



# PLANNING THE TRANSPORT SYSTEMS OF THE BIG CITIES

Summary in English

SIKA Report 2001:2

## **PLANNING THE TRANSPORT SYSTEMS OF THE BIG CITIES**

### **The commission**

One way of implementing Swedish transport policy is central government investments to develop the infrastructure. Planning takes place in two stages – first, strategic transport planning and then the planning of various measures (implementation planning). The strategic planning determines the guidelines for these government investments.

This report is the response to a Government commission to develop the planning system to improve its performance in the metropolitan areas. Our proposals are limited to how planning can be changed within the framework of the existing institutional arrangements.

Our work has therefore focused on the following points:

1. To produce a description of the problem in order to serve as a basis for discussion on appropriate organisational and institutional conditions in the big cities.
2. To produce a basis for continued discussion on appropriate forms of work and the division of labour.
3. To make proposals on what should be included in the material for decision-making when major measures and strategies in big cities are being analysed.

### **Description of the problem**

Stockholm, Gothenburg and Malmö have a difficult traffic situation by Swedish standards. During the latter half of the twentieth century, traffic increased more rapidly in all three metropolitan areas than the average for the country, and fastest of all in Stockholm. This traffic results in congestion which leads to a deterioration in the quality of life for city dwellers, both directly through work, service and leisure journeys taking longer time and indirectly by restricting the range of work opportunities and leisure activities. The quality of life is also affected negatively by health problems due to noise, air pollution and accidents.

In particular, in the Stockholm area, but also in Gothenburg and Malmö, the population and the economy is expected to increase more rapidly than the average for Sweden. We are therefore expecting an increase in household purchasing power, increased economic activity in business and industry and a continued inward migration to the big cities. Car sales are increasing, the number of employed is increasing, commerce is increasing, the need of goods and service transport is increasing – a development which most people regard as positive but

which also leads to increased road traffic and greater problems with congestion, and the accompanying environmental disturbances through emissions, noise, barrier effects and discomfort. There is a risk that the attraction of our cities will diminish – to the detriment not only of big city dwellers but the whole country. There is quite a high level of awareness of this risk although it is a difficult challenge for the planning system to tackle.

The difficulties for the planning system in the big cities depend on a large number of conditions. Many of them can be directly or indirectly explained by the density of the cities. Increased amounts of traffic mean that there is a great need for measures to increase capacity. At the same time, it is difficult to find acceptable solutions for required investments since potential conflicts of interest between developing the transport infrastructure and protecting existing interests and environments tend to be especially acute in big city regions. There are almost always competing claims on land.

The planning of the infrastructure of the big cities is further complicated by the organisational and institutional structure. The administrative boundaries do not coincide with the functional traffic regions. The metropolitan regions, for instance, consist of a number of municipalities and have several different regional levels. It is not hard to see that it is a difficult task for the planning system to respond to all the opinions and interests held by these players. It is also apparent that many important players have a perspective that does not self-evidently promote a holistic view of the transport system.

The question of who is to finance infrastructure and transport and how this is to take place is also an issue that is particularly complicated in the metropolitan regions. Roads and railways that are part of the national networks are usually also important links for local and regional traffic. Approach roads and through roads with a partly national function are, on the other hand, often the concern of local government. In this way, a negotiation situation is created between central and local government as regards the capacity, design and functioning of transport links.

The transport systems of the big cities are even more complex than in the rest of the country. What happens in one part of the system affects, and is affected by, other parts. This means that many are affected by the decisions made, and that when decisions are to be made, there is a great need to know about the effects in other parts of the system. The fact that the measures taken also interact to a great extent also makes it difficult to produce a basis for decision that clarifies all relevant alternative courses of action. The need for a measure depends on the other measures undertaken at the same time or subsequently.

Many of the causes discussed above of the difficulties encountered by the planning system in handling big city issues are due to the nature of big cities and are therefore unavoidable prerequisites. The question is rather how the planning system can be developed so as to reduce some of these difficulties. In our view, it is particularly important to strengthen the linkage between the objectives of transport policy and objectives for the development of the regions and the measures that are to be undertaken. For this to be possible, a better material for

decision-making is required, however, and a clearer demarcation of responsibility. Some improvements also need to be made in the analytical tools.

### **Proposals on how the link between objectives and measures can be strengthened**

An important task is to translate the national transport policy objectives into objectives adapted to conditions in the big cities. We therefore recommend that the Government initiate the development inputs that are required to be able to achieve agreement on these objectives. However, the number of goal conflicts makes it very difficult to arrive at agreed objectives which can more or less directly serve as a basis for planning. It is not even certain that there is a feasible approach here.

None the less, planning will always be guided by objectives that are more or less explicitly incorporated in the planning process. Regardless of how the objectives are formulated, another important task therefore is to study how the objectives can be linked to choice of measures. The strategic transport planning has an important role to play here. We recommend that the method of work which involves studying different combinations of measures be further developed. This means analysing many types of measures (for instance, sector measures) at the same time as studying the extent to which infrastructural measures and other means of control (e.g. taxes) can substitute for one another. Through such analyses, the linkage can be reinforced between objectives and the chosen strategies and measures.

It is natural that transport policy successively needs to be reviewed and clarified - in particular in the big cities. An ongoing review of this kind requires continual analytical work where the Government and Riksdag are furnished with a basis for decision to be able to adopt detailed policies. We consider that objectives and strategies should be formulated in an iterative process and that the basis for this should be successively developed by continuous analytical work. Since this is not done to any great extent today, we recommend that the Government underlines the importance of continuing strategic analyses in official documents placing appropriations and other regulatory documents. Furthermore, we recommend that, for instance, the sector reports made by the transport agencies be focused to a greater extent than at present on reporting the conclusions of such analyses. For SIKA, we recommend that such conclusions are reported in the annual follow-up made of the transport policy objectives.

### **Recommendation on responsibility to produce a basis for decision**

Infrastructure planning in the big cities is in a regional or local perspective primarily a matter of designing a complete life environment, while in a national perspective it is more a matter of safeguarding the ambitions for growth and welfare expressed in the transport policy objectives. In particular, in the big cities, it is therefore important that transport planning is integrated with planning of land use. It is thereby also only at regional or local level that a real balance can be

struck between all relevant considerations. This argues in favour of placing more of the planning initiative for the infrastructure there.

The functioning of the transport system in the big cities is at the same time an important part of the functioning of the whole country's transport system. The big cities also account for a high proportion of environmental disturbances and accidents. The big cities must therefore be included when an assessment is to be made of how the national objectives and strategies are to be met. Our conclusion is that it is important that central government is able to affect regional or local planning to ensure that national objectives have an impact.

If the responsibility for producing a basis for decision-making is shifted to the regional or local level, the role of the transport agencies and other government agencies in strategic planning would also need to be changed. For instance, traffic forecasts, evaluations, and other calculation assumptions would need to be produced jointly. Working on follow-up would at the same time become more important, which is moreover a natural consequence of a general aim to increase management by objectives. In order to formulate internally balanced objectives and for their subsequent review, knowledge of previous measures is necessary.

The political dialogue with citizens is deficient today. If an attempt is made to more systematically analyse the consequences of different approaches, we believe that it would be easier to achieve acceptance for those that are feasible and to place individual measures in a more holistic perspective. It is not particularly suitable that such a dialogue is led by a transport agency or other government agencies. We propose that the work of the agencies is instead focused on producing material for decision making which shows the consequences of different alternative courses of action. The political dialogue should then be a task for the political system.

### **Recommendations on what the material for decision-making should include**

If strategic planning is changed in the way we have described above, it makes increased requirements on the material for decision-making. Already today, many people regard the planning process as too ambitious and difficult to grasp. However, the basic problem is the complexity of the problem on which decisions are to be made. Even if a lot could be done to make the material on which decisions are to be made more readily comprehensible, it is not easy therefore to see how it could be significantly simplified without at the same time undermining democratic influence over the development of the transport infrastructure.

The usefulness of a measure can depend wholly on what is expected to happen in its surrounding world. Before decisions are taken on major measures, it is therefore important to study the effect of alternative assumptions. We therefore recommend that some major conceivable measures are studied already in the transport strategic planning. In the strategic decision, one of the main tasks is to establish guidelines for use of different transport policy means of control - i.e. to establish the framework assumptions. For this reason too, major measures or

strategies in the central parts of big cities should be analysed on the basis of some different assumptions as a preparatory component of strategic planning.

We therefore recommend that such analyses be structured according to a schedule. A study should be made of how the effects of a measures or strategy change when the following framework conditions vary:

1. Unchanged framework conditions
2. Socially efficient prices (or other prices)
3. Alternative road investments
4. Alternative public transport investments or traffic solutions,

Two examples of such analyses are given in the report – the case studies for Österleden and the railway construction Mölnlycke to Rävlanda/Bollebygd. On the basis of experience from our cases studies among others, we make the assessment that, when preparing to make decisions on investment in new roads, it is important to study points 1–3 and sometimes also point 4 in the schedule for analysis. With regard to rail investments, we consider that it is important to study all of the above points.

### **Proposals for method development**

Method development is an important part of the ordinary work of traffic agencies and SIKa. The methods for analysing measures in big cities and describing the consequences of these need to be improved, however. There are a number of consequences which are difficult to describe in a systematic way in the material produced for decision-making. Some examples are encroachment on natural and cultural environments, regional distribution effects, exploitation effects, disruption during the period of construction, reduced sensitivity to disturbances in two alternative transport possibilities and comfort and information in public transport.

It is difficult in the short term to produce general assessments of encroachment that can be used to evaluate how much consideration should be given to the natural and cultural environment and to estimate the funds required for new roads and railway. However, there is new research that indicates that this may be a feasible approach in the somewhat longer term.

At present, the description of the distribution of effects among different groups is seldom especially detailed. A model tool such as SAMPERS makes it possible to produce such descriptions when entire strategies or approaches are analysed. It is probable that improvements of the model will need to be made before it can reliably account for the behaviour of different groups.

There is a need to develop both models to analyse changes in the transport system and models for the valuation of the effects that arise. For big city measures, the uncertainties that are most important are probably the effects of congestion and the valuation of time by different groups. In our view, it is important to develop the model systems, (for instance SAMPERS) to better deal with congestion. It is also important to obtain better knowledge of certain time values and to improve

the description of emissions in queue situations. In conclusion, we want to emphasise the importance of the availability of consistent data. Among other things, there is a need to produce procedures for how model runs are to be made and data saved.



## THE SWEDISH INSTITUTE FOR TRANSPORT AND COMMUNICATIONS ANALYSIS

The Swedish Institute for Transport and Communications Analysis, SIKÅ, is an agency that is responsible to the Ministry of Industry, Employment and Communications. SIKÅ was established in 1995 and has three main areas of responsibility in the transport and communications sector:

- To carry out studies for the Government
- To develop forecasts and planning methods
- To be the responsible authority for official statistics

Swedish Institute for Transport and Communications Analysis

P.O. Box 17 213, SE-104 62 Stockholm, Sweden

Visit: Maria Skolgata 83

Phone: +48 8 506 206 00 Fax: +46 8 506 206 10

[sika@sika-institute.se](mailto:sika@sika-institute.se)

[www.sika-institute.se](http://www.sika-institute.se)