

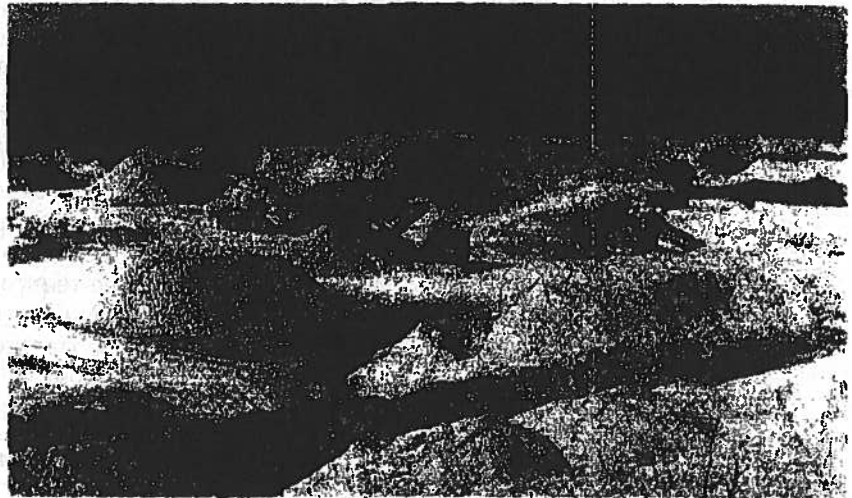
# **GUIDANCE NOTES NO. 1**

## **Guidelines for the Environmental Assessment of Road Traffic**



**INSTITUTE OF  
ENVIRONMENTAL  
ASSESSMENT**

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## Geographical Boundaries of Assessment

3.14 An important prerequisite of the environmental assessment is to determine the geographical boundaries of the assessment: This is not an easy task. For example, different projects will give rise to different levels of traffic attraction and vary in the geographical extent of their traffic and environmental impact. If a project attracts only a small number of additional trips which take place on routes already heavily trafficked, then it is unlikely that there will be a need for a detailed environmental assessment of traffic. On the other hand, a single lorry movement arising at a works may be perceived as a source of nuisance when it takes place at 05.00 in the morning. Judgements will inevitably be required to define the geographical boundaries of the assessment. Such judgements will tend to be based upon a combination of experience and implicit assumptions, however, it is important that these assumptions are made explicit in the Statement.

3.15 To assist the assessor it is suggested that two broad rules-of-thumb could be used as a screening process to delimit the scale and extent of the assessment. The rules are described and justified in the following paragraphs:

- Rule 1**            include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)
- Rule 2**            include any other specifically sensitive areas where traffic flows have increased by 10% or more.

### Rule 1

3.16 Traffic forecasting is not an exact science and the accuracy of projections is open to debate. It is generally accepted that accuracies greater than 10% are not achievable. It should also be noted that the day-to-day variation of traffic on a road is frequently at least some + or -10%. At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental impact. The cumulative effect of a number of developments attracting less than 10% of additional traffic may need to be assessed at a broader strategic or policy level.

3.17 Previous research has identified that the most discernible environmental impacts of traffic are noise, severance, pedestrian delay and intimidation (Hedges, 1978). Generally, people cannot perceive a change in noise nuisance for changes in noise levels of less than 3 dB(A); such change requires a doubling or halving in the level of traffic. Recent research (Baughan and Huddart, 1992) is tending to suggest that this threshold is likely to be reduced to 1dB(A). At low flows, increases in traffic of around 30% can double the delay experienced by pedestrians attempting to cross a road (DoT, 1983). Whether this is significant in absolute terms requires further consideration (see 3.19). Severance and intimidation are, however, much more sensitive to traffic flow and the Department of Transport, in its MEA, has assumed that 30%, 60% and 90% changes in traffic levels should be considered as "slight", "moderate" and "substantial" impacts respectively.

3.18 It should be noted that the Department of Environment suggests, in Policy Planning Guidance Note 13 (DOE, 1988), that increases in traffic of 5% are likely to be considered as significant by the Department of Transport. The context of such a statement relates to the operational and capacity criteria of highway and not its environmental impacts. It is recommended that the criteria set out in these paragraphs are more relevant to the assessment of environmental impacts and hence the higher thresholds are more relevant.

3.19 Other environmental impacts, (eg. pollution, ecology, etc.) are less sensitive to traffic flow changes, and it is recommended that, as a starting point, a 30% change in traffic flow represents a reasonable threshold for including a highway link within the assessment. Where there are major changes in the composition of the traffic flow, say a much greater flow of HGV's, a lower threshold may be appropriate. An example of the sensitivity of environmental conditions to changes in traffic flow is illustrated below.

A major new industrial plant attracts 150 vehicles per hour. The traffic follows a single route to reach the major highway network. An initial indication of environmental impact is tabulated below.							
Road	Flow (vehicles/hour)				Severance	Noise	Link to be assessed
	Base	Development	Total	% Increase	Impact (1)	Impact	under "Rule 1"
A	150	150	300	100%	Substantial	Perceivable	Yes
B	400	150	550	40%	Slight	Not Perceivable	Yes
C	800	150	950	19%	Less slight	Not Perceivable	No
(1) As defined by DTp.							
(Key: A - Access Road, B - Local Distributor, C - Main Road)							

## Rule 2

3.20 The assessor should include any other link or location where it is felt that specific environmental problems may occur. If these guidelines have been followed the assessor would already have compiled a list of potentially affected group and special interests (paragraph 2.4) and this would be the starting point. Locations would include accident black-spots, conservation areas, hospitals, links with high pedestrian flows, etc. Normally it would not be appropriate to consider links where traffic flows have changed by less than 10% unless there are significant changes in the composition of traffic, eg. a large increase in the number of heavy goods vehicles.

## Summary

- The environmental impact of traffic will be dependent upon existing conditions and adjacent land uses as well as changes in traffic levels.
- Assessments should consider the period (possibly the hour) at which the impact is greatest and the period at which the impacts exhibit the greatest change.
- Peak environmental impacts may well occur at times other than the "peak hour", and traffic assessments may need to be undertaken for a number of time periods.
- Environmental Assessments may need to be undertaken separately for different phases in the life of the project.
- Assessment should be undertaken in the year of opening (or first year of a phase) when, generally, the perceived environmental impact is at its greatest. As a guide, highway links should be separately assessed when:
  - traffic flows have increased by more than 30%
  - or - other sensitive areas are affected by traffic increases of at least 10%
  - or - HGV flows have increased significantly.