



Facts about the Evaluation of the Stockholm Trial

What is it that has been evaluated?

A programme of evaluation was designed in consultation with the National Road Administration Vägverket, the County Council's Regional Planning and Traffic Office, Stockholm Transport, specialist independent consultancies, various research institutes and some of the city administrations. The areas evaluated include:

- County residents' travel habits
- Car traffic
- Public transport
- Pedestrian and cycle traffic
- Environmental and health effects
- Traffic safety
- Distribution effects
- Business and the regional economy
- Social cost-benefits
- Knowledge of, and attitudes to, the Stockholm Trial

Who carried out the measurements?

Measurements of air quality, noise and traffic flows, conducted earlier by the City of Stockholm Environmental and Health Administration, the City of Stockholm Traffic Office, Stockholm Transport and the National Road Administration, have been used as far as

possible. In other areas, measurements have been made specifically for the trial, for example extra measurements of traffic flows, journey times, travel patterns and effects on business life. These have been carried out by different consultancies specialising within each field, e.g. Trivector, Transek, SWECO, ÅF, the Retail and Wholesale Trade Research Institute and Inregia.

How are the results reported?

The results and analysis from the different individual studies and projects have been presented in reports as they were completed. They have been presented in a comprehensive report in which a group of experts have made an overall assessment of the effects of the Stockholm Trial.

The Congestion Charge Secretariat has also reported real figures each month for car traffic, public transport, usage of park-and-ride facilities, an index from trade turnover in the inner city, cycle traffic as well as questionnaire returns on how county residents view the traffic situation and the urban environment. The expert group has, at the same time, presented a comprehensive analysis of the past month.



Further information, and all the evaluation reports can be found on www.stockholmsforsoket.se



Facts and Results from the Stockholm Trial

Stockholmsförsoket
Miljöavgifter/trängselskatt och utbyggd kollektivtrafik för mindre köer och bättre miljö.

The Stockholm Trial

On June 2, 2003 Stockholm City Council decided to ask the Swedish government for permission to conduct a congestion tax trial. On June 16, 2004 the Swedish Parliament, the Riksdag, adopted the Congestion Charges Law, with an annex relating to the Stockholm Trial. The trial is being financed by state funding. The National Road Administration, Vägverket, was given responsibility for the technical design, and the City of Stockholm was tasked by the government with responsibility for evaluating the trial and providing information about it.

The Stockholm Trial began on August 22, 2005 with extended public transport, and ended on July 31, 2006. A congestion tax was levied between January 3 and July 31, 2006. The provision of extended public transport will continue up to December 31, 2006. In the City of Stockholm a referendum will be held on September 17, 2006 on the question of whether the congestion tax should be made permanent in Stockholm.

The City Council's objectives in the Stockholm Trial were:

- A reduction in traffic by 10–15% during rush hours
- Improvements in traffic flows
- Reductions in the emissions of carbon dioxide, nitrogen oxides and particles
- That the residents should perceive an improvement in the urban environment

The City of Stockholm has entrusted a large number of the most highly qualified traffic researchers in the country with conducting various evaluations, and in this way, assessing whether the objectives have been met, and what other effects the trial has had in Stockholm. Their reports were presented on June 21, 2006.

All the reports are to found on the Stockholm Trial homepage www.stockholmsforsoket.se and can also be ordered by ringing +46 (0)771 29 29 29 or writing to Miljöavgiftskansliet, SE-105 35 Stockholm, SWEDEN.

This brochure is a brief summary of the results of these different evaluations. It is being distributed to households within Stockholm municipality. The aim is that it will serve as a basis for discussion by everyone, both those who are in favour of a continuation of the congestion tax and those who are against.

Stockholm, August 2006

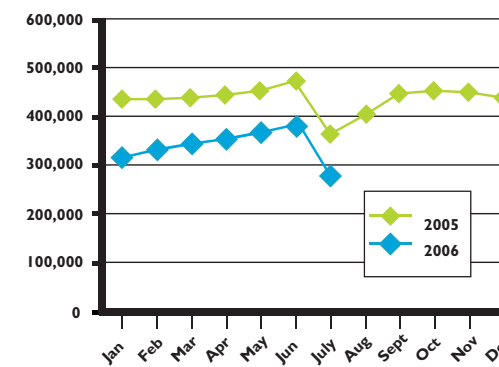
Gunnar Söderholm, Deputy Chief Executive Officer
Head of the Congestion Charging Secretariat

Car Traffic

A reduction in traffic to and from the inner-city

During the period when the congestion tax was being trialled car traffic decreased in Stockholm. During the spring of 2006 on weekdays between 06.30 hours and 18.30 hours traffic fell by approximately 22% compared with the previous year. The reduction was somewhat smaller during the morning rush and somewhat greater during the afternoon rush. Over a 24-hour period vehicle passages into and out of the inner-city dropped by 19%, which corresponds to 100,000 passages.

Number of vehicle passages into and out of the inner-city

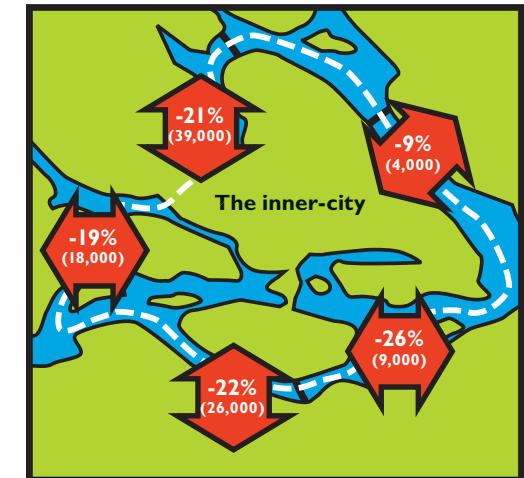


The number of vehicles travelling into or out of the inner-city on weekdays between 06.00 hours and 19.00 hours.

The normal seasonal variation means, however, that traffic always increases steadily through the spring only to decrease markedly at holiday times. In a month-by-month comparison during the period the charge was levied the reduction in traffic was in February 24%, in March 23%, in May 22%, in June 21% and in July 23% compared with 2005.

The reduction in traffic was evenly distributed across the different approaches to the city, with the exception of the island of Lidingö, where the traffic did not decrease by as much. This is presumably because traffic to and from Lidingö which passed through the charging zone within 30 minutes was exempted from the congestion tax.

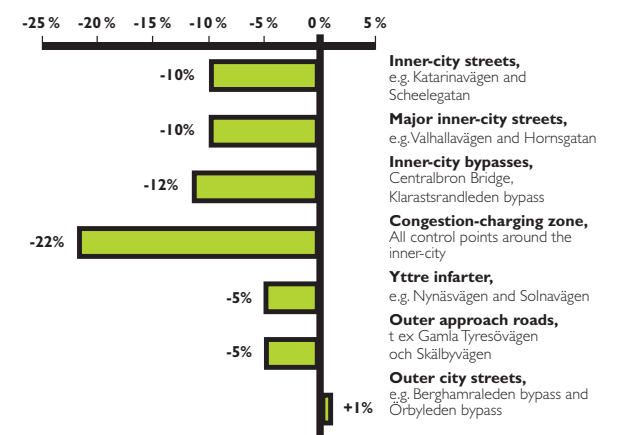
Reduction in car traffic



Percentage reductions in traffic flows during the spring of 2006 compared with the spring of 2005 during the charging period (from 06.30 to 18.30 hours) by cardinal points. The values in brackets show the reduction in the number of vehicle passages.

Traffic decreased most at the control points, but the reductions were substantial even on approach roads to and from the inner-city, and within the inner-city. On the other hand, on orbital roads the traffic remained unchanged.

Changes in car traffic on different roads

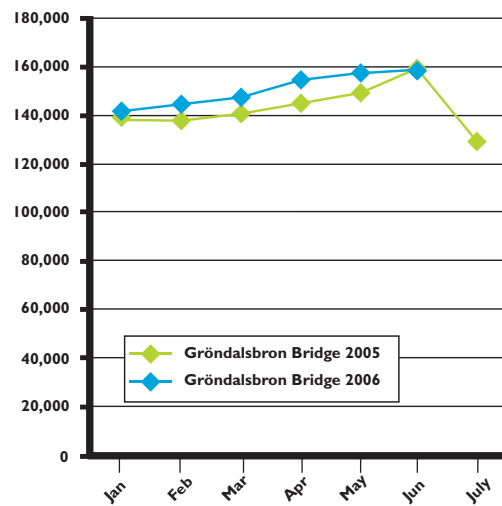


Percentage reduction in the number of vehicles on different types of road during the congestion-charging period.

Somewhat increased traffic on the Essingeleden bypass

Car traffic on the E4/Essingeleden during the survey period in 2006 was somewhat higher than that for the same period last year. The increase was up to 5%, depending to some extent on where the measurements were taken. The difference was relatively small, with regard to the fact that traffic on Essingeleden normally varies by a few percent up and down from week to week.

Number of vehicle passages on the Essingeleden bypass



Number of vehicles on the Essingeleden bypass per 24-hour period.

Traffic on the Södra Länken bypass increased, and travel times were longer than last year, in particular westbound in the morning and eastbound in the afternoon. If one compares the spring of 2006 with the spring of 2005 the increase on Södra Länken was approximately 18% during the congestion-charging period. Since the bypass was opened in October 2004 traffic has increased continuously. During its first year traffic on Södra Länken increased by 19%.

Fewer trucks and more clean vehicles

Private car traffic was responsible for the greatest reduction in the number of passages into and

out of the inner-city, a total fall of 30%. The reduction in truck traffic was just over 10%. The proportion of clean vehicles passing control points more than doubled, from approximately 1% in 2005 to around 3% in 2006. The increase in the proportion of clean vehicles presumably results from several causes than merely from the Stockholm Trial, for example, free residential parking in the inner-city. The sales of clean vehicles have increased considerably in Stockholm County, and during the spring of 2006 one in every five new cars was a clean vehicle.

Where did the motorists come from?

Of the private car passages charged 42% of the cars came from the City of Stockholm, 49% from other municipalities in the county and 9% from other counties.

Home municipalities of taxed cars

Stockholm	42,3%
Nacka	5,9%
Lidingö	4,1%
Huddinge	4,0%
Haninge	3,4%
Täby	3,4%
Solna	2,9%
Sollentuna	2,8%
Danderyd	2,5%
Tyresö	2,4%
Botkyrka	2,4%
Värmdö	2,2%
Järfälla	1,7%
Österåker	1,7%
Sundbyberg	1,3%
Södertälje	1,3%
Uppl. Väsby	1,2%
Ekerö	1,2%
Vallentuna	1,1%
Sigtuna	0,7%
Vaxholm	0,7%
Nynäshamn	0,7%
Norrköping	0,6%
Upplands Bro	0,5%
Salem	0,4%
Nykvarn	0,1%
Others (outside Stockholm County)	8,5%

Proportion of taxed passages made by privately owned vehicles. Cars registered within municipalities in Stockholm County



Journey times

Journey times have fallen considerably in and around the inner-city. Particularly large reductions were seen on the approaches to and from the inner-city. There queuing times have dropped by approximately a third in the morning rush and have been halved in the afternoon rush. The increase in traffic on the Essingeleden bypass presumably means that journey times there have increased, but it has not been possible to prove beyond a doubt any clear increase in journey times compared with last year. Over certain periods and in certain directions journey times were longer in 2005 than 2006; for other periods it was the other way around.

Changes in journey times



Changes in journey times, in spring 2006 compared with 2005. Red means that the journey time has increased and green that the journey time has decreased.

Public Transport and Park-and-Ride Sites

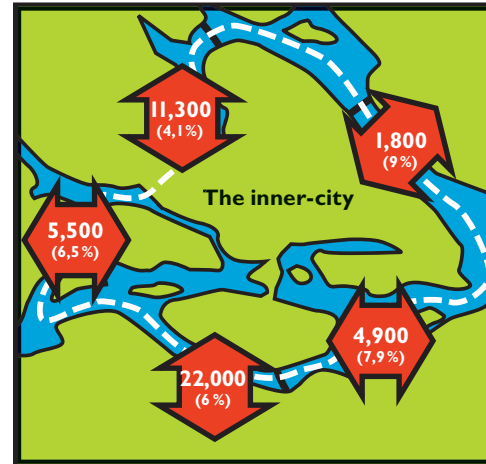
More people used public transport

On August 22, 2005 before the congestion tax began to be levied, Stockholm Transport (SL) initiated a state-financed investment in extended public transport in connection with the Stockholm Trial. Rail traffic was augmented by some new departures during the afternoon rush and longer trains. Bus traffic was expanded by 16 new bus routes to the inner-city and more frequent trips on existing direct bus routes as well as major routes in the inner-city. In total, 197 new buses were purchased as a result of the Stockholm Trial. During the autumn of 2005, before the period of the congestion tax, travel on Stockholm Transport increased by 2% compared with the autumn of 2004.

During the spring of 2006 40,000 more travellers used Stockholm Transport on an ordinary weekday compared with the year before. This is an increase of 6%. Traffic researchers estimate that approximately 4% of the increase is a result of the Stockholm Trial.

Travel by public transport into and from the inner-city increased by more than 20,000 additional travellers during a 24-hour weekday period. This corresponds to more than 45,000 passages into, out of or through the inner-city. The tube increased most, with 25,000 passages per 24-hour weekday period, followed by bus traffic which increased by 16,000 passages.

Increases in travel by public transport



Increases in the number of individual passages with public transport in spring 2006 compared with spring 2005.

Park-and-ride sites

Preparatory to the Stockholm trial, Stockholm Parkering and Stockholm Transport had improved and developed opportunities for travellers to park-and-ride within Stockholm municipality, and Stockholm County respectively. A good 2,800 new parking spaces were completed, so that in total there were approximately 13,800 park-and-ride spaces in Stockholm County. In 2006 approximately 9,500 cars parked on park-and-ride sites every weekday. The corresponding figure for the spring of 2005 was 7,700 cars. This was an increase of 23%. During the Stockholm Trial park-and-ride sites run by Stockholm Parkering were also free of charge to commuters with SL cards.

New Travel Habits

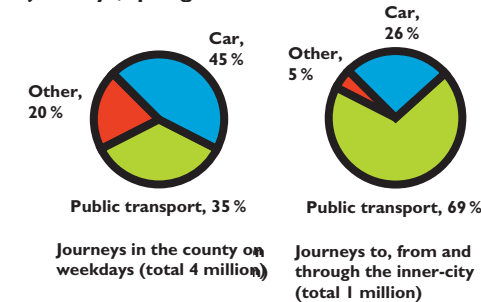
How county residents adjusted

During the congestion tax trial period the residents of the county made 100,000 fewer car journeys in the congestion charge zone per 24-hour period. This is a reduction in car use by 25% compared with the autumn of 2004. Those who live north of the inner-city reduced their car use to or through the inner-city less than those who live south of the inner-city. Those motorists in Stockholm County who no longer took their cars to, from or through Stockholm's inner-city during the charge period chose other alternatives. Some of them travelled more often by public transport, a few percent chose to use the park-and-ride facilities; others chose to a greater extent to take the Essingeleden bypass, or chose not to travel at all. Car-sharing did not increase. Nor did people work from home more or travel at different times.

Journeys within the county and in the congestion charge zone

On an ordinary weekday during the spring of 2006 residents of Stockholm County made more than 4 million journeys. Each movement by foot, by bicycle, by car or by public transport is counted as one journey.

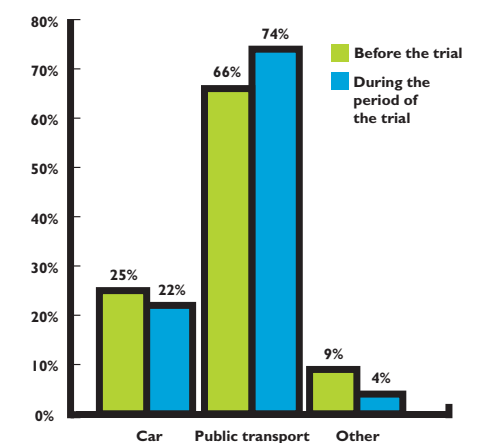
Choice of means of transport for different journeys, spring 2006



Of the more than 4 million journeys, more than 1 million people travelled into, out of, or through the inner-city. As many as 69% of the inner-city journeys were made by public transport, 26% were made by car. The most common reason

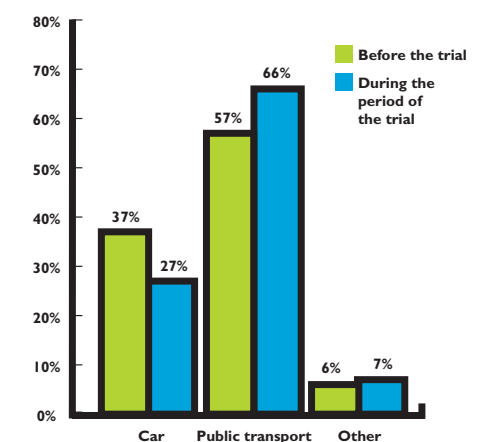
for a journey was to travel to and from work or school. The survey of travel habits shows that some Stockholmers have changed their means of transport in journeys to, from, or through the inner city. Both for journeys to work and to school and for shopping trips the proportion of those going by car has fallen and the proportion travelling by public transport has increased.

Journeys to work or school during the congestion charge period



Choice of means of transport before and during the period of the Stockholm Trial.

Shopping trips during the congestion charge period



Choice of means of transport before and during the period of the Stockholm Trial.

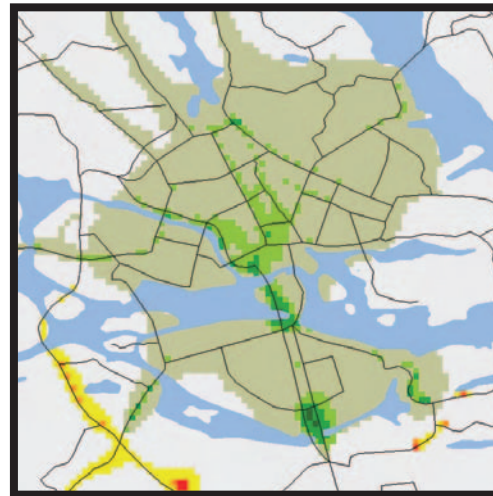
The Environment and Urban Life

Lower emissions and cleaner air

The reduction in traffic during the Stockholm Trial has led to a fall in emissions from road traffic by 8% to 14% in the inner-city. For Greater Stockholm the reduction was between 1% and 3%.

Emissions from cars both influence the longterm effects on mortality for Stockholmers, and the occurrence of diseases as well as exacerbating respiratory problems in individuals susceptible to these. For Stockholm's inner-city it is estimated that between 20 and 25 fewer premature deaths will result from the cleaner air.

Levels of noxious particles



The levels of noxious particles fell throughout the inner-city during the Stockholm Trial. On the other hand they rose at the exits from the Södra Länken bypass and on the Essingeleden bypass. The map shows an estimated change in the annual median values. In green areas there were lower levels of particles. In yellow and red areas the levels have risen.

Other environmental effects

The reduction in car traffic has also led to other environmental improvements, such as lower emissions of carbon dioxide and nitrogen oxides. The greenhouse gas carbon dioxide has fallen by 40% in the inner-city and by 2-3% in Stockholm County. Nitrogen oxides, which

affect acidification and eutrophication in the soil, lakes and sea, have also decreased.

The table shows how much the emissions from road traffic in Stockholm are estimated to fall on an annual basis, compared with a situation with no Stockholm Trial. The estimates are based on an assumption of unchanged vehicle mix, but do take into account the extended bus traffic.

Estimated reduction in air pollutants

The Inner-City	tons/year	%
Particles, PM10	21	-13
Nitrogen oxides, NOx	45	-8.5
Volatile organic compounds, VOC	110	-14
Greater Stockholm*	tons/year	%
Particles, PM10	30	-1.5
Nitrogen oxides, NOx	55	-81.3
Volatile organic compounds, VOC	130	-2.9

* Greater Stockholm is defined as an area 35 x 35 kilometres across central Stockholm.

Facts:

Particles derive from wear and tear on the road surface and the combustion of diesel. Particles affect health in both the short and long term.

A large number of people are affected by cardiovascular disorders and respiratory problems.

Carbon dioxide derives from vehicle exhausts and is formed in burning fossil fuels. It makes a major contribution to the greenhouse effect.

Nitrogen oxides are formed in combustion and are released together with exhaust gases. Emissions lead to acidification and eutrophication of the soil, lakes and sea.

Volatile organic compounds are formed in incomplete combustion and are released together with exhaust gases. For example, benzene is formed, which is thought to be carcinogenic.

Source: National Environmental Protection Board.



Noise

The limit to a human being's ability to distinguish the difference in sound levels is 3 dBA, which corresponds to a doubling or halving of traffic. Traffic reduction during the Stockholm trial meant almost no differences in noise levels.

Stockholmers' experiences of the urban environment

What is felt to be a good urban environment

is individual and subjective. In the assessment of the Stockholm Trial, county residents have been asked about their experiences of the urban environment. The differences between spring 2005 and 2006 were, however, small. The results show that the effects which are clearly linked to the reduction in traffic have also influenced how the urban environment is experienced. People have experienced an improvement both in accessibility by car and in air quality.

Traffic Safety

Traffic safety analysts have assessed that the Stockholm Trial has had a positive effect on traffic safety. The reduction in traffic led to improvements in traffic safety, whilst higher speeds, on the other hand, had a negative effect. Taken together a conservative assessment is

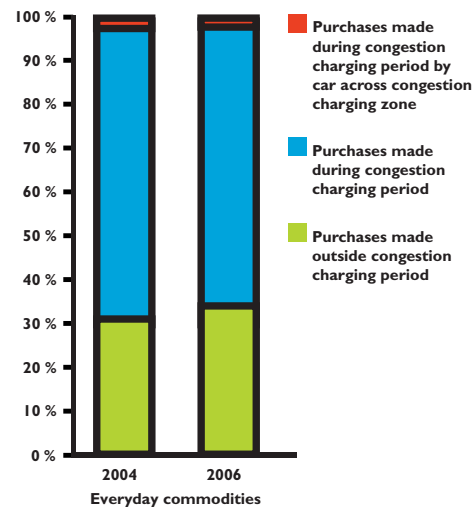
that the Stockholm Trial has resulted in a reduction in the number of accidents involving personal injuries by 5–10% in the inner-city. This corresponds to a reduction of between 40 and 70 personal accident injuries per year.

Retail, Business and the Economy

Retail little affected

Analyses of turnover within the retail trade in the Stockholm region show that the Stockholm Trial only had a minor impact. Sales of, for example, clothes and furniture (rarely bought commodities) in shopping centres, shopping malls and department stores have developed in the same way as for the rest of Sweden. For the smaller shops it is, however, too early to draw any conclusions as regards the impact of the Stockholm Trial. Sales of foodstuffs and hygiene products (everyday commodities) followed the national trend towards greater sales in larger hypermarkets outside city centres.

The minor impact on the retail trade is due to the fact that, even before the trial, few people (2–4%) both did their shopping during the period which would later be subject to the charge and drove a car in what was to become the congestion charging zone.



Proportion of purchases of everyday commodities made during the charging period and non-charging period, respectively. The red proportion of the bar shows those people who travel by car across the congestion charging zone during the charging period.

More efficient transport

Studies of companies within transport-intensive trades such as taxis, courier services, and tradespeople show that in many cases they have been able to streamline their business as a result of improved accessibility. What is more, the working environment has improved for drivers. The administration of the congestion tax has, on the other hand, been regarded as complicated and expensive.

Cost-benefit analysis

In order to weigh up all the effects of a measure, a cost-benefit analysis is often carried out. This is done in order to show whether the advantages to society are greater than the sacrifices and/or costs. In the Stockholm Trial the effects included changes in journey times, effects on the environment and health, and the congestion tax. The average effects are then calculated for all individuals in the community, and an attempt is made to put a monetary value on these. For individuals, the consequences of the measure can be both positive and negative.

If it is regarded only as a brief experiment which is now concluded and will not be resumed, the Stockholm Trial was a financial loss to the nation of approx. SEK 2,6 billion. Investment and the operation of the congestion tax system make up the majority of the loss. It is no surprise that insufficient benefits accrue over 7 months to outweigh the costs of the congestion tax system.

It is estimated that the permanent introduction of a congestion tax system would produce a social cost-benefit of approx. SEK 765 million per annum. The investment costs are earned in the form of social cost-benefits such as, for example, savings in journey times, after four years. This is a very short period compared with, for example, investments in roads or

public transport, which in rather favourable cases pay for themselves from a social cost-benefit viewpoint over 15–25 years.

The greatest social cost benefit is shorter journey times, worth SEK 600 millions per annum. Improved traffic safety is valued at SEK 125 million per annum, and health and environmental effects at SEK 90 million per annum. The congestion tax levied is estimated to be SEK 763 million per annum, and running costs around SEK 200 million per annum.

In the cost benefit analysis only that part of the investment in public transport made up of bus traffic is included. The extended bus traffic is estimated to be unprofitable from a cost-benefit viewpoint, both during the Stockholm Trial and in any permanent charging scheme. The benefits are estimated to amount to SEK 180 million per annum, compared with a running cost of SEK 520 million per annum. It is not unusual that public transport is estimated to be unprofitable from a strict cost benefit viewpoint, but that, nevertheless, it is considered to be important for other reasons.

Facts about the Congestion Tax January 3 – July 31, 2006

Facts:

Number of passages in and out:	46,500,000
Number of tax decisions:	14,500,000
Proportion of passages not liable to tax:	13,000,000
The average tax:	SEK 28
Total amount from tax decisions:	SEK 399 million
Number of decisions referred to National Tax Board, Skatteverket:	13,000
Number of calls to customer services:	361,000