Pedestrian Guardrail Assessment – Guidance Notes

These guidance notes provide supporting information to the CEC PGR Assessment methodology and PGR Assessment Forms.

Introduction

The Council's **Active Travel Action Plan** (ATAP) includes a commitment to review the need for existing pedestrian guardrail (PGR) and minimise its use. Scottish Government guidance, in the form of **Designing Streets**, and the Council's own guidance, Edinburgh Street Design Guidance (2015), recommend minimal use of guardrail.

One action of the ATAP is the development of an assessment process for the review and removal of PGR. This process will apply to existing sections of PGR and also any proposals for new sections of PGR, as part of improvement schemes.

PGR has been used since the 1930s, with significant increase in its use since the 1960s, when it was developed for traffic management purposes, as an inexpensive tool to separate pedestrians from motorised vehicles.

For many years, traffic management objectives have given priority to ensuring vehicles maintained free flow and speeds. However, a new approach is now becoming more prevalent, with a recognition that our streets need to share limited road space more effectively and there needs to be a greater emphasis on the majority of streets as places for social inter-action, rather than being mainly for movement of vehicles. Whilst PGR provides segregation that can reduce accidents, it does create a restricted pedestrian environment that impacts on the urban streetscape.

Legal Position

PGR has mainly been used to as a tool to reduce accidents between pedestrians and vehicles. However, there is no legal requirement for a Roads Authority to provide PGR. Whilst a Roads Authority has a general duty to carry out accident studies and take such measures as deemed appropriate to minimise those accidents, the burden of responsibility rests with the individual road user to travel in a manner appropriate to they conditions they encounter.

In this respect, the removal of PGR or not providing it should not, in the majority of situations, expose an individual Officer or a Roads Authority to liability. However, it is likely to be of assistance, if an assessment process has been undertaken, which demonstrates a clear audit trail of the decisions taken and their justification.

CEC PGR Assessment Process - Purpose

The Council's PGR assessment process seeks to establish a methodology that sets out logical staged approach to considering the need for PGR, with the objectives of ensuring consistency in the analysis, robust justifications and a clear audit trail.

The following sections provide guidance to assist with the PGR assessment and completion of appropriate forms. **However, it should be recognised that the assessment is not intended to be a basis 'tick box' process but does require the professional judgement of experienced staff.**

The methodology is presented below in 2 parts and 9 distinct stages.

Part A determines the necessity for having PGR, and Part B is where the recommendations go through a formal Road Safety Audit process and final decisions on installation, relocation or removal of PGR are made.

PART A: Determining the need for PGR

Stage 1(a) – Place context: built environment and socio economic factors

Describe the urban structure, character and identity of the study area. Note any particular attractors or socio-economic activities that may affect the form and function of the street.

Stage 1(b) – Movement context: assessing modal user groups

Review the street from the perspective of its use by different modal user groups. Consider volumes and speeds and how different user groups interact. Is the location dominated by motor vehicles? Is it important for pedestrians? Are there unusual peaks? Does the current carriageway/footway layout and built environment communicate a sense of relative priorities between user groups? Write a brief report.

Stage 1(c) – Road Safety Assessment:

Consider any specific issues in this location that might affect road safety, e.g. the presence of unusual numbers of vulnerable road users (e.g. schools), unusual peaks, excessive vehicle speeds, awkward highway geometry. What is there to learn from the historic casualty record? Write a brief report.

Stage 2 - Street Type Assessment

On the basis of the above, assign the location in question to one of the following street types. These help to clarify the importance of the location to pedestrians and motorised traffic and to describe a basic sense of relative priorities, and they also enable a 'first-pass' assessment of the appropriateness of PGR for the location in question. Where there are junctions, assess the type of each street involved. If street types do not apply, describe the type observed in similar terms.

- Appropriateness of PGR

The use of PGR should be considered is inappropriate in principle in certain street types, especially those where a high degree of pedestrian priority is sought and the volume & speed of motorised traffic are relatively low. If street types do not apply, assess the appropriateness of PGR in principle for the sui generis street type using the table in the form.

Stage 3 – Further Supporting Information

State, if any, supporting information is required and/or desirable to help Stage 1, 2 and/or 3 assessments. For some minor sections of guardrail being assessed, it may not be necessary to collate any or all of the supporting information. Use professional judgement as to when it is beneficial.

Stage 4 –Where are the pedestrian desire lines and coincidence points?

Vehicular desire lines are constrained by kerb lines (other than in Street Types 4 and 5); the traffic volumes on different arms at a junction are a measure of relative importance.

Pedestrian desire lines should be assessed on the assumption that there is no PGR, and will relate to crossing facilities, continued travel in a given direction across a junction, origins/destinations represented by doors/gates in nearby buildings, etc. Be aware that different pedestrian user groups may have different desire lines at different times of day. In shopping areas, and other locations with many pedestrian origins/destinations, there may be a multiplicity of desire lines. While few of these may be especially important, this pattern of movement presents particular challenges. Plot the important desire lines on a plan.

On the same plan, mark where important pedestrian movements and vehicular movements coincide. PGR is essentially a tool for influencing pedestrian desire lines, and Stage 5 is intended to identify those locations where this may be a desirable intervention.

Other than in Street Types 1L, 1F and 2F (and possibly 1R) PGR should not generally be considered in locations where no important desire lines coincide with vehicular movements.

Stage 5(a) –What are the severity of conflicts at coincidence points

Pedestrian and vehicle desire lines very commonly coincide, and the fact that they do is not necessarily a problem. This stage intends to identify where coincidences might lead to potentially dangerous conflicts and should include an identification of where there are other issues that may warrant the use of PGR or other measures such as trip hazards and school entryways. This should be determined according to an assessment against the 4 basic causal factors set out the table.

Stage 5(b) Other locations where PGR may be required

The following should identify locations where any of the above mentioned criteria give rise to concern even though it is not a major coincide of vehicular and pedestrian movement. It is intended to assess whether PGR may be a desirable intervention at these locations. At the end of stage 5 a list of coincidence points where there are issues that are considered severe enough to warrant consideration of PGR will be produced, and those locations taken forward into the stage 6 assessment.

Stage 6 – Confirm Problem Locations

Locations where there are no concerns in respect of all four criteria from Stage 5 are categorised as type 1 and are deemed not to need guardrail. The remaining guardrail is categorised as type 2.

It may be the case that a section of guardrail is relevant to several different conflict points / desire lines. If there are significant concerns with at least one of the desire lines, categorise this guardrail as type 2.

Stage 7(a) – Would the installation of PGR contribute to the reduction of road danger?

Following on from the above analysis this question seeks to understand whether PGR could be effectively employed towards achieving its stated purpose of materially diminishing road danger. For each potentially dangerous conflict described in Stage 5, explain how, if at all,

PGR would make a significant contribution reducing the danger. Specify how much PGR is required to achieve that purpose (in terms of the number of panels in each location) and explain why fewer or more panels would be appropriate. Mark all proposed PGR coverage on a map.

Stage 7(b) – What alternative courses of action exist that would reduce road danger?

Assess other possible course of action that could reduce road danger without the impacts that typically accompany the installation of PGR. These may range in nature from comprehensive street design through to smaller scale traffic management measures to slow speeds etc, or other more indirect measures that remove the need for an intervention altogether. Comment on cost/deliverability and impact on the need for PGR identified above.

PART B – Review recommendations and make final decisions

A decision should be taken as to whether a Road Safety Audit (RSA) for the site is necessary. The assessor should seek to balance the RSA cost with what will be gained above and beyond the information already gathered up to this point.

Stage 8(a) – Review by safety auditor (optional)

The results of the Part A analysis will be subjected to a safety audit. The audit will respond with a series of concerns for the Council to consider.

Stage 8(b) – Response to safety auditor

For each location where concerns were raised by the safety audit, Stage 8 needs to indicate if and to what extent the recommendations are accepted. Should exceptions be made from the safety audit's recommendations, justification needs to be provided. Locations from Stage 7 having no concerns raised by the safety audit should not be considered.

Stage 9 – Make a Final decision and record/report site for monitoring

Each of the locations where guardrail will be retained/proposed should be identified. Based on guardrail assessment illustrate the precise extent of proposed guardrail coverage on a map.

Following a review of the assessment form (and safety audit results if appropriate), the Council will make a final decision on the need to install, relocate or remove PGR as per the plan.

If there is **cycle parking on guardrail** which is to be removed, the team responsible for new cycle parking stands should be informed. They will choose cycle parking sites that best meet demand and if possible add new stands.

MONITORING AND RECORD KEEPING

Please send the copy of the signed form (and as appropriate any images, drawings, additional data, RUSA etc) to transport.roadsafety@edinburgh.gov.uk