Soft measures affect traffic in Lund

– effects from two years work with a sustainable transport system in Lund

Speaker: Pernilla Hyllenius, Trivector Traffic AB, Lund, Sweden
pernilla.hyllenius@trivector.se, +46 46 38 65 07

Workshop: Monitoring and Evaluation.
1b. Travel pattern analysis and process feasibility as a basis for mobility management strategy and actions

Introduction

Lund is a medieval university city in the south of Sweden with about 75000 inhabitants in the city and 100.000 inhabitants in the whole municipality. The City of Lund has since long worked with a better and less car intensive inner city, for example pedestrian zones, bicycle lanes etc. In spite of all efforts the traffic volume and the emissions increased, and the politicians decided to study how the City could strengthen the efforts to create a more sustainable environment in the whole municipality.

Since 1997 the City of Lund has worked with LundaMaTs, Lund's sustainable transportation system. The project started with a study concerning the before situation, followed by target setting and an action program with 8 main projects and 83 subprojects. The political involvement in the project was quite high, especially in the target setting phase.

In 1998 the City of Lund selected four projects to focus on over a three year period (1999-2001) and began the implementation process, much thanks to the political courage, an agreement over the party blocks, and not least a good timing with a grant from the Swedish Department of the Environment. The four selected projects was the Mobility Centre, the Bicycle City, Walk and cycle to school and the Lundalink, which are all part of the comprehensive LundaMaTs, at a total cost of about 16.5 Million of Euro.

The study that preceded the implementation of LundaMaTs was carried out by Trivector, a consultancy firm in Lund, and financed by the City of Lund. The City of Lund and the Swedish Department of the Environment are co-financing the implementation. The Technical Services Department and the Planning and Building Department in the City of Lund have chief responsibility for the realisation of LundaMaTs. The Mobility Centre, which was one of the first of its kind in Sweden, is a part of the EU-project MOST. Trivector has, as an external consultant, been responsible for the MOST part at the Mobility Centre, and also together with the Mobility Centre, realized the evaluation described below.

LundaMaTs – the first evaluation

Three years after the realisation of the four LundaMaTs projects started, in spring 2001, the first extensive evaluation has been carried out.

Soft and hard measures

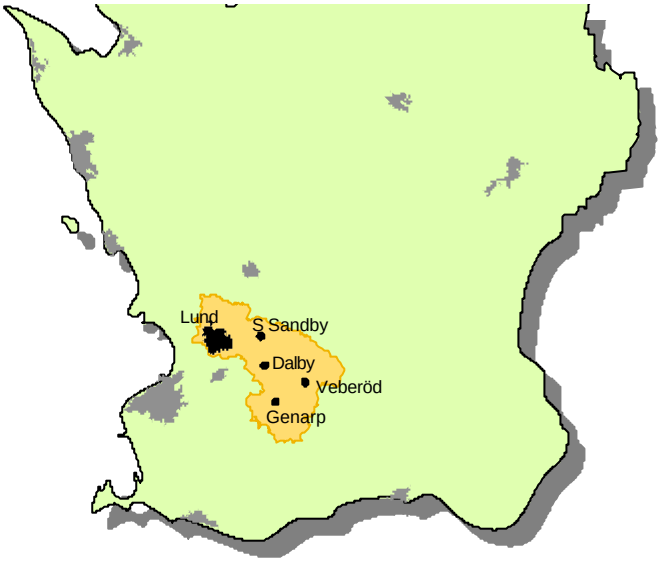
The measures that have been carried out within the frame of LundaMaTs are of both technical and mobility management character. Examples of measures are construction of new bike paths, improved school routes, commuting by bike, walking school bus, car

sharing associations etc. Another example is the 'In town without my car' event that was organized for the first time on September 22, 2000.

Purpose

The purpose of the evaluation is to investigate how aware the inhabitants in the City of Lund are of the different projects that have been conducted over the last few years, and how the inhabitants have been affected by them.

The activities have varied in size and intensity. In order to investigate the awareness and the effects of LundaMaTs in different areas in the City of Lund the evaluation study focused on the town Lund, and the villages Soedra Sandby, Dalby, Genarp and Veberoed. The division also enables future studies on the effects and how they relate to invested resources and involvement.



The City of Lund (yellow), the town Lund and the four villages.

Realisation

The investigation has been carried out in the form of a questionnaire survey. The questionnaire was sent out to 3,000 inhabitants in the City of Lund between the ages of 18-70. After two reminders – the first being a post-card and the second as a new questionnaire – the answering frequency rose to 62 percent.

In order to see if there are any differences between the people who did and did not answer the questionnaire, telephone interviews were made with about 50 randomly chosen persons who had not answered the questionnaire. In general there are very small differences between the two groups. In those cases where a difference has been noticed it has been taken into consideration in the analysis of the questionnaire.

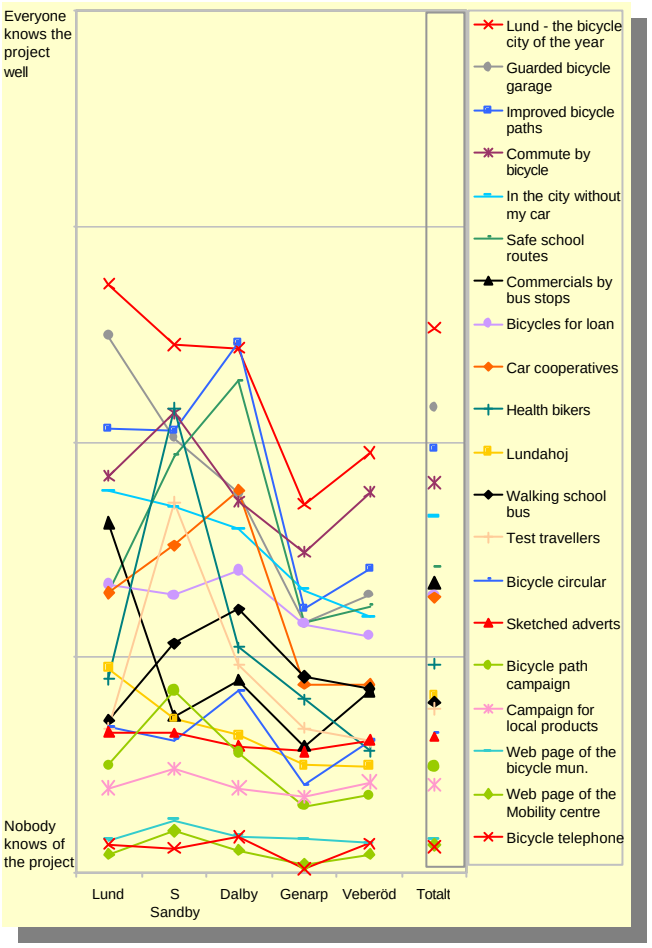
Awareness of the projects

The major projects within LundaMaTs are so far LundaMaTs in itself, the Mobility Centre, the Bicycle City, Walk and cycle to school and the Lundalink (a high quality public transport link between central Lund and the village Soedra Sandby, 10 km out-

side Lund). The major projects are fairly well-known in the City of Lund. Within every major project several activities and subprojects are carried out.

The largest awareness can be found in Soedra Sandby, where a lot of activities have been carried out. In Genarp, where the least number of activities have been carried out, the awareness is much lower. Regarding the project Walk and cycle to school the inhabitants in Dalby have the largest awareness, probably because of the extensive traffic safety measures that have been implemented. The village has also received both national and international attention due to the implementation of the project.

The more specific activities that have received most attention are the award Lund – the bicycle city of the year, the guarded bicycle garage by the railway station, the project Improved bicycle paths and the campaign Commute by bicycle.



Awareness index of the specific activities in Lund and the four villages.

The Mobility Centre

The purpose of the Mobility Centre is to run out-going activities of different kinds. It may be everything from working with campaigns and projects to assisting companies and individuals that work for a more sustainable transport system. The projects that are considered in this report include a bud rider project, health bikers and car sharing.

Bus Rider project

In the *Bus Rider* project, the aim was to convert half of a group of regular car commuters to go by public transport after a one or two month trial. This goal was almost achieved. In the three groups (72 persons in total) the use of public transport at the start was 0%. During the project time about 95% of the participants travelled by public transport at least 3 days a week. Even one year later it was still about 40%. During the project period the bus riders reduced car travelling by 82,000 km, and more than 200,000 km during the following year.

Change in travel mode in the Bus Rider project.

	Persons (=3 days/week	Trips
Before	0%	<5%
During	95%	70%
After 12 months	40%	30%

Health Bikers

The ten Health Bikers have substituted car use on average by 4,300 kilometres per year and almost all were satisfied. Before their test they had used bikes in 15% of the commuting trips. During the test it was 86%, even 12 months after it was at a high level of 56%. During the project year the ten participants reduced car travelling with 43,000 km. The year after, car travelling was reduced with 29,000 km. The final medical investigation also showed an improvement of 10% in the participants' health condition and the stress factor had decreased by 10% (self-assessed through a questionnaire). From the main survey it was found that one-third of the population had heard about the Health Bikers. In addition, new Health biker groups have started independent of the Mobility Centre.

Change in travel mode in the Health Biker project.

	Persons =3 days/week	Trips
Before	0%	15%
During	90%	85%
After 6 months	80%	70%
After 12 months	55%	55%

Car sharing

The Mobility Centre has worked to get more people to start or join car sharing associations. This has resulted in a very high awareness among the inhabitants in the City of Lund.

Car sharing awareness in the City of Lund (2001) compared to Sweden (1999).*

	Lund 2001	Sweden 1999*
Well-known to me	32,5 %	15 %
I have heard the expression	51 %	42,5 %
I have never heard about it	16,5 %	42,5 %

** Vägar och trafik 1999, Markör AB*

The table shows that the knowledge about car sharing is considerably larger in the City of Lund compared to the rest of Sweden. Statistics of the Swedish average is from 1999, and can thus be a bit higher in 2001. The knowledge about car sharing is the highest in Dalby and Lund. In Dalby there were advanced plans of starting a car sharing association when the questionnaire was sent out, and in Lund the number of car sharing associations have increased since the start of the project. 5 percent of the inhabitants state that they would probably join a car sharing association if they were offered the opportunity.

The Bicycle City

Lund is today the city, which has the highest share of cyclists and pedestrians in Sweden. Measures taken in the Bicycle City project aim to further reduce the environmental effects of traffic by getting even more people to cycle instead of going by car. The concept Bicycle City is known by a majority of the people living in the City of Lund.

An important part of the work done by the Bicycle City is the investment in improved bicycle paths. The improvements mainly involve safe passages and measures taken on paths used by commuters and for journeys to school.

People living in the City of Lund have stated if they think there has been a larger or smaller investment in bicycle paths during the last two years compared to previous years. It should be emphasised that the question did not refer to the measures taken in a specific region, but how people have considered the measures taken in the whole City of Lund. In general 50 percent think that the investments have been larger or even a lot larger during the last two years. Slightly less than 15 percent have not noticed any difference, and less than 35 percent say that they do not know.

Walk and cycle to school

The purpose of the project Walk and cycle to school is to reduce carbon dioxide emissions by getting parents not to drive their children to school and pre-school, but instead to walk with them or let the children walk or cycle on their own.

One starting point has been that a lot of parents choose to take their children by car to school since they think that the school routes are too un-safe. An inventory of these school routes for the youngest has been made. By doing so, the most dangerous intersections and paths have been localised. The most critical places have been assembled in a plan, which has been accepted by the Technical Committee. A consequence of this plan is that the critical places are gradually being rebuilt.

In addition to the street improvements a series of mobility management measures have been conducted. These measures are carried out to persuade parents to stop driving their children to school. Information at parent meetings, traffic safety work in school, campaigns and preventative health projects are some measures.

The project group has mainly been involved in activities such as Safe routes to school, which 55 percent of the inhabitants have heard about, and Walking school bus, which 30 percent have heard about.

Regarding school routes, most of the reconstructions have been carried out in Dalby. This has contributed to 70 percent of all parents and schoolchildren in Dalby consider the school routes to be safer or even much safer today. In Soedra Sandby several soft measures, but no physical measures, have been implemented. Around 30 percent of the parents consider the school routes now to be safer.

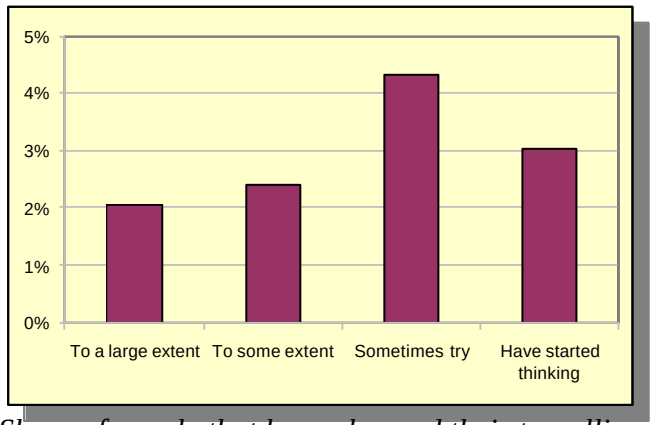
The evaluation of the Walk and cycle to school project shows that the percentage of parents that drive their children to school has reduced from 17 to 13 % since the project start. This means that the number of parents driving to school after the project are about 20 % less than before.

Effects on travelling and emissions

Effects on behaviour

Earlier in this report it has come to light that the majority of people living in the City of Lund are aware of the work with LundaMaTs and the projects and activities involved. The scheme has also affected the inhabitants' travelling:

- 2 percent have to a large extent switched from car to bicycle and public transport
- 2,4 percent have to some extent switched from car to bicycle and public transport
- 4,3 percent sometimes try to take another transport mode than the car
- 3 percent have started thinking of alternatives to the car



Share of people that have changed their travelling routines because of the activities within LundaMaTs.

The figures above are an average for all inhabitants in the City of Lund, and are different in Lund and the four studied villages. People living in Lund and Soedra Sandby, where most measures have been carried out, are recognised as being more positive towards alternative modes. The highest shift in travel mode can be noticed in Soedra Sandby where only soft measures had been implemented at the time of the evaluation. In this village 13 percent have changes their travel mode to some extent, and 6 percent have started thinking about it.

Changes in car travelling and emissions

Approximately 10 percent of the inhabitants say that LundaMaTs has influenced them to cycle more and make more use of public transport. A large proportion of the inhabitants have also stated that they have reduced the distance in kilometres that they travel by car during an average week. The total effects are shown in the table below.

The impact of cycling and public transport as a result of the LundaMaTs projects.

	Bicycle	Public transport	Total effects
Million km/year	2,0	1,9	3,9
Tonnes CO2/year	520	380	900

The people living in the City of Lund have reduced their car travelling with nearly 4 million kilometres – or about 1 % – during the last year. This should be compared to an annual traffic increase of 1-2 % over the last few years in Lund. With the LundaMaTs measures the traffic increase has thus been reduced, something that also can be seen in the annual traffic counting. The change corresponds to a 900 tonnes reduction in carbon dioxide emissions.

In addition, other measures not investigated in this project can positively contribute towards a better environment. For example car pooling, replacing travelling with distance work, by more efficient car usage created by people joining car sharing organisations, or by more efficient goods transports can all help to create a sustainable transportation system in the City of Lund.

Conclusions

LundaMaTs covers a large variety of tools to establish an environmentally friendly transportation system in the City of Lund. The project consists of a number of measures, of both physical and mobility management in character. The evaluation shows that the soft measures are of the same, or even higher, importance as the physical measures regarding the effects. The highest shift in travel mode can be noticed in Soedra Sandby where only soft measures had been implemented at the time of the evaluation.

It seems like most people in the City of Lund are satisfied with what has been done within LundaMaTs. This does not only show from the answers in the questionnaire, but also on the response received in the different subprojects. About 10 percent of the inhabitants have altered their travelling behaviour in a positive direction thanks to the activities and more than 90 percent state that the investments in sustainable transports are good.

The evaluation shows that the activities after a couple of years have given measurable effects. Behavioural influence often requires hard work and in the beginning it can be difficult to achieve measurable effects. The City of Lund is obviously on the right track, since effects have already been received after a relatively short period. Our judgement is that the City of Lund can expect even larger effects ahead, assuming that the investments in LundaMaTs will continue. One can also expect synergy effects when several measures are being conducted at the same time. The City of Lund must therefore continue giving the inhabitants the information and the prerequisites that are required for an altered behaviour, and also point out the individual's gains such as better health, time and money.

The whole LundaMaTs project has been a collaboration between different actors: the City of Lund as initiative taker and Trivector as consultant during the study phase. The implementation of the measures has been done by the City, in collaboration with the public transport sector, the business sector different associations and authorities. The evaluation has been done by Trivector and some other different private partners. The collaboration between the official and private partner has developed during the project, much thanks to the different phases in the project. This means that the different competences have been used in a more optimal way. Some phases have been easier for an external partner to do, for example the evaluation which requires both knowledge and independence. More and more the external private partners have been used as discussion partners in specific questions.

The interest from other partners and their involvement, for example the public transport provider and the companies involved, has increased during the project. The gain for different actors and target groups are more evident today that in the beginning of the project.