Strategising safety

Eric de Kievit looks at Amsterdam's Safety Performance Indicators and the city's search for an alternative to the paucity of accident data in policy making

One of Amsterdam's busiest streets, Damrak, is a perfect example of multimodality in full effect

The combination of large crowds of cyclists and pedestrians in a very limited space makes Amsterdam unique. We see new safety issues arise which mostly have to do with the fight for limited space

Let's first ask a simple questipon: why is Amsterdam so interested in road safety? Every day over 600,000 cycle journeys are made; the city attracts more than seven million visitors a year and the street layout was originally designed for horse-drawn carriages. The combination of large crowds of cyclists and pedestrians in a very limited space makes Amsterdam unique. We see new safety issues arise which mostly have to do with the fight for limited space.

Annual growth of inhabitants (+10,000), jobs (+5000), tourists (+450,000 pa) and students (+2500), plus more and more events being organized adds to the problems and, especially within the A10 ring road, the pressure on public space is increasing. This also has implications for road safety. Think of the busy (narrow) paths through the

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growth of bicycle use (+40 per cent since the 1990s) and the explosive growth in the number of mopeds (+ 265 per cent between 2007 and the present). These (light) mopeds have to cope with the large amount of pedestrians, including visitors and tourists. For relatively vulnerable road users like cyclists (including children and the increasing elderly population) and pedestrians, this rising traffic congestion also causes an increase in unsafe situations.

A NEW STRATEGIC PLAN FOR ROAD SAFETY

The City of Amsterdam is preparing a new Strategic Plan for Road Safety.

The Strategic Plan for Road Safety is an additional incentive to reduce the number of road accidents in Amsterdam. Within the Road Safety Plan, we focus on improving the security of the most dangerous intersections (black spots) and roads (red routes). Road safety is a precondition in all infrastructure projects of the municipality. The national 'Sustainable Safety' guidelines are processed under the guidance of the Central Transport Commission (CVC) and this forms the basis of road design. The CVC assesses plans and designs on traffic flow and road safety.

In addition, preventive measures are taken to prevent common accidents of the largest victim groups, such as creating safer school environments, removing obstacles along paths to prevent single-vehicle accidents and highlighting bicycle lanes in red asphalt. A large majority (over 90 per cent) of accidents are caused by unsafe behaviour. An important pillar in this area is traffic education. All primary and secondary schools are offered a coherent road safety program ('Amsterdamse Verkeerslijn').

How does this relate to SPIs?

The policy-making process changes from a reactive to a more proactive approach to traffic safety in the years to come. Previously, the accident figures were contributory to the policy. The accident registration has never been quite complete, but since 2010 the records have deteriorated such that the figures of serious road injuries were no longer reliable. Due to the reduction in the registration of these accidents, an important basis for decision-makers disappeared.

In co-operation with the SWOV Institute for Road Safety Research a new method of analysis that is unique in Dutch cities was developed. The approach is based on "Safety Performance Indicators" (SPIs)..

SAFETY PERFORMANCE INDICATORS – BEHAVIOUR

We defined over 30 SPIs for behaviors of key road safety groups, which

are scientifically shown to contribute to the occurrence of accidents. On the basis of these SPIs, education campaigns and enforcement are to be used more effectively.

SAFETY PERFORMANCE INDICATORS – NETWORK SAFETY INDEX (NSI)

NSI for infrastructure is an assessment instrument (Network Safety Index) for the infrastructure in

In Amsterdam its many bicycle lanes are highlighted in red asphalt

Amsterdam, without looking at where the accidents took place first. Eventually, there shall be an overview of the road network (with priority: the 50km/h roads) where for each road section it is clear how dangerous this is compared to other road sections. This Network Safety Index (NSI) – score is created based on various SPIs for infrastructure. For example: there is a separate bicycle lane alongside a 50 km/h road, there are obstacles (bollards) on the bike path, there is a curb along the bicycle lane, etc. The instrument NSI is being developed in partnership with the ANWB and SWOV.

The instrument can help in improving road safety considerations (prioritizing) in road infrastructure projects. In addition, when accidents/incidents occur, based on the NSI, we know directly if the infrastructure is in good order.

Why the municipality of Amsterdam is engaged in SPIs?

There are a number of reasons to use SPIs:

1 More transparency with regard to the policy process and the "circle of influence" of the many actors relevant to improving road safety.
2 Better control options because the indicators can be measured directly, are less rare and less dependent on 'probability' as an accident.

For each indicator, we can determine what actors can exercise influence on this indicator. This also offers opportunities for a more integrated approach because SPIs may also be relevant for other policy areas (health, assets)

3 The step to taking appropriate measures easier as SPIs better or more direct offer a view on causes of unsafety.
4 A natural basis for integrated policy because the indicators can also be relevant for other policy fields. For example, consider health, spatial planning, quality of life and environment and so on. An important opportunity has seen recognised in combining the NSI to asset management and we are looking into that...

What does that mean in practice for Amsterdam? What research is being done, which SPIs being measured? What kind of instruments are being used?
For 2015 – the first base year – was have chosen 30 SPIs divided into seven indicators and seven types of road users. The SPIs relating to the key behaviors of key road safety groups in Amsterdam are:

- Proportion of road users that give right priority,
- Proportion of road users waiting for green light
- Proportion of road users that respect maximum speed
- Proportion of road users that is sober (including drugs / medicines)
- Proportion of road users that looking back at crossing or overtaking
- Other bike (bicycle lights)
- Distraction (by smartphone) in traffic.

Depending on the type of research question we use existing data sources (traffic lights, counting studs), surveys or observation by camera.

Wait for green – the message is clear...

Are there any difficulties encountered in this study?
What is of concern in each study is representativeness and costs. Measuring some many SPIs – surely the first year – requires a considerable investment. That is also the reason that we make use of existing data sources where possible, and additional research where inevitable. Before the end of the year 80 per cent of all SPIs must be provided with a percentage.

What are the expected results?
SPIs give the City of Amsterdam the opportunity to monitor the development of road safety in key areas. The state of the indicator is input for new road safety policies. By analyzing the evolution, recorded in an annual progress report (dashboard) we hope to achieve substantial saving of casualties. For each indicator, we can determine what actors can exercise influence on this indicator. This also offers opportunities for a more integrated approach because SPIs may also be relevant for other policy areas (health, assets). With the actors involved, the City of Amsterdam wants to come to an agreement to get the SPI in a desirable direction for road safety.

What do you hope the City of Amsterdam to achieve?
Ultimately we want a decrease in number of traffic accidents. With the use of SPIs, we expect more efficient use of budget for road safety.

FYI
Eric de Kievit is Senior Consultant Transport and Traffic Research, City of Amsterdam