)	+2
Down gradient less than 12.5% greater than 5% (1 in 20)	+1

Speed/Visibility

It is recommended that SCP sites are not established on roads with speed limits greater than 40 mph.

85%ile speed of traffic) ¹	Visibility (metres) ^{2, 3}	Factor
Travelling between 30 and 40 mph	Less than 50 m	+3
	Between 50 – 75 m	+2
	Between 75 – 100 m	+1
Travelling between 40 and 50 mph	Less than 60 m	+3
	Between 60 – 100 m	+2
	Between 100 – 150 m	+1

¹ To obtain the 85th percentile (85%ile) speed of traffic, a record of the speeds of at least 100 free running vehicles will be needed on one visit during the period 08.30 (08.15 if the full operation of an SCP is required) to 09.00 – i.e. the site operation times prior to the start of the **busiest** school day.

SCP Guidelines

² Care must be taken when using these factors, as the distances shown are less than vehicle stopping distance in adverse weather conditions.

³ If parked vehicles obstruct sightlines or mask children, and it is not possible to

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prohibit parking, then the visibility criteria from the kerb edge should be applied using a 1 metre eye level.

Street Lighting Factor

None +3

Signs, Street Furniture, Trees, etc Factor

If visibility is variously obstructed within 100 metres of the proposed Site and pedestrians are masked. +1

Road Markings Factor

If the Site is complicated by road markings for the purpose other than an SCP, i.e. turning lanes etc., within 50 metres either side. +1

Junctions Factor

If the Site is on a major road and is within 20 metres of a road junction +2

If the Site is on a minor road and is within 20 metres of a road junction +1

Accidents

Accidents involving pedestrians on weekdays within 50 metres of the proposed crossing point. One point per pedestrian injured per year based on a three-year average. +1

Weight of Traffic

Where pedestrian flows are light, the vehicle flows are heavy and the criteria are not satisfied, then at 800 passenger-carrying units) per hour (two way, or one way on dual carriageway) it is recommended to add a further +1 factor.

Age Factors Factor

Average Age	Primary (up to 11 years)	+5
	Secondary (12+ years)	+1

Recalculating the Rating against the Adopted Criteria Threshold Level

Take the 'Multiplier' indicated in the table of '10% Compound Multipliers' and multiply it with the previous threshold rating (PV₂). The result of this calculation is the 'New' PV₂ value. Re-check it again with the adopted threshold level.

Consideration of Additional Facilities

- Where significant flows of vehicles and/or children are identified at the potential site, other additional facilities may be justified. Assuming that there are no grade separated facilities already available, a zebra or light-controlled crossing should be considered in accordance with the criteria laid down by the DfT.
- It should be remembered that an important part of the Manager's responsibility as 'employer' is to ensure the safety of their employees (SCPs), the people in their charge and the safety of those who may be affected by their acts or omissions. Therefore, sites which are very heavily trafficked, or deemed potentially dangerous by the nature of the road layout or other environmental conditions, may not be safe for the authorisation and siting of an SCP.

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TABLE OF 10% COMPOUND MULTIPLIERS

No of Factors Multipliers to be applied to basic PV₂ figures

1	1.100
2	1.210
3	1.331
4	1.464
5	1.610
6	1.772
7	1.949
8	2.144
9	2.358
10	2.594
11	2.853
12	3.139
13	3.453
14	3.798