A tramway line extension - integrated town and traffic planning in local practice[1]

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Introduction

In Sweden, as in most western European countries, the political system has been very ambitious and innovative when establishing new targets for the environmental and transport policy in the latest decades. However, there is a growing awareness that the formulation of targets and subsequent target levels and ambitions is somewhat out of line with the actual situation. The time has come when it is necessary to support the targets with new and more forceful political measures and procedures, or to reformulate the targets.

Most of the problems with the transport system concern the traffic situation in cities, e.g. congestion, exhaust and noise emissions, safety, encroachment, accessibility, and are closely related to traffic with the private car. The strong trend towards more car traffic in cities threatens the realisation of almost every transport policy goal. One strategy to mitigate this problem is to increase the travel by public transport, at the expense of the private car.

However, it is not an easy task to improve the competitiveness of public transport with only traditional system internal measures, e.g. fares, vehicle design, comfort, safety. There is a strong assumption that efficient public transport systems demand a supportive and integrated urban planning. Measures such as car restrictions, traffic priorities, high densities in residential areas, “anti-sprawl” policies etc, are important if the target is to create a more competitive alternative to the private car in urban settings. [1] In Sweden there is a growing awareness at the national political level that integrated planning is a measure that must be used to reach the targets associated with the very ambitious environmental and transport policy. [2]

Integrated planning supporting public transport

The authorities responsible for the development in the relevant sector are the road administration and the building and planning agency. Both governmental bodies agree upon the problems of the present system. The means of control and incentives are weak and too few, the national targets are difficult to interpret and translate into local action, the coordination in and between different levels and sectors in the political and planning system is weak, management by objectives demands new methodologies and description patterns which are still not fully developed, and there is a general lack of knowledge. [3]

[1] Swedish title of the paper is ”Attraktivare stad med ny spårväg – integrerad trafik- och stadsplanering”

The national road administration has launched the so called four steps model in order to reduce the amount of traffic inducing capacity investments in the national road network. The first step focuses on changing the need for travelling and the choice of travelling mode, e.g. mobility management measures. The second step focuses on increasing the capacity utilisation of the existing road network. Capacity investments are considered only if the first and second steps are not enough to solve the problems. The third step deals with improvements and minor reconstructions, and the fourth and last step deals with investments in new capacity and major reconstructions projects. It is a major challenge to implement this new kind of thinking on a system wide basis.

As a consequence of tradition and historical legacy the local level in Sweden has a formal monopoly in land use planning regulated by law. The regional governmental bodies, i.e. county administrative boards, have some powers to revoke local plans that are clearly against the realisation of relevant policy targets. However, these powers are seldom used due to costly and lengthy administrative procedures with unclear and uncertain outcomes.

The local authorities are obliged to produce master plans describing the land use strategy and other relevant issues. But the master plans are sometimes superficial and do not deal with unpleasant priorities such as between environment and transport. The actual planning decisions are put forward by detailed plans dealing with small areas and short-term issues. It is not uncommon to see planning decisions regarding for example retail establishments that are in direct opposition to the rhetoric in the master plans, despite the fact that it is the same political body which approves both.

One difficulty with these procedures and system failures is the potential to support public transport with a more integrated planning approach. This support can only be powerful if it is launched on the strategic level and situated as an integrated transport strategy in the master plan, perhaps in the same way as Local Transport Plans in Great Britain and Plans Déplacement Urbains in France. [4] The political discussion in Sweden deals with this issue but there is still a long way to go. One example of the difficulties on the local level is the gap between traditional technical traffic planning and architectural town planning performed by professionals from different disciplines and traditions with different methodologies and approaches.

Integrated planning and a tramway line extension

The Swedish National Road and Transport Research Institute (VTI) is conducting research about modern tramways, and in many other fields of inquiry with transport relevance. [5] The Institute was approached by officials from the local authorities in the middle-sized Swedish city of Norrköping in the autumn of 2001. The city commissioned VTI to perform a development project concerning the design of an extension of the existing tramway system. [6] This extension has been on the local political agenda for several decades but a sequence of political quarrels and disagreements had turned the extension issue into a dead end.

VTI soon realised that the stumbling block was a short-sighted tendency to conceptualise the extension as a traditional transport solution to a transport problem, disregarding the potential to expand the approach and investigate the opportunity to use the extension as a city renewal

project. The cause of this "misconception" was the ubiquitous problems with coordination and cooperation between local traffic planning on the one hand and town planning on the other. VTI could as a third party overcome this gap and formulate a proposal that strongly emphasized the necessity to couple traffic and town planning into a proposal that is discussed below. But let us first consider some facts about the city of Norrköping and its tramway system.

The city of Norrköping and the tramway system

Norrköping is a middle-sized Swedish city located 150 km south-west of Stockholm, the Swedish capital. Together with the neighbouring city of Linköping, Norrköping is the main concentration of activity in the dynamic East-Gothia region with universities and high-tech companies such as one of the leading companies worldwide in the military aircraft industry, SAAB Aircraft. Norrköping has about 123 000 inhabitants. Norrköping is one of only three cities in Sweden with tramways. Trams were once a common feature in many Swedish cities but lost the battle for the streets to motor traffic during the decades following the Second World War. The first trams in Norrköping were introduced back in 1904. The modern network contains two lines of 13 km tramway that is operated with 23 vehicles with departures every 10 or 15 minutes in the daytime. The modal share for public transport has been decreasing in Norrköping as in most Swedish cities. The decreasing share of public transport in Norrköping hides the fact that travel with the trams is increasing, but travel with buses decreases even more and produce the negative outcome in total figures. The modal shares in the city are as follows: walking and cycling: 48%, public transport: 9%, car: 43%. The share of walking and cycling is high compared with other cities of the same size in Sweden. The public transport system in Norrköping produces 28 000 trips on an average day which is equal to 100 trips per inhabitant and year.

However, the tramway system is not complete. There is one missing link between the central parts of the city and the districts in the south-east. This fact is well known and has from time to time occupied the minds of the politicians in the city for a long period of time. The extension was intensively debated in the late 1980s and the social democrats promised to build the line if they won the election in 1988. The social democrats lost the election and the extension was delayed once again. But in the last years of the 1990s the proposal regained its attractiveness and political viability. The reason was the increasing ambitions regarding targets for the environmental and transport policies, as discussed above.

Methodology and approach in the project – determine the potential of tramway systems in cities

The proposed extension is a 4.3 km tramway which ends in the city district Navestad/Ensjön. The investment in the transport infrastructure was calculated at approximately 20 million euro. The underlying idea for the entire project was to investigate the full potential of the extension if the investments in transport infrastructure were supported in full by matching investments in other areas, preferably new buildings for mixed use, rebuilding of existing

ones and transformations of streets, parking lots, open spaces, parks etc. The ambition was to create a more attractive and liveable city. The "normative" ingredients can be sorted around keywords such as mixed-use development, less motor traffic, increased safety and security, better environment, less "confused space", improved aesthetic and architectural design.

The first step was to identify and exactly establish the configuration and the geographical placement of the tramway track. It was important to perform this step carefully. All other components in the proposal are dependent on, and related to, the actual track in a physical sense. This part of the project involved a great deal of fieldwork and inspections on the actual sites. The parts of the city that are located around the proposed tramline were carefully scrutinized. The focus was on actual problems today and the use of the tramway in such way as to improve the districts in a broad sense. However, this could not be done without several contacts and discussions with planners, landlords, inhabitants, shopkeepers, real estate companies, retailing companies, firms of different kinds etc. The area around the tramline was then divided into seven sites. These sites were the focus of the main investments proposals in addition to the actual track.

The next phase of the project was to develop the design proposals for the seven different, but connected, areas. The aim of the proposal was to highlight the full potential and possibilities for city renewal enabled by the tramway extension. It was considered very important that the full potential were put forward and discussed before attention was given to obstacles, limitations and stumbling blocks. Unfortunately, our own experience and results from research on local traffic and town planning clearly show that this visionary analysis centred around potentials and possibilities is in most cases not carried out at all.

Figure 1 *Illustration of the new tramway in the design proposal (Jan Borek, Design Ateljé Borek)*

The presentation of the proposals was taken care of by means of a document with a layout and design identical to regular local planning documents in Sweden. All areas and subsequent

design proposals were presented with the same structure and approach. The first section presents facts, figures and problems which are specific to the area in question. The proposals and suggested renewal projects are then discussed in the following section. A substantial part of the project budget was devoted to the production of illustrations, sketches and perspectives. By using planning and architectural competence it was possible to illustrate the proposal in the same way as a regular plan in the city's ordinary planning procedures, which is important for legitimacy and communication purposes.

The proposal contains 500 new apartments, which have the potential to function as new dwellings serving around 1 500 individuals. The new residences are made possible by new buildings and an increased density. Around 22 000 individuals will have their houses in close proximity, i.e. within a short walking distance, to the new tramline. New workplaces and a better adaptation to retailing and other service facilities will also increase the demand for travelling with the tramway. The travel time to the city centre will be reduced by approx. 60%, compared with the coaches operating the connections at present. The city districts surrounding the proposed extension resemble the "linear city" identified in the literature as ideal to be served by high-capacity public transport systems. It is therefore clear that the tramway has a substantial potential to enlarge the market for public transport in the area and to change the modal split in a way that is more in line with the policy targets concerning sustainability.

The proposal was very well received by the local authorities in Norrköping. The city council voted on the proposal and decided to take the plans further and investigate the prerequisites for actual implementation of the tramway extension. The Swedish government has also decided to back up the project with government grants for investments in five new modern trams. There are also good prospects for governmental subsidies attached to the track investment. Two leading real estate companies have decided to embark on the largest renewal projects in the proposal, building new residential areas and mixed-use developments. The design proposals put forward by the companies are identical to the ones in the project discussed in this paper. It is clear that the design proposal, i.e. the outcome of the project, injected new energy into the extension project and caused a change in the way the extension was viewed and conceptualised. The project can be seen as a bridge between traffic planning and town planning in general and was in this respect faithful to the original outlines and initiatives.

Figure 2 *Illustration of the new tramway in the design proposal (Jan Borek, Design Ateljé Borek)*

Conditions for integrated planning in Swedish cities – conclusion and final discussion

The purpose of this section is to use the experiences from the project presented above and to discuss the prerequisites for a more integrated approach in local planning in Swedish cities. As stated above, integrated planning is seen as a necessary measure and a consequence of higher ambitions about sustainability and other issues in transport and environmental policies. In the latest white paper from the government integrated planning is described as something that is unavoidable if public transport shall increase its competitiveness and modal share in urban transportation. There is, however, a shortage of ideas of how to do this in practical terms when integrated planning is conducted on the local level. There is a lack of approaches, methodologies, measures and procedures. This statement does not rule out the fact that there are many good examples in Sweden that deserves to be high-lighted. Examples are the new city districts in Stockholm based on the new tramway (Hammarby Sjöstad), and the extension of the tramway network in Göteborg with high ambitions concerning city revitalisation, environmental improvements, and the competitiveness of public transport.

If Sweden is compared with other western European countries it is clear that the relatively high degree of self-government for cities and municipalities is a factor that distinguishes the Swedish planning and political system. However, there is no reason to transform the constitution to establish integrated planning as a primary tool in land use, town and traffic planning. It is undoubtedly a problem that many towns and cities are too small in an administrative sense. The fierce fight between cities to “win” traffic generating out-of-town establishments in retailing is one highly questioned ingredient of the present system. There

are more examples of similar zero-sum games that threaten the realisation of the relevant policy targets. But the insight that administrative geographical areas which are too small are a serious problem is widespread and a change is in the political pipeline. Larger and fewer municipalities, with towns and cities, will revitalize the former regional level and enhance integrated planning and management by objectives with the focus on transportation and environmental issues.

But this institutional reform within the existing constitutional structure is probably not enough. Some kind of a more powerful external pressure on the local authorities and political bodies is necessary. The easiest way for the central government to progress in this issue is of course to use financial resources and the ordinary budgetary process. The funding of investments and other measures in urban transport systems demands to some extent funding through governmental grants. The development of the transport system in cities is dependent on projects managed and financed by the national administrations responsible for the infrastructure. Some measures and investments are taken care of by local agencies using funds from the local budgets. The central government, through its agencies, also uses funds to create incentives for the local authorities to embark on projects and measures derived from the national policy agenda. The problem is that this latter kind of funding is rather marginal, short-sighted and not attached to a consistent strategy. The financial and funding structure is unfortunately not integrated enough if management by objectives is the prevailing principle. There are therefore strong arguments in favour of discussing the possibilities to use an approach similar to Local Transport Plans in the UK and Plans de Déplacement Urbains in France, i.e. targeted funding attached to a comprehensive transport plan dealing with all relevant issues and consistent with actual policy formulations.

Experiences from France and the UK, as well as from other countries in Europe such as Germany, the Netherlands and Switzerland, clearly indicate that this form of external pressure also produces organisational changes. Integrated planning demands some kind of cross-sectional project organisation with representation from stakeholders outside the regular administration.

The project discussed in this paper did perform activities which are not performed in the ordinary planning process at present. The work in the project could be done without considering the barriers between different professionals and responsibilities in the local administration. Therefore, the work could focus on possibilities and potentials. This is certainly not the same as downplaying actual problems and obstacles that also must be considered. The project was quite aware of this later phase, but it is of the utmost importance that the full potential of different projects and measures is analysed in the planning and political process, not least for the sake of democracy and communication between the authorities and the inhabitants. There is an urgent need in Sweden to improve the strategic dimension in town and traffic planning and to situate all components in a comprehensive and transparent framework. [7] The city as a geographical entity must define the scope of action. Integrated planning and management by objectives demands a change in precisely that direction.

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