



Background to The Stockholm Trial

Practical example of how to implement congestion charging



Preface

The Stockholm Trial started on 22 August 2005 with extended public transport, including 14 new bus routes. On 3 January 2006, the second part of the trial started with the implementation of the congestion tax. In addition, a large number of new park-and-ride sites were opened in nearby districts outside the congestion-charging zone. The Stockholm Trial worked well during the initial period, with significant reductions in traffic volumes and queues.

This report was produced by Trendsetter, a Civitas project. The aim is to offer a clear description of the background and framework of the Stockholm Trial.

The report is mainly based on the progress report on congestion charging produced by the City of Stockholm's Office of Regional Planning and Urban Transportation.

This report does not aim to forestall the evaluation of the Stockholm Trial and deals mainly with the period up until the start of the trial in August 2005. A comprehensive evaluation will be presented in June 2006, offering a good picture of the effects of the trial on traffic, travel habits, the environment and the economy.

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Summary

In June 2003, the Stockholm City Council adopted a proposal to conduct a trial with congestion-tax, extended public transport and new park-and-ride sites.

The primary objectives of the trial are to reduce congestion, increase accessibility and create a better environment. The purpose is to test whether the congestion tax and extended public transport contribute to a more efficient traffic system and a better environment. Interim targets are:

- To reduce traffic volumes on busiest roads by 10-15%.
- To improve traffic flow on streets and roads.
- To reduce emissions of carbon dioxide and pollutants harmful to human health.
 - To improve the urban environment as perceived by Stockholm citizens.
- To provide increased resources for public transport.

The Stockholm Trial started on 22 August 2005 with extended public transport. The public-transport extension will continue until 31 December 2006. On 3 January 2006, implementation of the congestion tax started and will continue until 31 July, when the Stockholm Trial ends.

The trial will be evaluated continuously from a number of different perspectives. Evaluations will be summarized in a report in early summer, 2006.

A referendum will be held in Stockholm Municipality in conjunction with the Swedish general elections on 17 September 2006. The result will determine whether the congestion tax and extended public transport will become part of a permanent solution to the traffic situation in Stockholm.

1. Background

Stockholm is the capital of Sweden, with about 765,000 inhabitants, making it the largest municipality in the country. In an otherwise sparsely-populated nation, Stockholm is a city of European class, where the economy, tourism and culture offer a rich diversity. A third of the inner-city area consists of water; the townscape is framed by bridges that link the city's islands to the mainland.



View from the Old Town in Stockholm.

The City's transportation needs are met by a network of roads and public transport. In October 2005, about 528,000 vehicles passed in/out of Stockholm's inner city every weekday. Public transport is well-developed. Seven out of 10 passengers (73%) travelling to the inner city during the morning peak period use public transport. Cycle and pedestrian traffic is becoming increasingly more important in the inner city.

Citizens are generally quite satisfied with the environment in Stockholm's inner city. Some 85% believe it is pleasant to spend time there. A large majority is also satisfied with the city's public-transport system. But, as in most large cities, Stockholm residents experience some problems connected to living in the city. In autumn 2005, more than half of its citizens stated that traffic caused poor air quality and three-quarters perceived problems with traffic congestion on radials leading into the inner city. Traffic queues before the Stockholm Trial started periodically caused severe problems, especially during morning and afternoon/evening peak periods. The consequences of congestion for the national economy are estimated at between SEK 3,600-8,000 million.

1.1 Traffic problems in Stockholm

During the latter part of the 20th century, traffic in the Stockholm region rose rapidly due to economic and population growth and

increased travel. During the 1950s and 1960s, the radical rebuilding programme that took place in Stockholm contributed to extensive through traffic in the inner city. The result of car traffic being given priority in 1960s town planning is that Stockholm still has a certain lack of balance between different passenger groups.

To some extent, problems have been alleviated via a range of different measures, for example the development of rail traffic, inner-city restrictions on heavy traffic, pedestrian streets, cycle lanes and dedicated bus lanes. In October 2004, the Södra Länken (South Link) bypass tunnel was completed, a new 6.5-km traffic route along the entire southern edge of Stockholm's inner city, which increased accessibility and reduced citizens' exposure to car traffic. In summer 2005, Nya Årstabron (New Årsta Bridge) was opened, a new combination bridge for rail, cycle and pedestrian traffic across the southern districts of Stockholm, considerably increasing rail-traffic capacity.

However, there was still a big lack of capacity – significant congestion with speed reductions exceeding 35% occurred on about 70 km of the main road network in Stockholm County. On half of these sections, driving times more than doubled during peak periods. The biggest flow reductions occurred on major radials and arterials leading to Stockholm's inner city. In addition, congestion on municipal roads and streets led to problems for deliveries and bus traffic.

Rail traffic also has a capacity problem, since regional commuter trains compete for rail space with long-distance traffic. As with road building, Stockholm has certain geographical conditions that hinder the development of rail traffic. Large rail and road investments must by necessity include construction of extensive tunnels or bridges – often both.

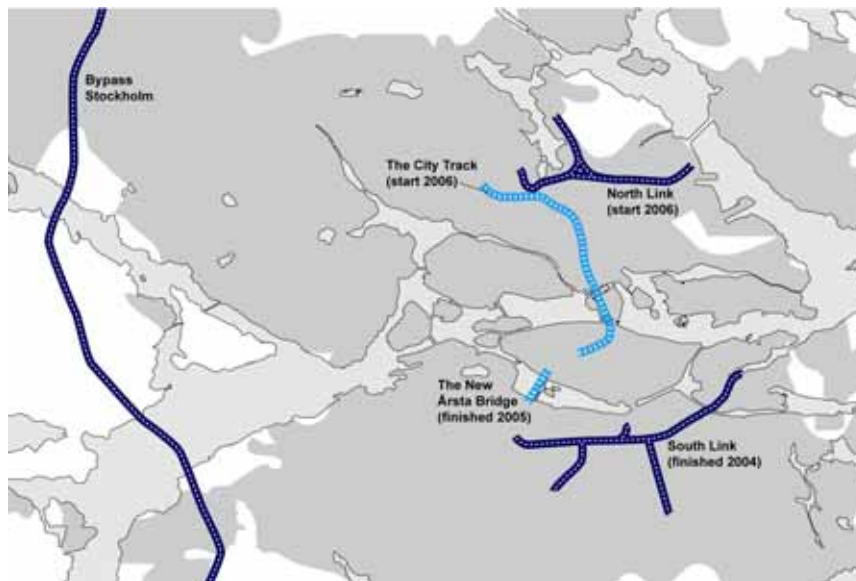
1.2 New and planned infrastructure measures in Stockholm

A number of infrastructure projects are planned for Stockholm. Next in line is the Norra Länken (North Link) bypass, a major road project aimed at relieving traffic on northern city radials that will start during 2006.

During 2006, construction will commence on a new 6-km rail tunnel directly under Stockholm's inner city. The City Track will result in the opening of completely new centrally-located commuter-train stations that will facilitate more frequent commuter train traffic in the entire region. The project will be completed by 2011, at the earliest.

A further major road project is under discussion. This is a new traffic route to the west of the city, aiming to improve north-south links in the Stockholm region. At the moment, three main alternatives are under

review, one of which is *Bypass Stockholm* (see map, below). The other alternatives, the *Ulvsunda diagonal* and the *Combination alternative*, run in a more easterly direction.



Recently-completed and planned major infrastructure projects in Stockholm.

1.3 Previous congestion-charging initiatives

It is unlikely that current investments in road infrastructure in Stockholm will be adequate for car-traffic volumes. Measures to control car-traffic volumes have therefore long been on the agenda.

The issue of congestion charging dates back to the 1970s. Since then, it has been the subject of recurring reviews and proposals, as a result of which expertise and knowledge concerning congestion charging has successively increased.

As early as the end of the 1980s came the first proposal from a parliamentary committee recommending that the government should give municipalities authority to implement congestion charging within specific zones.

A few years later, in January 1991 and September 1992, three political parties in Stockholm City and Stockholm County made a cross-bloc agreement on investments in the region's traffic system. The Dennis Agreement comprised the building of a ring road around the inner city and a new major traffic route. Construction would be financed via congestion charging.

The agreement became the subject of a number of reviews and decisions. Preparations were far advanced but never led to a bill in the Swedish Parliament. A ruling in the Swedish Supreme Administrative Court meant that an important part the agreement could not be

implemented as planned: The construction of a road tunnel, part of Norra Länken bypass, was not approved because it would conflict with the newly-established National City Park in the north of Stockholm. The Dennis Agreement was thus scrapped.

However, the need to regulate Stockholm traffic via congestion charging was still great and in January 1999 a new inquiry led to a clear proposal to regulate traffic in order to create a better environment. The inquiry proposed that municipalities should themselves be able to decide on congestion charging and implement it after notifying the government.

2. Beginnings of the Stockholm Trial

In March 2002, the inquiry process continued when the government gave the “Stockholm Committee”, a government committee of inquiry, the additional task of looking into congestion charging. The task included showing which conditions must be fulfilled in order to introduce congestion charging. According to the government, one condition was that municipalities themselves wished to be responsible for implementing congestion charging.

The issue came to the fore after the Swedish general election in autumn 2002. The agreement between the Social Democrats, the Left Party and the Green Party to cooperate at national level during the new term of office included a full-scale congestion-charging trial in Stockholm’s inner city stretching over several years. A condition was that a corresponding agreement on congestion charging be made at local level. Such an agreement was presented less than two weeks later in a joint announcement by the majority parties on Stockholm City Council.

In January 2003, Stockholm’s mayor requested in an official letter to the Swedish infrastructure minister that the government pay for investments in connection with a congestion-charging trial. This was the start of practical preparations for the Stockholm Trial.

2.1 Decisions by the City of Stockholm

In February 2003, the City of Stockholm Executive Board agreed on directives for the Stockholm Trial. The City of Stockholm Executive Office was required to present an implementation plan by March 2003. According to the directives, the trial should start and be evaluated during the current term of office. A Congestion Charging Secretariat was to be established within the Executive Office and a political reference group formed to monitor the work.

Two months later, the Executive Office presented a draft implementation plan for the start of the trial. The purpose of congestion charging was to reduce the number of vehicles on the busiest roads during peak periods by 10-15%. The recommendation was for a single charging zone and that traffic on Essingeleden, an important bypass crossing the western parts of central Stockholm, should be exempt from the congestion tax. The technical solution recommended by the Executive Office was an electronic system based on short-range communication with a transponder placed on the vehicle windscreens. Video cameras would photograph number plates as vehicles passed control points.

In May 2003, the majority parties on Stockholm City Council put forward a proposal to conduct a congestion-charging trial, which was adopted by the council on 2 June 2003. The decision was taken on condition that the Swedish Parliament passed legislation making the trial possible. The Executive Board was given the task of carrying out procurement of a technical system and the Executive Office was instructed to make an agreement with the government regarding the financing of the trial. The agreement was to make it clear that the government was responsible for all costs connected with the trial. It was also stipulated that the trial would have a time limit and that Stockholm citizens would be able to vote in a referendum in conjunction with the Swedish general elections in autumn 2006 on whether congestion charging should be made permanent. The system would be time-differentiated and fee levels would be SEK 20 each time a vehicle passed over the congestion-charging cordon during peak periods and SEK 10 during moderately busy hours. Exemptions were made for certain vehicle categories.

2.2 Report from the “Stockholm Committee”

In June 2003, the “Stockholm Committee” presented its Congestion Charging Report. The committee proposed a general congestion-tax law. The committee stated that from a legal standpoint, the congestion tax would be a national tax, meaning that the decision to implement it must be taken by the Swedish Parliament. The report also made two points that were later accepted - that Essingeleden and journeys to/from the island of Lidingö be exempt from the congestion tax. Lidingö Municipality’s only connection to the mainland was via the proposed charging zone and the committee believed that its citizens, like those in other municipalities, must have free access to the public-road network not subject to congestion tax.

The Swedish Ministry of Finance then took over the ongoing preparations for the Stockholm Trial since the congestion tax was considered to be a national tax.

2.3 Congestion Charging Secretariat established

In June 2003, a Congestion Charging Secretariat was established to oversee planning, implementation, evaluation and communication in connection with the Stockholm Trial. The idea was to create a small project-management office. Work was divided into three main areas: charging-system technology, traffic planning/evaluation and information/communication. A project leader was appointed for each area.

3. Planning and legislation

Since the Stockholm Trial had now been given a distinct time-limit by Stockholm City Council, it was of major importance to speed up preparations for it. The Executive Office therefore immediately started preparations for procurement of the technical system.

At the same time, the Congestion Charging Secretariat started to create a network organization, mobilizing resources from the city's administrations and companies. A project group was linked to each of the main areas for planning, evaluation and information. This cooperation was overseen by a reference group at strategic level, comprising managers in leading positions. In this way, the Swedish Swedish Road Administration and Stockholm Transport were included at an early stage.

3.1 Start of procurement of technical system

The Executive Board decided in June 2003 to carry out procurement of equipment, systems and services. The finance department of the Executive Office decided on a negotiated procedure in two stages, with a clear functional basis. Procurement consultants with experience of public procurement and the type of charging system envisaged were engaged. Since it was anticipated that procurement would be exacting and complicated, the procurement process was carefully planned.

An invitation to participate in the procurement was advertised in July 2003 and six companies notified their interest in September. Four of these fulfilled the stated requirements. In November, the Executive Board agreed on a detailed tender document and decided to invite the four suppliers that had qualified to submit tenders.

3.2 Stockholm Transport proposes extended public transport

In February 2004, Stockholm Transport presented a preliminary proposal for extended public transport measures during the Stockholm Trial. The aim of the proposal was to be able to meet anticipated increased demand following implementation of the congestion tax. Stockholm Transport estimated that there would be about 12,000 additional passengers travelling into Stockholm's inner city during the morning peak period. It proposed that existing direct bus routes be reinforced and a number of new routes between nearby municipalities and the inner city be opened. It also proposed 12 new direct bus routes, two new trunk services and an extension of existing trunk services in the inner city. In all, 32 trunk and direct services were affected. The

proposal also included reinforcement of commuter-train services, the Underground and regional train services, where possible.

The proposal was adopted by Stockholm Transport's management and the company undertook the planning of necessary increases in public-transport services provided the government paid for all extra costs. At a later stage, an agreement was signed with the government regarding financing.

3.3 Proposed legislation from Ministry of Finance

In February 2004, the Ministry of Finance presented a memorandum with draft legislation for a congestion tax. It proposed that net income received by the government from the system should be returned to the region after deduction for increased costs connected to various authorities. The ministry further proposed that the legislation should apply to Sweden as a whole but initially should only be implemented in Stockholm's inner city. It also proposed that the car owner be liable for the congestion tax, which would not be subject to VAT.

Details regarding the congestion tax in Stockholm were contained in an appendix to the proposed Congestion Tax Act. The exception made for Lidingö was specified as follows: Car journeys between Lidingö and the rest of Stockholm County are exempt if the car enters and departs Stockholm's inner city within 30 minutes. The congestion tax applies Monday-Friday between 6.30 a.m.-6.30 p.m., the tax varying between SEK 10, 15 and 20. No tax is levied during evenings after the charging period and weekends. Maximum tax payable is SEK 60/day.

After the draft legislation had been out on review, the Ministry of Finance presented a new proposal with exemptions for taxis and clean vehicles, for example, in accordance with a request from the City of Stockholm.

3.4 Swedish parliament approves government bill on the congestion tax

On 28 April 2004, the government submitted a bill on the congestion tax to the Swedish Parliament. It was proposed that a law on the congestion tax, and consequential changes to other legislation, come into force on 1 January 2005. The government was authorized to determine on which day the Stockholm Appendix to the Congestion Tax Act would come into force. The appendix should, according to the bill, be time-limited and apply until 31 July 2006, after which date a new parliamentary decision would be required in order to continue with the congestion tax. The government would compensate the City of Stockholm and Stockholm County for costs directly linked to the trial. Which costs would be recompensed and the amounts would be

regulated in an agreement with the government, municipality and county council.

Parliament adopted the bill on 16 June 2004 by 171 votes to 137.

In June, the government also submitted a bill to parliament authorizing municipalities and county councils that implement congestion charging to inform the public about the congestion tax and assist the government in administration and procurement of the congestion-charging system, for example. The bill was later approved by parliament.

4. Procurement of technical system

Since it became clear in spring 2004 that the Stockholm Trial concerned a tax rather than a municipal charge, it was also evident that government authorities must take over procurement of a system for collection of the tax. According to the Swedish constitution, municipalities may not collect tax. That is the government's responsibility.

4.1 Transfer of procurement process to Swedish Road Administration

On 27 May 2004 the government therefore decided to give the Swedish Road Administration the responsibility of procuring technology and services required for the collection of the congestion tax. The decision meant that the procurement of a technical system was transferred from the City of Stockholm to the Swedish Road Administration.

The Swedish Road Administration took over ongoing procurement responsibility in an agreement with the City of Stockholm on 5 July 2004. Under the agreement, Stockholm City is responsible for general information, analyses and follow-up, while the Swedish Road Administration is responsible for the tax-collection system (technical equipment for tax collection and the tax decision) and information about how the tax is to be paid.

4.2 IBM winner in procurement bidding

On 9 July 2004, the Swedish Road Administration decided to purchase the technical system from IBM Svenska AB. IBM was contracted to build, run and coordinate the technical system.

4.3 Appeal against procurement decision

Two participating suppliers in the procurement process appealed against the Swedish Road Administration's decision to award the contract to IBM and sought an interlocutory injunction, i.e. an order prohibiting execution of the contract, at Dalarna County Administrative Court. The suppliers claimed, for example, that the transfer of procurement responsibilities to the Swedish Road Administration and the decision to exclude one of the suppliers from continued procurement procedures was unlawful. The County Administrative Court ruled in accordance with the EU procurement directive and upheld the injunction. This meant that the Swedish Road Administration and IBM had to suspend further work.

On 13 August 2004, Dalarna County Administrative Court announced its decision. The appeal from one of the suppliers was granted. The court ruled that the procurement process must be redone, on the grounds that negotiations had not taken place with a sufficient number of tenderers. The other lawsuit was dismissed. At the same time, the interlocutory injunction was lifted. A few days later, the Swedish Road Administration appealed against the ruling.

The Administrative Court of Appeal in Sundsvall ruled on 9 September 2004 that the agreement between the Swedish Road Administration and IBM was legally binding and that the procurement process did not have to be redone. The Administrative Court of Appeal did not try the matter but found that no one had appealed within the prescribed period against Dalarna County Administrative Court's ruling to lift the interlocutory injunction. An appeal was made against the ruling.

The Supreme Administrative Court decided in a ruling on 4 February 2005 that the agreement between the Swedish Road Administration and IBM did not prevent a trial of the case and remitted it to the Administrative Court of Appeal for trial of the matter in law.

On 2 March 2005, the Administrative Court of Appeal in Sundsvall, after a retrial, ruled that the procurement process by the Swedish Road Administration and the City of Stockholm had been carried out in due order. All motions were dismissed.

The ruling was again appealed to the Supreme Administrative Court. The appellant was granted an interlocutory injunction on March 11 2005, which meant that the Swedish Road Administration and IBM were yet again prevented from carrying out further work. On 30 March 2005, however, the Supreme Administrative Court denied leave to appeal, which meant that the Administrative Court of Appeal's ruling was valid and the Swedish Road Administration and IBM could resume preparations for the introduction of the congestion tax.

5 Framework of the Stockholm Trial

The final framework for the Stockholm Trial consisted of three parts:

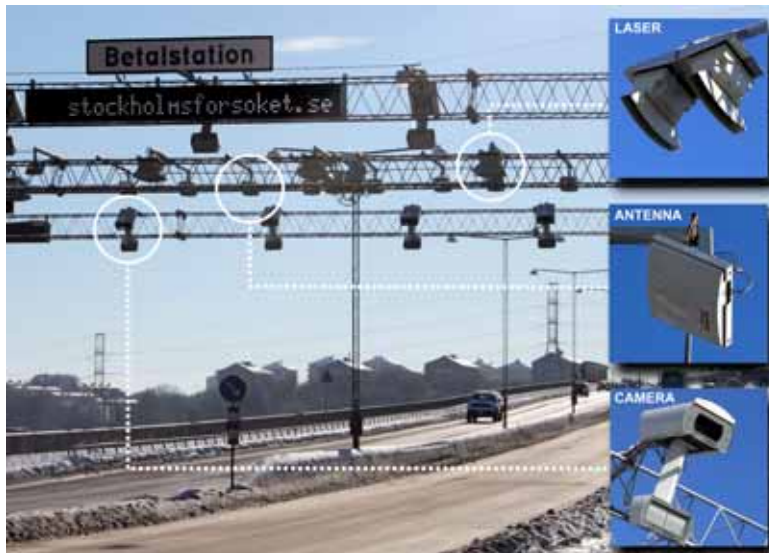
- Extended public transport
- New and improved park-and-ride sites
- Congestion tax for passage into/out of Stockholm's inner city



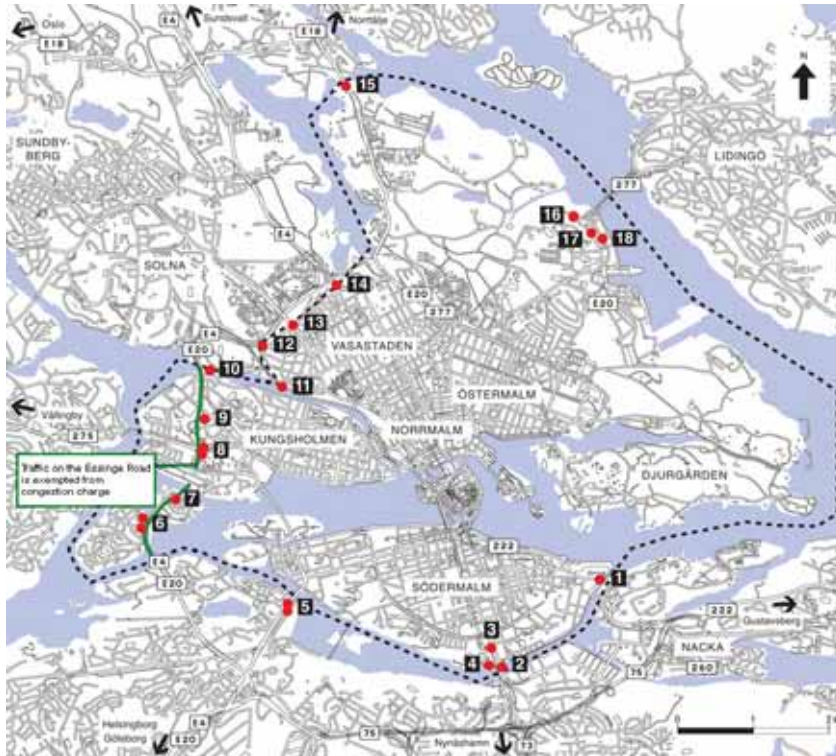
The three parts of the Stockholm Trial.

5.1 The Congestion tax

The congestion tax will be levied during the period 3 January to 31 July 2006 on vehicles passing any of 18 control points that have been installed around Stockholm's inner city. Passages are registered automatically and the owner of the vehicle is responsible for ensuring the tax is paid.



Skanstull: One of the 18 control points used in the Stockholm Trial.



A congestion tax of SEK 10, 15 or 20 kronor is levied for passages in/out of Stockholm's inner city on weekdays between 6.30 a.m. and 6.30 p.m.

How much car owners pay depends on what time of the day their passage is made. The charge is higher during peak periods, to encourage drivers to make their journeys at times when roads are less busy. It is only on weekdays between 6.30 a.m. and 6.30 p.m. that the congestion tax is levied. No tax is levied in evenings after the charging period, nights, Saturdays, Sundays, public holidays and the day before a public holiday. Maximum tax payable is SEK 60/day.

Time	Tax, SEK
6.30-6.59 a.m.	10
7.00-7.29 a.m.	15
7.30-8.29 a.m.	20
8.30-8.59 a.m.	15
9.00 a.m.-3.29 p.m.	10
3.30-3.59 p.m.	15
4.00-5.29 p.m.	20
5.30-5.59 p.m.	15
6.00-6.29 p.m.	10
6.30 p.m.-6.29 a.m.	0

Tax levels reflect traffic intensity on weekdays. The tax is highest during peak periods (red in the right-hand chart). Evenings after the charging period, nights, Saturdays, Sundays and public holidays are not subject to the congestion tax. Maximum tax payable is SEK 60/day.

Vehicles are registered as they pass control points. Number plates on all vehicles are photographed and recorded automatically. If the car owner has ordered and installed a transponder, the vehicle is also recorded via a signal. The transponder is an electronic box attached to the inside of the windscreen and can be ordered free of charge from the Swedish Road Administration.

There are several ways to pay the congestion tax. The easiest way to pay is via direct debit, a payment method available only to car owners who have acquired a transponder. For direct-debit payment in Sweden, the account holder gives his/her bank permission to transfer money directly to named authorities/companies.

Vehicle owners can also pay via an Internet bank or any 7-Eleven convenience store or Pressbyrån kiosk in Sweden. It is also possible to pay via bank giro. Payment must reach the Swedish Road Administration within five work days of the passage - otherwise a SEK 60 penalty is charged. If the tax has not been paid within a month, an additional SEK 500 penalty is charged.

Certain routes are exempt from the congestion tax. For example, journeys to/from Lidingö Municipality are exempt in order to ensure that its citizens have free access to the regular public-road network. Essingeleden is also exempt, making it possible to drive past Stockholm's inner city without having to pay the congestion tax.

A number of vehicle categories are also exempt from the congestion tax: (1) Vehicles that are part of, or complement, public transport – large buses and taxis, for example. (2) Clean vehicles - vehicles that run totally or partly on electricity or biogas. (3) Vehicles equipped with technology for using blended fuels with a high percentage of ethanol. (4) Emergency vehicles, diplomatic cars and vehicles registered abroad. In addition, cars used by drivers with a parking concession for the disabled can apply for exemption.

5.2 Extended public transport

To cope with the increase in passengers, Stockholm Transport has reinforced public transport resources with 197 new buses, 14 completely new direct bus routes and two new blue-bus routes. The new direct bus routes are a good, fast alternative for peak-period travel from nearby municipalities to Stockholm's inner city.

Where possible, existing bus, Underground and commuter-train services have been reinforced with more frequent departures and more carriages. Moreover, some 20 of existing blue-bus and direct bus routes have increased departure frequencies. Totally, 100,000 additional seats have been added for weekday travel.

5.3 New park-and-ride sites

To facilitate inter-modal travel, a large number of new park-and-ride sites have been opened in the Stockholm region by Stockholm Parkering and Stockholm Transport, while existing park-and-ride sites have been made more attractive. Totally, about 2,300 new parking spaces have been added at 36 sites in the City of Stockholm and the surrounding region.

Between 1 November 2005 and 31 July 2006, citizens with a Stockholm Transport travel card can park free of charge at park-and-ride sites throughout Stockholm Municipality.

6. Description of organization and implementation

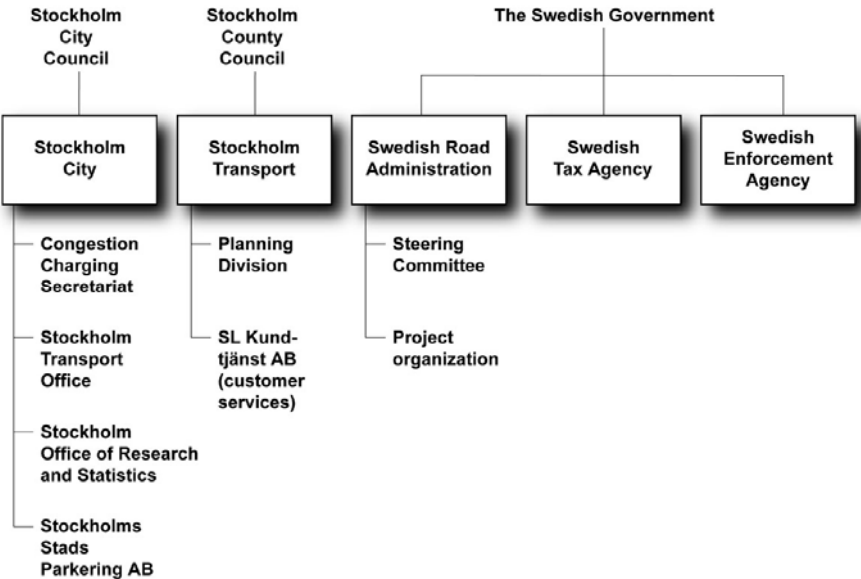
6.1 Organization for implementation

Organization of the Stockholm Trial is characterized by division of work between municipality, county council and government authorities.

Within the City of Stockholm, work has been coordinated by the Congestion Charging Secretariat, mainly working together with the City Traffic Office and municipally-owned Stockholm Parkering AB. Other parts of the city administration have also been involved, especially the Stockholm Office of Research and Statistics, the Environment and Health Administration and the City Planning Administration.

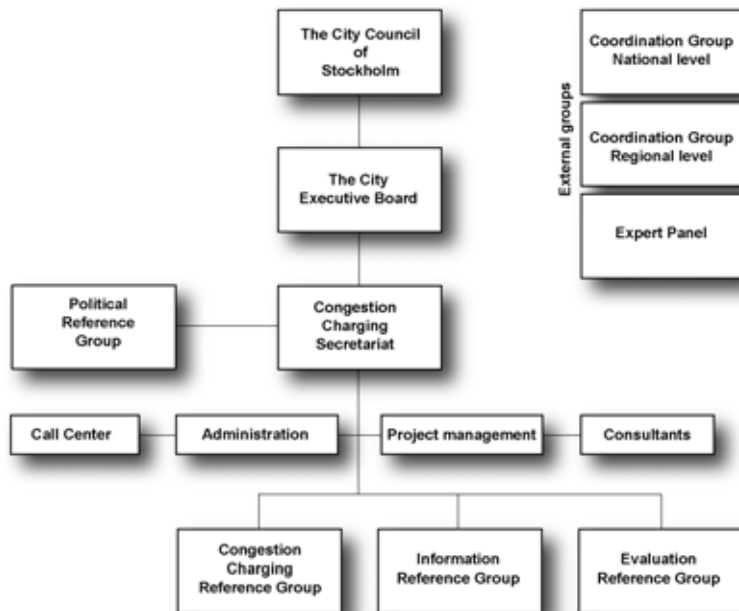
At county-council level, Stockholm Transport assumed all responsibility for extended public transport services and new park-and-ride sites in the county during the trial. A project leader was appointed to plan and implement investments.

Within the Government Offices, a number of authorities took part, the Swedish Road Administration assuming a leading role by implementing the congestion tax and developing the technical system together with main contractor IBM Sverige AB. The Swedish Tax Agency and Swedish Enforcement Agency created separate units within their organizations to handle the new tasks.



Main participants in the Stockholm Trial.

Because of the far-reaching division of work between the participants in the Stockholm Trial, coordination between the different parties was important. A number of coordinating groups was therefore set up for various purposes.



A large part of planning and coordination took place in reference groups, with representatives from the various participants in the Stockholm Trial.

6.2 Technical system

The technical system developed in Stockholm is designed for high reliability. The goal is a robust system that can withstand disturbances and high load. Should some parts break down, the system as a whole still works. One example is the connections at control points. Each control point is equipped with three fibre-optic cables that independently transfer information from the control point to the main network. Even if one or two cables are accidentally damaged during excavation work, for example, registration is still possible. Should, contrary to all expectations, all three cables stop working, information is stored in such a way that it can be retrieved on site.

The technical system consists of three parts:

- Registration of passages
- Information processing
- Payment system

6.2.1 Registration of passages

Each of the 18 control points has equipment for the registration of passing vehicles.

Short-range communication

Short-range communication involves having a transponder attached to the inside of the vehicle windscreen. The transponder receives and transmits radio signals. When a vehicle fitted with a transponder passes a portal, the transponder is activated by the equipment on the portal. The transponder then transmits a signal to the receiver on the portal, informing the system which vehicle the transponder belongs to.

The technology is thoroughly tested and used in many places around the world, for example on the Öresund Bridge linking Denmark and Sweden and in Norway and Singapore.



Transponder.



Aerial.

Camera technology

Camera technology is used to supplement the short-range communication system. When a car approaches a control point, a laser detector reads the vehicle's position on the road. This information is used to activate cameras positioned at control points in such a way that they can photograph the front and rear of each vehicle. Number plates are photographed with infrared technology. Number plates are then read with OCR (optical character recognition) technology. The photos only show the immediate area around the number plate - driver and passengers are not shown.



Infrared camera.



Laser reader.

Manual reading of images

During a small number of passages, problems will occur with the automatic recognition system, for example due to weather conditions or snow on number plates. The images will then be sent for manual reading. In such cases, images from each passage are checked by three examiners, each making an independent assessment of the picture. If there is no consensus, the picture will be further examined.

6.2.2 Information processing

Apart from photographs, information from roadside control points includes vehicle profiles, transponder readings, time, location and registration numbers.

This information provides the basis for determining how much congestion tax the car owner is liable for. At the end of each day, all passage data is collected in the system, which calculates the tax amount due. Information about car ownership, fuel type and address is taken from the Swedish Road Administration's Traffic Register. Using this information, the system checks, for example, whether a vehicle has reached the maximum charge of SEK 60/day or whether it belongs to an exempt category such as clean vehicles. Based on this information, the tax is then calculated.

The system updates databases linked to a website where car owners can check how much tax they are liable for. The same databases are used by the Swedish Road Administration customer service office and staff at 7-Eleven and Pressbyrå. The system also automatically debits accounts linked to direct debit.

In Sweden, car owners' tax decisions (meaning they have decided to cross over the congestion-charging zone cordon) are official documents

under the Official Secrets Act, which means that information about registration numbers and daily tax amounts due is a public document. However, information about which control point a vehicle passed, time of passage and photographs from the passage is classified.

6.2.3 Payment system

Car owners who have installed a transponder, as previously mentioned, can pay via direct debit. When ordering a transponder, the car owner also signs an agreement and supplies bank-account details, enabling direct debits to be made to his/her account. For car owners using direct debit, payment will thus be made automatically.

As a rule, a transponder can only be used for a specified vehicle. If the transponder is moved to another vehicle, the system will note that it is in the wrong car.

Those who do not have a transponder can pay the congestion tax retroactively at any 7-Eleven or Pressbyrå, via an Internet bank, bank giro or postal giro. 7-Eleven and Pressbyrå together have 390 outlets, of which 178 are located in the Stockholm region. When paying, the vehicle registration number and date of passage must be supplied. Information is stored in a database. Photographic images of number plates are compared with payments made.

No invoices are sent out and car owners liable for congestion tax must themselves keep track of how much to pay (although payment is made automatically for car owners with direct debit). To find out the tax due, car owners can visit www.stockholmsforsoket.se. It is also possible to phone customer services at the Swedish Road Administration or inquire at any 7-Eleven or Pressbyrå.

6.3 Public transport

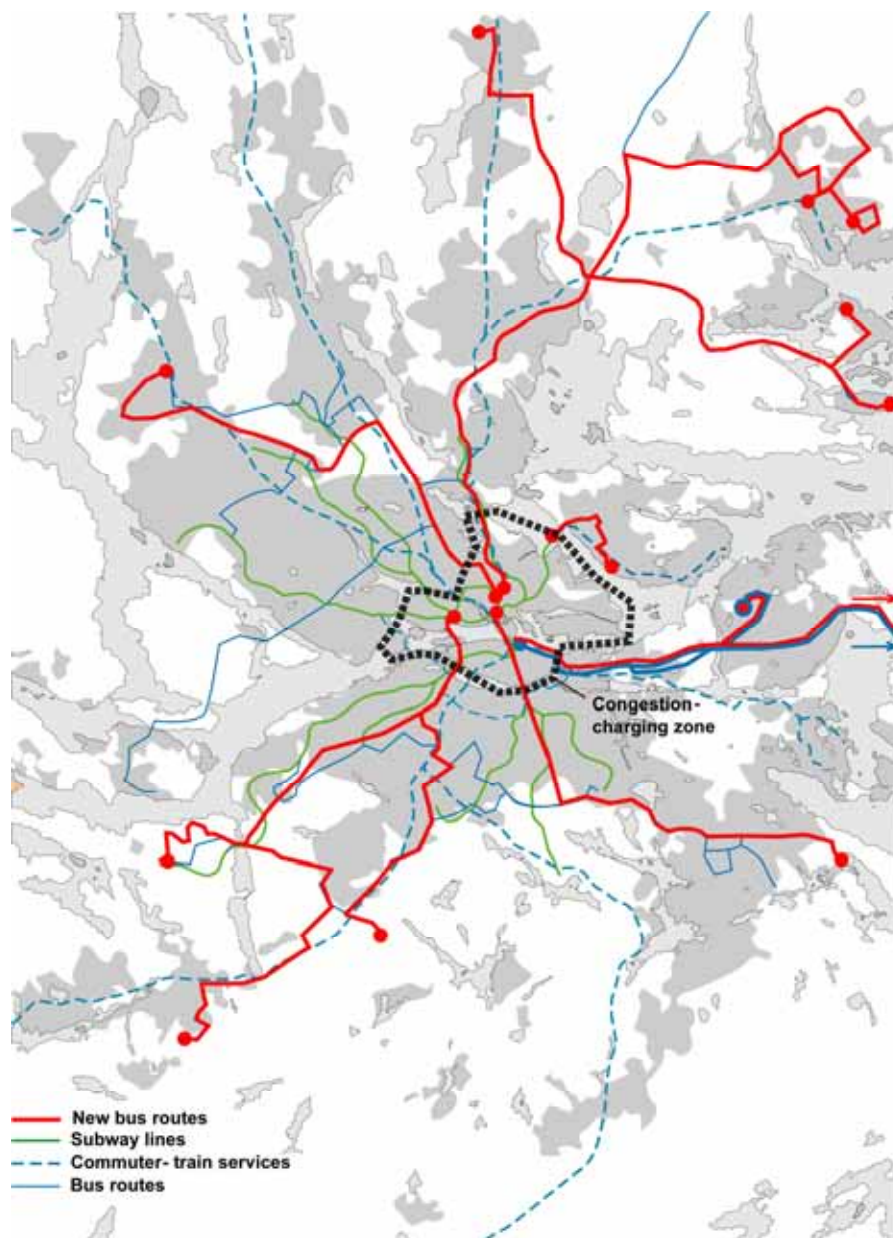
On 22 August 2005, Stockholm Transport's measures to extend public transport were put into operation. Thus, this part of the Stockholm Trial began some time before implementation of the congestion tax. Measures to extend public transport will continue for some time after the Stockholm Trial ends - until December 2006. The reinforcement of the public transport system is the biggest coordinated expansion by Stockholm Transport since the large Underground construction projects of the 1950s.

Since there was little potential for introducing more train departures, Stockholm Transport focused on supplementing and relieving rail traffic with new bus routes. The nucleus of the public-transport extension is therefore 14 completely new direct bus routes and 197 new,

modern buses that pick up passengers in nearby municipalities and transport them directly to Stockholm's inner city.

Direct buses operate during peak periods, travelling to/from Stockholm's inner city in the afternoon/evening. The new buses are of high quality, built for motorway traffic and equipped, for example, with air-conditioning, reading lights, safety belts and kneeling capability.

The expansion also includes the start of two previously-planned blue-bus services between Slussen and the inner city and two districts in the south-eastern part of the region.



To meet increased demand, 14 new bus routes have been put into operation. (Map: Stockholm Transport)

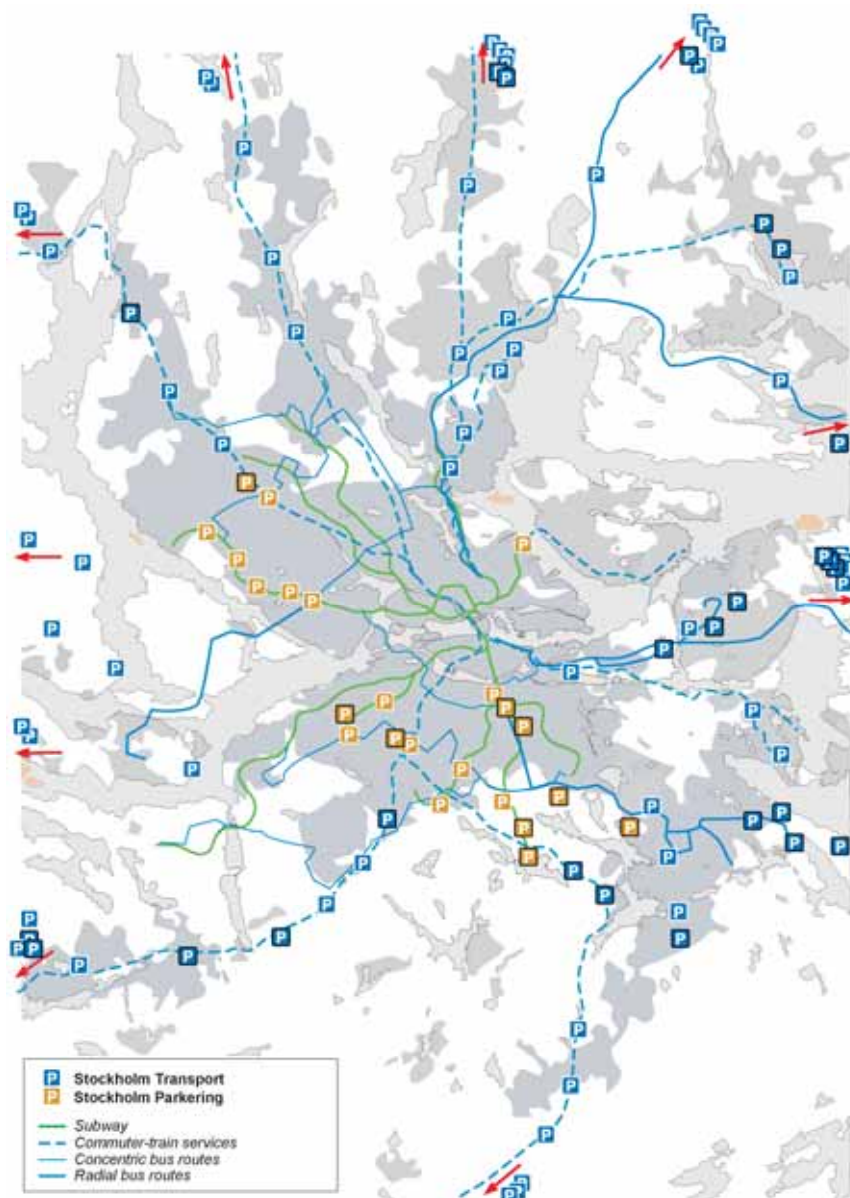
Where justified and possible, Stockholm Transport has also reinforced rail trunk lines - for example the Underground, commuter trains and three local train routes- with new departures or more carriages. Some 20 existing bus routes have also been extended.

6.4 Park-and-ride sites

To facilitate the change from car to public transport, park-and-ride sites were extended as part of the Stockholm Trial.

Stockholm Parkering AB extended and improved park-and-ride sites at 10 locations in Stockholm. It was difficult to find suitable areas for new park-and-ride sites within the city because of current high demand for development land. Stockholm Parkering managed to find 10 suitable locations within the municipality, close to Underground stations or major bus terminals outside the charging zone. During the Stockholm Trial, parking will be free for passengers with a Stockholm Transport travel card (parking meters have been equipped with special recognition technology for this purpose).

Stockholm Transport extended park-and-ride sites at a further 26 locations in the region and worked in close cooperation with several municipalities near to Stockholm to find suitable locations for new sites. The fact that it was very much in municipalities' own interest to develop sites made it possible to quickly find suitable locations near rail services. These park-and-ride sites are free of charge.



Park-and-ride sites in the Stockholm region. New or extended sites are boxed in black (Map: Stockholm Transport).

6.5 Information measures

Before the Stockholm Trial, a communication plan was drawn up for measures to be taken by the Congestion Charging Secretariat and coordinated with other participants. Some important measures were carried out jointly. But in the main, Stockholm Transport, the Swedish Road Administration and the City of Stockholm ran their own information campaigns.

Agreements made between the City of Stockholm and the government include the following division of work and responsibility as regards information:

- The City of Stockholm is responsible for general information about the trial to the public, as well as coordination with other participants. It is also responsible for information about the effects of the trial by publishing results of monitorings and evaluations.
- The Swedish Road Administration is responsible for information about payment of the congestion tax and related issues.
- Stockholm Transport is responsible for information about extended public transport services during the trial, as well as information about park-and-ride sites in all municipalities involved.

6.5.1 Joint information measures

Two major information activities have been carried out jointly by participants in the Stockholm Trial:

- Special website about the Stockholm Trial (www.stockholmsforsoket.se) where the public can read about regulations, find information material and check how much congestion tax they are liable for.
- Customer Service Office that answers questions from the public.

6.5.2 City of Stockholm communication

The City of Stockholm's communication efforts are focused on informing the public about the motives for the Stockholm Trial and explaining the overall picture. A large part of the work is to satisfy the considerable media interest in the trial. As evaluations become available, much of the information work involves supplying media and the public with details of the evaluations.

Two large information campaigns were carried out before the Stockholm Trial started. The first was a campaign in February 2005 with the explicit aim of preparing citizens for the start of the trial later that summer. The second campaign was carried out in connection with the start of extended public transport services in August 2005.

Other measures include information brochures, the City of Stockholm's own websites about the trial, spot ads, media seminars and press conferences.

6.5.3 Swedish Road Administration communication

The Swedish Road Administration has in accordance with its remit mainly provided information about the congestion tax and different payment methods available. It has used a number of different channels to reach the public. For example, it sent an information letter to all car owners in Sweden to ensure that people who only occasionally drive in Stockholm are informed. Information prior to the Stockholm Trial included:

- Campaigns in daily and evening papers.
- Meetings with the public in the Stockholm region in connection with the installation of control points.

6.5.4 Stockholm Transport communication

Stockholm Transport's main task has been to inform citizens in Stockholm about the extended public transport services. A special initiative was taken in connection with the start in August 2005, with targeted mailings to various citizen groups. Those living near the new services obtained special information and timetables. At the same time, Stockholm Transport carried out an extensive media campaign, with information about the 100,000 additional seats available during weekday travel.

6.6 Evaluation of the Stockholm Trial

Primary objectives of the Stockholm Trial are to reduce congestion, increase accessibility and create a better environment. To find out whether the objectives are being met and what the effects of the trial are, a number of surveys are being carried out which will be the basis of the final evaluation of the trial and provide basic data for the:

- Referendum in September 2006
- Development and improvement of the payment system (if the congestion tax is made permanent)
- Research on economic control instruments for traffic

6.6.1 Evaluation programme

Against the background of the Stockholm Trial, the City of Stockholm drew up an evaluation plan in collaboration with a reference group comprising traffic experts and researchers. The plan is the basis for evaluations of the situation prior to the trial compared with the situation after a few months, in some 30 areas. Main areas for evaluation include:

- Stockholm citizens' travel patterns
- Car traffic
- Public transport
- Pedestrian and cycle traffic
- Environmental and health effects
- Road safety
- Distribution effects
- Business and regional economy
- Revenue and costs of the congestion tax
- National economy
- Attitudes to the congestion tax

Most reports are commissioned by the Congestion Charging Secretariat. The studies are decided in collaboration with the Swedish Road Administration, the Office of Regional Planning and Urban Transportation in Stockholm, Stockholm Transport, various research institutes and city administrations. The Congestion Charging Secretariat also consults with representatives from other bodies and organizations. Consultancy firms specialized in respective areas carry out the studies.

Results and analyses from the interim studies are made public as and when reports are published. They will also be presented in a concluding report on 21 June 2006.

6.6.2 Daily monitoring

Demand for reliable statistics was anticipated. Therefore, daily monitoring of car and public-transport traffic was conducted during two-week periods on two occasions. The first period of daily monitoring took place when extended public transport services started in August 2005. The second daily monitoring period occurred in connection with implementation of the congestion tax on 3 January 2006.

Results of daily monitoring were published on the Stockholm Trials website.

6.6.3 Monthly indicators

In order to supply the public with information on how the Stockholm Trial is proceeding, monthly monitoring is also carried out, presented as "monthly indicators" on the 10th of each month during the first half of 2006. These smaller monitoring operations cannot be compared with the more in-depth evaluations, but offer an opportunity to follow developments during the trial. These are also published on the Stockholm Trial website. The monthly indicators include:

- Car traffic
- Public transport
- Cycle traffic
- Parking
- Business economy
- Retail market

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