

2 SOLVING ROAD SAFETY PROBLEMS: A STRATEGY

2.1 Present practice

Traffic problems are often approached from a specific point of view. The road owner (authority, council) identifies a problem, a group of experts develop a solution and the owner takes a decision. Occasionally, involved parties such as residents, school boards, retail associations or councillors are given the opportunity to put their view forward. The danger of a one-sided approach is that not all aspects of the problem are sufficiently dealt with. Was a cheaper solution possible instead of the expensive traffic regulation system? Has the problem actually been solved? In this manual emphasis will be on road design in relation to road safety with special attention to design standards, accident analysis and cost-benefit analysis. A step-by-step method is described to lead from problem recognition to development of adequate and appropriate solutions.

2.1.1 Policies

Road safety policy is in many countries a spearhead action. For instance: it is based on selecting and analysing black spots, giving special attention to vulnerable road users (pedestrians and cyclists) or predominant accident types (speeding, alcohol). In United Kingdom, Sweden, the Netherlands and Denmark this policy has proven to be very successful in reducing the number of accidents and fatalities. However, for continuing the downward trend in fatalities and injuries it is necessary to develop a more comprehensive approach, based on the interaction between humans, vehicles and the infrastructure. In the Netherlands this approach is known as “Sustainable Safety”. In Central and East European countries with high accident rates, due to the strong growth of car ownership and partly inadequate infrastructure, the spearhead policy seems to be the most cost-effective manner to start with.

2.1.2 Approach

The frustrations of interested parties not involved in the process should not be forgotten, nor the interminable discussions afterwards which come too late in the day. A great deal of unnecessary time and money is wasted in this way, certainly if the situation has to be modified afterwards. Unnecessary because there is a better approach to traffic problems:

POGSE

This is a simple aid to quickly and effectively analyse and solve problems. POGSE stands for

- Problem
- Origin (cause)
- Goal (objective)
- Solution
- Evaluation.

2.2 Integrated approach

POGSE is a coordinated approach, integrating a number of logical steps to solve the problems of traffic safety. It promotes consultation and active involvement of all parties concerned (the stakeholders) to systematically seek solutions to traffic problems. The starting point is the opinion that all stakeholders – with their traffic behaviour and views on traffic– should play a role in seeking and finding the correct solutions. Communication and cooperation are just as important as traffic science and engineering.

With the POGSE approach all parties involved are assured of the opportunity for maximum input to the decision-making process. The POGSE approach saves time, money and frustration and provides demonstrably better results. In the Netherlands it is applied successfully in various situations, both simple and complex, to solve traffic problems.

The POGSE approach has many advantages. Most important, naturally, is the quality of the decision. The broad approach generally generates points of view that are overlooked in the one-sided approach. With the POGSE approach the various points of view can be carefully weighed up against one another.

The approach, simplified by the steps Problem-Origin-Goal-Solution-Evaluation, summarises the entire decision-making process. Contrary to the conventional approach, involved parties are not confronted with ready-made solutions, but they are given the opportunity to participate and react early on in the process.

2.3 POGSE: step by step

Problem

A problem is mainly related to a location (junction) or a road link. It can be determined on the basis of accident records (see chapter 10: “Analysis of accidents”), but may also follow from complaints of local residents. Insight is needed in the present and future function of the road or



Consensus of stakeholders

road links. (see chapter 3: “Sustainable safe road design: theory”). The trap of confusing the problem itself and the cause of the problem should be avoided (see the next step of the POGSE approach). Consensus of the stakeholders on the real problem and the intended function of the road (link) are required before the next step is started.

Origin (cause)

When agreement regarding the nature of the problem is achieved; it is possible to proceed to the following phase: indicating possible causes. Opinions can differ drastically here between the stakeholders. Car drivers, for

example, can be inclined to point to irresponsible cyclists' behaviour, while vice versa there are complaints about speeding by car drivers. At this stage, clear, independent research is indispensable. It is essential for all opinions to be considered, as more than one cause can lead to the identified problem. Also with this step, agreement on the cause(s) of the problem is a requirement before proceeding to the next step.

The analysis may concern:

- accidents (black spot analyses, see chapter 10);
- complaints (local residents, drivers, school boards, other pedestrians);
- traffic data (speeds, volumes);
- confusing road lay out;
- evaluation of measures (reconstruction or else) taken in the past (see the last step of the POGSE in this chapter).



All stakeholders should be convinced

Goal (objective)

Once problems and causes have been analysed and established, a common objective needs to be formulated. For example: within a certain period the number of accidents at a junction have to be halved, or cyclists are not to be mixed with fast speeding traffic on a particular road link. In every case, the description of the objective needs to include the highest achievable return.

If an agreeable objective cannot be specified, there is a danger of remaining on a too general level like “Improving the road safety”. Make sure the objective can be measured by defining a quantified improvement. In the evaluation the results of the measures taken (the solution) will be checked or audited against the goals identified in this step. When a specific, common goal is agreed, possible solutions can be identified and implemented, which is the next step.

Solution

This step is to devise possible solutions, in which the traffic expert has an important role. The input or basis for optional solutions are the conclusions of the previous steps (the goal in particular). The stakeholders may propose alternative solutions to facilitate discussions and decisions. The final choice is made considering the following:

- which solutions have the best effect (comes nearest to the goal or goals)?
- what is the cost?
- are other works foreseen to combine with specific measures?

A cost benefit analysis (see chapter 11) may provide more insight when comparing and discussing possible solutions. All stakeholders should be convinced that the final choice would provide the benefits appropriate to the identified objective or goal. If so implementation (design, construction, installation) can proceed.

Evaluation

Evaluation is the continuous monitoring of the effects of measures, followed by comparison with the set goals. Monitoring means collection and analysis of traffic data and accident data,

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complaints. Experience shows that implemented measures do not immediately lead to an improvement of the situation; it may even worsen initially. Evaluation is also very important to gather experience and knowledge about safety measures within certain circumstances. Comparison with the set goals means: an answer to the question whether results are as expected (do the results comply with the goals).

An evaluation period of three years is generally observed before definite conclusions are drawn. If found that the benefits are not satisfactory, the POGSE approach should be repeated, most probably leading to a refinement of the initial solution.