



**The Current State of the Swedish Transport System
– Challenges and Opportunities**

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Summary

The purpose of this report is to describe the current status of the Swedish transport system and how it is being affected by various societal conditions, and to analyse the existing opportunities to achieve Swedish transport policy objectives.

The physical infrastructure – a key part of the transport system – is described in the report. Forty-six per cent of the Swedish road system consists of national highways. Important changes in recent years have focussed on traffic safety measures, including lowered speed limits that has reduced accessibility in many parts of the country.

The railroad system is mostly state-owned. The implementation of the international European Railway Traffic Management System (ERTMS) signal standards represents a major developmental issue.

Eleven of Sweden's 51 airports are state-owned, and most of the others operate at a loss.

Roughly half of Sweden's ports are private industry ports with specific orientations, while the other half consist of commercial ports open to all sorts of commercial traffic. Over two out of three ports handle bulk goods, while only 17% handle containers.

The vehicle and vessel fleets are other important parts of the transport system. The rising average age of the vehicle fleet is a cause for concern in the long term. Generally speaking, this means that the anticipated environmental and safety benefits from new technologies introduced into the market will take longer to have an impact.

The introduction of vehicles powered by non-fossil fuels is progressing very slowly for all types of traffic. For example, the share of newly registered passenger cars running on fossil fuel was higher in 2011 than in any of the previous five years. The transport sector accounted for one-fourth of Sweden's energy consumption in 2010, consuming energy mainly in the form of fossil and climate-forcing fuels.

Road traffic accounts for 83% of the transport mileage for personal travel, while goods shipments are distributed more uniformly between transport by road, railroad, and sea. The transport mileage of passenger cars has increased by nearly 7% over the last ten years, while the share of transport mileage of public transport is still slightly under 20%.

Another trend is for an increasing number of people to have access to one or more passenger cars. The growth of the transport sector is closely related to economic growth, particularly with respect to goods shipments.

Various instruments and incentives are used to influence the use of resources to achieve politically determined goals. The objective in the transport sector is usually to steer the market to achieve greater socio-economic efficiency. The report presents an overview of current Swedish and international instruments and incentives, categorised as *planning, regulations, taxes and levies, and information*.

The transport sector has undergone a number of major organisational changes in recent years. These changes are intended to increase the sector's market adaptation and realise the potential for transport system efficiency and coordination across all traffic types. National and international actors and organisations are presented in brief.

The report also describes the levels of resources being used for investments, reinvestments, operation, and maintenance, which will have a major impact on the future transport system. Such compilation is made more difficult by the fact that the data are possessed by different actors with differing definitions and reporting practices, significantly reducing the feasibility of drawing comparisons between traffic types, over time, and between countries.

A total of SEK 34 billion/year is invested in Swedish transport infrastructure, 49% on roads and 42% on railroads, a total that has increased by 1–17% per year in recent years. These investments account for an increasing share of GDP, although most European countries allocate a larger share for investments in roads than does Sweden. Sweden's investments in rail traffic rank among the highest in Europe in terms of share of GDP, although Sweden ranks 11th in terms of the investment per track length.

Infrastructure operating and maintenance activities cost a total of roughly SEK 18 billion/year, 51% spent on roads and 46% on railroads. The annual rate of increase has been 5–10% for roads and 12–18% for railroads.

Sweden ranks 14th in Europe in terms of road infrastructure operation and maintenance expenditure relative to GDP. Sweden's operation and maintenance activities for railroads rank fourth in absolute terms and roughly eighth relative to GDP or track length.

Several challenges are identified in the report. Growth and development in Sweden, due partly to regional enlargement, have resulted in a clearly increased dependence on a functioning transport system that provides the necessary accessibility.

Achieving a balanced expansion of accessibility while taking environmental and safety considerations into account is necessary, as is also reflected in our transport policy goals. The goals set must be complemented with the robustness needed to maintain function despite disruptions that seem increasingly serious. Meeting growing demand for a functional and robust transport system that provides high accessibility even as emissions levels and accident rates are to decrease poses a major challenge.

The accessibility that the transport system must provide society needs to be improved. Obvious deficiencies in the current infrastructure and public transport system affect work commuting in the three major urban regions.

Congestion is a distinct problem affecting both passenger and goods transport, separately and jointly, and is exacerbated by various bottlenecks in the system. From a broader perspective, speed limit changes have reduced accessibility, particularly with regard to service in sparsely populated areas.

The challenges facing the railroad system involve its rapidly ageing infrastructure, its great need for maintenance and reinvestment, and its growing capacity deficiencies. It is consequently becoming increasingly important to view the various parts of the transport system as parts of a cohesive system whose purpose is to create accessibility, regardless of the type or types of traffic involved. Opportunities for transfers and connections are important, for example, between aircraft and trains, between sea and land transport, and in terms of infrastructure for intermodality. A holistic perspective should also make it possible to create conditions more favourable to switching between traffic types in the event of temporary disruptions.

It is also clear that capacity limitations, for example, in road traffic in major urban areas, can no longer be “built away” through infrastructure investments alone. Initiatives are also needed to expand efficient public transport systems. Infrastructure ownership conditions can sometimes make coordination more difficult, for example, between municipally financed ports and state-owned roads and railroads.

The robustness of the transport system needs to be enhanced so that it can efficiently offer reasonable transport solutions, even in the face of more extensive stresses. This applies to climate change-related disruptions attributable, for example, to extreme weather situations, as well as to the risk of disruptions due to sabotage and terrorism.

Regarding railroads, it has become clear that their sensitivity to disruption cannot be explained by deficiencies in their condition or by the age of their infrastructure and rolling stock alone. Deficiencies in terms of organisation and coordination also contribute to disruptive effects. This conclusion is supported by the fact that Sweden’s financial commitments in terms of investments in and the operation and maintenance of the transport infrastructure are not particularly low by international standards.

Regarding Sweden’s transport policy objectives, the environmental impact of emissions from the transport system remains a major problem. Sulphur and nitrous oxide emissions have been reduced considerably as a result of improved exhaust purification technologies in road vehicles, but the emissions from maritime transport remain significant and show no signs of decreasing. This is particularly true with respect to emissions from international maritime transport, which have received no major attention to date, as it is domestic emissions that are reported within the EU and the UN.

Emissions of greenhouse gases from the transport system have increased continuously. The share of renewable energy has increased, and new passenger cars are much more efficient than those of earlier years, although increased traffic volumes are outweighing the gains from these improvements. Here again, emissions from international transport should receive greater attention.

To date, traffic safety initiatives have focused largely on measures to reduce the number of road fatalities. This effort has been successful and should continue, but there is a need to target other groups of travellers with similar initiatives. For example, in 2010, rail traffic saw a dramatic increase in the number of fatalities, excluding suicides. There are also many who are not killed but are seriously injured in road traffic, particularly among unprotected road users.

The chances of achieving Swedish transport policy objectives will be determined not only by the future infrastructure or the composition of the vehicle and vessel fleets, but also by changes in behaviour, altered regulations, instruments and incentives, and highly developed societal planning. A holistic approach is consequently needed, as is a mix of initiatives including long-term ones such as planning, short-term ones such as regulation, and financial incentives that will influence behaviour.

The reorganisation of the transport sector has created conditions favourable to a more holistic view, with an approach that encompasses all traffic and transport types. Against this background, ongoing reviews of the planning system and the capacity situation will be extremely important to our ability to continue developing a socio-economically efficient and robust transport system that is sustainable in the long term.



Transport Analysis is a Swedish agency for transport policy analysis. We analyse and evaluate proposed and implemented measures within the sphere of transport policy. We are also responsible for official statistics in the transport and communication sectors. Transport Analysis was established in April 2010 with its head office in Stockholm and a branch office in Östersund.