

Innovations for sustainable public transport

Experiences and challenges in the Scandinavian countries

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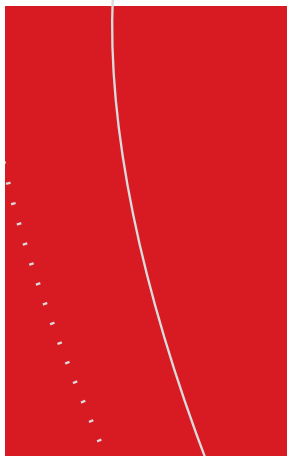
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Innovations for sustainable public transport

Experiences and challenges in the Scandinavian countries

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Titel: Innovationer för hållbar kollektivtrafik i Skandinavien. Erfarenheter och utmaningar.			
Referat Syftet med projektet har varit att analysera de institutionella och planeringsmässiga förutsättningarna för kollektivtrafiken i de Skandinaviska länderna ur ett jämförande perspektiv. Rapporten bygger på kvalitativa fallstudier av kollektivtrafiken i Skåne (Sverige), Aarhus (Danmark) och Trondheim (Norge). Den använder ett empiriskt material som består av skriftliga källor och intervjuer. I rapporten dras slutsatserna att: (i) nya former för samordning mellan organisationer och politikområden behövs på ett antal kritiska områden för att kollektivtrafiken ska kunna bidra till att utveckla ett effektivt och hållbart transportsystem (exempelvis former för samordning av kollektivtrafik, markanvändning och infrastrukturplanering); (ii) kollektivtrafik ska inte ses som ett mål i sig, eller som enbart ett tekniskt transportsystem; (iii) framgångsrikt genomförande av kollektivtrafikinnovationer förutsätter strategier och argument som förmår olika aktörer och organisationer att samarbeta och agera gemensamt; (iiii) det finns ett behov av att utmana “planeringsmyter” som kan användas för att mobilisera stöd för en utvecklingen av markanvändning och trafiksystem som minskar kollektivtrafikens långsiktiga konkurrenskraft.			
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Title: Innovations for sustainable public transport: experiences and challenges in the Scandinavian countries.			
Abstract The aim of the project has been to analyse institutional and planning conditions for public transport in the Scandinavian countries from a comparative perspective, looking at the county of Skåne (Sweden) and the municipalities of Aarhus (Denmark) and Trondheim (Norway). The report considers qualitative case-studies of public transport in Skåne, Aarhus, and Trondheim, and uses an empirical material consisting of written material and interviews. It concludes that: (i) new forms of coordination between organizations and policy areas are called for in a number of critical areas, if public transport is to contribute effectively to the development of an efficient and sustainable transport system (for example, forms for the coordination of public transport, land use, and infrastructure planning); (ii) public transport must not be seen as an end in itself, or as merely a technical transport system; (iii) the successful pursuit of public-transport innovations relies upon complex, interwoven stories and arguments that persuade diverse actors and organizations to collaborate and act on their shared meanings; and (iiii) there is a need to challenge the planning myths used to mobilize support for land-use and traffic-system developments that undermine the long-term competitiveness of public transport.			
Keywords: Institutional conditions, coordination, land-use and transport planning, Scandinavia.			
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Preface

This report presents the results from the project *Innovations for sustainable public transport. Experiences and challenges in the Scandinavian countries* that VTI has carried out in collaboration with the Institute of Transport Economics (TØI), Norway, and Aalborg University (Urban Planning and Mobility research group), Denmark, and during the latest stage of the project also Norwegian University of Life Sciences. The following researchers have participated in the project: Lisa Hansson, Tomas Svensson and Robert Hrelja (VTI), Enza Lissandrello (Aalborg University), Aud Tennøy and Frode Longva (TØI), Tim Richardson (VTI, until 28.02.2013 Aalborg University) and Petter Naess (Norwegian University of Life Sciences, until 31.12.2012 Aalborg University).

The project is funded by The Swedish Governmental Agency for Innovation Systems (Vinnova). It would not have been possible to carry out the project without the help of all the officers and politicians from the cities and regions we have investigated. We thank those who took their time to be interviewed or assisted in other ways with the data collection.

Linköping October 2013

Robert Hrelja
Project Manager

Quality review

Internal peer review was performed on 30 September 2013 by Karolina Isaksson. First author; Robert Hrelja has made alterations to the final manuscript of the report. The research director of the project manager Nils Petter Gregersen examined and approved the report for publication on 1 October 2013.

Kvalitetsgranskning

Intern peer review har genomförts 26 september 2012 av Karolina Isaksson. Förste författaren; Robert Hrelja har genomfört justeringar av slutligt rapportmanus 30 september 2013. Projektledarens närmaste chef Nils Petter Gregersen har därefter granskat och godkänt publikationen för publicering 1 oktober 2013.

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Innovations for sustainable public transport. Experiences and challenges in the Scandinavian countries

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Summary

It is well known that transport systems comprise not only technical components, but also institutional dimensions that are crucial to their proper development and functioning. We also know that public transport planning should be coordinated with land-use planning. However, analyses of important institutional and planning-related prerequisites for successful public transport are rare. The aim of this report is to analyse institutional and planning conditions for public transport in the Scandinavian countries from a comparative perspective, looking at the county of Skåne (Sweden) and the municipalities of Aarhus (Denmark) and Trondheim (Norway). The report considers qualitative case-studies of public transport in Skåne, Aarhus, and Trondheim, and uses an empirical material consisting of written materials and interviews.

This report concludes that, from an institutional perspective on roles and responsibilities, it is difficult to speak of a unified Scandinavian public transport model. However, there are common challenges in all the Scandinavian countries. There is a need for new forms of coordination between organizations and policy areas in a number of crucial areas. For example, municipal land use planning and regional public transport planning could be better coordinated. Another finding is that successful pursuit of public transport innovations relies on complex, interwoven stories and arguments that persuade diverse actors and organizations to collaborate and act on their shared meanings. At the heart of these initiatives and strategies are stories that are used to mobilize support, agreement, acceptance, resources, decisions, and implementation. Public transport in Trondheim, Aarhus, and Skåne is consciously and strategically promoted as a driving force in sustainable cities and regional development. It is clear that public transport cannot be seen as an end in itself, or as merely a technical transport system. On a long-term planning level, public transport organizations in all countries, regardless of the regulatory and legal conditions, should try to reach agreement on the question of what they want to achieve with public transport. Such agreements are one prerequisite for the successful coordination of land use and transport planning in contexts where there are no formal coordination mechanisms between municipal land use planning and regional public transport planning.

The long term development of public transport also depends on whether or not the land use and infrastructure planning measures that municipalities choose to use will actually improve conditions for public transport. A review of key planning documents, case study by case study, shows that while the competition between car and public transport is recognized in impact assessments of public transport improvement, forecasts of changes in traffic volumes due to road construction tend to ignore the competition that exists between public transport and car traffic. This illustrates the need to challenge 'planning myths' that can be used to mobilize support for a brand of land use and traffic system development that counteracts the long term competitiveness of public transport.

Planners may well play an important role in challenging ‘planning myths’ by using their expert knowledge of land use and traffic development. In all three cases, it was found that the expert knowledge in question was fundamental to the realization that the coordination of land use and transport system developments is necessary to reduce car usage and to introduce traffic-reducing elements. The explanations of why traffic-*increasing* elements were included in plans were complex, and varied from case to case: the objective was supplanted by other objectives; planners for various reasons failed to speak up about counteracting the effects of such elements; some planners did not have the requisite expertise in the field, and drew on old ‘planning myths’ rather than current expert knowledge when suggesting traffic-increasing elements.

Innovationer för hållbar kollektivtrafik i Skandinavien. Erfarenheter och utmaningar

av Robert Hrelja, Lisa Hansson, Tim Richardson, Tomas Svensson, Enza Lissandrello, Petter Naess, Aud Tennøy och Frode Longva
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Sammanfattning

Det är väl känt att transportsystem inte bara omfattar tekniska men även institutionella dimensioner som är avgörande för systemens utveckling och funktion. Vi vet också att kollektivtrafikplanering bör samordnas med fysisk planering. Men analyser av viktiga institutionella och planeringsmässiga förutsättningar för framgångsrik kollektivtrafik är få. Syftet med denna rapport är att analysera institutionella förutsättningar och planering för kollektivtrafik ur ett jämförande perspektiv i Skåne (Sverige), Aarhus (Danmark) och Trondheim (Norge). Rapporten bygger på kvalitativa fallstudier av kollektivtrafiken i Skåne, Århus och Trondheim. Analysen baseras på skriftligt material och intervjuer.

I rapporten dras slutsatsen att det ur ett institutionellt perspektiv, med fokus på roller och ansvar, är svårt att tala om en enhetlig Skandinavisk kollektivtrafikmodell. Det finns emellertid gemensamma utmaningar i alla de Skandinaviska länderna. Nya former för samordning mellan organisationer och politikområden måste skapas på ett antal kritiska områden. Det finns till exempel ett behov av bättre samordning av kommunal fysisk planering och regional kollektivtrafikplanering.

Framgångsrikt genomförande av kollektivtrafikinnovationer förutsätter strategier och argument som förmår olika aktörer och organisationer att samarbeta och agera gemensamt. Dessa strategier och argument används i de studerade fallen för att mobilisera stöd, överenskommelser, acceptans, resurser, beslut och genomförande. Kollektivtrafiken i Trondheim, Aarhus och Skåne förespråkas medvetet och strategiskt som en åtgärd för skapandet av hållbara städer och regional utveckling. Det är uppenbart att kollektivtrafiken inte ska ses som ett mål i sig, eller som bara ett tekniskt system. Kollektivtrafikorganisationer i alla länder bör på en långsiktig planeringsnivå, oberoende av nationella regelverk och lagar, försöka att komma överens om svaret på frågan: vad vill vi uppnå med kollektivtrafiken? Sådana överenskommelser kan bli en förutsättning för att framgångsrikt kunna samordna kollektivtrafik och fysisk planering i ett sammanhang där det inte finns några formella samordningsmekanismer.

Kollektivtrafikens långsiktiga utveckling beror också på huruvida kommuners markanvändning och infrastrukturinvesteringar förbättrar förutsättningarna för kollektivtrafiken eller inte. En genomgång av viktiga planeringsdokument i de studerade kommunerna visar att medan konkurrensen mellan biltrafik och kollektivtrafik vidkänns i konsekvensanalyser av kollektivtrafikåtgärder, så tenderar prognoser av förändringar i biltrafikvolym till följd av vägbyggen att bortse från konkurrensen. Detta illustrerar hur man bör utmana "planeringsmyter", som kan användas för att mobilisera stöd för en utveckling av markanvändningen och trafiksystem som minskar kollektivtrafikens långsiktiga konkurrenskraft. Planerare med sina expertkunskaper om effekter av markanvändning och trafikutveckling kan spela viktiga roller och utmana sådana "planeringmyter". En slutsats i alla tre fallen var att planerarnas expertkunskaper var viktiga för förståelsen av behovet av samordning av fysisk planering och transport-

planering för att minska bilanvändningen, och för förståelsen av behovet att införa biltrafikreducerande åtgärder för att stärka kollektivtrafiken. Förklaringarna till varför åtgärder som *ökar* biltrafiken ingick i planer var komplexa och varierade mellan fall: mål om mer kollektivtrafik trängdes ut av andra mål, planerare valde av olika skäl att inte tala om hur åtgärder motverkade målen, vissa planerare var inte experter på området och lutade sig mot "planeringsmyter" snarare än på expertkunskapen när de föreslog åtgärder som ökade biltrafiken.

1 Introduction

Public transport is recognized today as one of society's most important tools for reconciling economic development with long-term environmental and climate-change targets. However, more still needs to be learned regarding a number of issues with a crucial bearing on the attractiveness of public transport and its long-term functional and competitive capacity. It is well known that transport systems not only include technical components, but also institutional dimensions that are crucial for their proper development and functioning. The institutional facets of public-transport systems comprise both formal aspects—organizations, rules, laws and regulations—and informal aspects—networks, values and norms, discourses, traditions, and justifications—that pertain among the actors that decide and plan public transport (Young 2002; Buitelaar et al. 2007).

We also know that transport planning should take place within the framework of an integrated planning approach (for example, Hull 2005; Stead & Geerlings 2007). The integration of planning and the development of public transport, other modes of transport, and land use is increasingly recognized as a potentially effective mechanism for achieving long-term public-transport goals for functionality and competitive capacity. While integrative approaches can be effective planning strategies for public transport and increase its attractiveness, the relationship between public transport and land-use planning is particularly important. Experience teaches us to expect coordination problems, tension among different planning sectors, and institutional constraints (Hysing 2010). Overcoming such constraints requires new efforts in governance, decision-making, and planning praxis. Yet there has been relatively little research about, for example, transport planning in relation to co-ordination problems and the tensions that can arise between representatives of different planning sectors, the role of planners, and the knowledge that underpins actual decisions and planning practices.

Institutional conditions and planning processes thus need to be taken into account to understand the ongoing operations and processes of change in public-transport systems. Despite this insight, research into public transport has mainly focused on describing the technical aspects of the systems that have been introduced in various places (for example, Curitiba, Portland, Karlsruhe, and the San Francisco Bay Area). Analyses of important institutional and planning-related prerequisites for successful public transport are thin on the ground (Hansson 2011; Gwilliam 2008). Most of the research concerning institutional changes to public transport has had a national focus, or consists of comparisons between European countries with different conditions, which make in-depth comparisons difficult (Hansson 2011). The Scandinavian countries exhibit several political and institutional similarities, but also differences, which could be used not only to refine policy recommendations, but also to foster a fruitful transfer of knowledge and experience between cities, regions, and countries.

Researchers from the Swedish National Road and Transport Research Institute (VTI), Aalborg University, Denmark, the Institute of Transport Economics (TØI), Norway and, in the later stages of the project, the Norwegian University of Life Sciences have joined forces in a research project—'Innovations for sustainable public transport in the Scandinavian countries'—to analyse public transport in the county of Skåne (Sweden) and the municipalities of Aarhus (Denmark) and Trondheim (Norway). The project's starting-point was that large public-transport projects can be considered policy innovations that are planned and implemented as part of the development of transport

systems in urban areas. Innovation is defined here as changes to institutional setting, policy-making, and planning practice that influence public-transport design and implementation.

The aim of the project has been to analyse institutional and planning conditions for public transport in the Scandinavian countries in a comparative perspective.

More specifically, the project has analysed public transport in relation to three analytical themes:

(1) Institutional factors in integrative approaches

This first theme concerns the institutional frameworks that influence public-transport systems, decision-making, and planning, and to that end we have studied formal, institutional changes in the Scandinavian countries, and the coordination mechanisms between sectors and actors that are usual in cities and regions.

(2) Actors' efforts and strategies for integrative planning practices

The second theme has to do with the actors involved in planning practices. We know from the literature that technical decisions about transport systems seldom avoid value judgements—indeed, their very framing involves a choice between modes of transport. Public-transport systems can therefore in a very broad sense be seen as political phenomena, and their form and development a product of negotiations between stakeholders during decision-making and planning. We have analysed how the actions of interested parties, their attitudes, expertise, strategies, and power relationships, influence public-transport decision-making and planning. We have focused in particular on public-transport planners, since they have an important part to play and can clearly act as initiators or ‘catalysts’ of change in the course of these processes.

(3) Use of knowledge in integrated land-use and transport planning

The last theme focuses on the use of knowledge in land-use and transport planning. One important task for planners is to provide knowledge to decision-maker so that they can arrive at well-informed decisions regarding transport and land-use development. It is therefore important that land-use and transport planning intended to strengthen the role of public transport is based on readily available, trustworthy knowledge. Here, we pay specific attention to whether the knowledge claims expressed in planning documents are in accordance with the state-of-the-art research on how land-use and transport-system developments affect journey lengths and modal choices. Further, we have investigated whether such knowledge is actually applied in planning practice, and, if so, how this affects the contents of plans and their goal-achievement potential.

This report summarizes the findings of the project. The project has seen papers published in international scholarly journals, and several workshops on the project's questions have been held in Sweden, Norway, and Denmark. Our aim has been to be succinct. Readers who wish to go into the specifics of any part of the project, or indeed the previous research or theoretical approaches, are therefore directed to the original

papers or to the report's appendices, where the project's workshops and other activities are summarized in greater detail.¹

1.1 Outline

The report is structured as follows: Section Two describes the project methodology and the case-studies; Section Three summarizes the project's publications, other activities and dissemination activities; and it concludes with a synthesis of the principal findings.

¹ Several articles from the project are published or under review in international scientific journals. When papers are published, it will be stated on the project website www.vti.se/sv/forskningsomraden/samhallet-och-transporterna/lokal--och-regionalplanering/innovationer-for-hallbar-kollektivtrafik-i-nordiska-regioner. The website also includes presentations the project scientists and invited speakers have been given during project workshops.

2 Method

The report is based on qualitative case-studies of public transport in Skåne, Aarhus, and Trondheim. The aim has been not only to compare all the cases with one another, with the main reason for using case-studies (Yin 2009) being the fact that decision-making, planning, and implementation are influenced by site-specific contextual factors, but also to analyse institutional and planning conditions in depth, to which end only a handful of case-studies were used in order to penetrate the processes more thoroughly. Empirically based analytical lines of reasoning taken from the case-studies could then serve as the basis for discussions of general analytical relevance (George & Bennett 2005; Yin 2009). One frequent objection when it comes to the use of case-studies is that it is a methodological strategy that does not allow for statistical generalization; however, the general conclusions we reach are founded on the concept of analytical generalizations (Yin 2009), which means that we relate our findings in specific case-studies to existing research and theories in the field.

In our selection of case-studies, the institutional and planning aspects of innovation have been our main concern, since there is a crying need for such studies (see section 1). We have therefore selected case-studies of new approaches to decision-making, planning, and implementation, chosen to reflect three specific criteria:

- (i) the regions and cities in question must be important urban centres;
- (ii) the regions and cities must have both adopted and implemented a political decision to pursue major transport projects that include institutional and planning-related components with policy relevance; and
- (iii) the projects must include different approaches, problems, and experiences in the coordination and integration of transport and land-use planning.

2.1 The case-studies

2.1.1 Skåne (Sweden)

The county of Skåne has about 1.25 million inhabitants, of whom about 280,000 live in Malmö, Sweden's third largest city. The top political body in the region, Skåne Regional Council (Region Skåne), was formed on 1 January 1999 with the merger of two county councils. Elected directly, it is responsible for health issues, public transport, regional development, and regional infrastructure planning. The current public-transport authority, Skånetrafiken, was also founded in 1999, and comes under the aegis of Region Skåne.

In Skåne, the use of public transport increased sharply after Skånetrafiken was founded. The establishment of Region Skåne has created new opportunities for integrated planning approaches and coordination between public-transport planning and regional-development planning. Region Skåne is an interesting case since the number of trips increased more than 80 per cent in the first decade after the establishment of Skånetrafiken. Added to this, Skåne's regional autonomy enabled the linking of previously independent policy sectors with the planning of local and regional development.

In-depth studies of two municipalities: Helsingborg and Lund

Within the county, we have also chosen two transport planning case-studies centred on the municipalities of Helsingborg and Lund. Helsingborg is interesting because the municipality has chosen to implement innovative solutions for its severe problems with traffic congestion, especially in the area of organizational structures. Lund was chosen because of its long work to integrate transport planning into comprehensive land-use planning, both in planning processes and in actual urban development projects.

2.1.2 Aarhus (Denmark)

Aarhus, a city of more than 300,000 inhabitants, is the unofficial capital of the Central Jutland Region (Region Midtjylland), one of the administrative regions of Denmark. It is also the centre of the East Jutland metropolitan area (Byregion Østjylland), or Greater Aarhus region, a geographic region with a population of approximately 1.2 million people. Aarhus is Denmark's fastest-growing city and leading growth centre in western Denmark. In the early 1990s, the Danish government decided to finance a railway infrastructure that would make it possible to connect the two parts of the national railway system. Since then, Aarhus Municipality and Region Midtjylland have tried to work out how to implement the national decision to link the two railways while improving the public-transport system, their solution being a new 'urban tram' project in and around Aarhus. This project was discussed in 1999–2001 by the Danish government, Aarhus Municipality, Region Midtjylland, and the international consultants COWI. In 2005, the idea was replaced by a 'light rail' project (Aarhus Letbane). Denmark's regional reform in 2007 saw the establishment of a new regional public authority for public transport, Midttrafik, responsible for the operation of public transport in Region Midtjylland (currently 95 per cent by bus), including the light rail project (through a special secretary). The light rail project for Aarhus Municipality is the first public-transport system by light rail ever planned and realized in Denmark; moreover, it has become not just a project about a new infrastructure for public transport, but also a new way of planning (sub)urban and regional development. Along the light rail lines, new suburban expansions are taking form based on new principles of accessibility and a healthy urban environment.

2.1.3 Trondheim (Norway)

Trondheim, with its 180,000 inhabitants, is the fourth largest city in Norway. We chose it as a case-study because of Trondheim's environmental package for transportation (Miljøpakken), which includes innovative financing models as well as institutional structures that integrate work on land use and public transport. The City Council adopted Miljøpakken in 2008 in response to increasing traffic and environmental problems. The package has ten main objectives—including the reduction of CO₂ emissions from transport by 20 per cent by 2018, and a reduction in private car use from 58 per cent to 50 per cent of all journeys in 2008–2018—and combines a number of different policy measures, including cordon tolls, parking restrictions, improved public-transport services and infrastructure for walking and bicycling, as well as land-use strategies to steer new housing and workplaces towards central locations close to the main public-transport corridors. Miljøpakken also includes major road-building schemes. The Mayor of Trondheim heads the steering group for the implementation of the package, which also includes representatives from the City Council, the County Council, and the Norwegian Public Roads Administration. The city planning office heads the project, while the various measures in the package are implemented by

various public organs. Since 2008 there have been a number of substantial successes: the three years from 2010 to 2012 saw the number of public-transport passengers increase by 23 per cent, while the number of car journeys fell by 10 per cent.

2.2 Material

2.2.1 Interdisciplinary approach

The project, by setting out to integrate knowledge from a range of disciplines, has taken an interdisciplinary approach. The project team, consisting of researchers from several disciplines (public-transport research, urban planning, sociology, land-use policy research, and political science) have brought fresh theoretical and methodological insights to the group. All the researchers involved have been responsible for data collection in their own countries, but analyses have been discussed jointly at project meetings. The project's publications, which all take a comparative approach, have also been written in collaboration. The researchers met twice a year to discuss and analyse the collected data. Representatives from each region or city were invited to the project meetings to comment on preliminary results. At each meeting, there were oral presentations of the preliminary findings, and stakeholders were asked to comment on one or two scholarly papers in progress.

The material that has been analysed differs somewhat from case to case. Each case-study, however, includes the following qualitative materials:

- interviews with stakeholders in each region or city (municipal or county officials and politicians, traffic and public-transport operators and contractors, and so on); and
- analyses of documents such as municipal and regional planning documents and strategies, municipal comprehensive plans, environmental impact assessments, and contracts between public-transport authorities and operators.

2.2.2 Stakeholder workshops

In addition to project meetings, three stakeholder workshops have been held in Sweden, Denmark, and Norway (with a fourth to come) to provide a forum for discussions between researchers and practitioners, targeted towards municipal officials and politicians, regional public authorities, county administrative boards, county representatives, and interest groups. The workshops were designed to promote an active exchange of experiences, where presentations of current praxis and research were mixed with questions and group analyses by the workshops' participants, and, as intended, have informed the project's publications. Summaries of the workshops are given here (see Appendix 1), while programmes, lists of participants, and presentations are available in Swedish at the project website.²

- Workshop 1 ('Public transport as a regional and local development tool') was held on 16 February 2012 in Linköping, Sweden, in collaboration with the Centre for Municipality Studies (CKS) at Linköping University. The theme was public

² <<http://www.vti.se/sv/forskningsomraden/samhallet-och-transporterna/lokal--och-regionalplanering/innovationer-for-hallbar-kollektivtrafik-i-nordiska-regioner/>>.

transport and regional development, with a focus on public transport in relation to the policy objectives of economic growth and environment, governance, and competitive public transport. Representatives from the East Sweden Regional Council (Regionförbundet Östsam), Skånetrafiken, and researchers from VTI described their experiences and the challenges they faced in using public transport as a local and regional development tool. The workshop concluded with a roundtable discussion.

- Workshop 2 ('Integrating land use and public-transport planning: learning from the making of light rail projects') was held on 10 October 2012 in Aarhus and took as its theme the coordination of urban planning and public-transport planning. Representatives from Aarhus's urban planning department, the public-transport authority (Midttrafik), and the Norwegian city of Bergen described their experiences of working with the planning and implementation of light rail projects. The workshop concluded with a roundtable discussion.
- Workshop 3 ('Integrating land use and public-transport developments through policy packaging: unpacking the packages') was held on 13 March 2013 in Trondheim. The workshop focused on 'policy packaging' as a tool for the integration of transport and land use. The workshop began with presentations from Trondheim and the Swedish Västra Götaland Regional Council (Västra Götalandsregionen) and their work with infrastructure packages. The workshop concluded with a roundtable discussion.
- Workshop 4 will be held on 5 November 2013 in Lund, Sweden, in collaboration with the K2 National Knowledge Centre for Public Transport.³ This workshop will be an outcome conference with two main objectives: to disseminate the project's findings to trade associations in the transport sector, regional public-transport authorities, county transport companies, municipalities, national authorities, and others; and to spark a dialogue between the transport sector and researchers about future research needs. The workshop will conclude with a roundtable discussion.

³ At time of publication of the present report, the workshop report was not available for inclusion.

3 Publications

The project's findings are reported in six articles that have been accepted for publication or have been submitted to international scholarly journals (Table 1, with article abstracts given in Appendix 2). The articles reflect the three themes described in section 1: (i) institutional factors in integrative approaches; (ii) actors' efforts and strategies for integrative planning practices; and (iii) the use of knowledge in integrated land-use and transport planning.

In addition to the articles, the project's findings have been presented at several academic conferences, workshops, and seminars with public-transport stakeholders, over and above the stakeholder workshops already mentioned (see Appendix 3).

Table 1 Project publications organized by analytical theme.

Theme 1: Institutional factors in integrative approaches	Theme 2: Actors' efforts and strategies for integrative planning practices	Theme 3: Use of knowledge in integrated land-use and transport planning
<ul style="list-style-type: none"> • 'A Scandinavian public-transport model? A comparative study of Denmark, Norway and Sweden' • 'Coordinating public transport with land use and road infrastructure. Investigating mechanisms involved in two Scandinavian urban projects' • 'Contracting accountability in network governance structures' 	<ul style="list-style-type: none"> • 'Three performativities of innovation in public-transport planning' 	<ul style="list-style-type: none"> • 'The role, use, and influence of expert knowledge in land-use and transport planning aiming at reducing traffic volumes: experiences from three Scandinavian cities' • 'Knowledge-based land-use and transport planning? Consistency and gap between 'state-of-the-art' knowledge and knowledge claims in planning documents in three Scandinavian city regions'

4 Findings

This section presents the main conclusions from the project, based on its workshops and publications. It also includes recommendations for further research. The conclusions are divided into three themes (as described in section 1). The published papers comprise more detailed empirical and theoretical conclusions than are presented here, and include references to previous research. Readers who wish to immerse themselves in the theoretical aspects of the project or the literature are therefore referred to these publications.

4.1 Institutional factors in integrative approaches

In Hansson et al. (2013a, Appendix 2), we present a comparative analysis of the institutional changes that have affected public transport in the Scandinavian countries over the last forty years. The paper's starting-point is the fact that the three Scandinavian countries—Sweden, Denmark, and Norway—are often treated as a homogeneous unit in public-transport research. True, there are several similarities in the reform shifts that have influenced Sweden, Denmark, and Norway since the late 1970s; all three have indeed taken steps to create cohesive planning functions, integrating local and regional public transport and providing public transport through competitive tendering; and the outcomes of public-transport planning and procurement are also similar in all three countries, despite their different institutional arrangements. However, from an institutional perspective that focuses on roles and responsibilities, we conclude that it is *unwise to speak of a single Scandinavian public-transport model*. Different institutional arrangements and responsibilities exist. For example, in Norway, the municipalities have had a much smaller role than in Denmark and Sweden. The latest public-transport reform implemented in Sweden in 2012, which allows for a deregulation of public transport, increases the differences between countries, and certainly poses a challenge to the integrated planning perspective that is found in each of the three countries. The deregulation of public transport in Sweden means that new players are expected to enter the market, which may bring about fragmentation. However, it is too soon to tell what the effect of the latest reform will be, and this is something that will have to be analysed in future research.

In terms of governance, public-transport planning, procurement, and management straddle a variety of governance landscapes in a complex and uncertain way. In discursive terms, too, public-transport futures are bound up with policy, especially the broader societal and political debates about, for example, competitiveness and value in public services, sustainability transitions, low carbon futures, liveable cities, and more. Attempts to subsume public-transport policies into a wider sustainable agenda (as in Skåne, Trondheim, and Aarhus) clearly increase the number of actors and policy areas/measures involved, making policy-making and planning a much more complex affair. As a result, coordinating efforts typically transcend existing organizational borders and professional boundaries, thus making them even more difficult. One result from the workshop in Linköping, Sweden (Workshop 1, see Appendix 1) was that *new forms of coordination between organizations and policy areas are needed* in a number of critical areas if public transport is to contribute effectively to the development of an efficient, sustainable transport system. The issue is about managing and solving often intractable problems such as the coordination of municipal land-use planning and regional public-transport planning, and between operators and public-transport authorities. One important element in the new public-transport reform in Sweden is that it does not regulate the coordination of municipal land-use and regional public-transport

planning. New coordination mechanisms to coordinate public transport with land-use planning are needed.

In Longva et al. (2013, see Appendix 2) the mechanisms that are used in Skåne, Trondheim, and Aarhus to coordinate public transport with land use and road infrastructure are analysed. There is a distinction to be made in the coordination of land-use planning with public-transport planning, a distinction between coordination in policy formulation, with its focus on agreeing clear, consistent goals, and coordination in the actual implementation of measures, which relates to the administrative choice of means or processes, or is designed to ensure that all parties adhere to a procedure once it has been agreed. There are several mechanisms for the coordination of public transport with land use and road infrastructures in Trondheim, Aarhus, and Skåne, all of them obviously interlinked and frequently coexisting and complementing one another. In all cases, there are some inconsistencies between the coordination of policy formulation on the one hand and the instruments utilized in the coordination of policy implementation on the other. For example, we find that even though land use is included in policy formulation (for example, in Trondheim and Helsingborg), it is *omitted from the coordinating instruments* duly chosen in the implementation phase: coordination is instead left to the normal procedures at the municipal level, with a loss of coordinating mechanisms that would otherwise ensure implementation. This goes for both land-use and parking policies. More research is needed to understand how coordination mechanisms that include land use can be part of the implementation phase of public-transport projects. The present project's case-studies provide some guidance here, as is discussed below.

Contracts are another important mechanism in the coordination of operators and public-transport authorities. Where multiple actors with differing institutional structures are involved, there is an evident need for transparent mechanisms to ensure control and accountability. Accountability is an important factor in the upholding of a legitimate, democratic political system since it ensures that public officials only take actions that meet the needs of citizens. In Hansson et al. (2013b, see Appendix 2) we analyse the contractual arrangements in Helsingborg and Trondheim. With the development of governing structures in terms of network—such as those found in the cases of Helsingborg and Trondheim—it can no longer be assumed that public authorities possess the same kind of clout that has traditionally been ascribed to public organizations. It is therefore crucial that one identify the mechanisms that guarantee accountability in such contexts. The two case-studies in question differ considerably in terms of networks, since Helsingborg is based on a governance relation that includes the private operator in decision-making processes, but Trondheim has a more hierarchical, government network structure. It is found that contracts have different functions in the two case-studies: for example, in Helsingborg there was no general contract that defined the network, and instead different contracts were used, while in Trondheim an incentive-based contract was used to bind the organizations together. From an accountability perspective, one contractual function found in Trondheim clarifies the roles and responsibilities of the parties and increases the possibility of citizen accountability. The paper brings new insights to the field of contracting and accountability by focusing on the role of contracts in network governance structures, taking into account different types of accountability relations and relating them to contractual approaches. The paper also raises questions for future studies in the field, especially about the dimensions between trust and contracting, and discusses how

‘trustworthy contracts’ can be designed by taking account of both a clarification of roles and the responsibilities of a network without reducing trust between the parties.

4.2 Actors’ efforts and strategies for integrative planning practices

Actors working in urban and regional contexts face many challenges in effecting significant changes to transport systems. One of the most significant is the need to establish strategic alliances across complex governance environments that can act decisively to create new governance forms and practices, which in turn can bring about the desired interventions. In Lissandrello et al. (2013, see Appendix 2), we study in detail the actions and skill sets of public-transport planners. Skilled planners have the ability to drive planning and decision-making forwards, to persuade key stakeholders, and to build strategic alliances between politicians, officials, and the public. One recurring theme in the interviews with the planners was that the successful pursuit of *public-transport innovation relies upon complex interwoven stories and arguments* that persuade diverse actors and organizations to collaborate and take action on the basis of their shared meanings. This was also evident in the stakeholder workshops (Workshops 1–3, see Appendix 1). At the heart of these initiatives and strategies are stories that are used to mobilize support, agreement, acceptance, resources, decisions, and implementation. These stories must be persuasive because they enter discursive fields where they may disrupt the accepted ways of viewing policy problems and solutions; they are certainly stories that shape not only a vision, but also coherent action and means of implementation that frame what the city or region is and what it might become. Fundamentally, the stories ascribe a specific role in development strategies to public transport. Public transport in Trondheim, Aarhus, and Skåne is consciously and strategically promoted by planners as a driving force in sustainable city and regional development. The prominence given to public transport in Aarhus and Trondheim is justified by its contribution in creating modern, green, attractive cities, whereas public transport in Skåne is promoted as a tool for sustainable regional development. Judging by this, public-transport planning and management cannot stand in isolation. *Public transport should never be seen as an end in itself, or as only a technical transport system.* This was illustrated by the workshop in Aarhus, where public transport was described as having been used as a tool for urban development in several Scandinavian cities (Workshop 2, see Appendix 1). *It will be easier to mobilize key stakeholders if public transport is perceived as a tool for the development of cities and regions.*

Public-transport organizations in all countries, regardless of the regulatory and legal conditions, should thus try to reach a long-term agreement on the question of what they want to achieve with public transport (even though conflicts of interest are probably inevitable). *Such agreements are a prerequisite for the successful coordination of land-use and transport planning in contexts where there are no formal coordination mechanisms in place in the implementation phase, but they will also be important even where formal coordinating mechanisms are established.* Successful, formal coordinating mechanisms require a common understanding if they are to work as intended. Ultimately, such agreements can mobilize support for the design of well-functioning public-transport systems. In Skåne, for example, the relatively broad consensus on the necessary conditions for regional development was used by the regional public-transport authority to justify a potentially controversial market-oriented redesign of the public-transport system, which set out to increase revenues that could be reinvested in the system (Workshop 1, see Appendix 1).

4.3 Use of knowledge in integrated land-use and transport planning

Even though it is important for officials to tell persuasive stories if they are to advance planning processes, some claims are more credible than others. Needless to say, the long-term development of public transport depends on whether or not the land-use and infrastructure-planning measures chosen by municipalities will actually improve conditions for public transport. And the choice of measures that will be efficient in achieving long-term public-transport goals depends on knowledge of the likely impacts of different strategies in urban land-use and transport-infrastructure development. The currently accepted academic view on the relationship between urban spatial structures and travel in a Scandinavian context holds that urban planners should focus on reducing car dependency and urban motoring in order to avoid urban sprawl, that they should increase the proportion of the population living and working in the inner-city and central areas, and that they should also ensure a sufficiently high density in areas of new development in order to facilitate the provision of good local services and public transport (Næss et al. 2013, see Appendix 2). Furthermore, while conditions for travelling by car should be made less attractive, conditions for travelling by other forms of transport should be improved.

The use of valid knowledge is necessary if one is to make plans that systematically and consciously contribute to a reduction rather than a growth in car traffic and related environmental impacts. In Næss et al. (2013, see Appendix 2) we review the key planning documents from the case-studies. The analysis shows that knowledge claims about the travel-behavioural impacts of proposed land use and transport infrastructure accord to varying extents with the accepted academic line. Yes, the cities' planning documents present dense urban development and public-transport improvements as furthering the goal of a reduction in urban motoring; however, a number of long-standing 'planning myths' are also encountered in the planning documents studied. The most significant deviation from cutting-edge knowledge can be found in the way the municipalities present the effects of increases in road capacity: while the competition between cars and public transport is recognized in impact assessments of public transport improvement, for all three cities the *forecast changes in traffic volumes due to road construction tend to ignore the competition between public transport and car traffic*. Moreover, in one of the cities, it is the location of residential and workplace areas close to suburban public-transport stops that is highlighted as a traffic-reducing measure, not their proximity to inner-city concentrations of jobs and other facilities, and density is discussed at a neighbourhood scale rather than at a city scale. More research will be needed to trace the consequences of such claims for actual, planned land-use and infrastructure developments, but in the meantime the study illustrates *the need to challenge the 'planning myths' that are used to mobilize support for land-use and traffic-system developments that undermine the long-term competitiveness of public transport*.

Planning is often defined as bringing to decision-making the knowledge of the consequences of future projects or the actions under consideration, in order to enable decision-makers to make decisions that will help them achieve their objectives. Throughout the project, practitioners said they needed to become better at communicating with politicians, explaining what is needed for goal achievement. The ability to do this was a quality that defined a 'good expert', as it was put by an official during the workshop in Trondheim (Workshop 3, see Appendix 1). Planners thus might play an important role in challenging planning myths by using their expert knowledge

of land-use and traffic developments, if they are knowledgeable in this field, but in other cases they spread the very planning myths they should be working against, and thus contribute to plans that contribute to a *reduction* in public transport's competitiveness compared to car usage.

We show in Tennøy et al. (2013, see Appendix 2) that there are stated ambitions to reduce or curb car dependency and car usage (along with other goals) in all three cases. Key planning documents set out the public bodies' determination to steer land-use and transport-system developments in directions that will help achieve this goal. Our analyses show that the resultant plans do indeed include some elements that contribute to this, but also other elements that counteract it, mainly related to land-use development, with all that brings in terms of sprawl and road capacity increases. Using a review of planning documents and interviews with key planners, we consider how the expert knowledge has been used, if at all (expert knowledge being defined as theoretical, empirical, and methodological state-of-the-art information about how land-use and transport-system developments influence total traffic volumes), and how this had affected the contents of plans. We found that expert knowledge was introduced to the planning processes by the action of various mechanisms, but mainly by dint of the presence of the skilled planners involved—their knowledge and actions having an immediate impact on the plans' content, and serving to explain cause and effect, to argue for the inclusion of certain elements, to solve problems on the ground, and for reference. In all three cases, it was found that the expert knowledge in question was fundamental for the recognition that the coordination of land-use and transport-system developments is necessary to reduce car usage and to include general traffic-reducing elements.

The explanations of how and why traffic-*increasing* elements were included in plans were complex and varied: traffic reduction was ousted by other objectives; planners, for various reasons, failed to speak up about counteracting the effects of such elements; some planners were not experts and peddled old planning myths rather than relying on current thinking when suggesting traffic measures. Numerous actors are involved in planning- and decision-making processes, all embark with different objectives, knowledge, and power, and all participate in order to achieve what they see as their priorities. As a result, real and fundamental conflicts are often embedded in planning and decision processes. For example, officials have explained that there would be no Trondheim package if roads were excluded, and hence their main responsibility is to make the package work as well as possible under the circumstances. Here the planners demonstrate their knowledge of the political milieu and their (limited) scope for manoeuvre. The political consensus continues to require road investment, but both public-transport and land-use planners need to disregard political choices if they are to secure decisions favourable to public transport (Workshop 2, see Appendix 1). As shown in Lissandrello et al. (2013, see Appendix 2), skilled officials have the ability to recognize what can be implemented in the prevailing political situation and to act upon it.

4.4 Future challenges for public transport

What have we learned about innovative public transport in a Scandinavian context? At least four conclusions of general interest can be drawn from the case-studies considered here. First of all, the Scandinavian countries face similar challenges, even if it is difficult to speak of a unified, Scandinavian public-transport model.

- New forms of coordination between organizations and policy areas are called for in a number of critical areas if public transport is to contribute effectively to the development of an efficient and sustainable transport system.

New coordination mechanisms are needed, for example, for the coordination of public transport, land use, and infrastructure planning. Land use is often included in policy formulation, but excluded from the coordinating instruments chosen for the implementation phases.

- Public transport must not be seen as an end in itself, or as merely a technical transport system.

In all the cities and regions studied in this project, there has been an evident change in the perception of public transport and the objectives it can help meet: once seen as a technical solution to a transport need, it is now thought of as a tool to be used for the development of cities and regions—and it will be easier to mobilize key stakeholders if it is seen as such. One related finding is that

- The successful pursuit of public-transport innovations relies upon complex, interwoven stories and arguments that persuade diverse actors and organizations to collaborate and act on their shared meanings.

They are stories through which a vision, coherent actions, and means for implementation are produced that frame what cities or regions are and what they might become. Fundamentally, they ascribe a specific role to public transport in development strategies. Such stories can be one prerequisite for the successful coordination of land-use and transport-system planning in contexts when there are no formal coordination mechanisms in the implementation phase, and they will be equally important where formal coordinating mechanisms are established.

- There is a need to challenge the planning myths used to mobilize support for land-use and traffic-system developments that undermine the long-term competitiveness of public transport.

The results show that the change in the perception of public transport has taken place in a context where a car-based transport system is the norm for how transport systems ought to be designed and regulated. To improve public-transport functionality and competitive capacity, innovations are required that alter existing institutions, norms, organizational relationships, coordination mechanisms, and so on, and that are not primarily designed to benefit the development of public transport. More knowledge is needed about how a more efficient public-transport system can be implemented despite this restriction. Since the political consensus continues to require road investments, consciousness should be raised about the critical underlying issue of competition between public transport and car traffic. These issues concern not only a policy shift towards public transport itself, but also issues relating to planners' professional cultures, knowledge, and working practices. The goal of such deliberative interventions should not be to resolve conflicts by morally justified consensus or compromises. Conflicts are probably unavoidable when handling the competition between public transport and car traffic in policy-making and planning, and therefore deliberative processes need to be designed and managed in ways that take seriously the significance of potentially conflicting interests, norms, habits, and attitudes.

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Stakeholder workshops

Workshop 1. Linköping 16th February 2012

Public transport as a regional and local development tool⁴

Kollektivtrafiken står inför stora utmaningar. Branschen vill fördubbla resandet med kollektivtrafiken och på sikt även marknadsandelen. Kollektivtrafiken framstår alltmer som det viktigaste verktyget för att kunna kombinera fortsatt lokal och regional utveckling med långsiktiga miljö- och klimatmål. Samtidigt avregleras kollektivtrafiken. De nya regionala kollektivtrafikmyndigheterna har en viktig roll i den förändringsprocess som pågår, men det är ännu osäkert hur deras arbete kommer att se ut, och vilka som är de viktigaste framgångsfaktorerna i det kommande arbetet med att utveckla och förstärka trafikens roll för den regionala utvecklingen.

Inom forskningsprojektet "Innovationer för hållbar kollektivtrafik i Skandinavien" arrangerade VTI, tillsammans med Centrum för kommunstrategiska studier vid Linköpings universitet, en workshop om kollektivtrafik och regional/lokal utveckling. I fokus stod frågor om kollektivtrafikens utveckling i förhållande till politiska mål om ekonomisk tillväxt, attraktiva städer, politisk styrning och marknadsmässigt konkurrenskraftig kollektivtrafik.

Workshopen vände sig till politiker och tjänstemän i Östergötland och syftet med workshopen var att skapa dialog om kollektivtrafikens potential att bidra till kommuners och regioners utveckling. Ett trettiotal politiker och tjänstemän från kommuner, landsting och regionförbund deltog i gruppdiskussioner, och lyssnade på föredrag av Bengt Nilsson, Skånetrafiken, Stefan Dahlskog, Regionförbundet Östsam och VTIs kollektivtrafikforskare.

Presentationer under förmiddagen

Under förmiddagen hölls presentationer av Bengt Nilsson, Skånetrafiken, Stefan Dahlskog, Östsam, samt av VTI forskarna Tomas Svensson, Karolina Isaksson och Robert Hrelja. Tomas Svensson och Karolina Isaksson diskuterade några av de forskningsresultat som nu finns om kopplingen mellan kollektivtrafik och regional utveckling. Vidare presenterades resultat från pågående forskning om koordinering, samordning och organisatorisk förändring med syfte att realisera kollektivtrafikens potential för den regionala utvecklingen.

Bengt Nilsson beskrev framgångsfaktorerna bakom den positiva skånska resandeutvecklingen. Han framhöll hur viktigt det var att den skånska kollektivtrafiken fungerade som ett sammanhållet och profilerat system, t.ex. med enhetliga taxor. Han framhöll vidare politiska och organisatoriska framgångsfaktorer. Bildandet av Region Skåne möjliggjorde långsiktighet och prioriteringar utifrån en regional helhetssyn. Samtidigt prioriterades ökat resande och en kund- och marknadsorientering arbetades fram som bas för kollektivtrafikens utformning. Den framgångsrika marknadsorienteringen av den skånska kollektivtrafiken tar sig bl.a. uttryck i en tydlig strategi om att främst satsa resurser i "starka stråk" (dvs. linjer med flest resenärer och störst utvecklingspotential). Strategin om de starka stråken är potentiellt sett politisk kontroversiell då det främst är i de befolkningstäta, västra delarna av Skåne som de starka stråken finns. VTIs Robert Hrelja beskrev emellertid hur relativt stor enighet

⁴ The workshop was held in Swedish.

mellan region och kommuner om starka stråk skapades genom att kollektivtrafiken av politiker och tjänstemän betraktades som ett system som länkade samman kommuner i en funktionell region där den ekonomiska utvecklingskraften påverkade hela regionen positivt. En sådan systemsyn gjorde det möjligt att förstå prioriteringar av starka stråk som viktiga för hela kollektivtrafiksystemets funktion och därmed för alla kommuner i regionen Skåne.

Också Östsams Stefan Dahlskog poängterade betydelsen av starka stråk för kollektivtrafikens utveckling i Östergötland, samtidigt som han reste frågan om hur man ska hantera den svagare trafiken. Stråkplaneringen ligger nu till grund för den strategiska utvecklingen av kollektivtrafiken även i Östergötland. Pendeltåget på stambanan är pulsådern i systemet och busslinjer används både för matartrafik till pendeltåget och för att bygga upp expressbusslinjer mellan regionens tätorter. Den förändrade inriktningen har bidragit positivt till resandeutvecklingen. I likhet med Bengt Nilsson framhöll Stefan Dahlskog betydelsen av att man även i städerna och tätorterna prioriterade kollektivtrafikens framkomlighet. Kommunernas politik och den lokala trafik- och stadsplaneringen kommer i stor utsträckning att avgöra kollektivtrafikens framtida utveckling och funktion.

Sammanfattningsvis visade föredragen och de efterföljande diskussionerna att en av de viktigaste utmaningarna i samband med den nya kollektivtrafikagstiftningen är att skapa former för styrning, samordning och samsyn om kollektivtrafikens utformning och roll för lokal och regional utveckling mellan aktörerna inom sektorn som landsting, kommuner, operatörer m.fl.

Föredragen gav upphov till flera frågor i publiken. De handlade bland annat om vilka hinder och möjligheter som finns för samordning inom regioner med syfte att utveckla kollektivtrafiken vidare.

Publikens frågor till Bengt Nilsson på Skånetrafiken – ett axplock

Det var en mycket aktiv publik och många ville höra mer om hur Skåne har arbetat med kollektivtrafikfrågorna. Några av de frågor som ställdes var:

- Hur hanterar ni linjer som har dålig täckningsgrad?
-Vi startar ingen ny trafik om det är lägre än 50 % kostnadstäckning för denna linjen. Det gäller för beslut om tilldelningen av ägartillskott frånregionen. Kommunerna kan själva starta och finansiera nya linjer om de så önskar
- Hur gör ni med den trafik som ni tidigare tog över från kommunerna vid skatteväxlingen ochsom inte har kostnadstäckning motsvarande 50 %?
-Inget är heligt, men det betyder inte att vi per automatik lägger ner trafik om kostnadstäckningen är låg. Det görs en regional avvägning från fall till fall och det finns linjer med låg täckningsgrad som fortfarande trafikeras.
- Berätta om de utmaningar ni ser framför er!
-Vi ser flera utmaningar; en är att hantera och kombinera nya stora volymer resande med en flexibilitet när ledbussar inte längre fungerar. En annan utmaning är att locka över vanebilister till att använda kollektivtrafiken, svarade Bengt.
- Hur lockar ni över bilister – med morot eller piska?
-Vi försöker använda morot i så stor utsträckning som möjligt men inser också att kommunerna bör använda mer av styrande åtgärder i den egna trafikplaneringen.

- Vad har ni valt för avtalslösningar gentemot entreprenören? Ger ni exempelvis extra vinst till entreprenören om resandet går upp?

-Det ser lite olika ut. Vi håller just nu på att förnya ett antal avtal som slöts vid upphandlingen 2008/2009. Bland annat kommer tydligare incitament att införas i de nya avtalen. Det finns även lokala exempel, framförallt i Helsingborg, där man har arbetat med incitament i avtalen en längre tid.

Redovisning av gruppdiskussionerna

På eftermiddagen blev workshopsdeltagarna indelade i fem grupper. Varje grupp fick i uppgift att diskutera frågan: *”Vilka är de viktigaste utvecklingsområdena för att kunna öka kollektivtrafikens roll för lokal och regional utveckling?”*

Grupperna fick sedan lista de viktigaste utvecklingsområdena på var sitt blädderblockspapper och därefter presentera resultatet i storgrupp:

Grupp 1:

- Se kollektivtrafiken som en utvecklingsmotor både lokalt och regionalt.

För att nå detta måste ett antal åtgärder genomföras:

- a) Att undersöka: Medborgares resebeteende, Incitamentavtal med utförarna
- b) Använd morot och piska: Trängselavgift? Sommarkort?
- c) Att förbättra: information, betalsystem, förenkla byten av färdstätt
- d) Att ta vara på: Befintliga spår – järnväg, IT-potentialen

Grupp 2

- Långsiktighet – ”to do - lista” som leder till genomförandet av målen med kollektivtrafiken
- Det behövs en samsyn och en gemensam vision för regionens utveckling och kollektivtrafikens roll
- Ökande resevolym (men hur hantera den svaga trafiken?)
- Förbättrad samordning mellan regional och lokal fysisk planering

Grupp 3+ 6 (sammanslagen grupp)

- Synliggöra kollektivtrafiksystemet i olika dimensioner, bl.a. för att hantera den brist på kunskap om den egna trafiken som finns hos invånarna
- Ett enklare biljettsystem – tillgänglighet
- Framkomlighet i städer
- Trafik i glesbefolkade områden, hur ska den lösas om starka stråk prioriteras? Finns nya lösningar utanför kollektivtrafiken?
- Parkeringspolicy – arbetsgivarpåverkan och andra åtgärder för att minska bilanvändningen
- Hela-resan perspektivet (dörr till dörr) är viktigt
- Bredare miljöperspektiv, energieffektivitet och hållbara transporter (mer än kollektivtrafik)

Grupp 4:

- Anlägg ett helhetsperspektiv: se regional utveckling, regional infrastruktur och trafikering som en helhet med en gemensam målbild
- Fungerande samordning och koordinering mellan kommuner, landsting,
- regionförbund m.fl. som driver utvecklingen framåt mot en gemensam vision
- Större utrymme på den politiska agendan

Grupp 5:

- Ökad satsning på pendeltåg
- Förbättrad framkomlighet i städer
- Hela resan-perspektivet i ett hållbart transportsystem
- Marknadsföring mot kunderna

Flera olika förslag utvecklades ytterligare vid grupppresentationerna och då fick även övriga grupper medverka. Till exempel diskuterades möjligheter och hinder för att skapa en gemensam vision för vad kollektivtrafiken ska användas till i en regional utvecklingsstrategi, hur man ska hantera trafik i glesbefolkade områden och hur man i Östergötland ska tänka kring samordning mellan färdtjänst, skolskjuts och reguljär kollektivtrafik. Även frågorna om hur man ska synliggöra och visuliserar kollektivtrafiksystemet, möjligheten att öka kollektivtrafikens marknadsandel samt Hela resan-perspektivet lyftes fram.

Punkten om fungerande samordning mellan olika aktörer diskuterades också mycket. Hur ska vi på bästa möjliga sätt hantera den förändring av ansvarsroller som nu sker och hur ska olika beslutsmandat koordineras för goda synergier? Här lyftes betydelsen av dialog mellan kommunala tjänstemän/politiker och landstingets tjänstemän/politiker fram när landstinget nu fått ansvar för kollektivtrafiken. Diskussionen återkom ofta under eftermiddagen till hur man kan skapa goda former för dialog mellan landstinget och kommunerna samt hur ansvarsfördelningen kommer se ut för arbetet med olika frågor som inte direkt regleras i lagstiftningen, exempelvis ansvaret för beteendepåverkan och samordning mellan trafikplanering och regional utvecklingsplanering. I storgruppen diskuterades också vikten av samsyn och hur man kan arbeta framåt i denna fråga. Vad behövs för samsyn? Hur tas visioner fram och hur tänker vi en sådan process?

Det finns ett stort behov av att diskutera dessa frågor vidare. Ramen utgörs av visioner och mål för regionens utveckling och kollektivtrafikens roll i det sammanhanget. Många andra frågor, stora som små, kan identifieras och hanteras mer effektivt om det finns en samsyn om kollektivtrafikens grundläggande funktion i det större perspektivet. Det uppfattades därför som ytterst angeläget att skapa arenor, organisatoriska lösningar och processer som kan hantera samordning och koordinering och driva på utvecklingsarbetet.

Workshop 2. Aarhus 10th October 2012

Integrating Land Use and Public Transport planning. Learning from the making of light rail projects

The integration of planning and development of public transport, other modes of transport and land use is increasingly recognised as a potentially effective mechanism for achieving long-term sustainable development in urban and regional areas. However

strengthening integration between public transport and land use planning entails overcoming coordination problems among different planning sectors and institutional constraints, requiring new efforts in planning action. This workshop aimed to generate discussion between municipal officials, public transport authorities, NGOs, private consultancy companies and the researchers engaged in the research project "Innovation for sustainable public transport". The workshop was organised in two parts. In the first part invited speakers presented their practical experiences of working with light rail projects. This part was introduced by Petter Næss (Aalborg University) and Enza Lissandrello (Aalborg University). They introduced the main workshop themes, pursuing the research interest in how integrated planning approaches can have a substantial influence on urban configurations and sustainability, taking as departure point the experience of planning light rail projects in Denmark, Norway, Sweden. The second part, comprising round table discussions on three main research themes and a closing plenary session, was introduced and chaired by Tim Richardson (Aalborg University).

Part one – Presentations of practical experiences from light rail projects (Aarhus and Bergen)

The light rail as a new nerve for Aarhus' future metropolitan development

Niels-Peter Mohr, Head Comprehensive Planning Department, Aarhus Municipality

Niels-Peter Mohr described in his presentation Aarhus as fast-growing and dynamic city and the recent strategies enacted by the municipality for maintaining this features in the future. Today the main attractive places for new residents and young people to study, work and live in Aarhus are the new hospital, university centres and the waterfront of the city. The light rail is seen in this context as a project of urban development. Along its lines new residential and service areas have been planned within the municipal plan in 2009. The light rail project combines the development of new residential areas along the projected lines with the potential goal of a CO₂-neutral city in 2030. The light rail network is part of the creation of an attractive modern city.

The experience of Midttrafik in designing the light rail project in Aarhus

Ole Sørensen, Project leader Light Rail Project Secretary, Midttrafik

Ole Sørensen discussed important issues related to public transport planning and land use in the planning process (still ongoing) of the light rail in Aarhus. This is the first light rail projected in Denmark. In connection with the evolution of the project, he mentioned the link between existent rail systems (regional and national) and the urban development areas within the greater Aarhus area. Sørensen also illustrated the regional dimension of this project, its technical solutions as the electrification of the lines, the vehicles produced and adopted in other localities, and stops' location in the inner city. He also focused on the governance aspects that have facilitated the project until now as the Danish governmental financial involvement for the future realisation of the light rail (construction company) and the progressing stages of the project.

The light rail as an urban developer - a success story from Bergen (Norway)

Håkon Rasmussen, Planning Department, Bergen Municipality

Håkon Rasmussen illustrated how the light rail already realised in Bergen has been a tool for urban development. He argued that the realisation of the light rail has given a

great input to the development of new patterns of travel behaviour among the inhabitants as well as to strengthening the modern image of the city. Rasmussen guided the audience of the workshop along the lines already built showing photos where new residential and commercial areas have been recently created as consequence of the light rail. In some cases great synergies between the new light rail network and the built environment have become possible. In other cases, these synergies have developed questionable interventions.

Part two - Round table discussions

The workshop continued through three round-table discussions, led by members of the research project teams. The roundtables' were composed of a combination of planning practitioners from Denmark, Sweden and Norway. Researchers from VTI, Aalborg University, TØI provided initial issues for discussion and facilitated as chairs and rapporteurs.

Roundtable 1 – Use of knowledge in coordinated land use and public transport planning

Chair: Petter Næss (Aalborg University); Rapporteur: Aud Tennøy (TØI, Norwegian Institute of Transport Economics)

In the first roundtable, the initial issue was about the diverse sources of knowledge which planning practitioners make use of, within their practices. Participants mentioned knowledge regarding the context, such as the knowledge about areas for future developments, knowledge about traffic intensities, knowledge about pollution concentrations in relations to standard requirements, and not least the political standings regarding various issues. The second issue of the discussion was how (through which mechanisms) state-of-the-art expert knowledge regarding the interrelations between development of land use, transport-systems, travel-behaviour and car traffic volumes is brought into planning processes. Through the discussion, a number of different mechanisms were mentioned, such as the importance of dialogue with other planners (e.g. land use planners and transport planners) or the learning from popular science journals, research reports, and conferences. But on the issue about how planning practitioners actually apply knowledge when making plans, skilled planners did not show a fix agenda. A topic of discussion was whether simple calculations to demonstrate immediate consequences of alternatives could sometimes replace more sophisticated mathematical transport model analyses. In the particular situation of making light rails, planner practitioners have to deal with political issues on road investments that can reduce the competitiveness of public transport. This illustrates the need for public transport planners to possess knowledge not only about public transport systems but also about the impacts of land use and other types of transport infrastructure development affecting the attractiveness of existing and planned public transport services.

Roundtable 2 –Planners' efforts and strategies for integrative planning practices

Chair: Tim Richardson (Aalborg University); Rapporteur: Enza Lissandrello (Aalborg University)

In the second round table, participants brought experience from diverse planning contexts. Ole Sorensen (Midtraffik) was invited to discuss his long-term strategies for the first light rail scheme planned in Denmark. Ole Iskov (Council for Sustainable

Transport in Roskilde) brought to the roundtable his experience of analysing historical processes of change in public transport in Denmark. He discussed the removal of tram systems from Danish urban areas in the 1970s, their replacement by urban bus networks, and the more recent resurgence of interest in light rail, which is also supported by his NGO as a contribution to sustainable mobility. Søren Sloth Lave (Aarhus municipality) talked about the importance of planning processes as the EIA for the light rail projects, and many details over technologies and planning regulations in need that this project brought about. Christian Trænker (Public authority North Jutland) reported on the experience of planning for light rail in Aalborg, influenced by developments in Aarhus. In this case, light rail is seen as a means for modernising the city and its environment, and as a response to Aalborg's present and future mobility needs. Marcus Horning (project director light rail Skåne Region) underlined the emergence of new discourses around light rail projects; if some time ago, all the talk over public transportation was about capacity, now it seems much more focused on the contribution of public transport investment to the transformation and modernisation of city areas. Mette Olesen (AAU/COWI) underlined this is a similar argument for the promotion and realisation of light rail projects around Europe.

Roundtable 3 – Consequences of technical, political or institutional factors in integrative planning approaches

Chair: Frode Longva (TØI, Norwegian Institute of Transport Economics); Rapporteur: Lisa Hansson (VTI, Swedish National Road and Transport Research Institute)

In the third roundtable, Danish, Norwegian and Swedish researchers and practitioners working with light rail and public transport planning participated in the discussion. The discussion had a comparative approach with a focus on differences and similarities found in the Scandinavian countries. One topic that was discussed was hinder/possibilities for integrating infrastructure and traffic when planning public transport. It became clear that different organisations are responsible for different tasks, and this may be a hinder for coordination and integration. In Norway several coordination attempts have been made, for example actors from different sectors (infrastructure and traffic operation) are contracted to meet in groups for joint discussions. Light rail was discussed at the round table, and it became clear that light rail is seen as a city development project, and not just a transport mode. Related to light rail, the group also discussed forms for investment and financing. In Denmark the financing of light rail and infrastructural projects are often solved by municipal funding while Norway has the toll system as a financing mechanism for road and other infrastructural projects. Problems related to conflicts of interests/goal conflicts were also discussed in the group, and how such conflicts are solved. In all countries several organisations are involved in planning public transport and it became clear that often one organisation/or actor/ takes on a role to navigate between the different interests. Another potential conflict that is important to be aware of when planning light rail systems is between urban and rural areas, and the group discussed how this is dealt with in Norway, Denmark and Sweden. The group ended with an innovative discussion regarding bus-rapid systems in relation to light rail and how such systems may, at least theoretically, be more optimal developed/planned in urban areas.

Closing plenary

The closing plenary, chaired by Tim Richardson (Aalborg University), departed from short reports described from the rapporteurs. The outputs from the round tables

indicated clearly that light rail emerges as an example of integrative planning practices between public transport and land use. In particular, the overall discussion focused on light rail as new driver for innovative urban planning strategies able to connect public transport to urban development and urban life quality.

There are several issues that potentially counteract the long-term competitiveness of light rail, particularly road investment. Planners' efforts in integrating public transport and land use planning encounter the challenge that road investments and growing number of parking spaces in the city have an effect on the long term attractiveness and competitiveness of public transport initiatives such as light rail. The political consensus continues to require road investments, but both public transport and land use planners need to overlook these political choices in order to secure favourable decisions for planning light rails. Restrictions on car traffic are politically sensitive issues, and cannot be solved simply by introducing light rail. However, light rail is emerging as a significant contributor to the role of public transport in modernising and reorganising mobility and development in urban spaces in a sustainable manner. It requires, as shown by the cases of planning light rail projects in Denmark, Norway, Sweden, innovative integrated planning practices in which the balance and the involvement of a plurality of competences (e.g. also urban designers) is particularly needed. The effects of these light rail projects are valuable in terms of urban life quality and attractive urban environment for new residents and businesses.

Workshop 3. Trondheim 13th March 2013

Integrating Land Use and Public Transport developments through policy packaging: Unpacking the packages

In Norway, it is widely recognised that population growth in the bigger cities contributes to increased traffic, greenhouse gas (GHG) emissions and local environment degradation. The National Transport Plan and the Parliament's climate agreement define clear objectives in terms of reducing/stopping traffic growth in the cities and to reduce the total amount of GHG emissions from the transport sector. A main strategy is to develop land use and transport systems in ways that facilitate growth in public transport, bicycling and walking at the expense of car use. Combined transport, land use and environment packages are increasingly seen as a notable way of achieving land use and transport developments that contribute to reduced traffic volumes. However, questions have been raised to what extent such policy packaging actually is an efficient strategy in favour of more sustainable modes of transport. In this seminar, researchers and practitioners were invited to critically discuss the packaging process, the role of public transport in such packages, and to scrutinise the packages' ability to achieve the defined objectives. We asked: What are the objectives, content and preliminary results of the Trondheim and West-Swedish (Gothenburg) packages? Are the policy packages in accordance with state-of-the-art-knowledge regarding land use and transport systems developments for reducing traffic volumes? Will the measures planned and implemented as part of the packages contribute to achieving the objectives of the packages? Which stories about public transport can be identified in the making of packages? How do planners work in policy packaging? What are the impacts of policy packaging on transparency and influence of various actors in the packaging processes?

The aim of the workshop was to trigger a discussion among planners and researchers, taking as point of departure the experience of the policy packages in Trondheim and Gothenburg. Below, we present a short summary of the workshop.

Part 1: The packages

The Trondheim package was presented by Henning Lervåg, Planning department, Municipality of Trondheim, Project leader for the Trondheim package.

Västsvenska paketet (the Gothenburg package) was presented by Line de Verdier, Västtrafik's project manager for the package. She was asked to answer the following question: Does the package contribute to strengthening the competitiveness of public transport in the Gothenburg region?

Part 2: Critical perspectives on policy packaging

This more critical part of the workshop started with a speech by Dr. Tore Langmyhr, Municipality of Trondheim, under the heading: The rationality of transport policy packages. This was followed by discussions in three parallel roundtables. The essence of the discussions are summarised below.

Round table discussion 1A:

Are the policy packages based on state-of-the-art knowledge? Will they contribute to achievement of defined objectives?

Chair: Petter Næss (Norwegian University of Life Sciences (UMB); Rapporteur: Lisa Hansson (VTI).

This roundtable consisted of a mix of researchers, municipal planners, consultants and university students. The groups discussed knowledge in relation to goal achievements and formulation of goals. Goals are often vaguely formulated, and sometimes unspoken. Even if they are unspoken, they exist. One question raised was how can goal achievement can be evaluated if the goals are unspoken or unwritten? The group also discussed goal conflicts in planning processes and some argued that it is not possible to make a package that doesn't have mixed goals – it is a political process and the policy package is based on agreements that include mixed goals. It is not possible to make a package that consistently pursues a particular set of goals according to state of the art knowledge about how to achieve these goals. The group also discussed rationality in relation to knowledge – whose knowledge are we discussing? There are competing rationales within an organization, and there is often a hierarchy defining what is “correct” knowledge which influences what type of reports are written, what methods and evaluations are made in a plan process.

Round table discussion 1B:

Are the policy packages based on state-of-the-art knowledge? Will they contribute to achievement of defined objectives?

Chair: Aud Tennøy (TØI); Rapporteur: Robert Hrelja (VTI).

In this session different perspectives among actors were discussed. The difficulties to communicate and explain how different measures and projects interact were main discussion points. Planners need to become better on explaining and communicating to politicians what is needed for goal achievement. A high communicative ability, towards both politicians and the public, was found to be especially important when controversial

measures as restrictions on car use were discussed. A “good expert” was claimed to be a planner who effectively can communicate what needs to be done in order to reach goal achievement. Several land use planners thought that a traditional “predict and provide” paradigm was still very strong among traffic planners. There was according to them a need for change in the mind-set of traffic planners in order to achieve more sustainable travel demand management oriented planning. Traffic models are as estimates tools for decision making. But the output from the models were too often said to be communicated as facts derived from “black boxed” models that not even the users always knew how worked. But what shall we use if we don’t use models, one participant asked? Participants agreed that models should be used carefully.

Roundtable 2:

Stories about public transport in policy making of packaging. Planners’ work in policy packaging.

Chair: Tim Richardson (Aalborg University); Rapporteur: Enza Lissandrello (Aalborg University)

In the first part of the round-table session the planner as a story teller was discussed. From the diverse experiences, telling persuasive stories seems essential to move along the planning process. The planners’ stories can be used to overcome barriers in planning practices and to develop trustful relationships with politicians. Stories can be an important aspect of planners’ involvement and influence on decision making. Story-telling is also about communication when the planning process involves many actors as local administrators, politicians at various levels, and consultants.

The second question for discussion was about the concrete ‘work’ of the planners in terms of actions taken within the policy making process. Henning Lervåg described his experiences about Miliøpakken in Trondheim in which his work as a planner was to make fast action in time of election and to use media. For some of the participants of the round-table session the planners’ work has to do with dealing with politicians and developing communication strategies not just for gaining an internal legitimacy within political parties but also to trigger public participation in order to legitimate planning processes. This has to do with democratic accountability but is also about making planners’ work visible. The roundtable concluded with two questions. The first was about the replications of stories – can research define some of the new challenges and identify persuasive stories as a key element in the promoting of public transport? The second question was about the relationship between planning and politics, and the role of the planners in relations to political decisions. This was an issue discussed further within the plenary session of the workshop.

Concluding plenary discussion: synthesis of findings from the roundtables

Chair: Aud Tennøy (TØI); Rapporteurs: Robert Hrelja and Lisa Hansson (both VTI).

The closing plenary started with short reports of the roundtable discussions by the rapporteurs. The participants felt that many counteractive actions are included in packages, with the result that decision making and planning continued to favour car traffic instead of public transport. A question discussed was what planners and other officers can do to increase goal achievement, i.e. sustainable transport systems. Another topic discussed was: what responsibilities do officers and planners have for telling politicians and the public that counterproductive measures are included in policy packages (when this is the case)? One objection to these questions was that the

attendants was a biased group that only advocated sustainability while politicians and many other officer groups needed to take other political goals into consideration when preparing and implementing policy packages. It was claimed that road investments that impaired public transport could be motivated by other goals than sustainability. There are clearly goal conflicts that need to be handled. The discussion also showed that there can be very different ways to conceptualise the relationship between planners/officers and politicians when handling these goal conflicts. One perspective advocated an active role of officers as provider of ideas and advice for policy formation and implementation – not only about technical matters but also of a more political nature as representatives of sustainability. The other perspective advocated a stricter separation of political and administrative spheres. The role of officers was in this latter perspective seen to be a provider of knowledge about how to handle goal conflicts and consequences of measures. From this discussion we can conclude that the actions of officers constitute an important aspect of policy package formation and implementation even if there are different ways to conceptualise the role and responsibility of officer in local government and planning.

Paper abstracts

A Scandinavian public transport model? A comparative study of Denmark, Norway, and Sweden (Lisa Hansson, Enza Lissandrello, Frode Longva, Petter Naess, Tomas Svensson 2013a).

Article to be submitted to *Research in Transportation Economics*.

Scandinavian public transport, especially aspects of how the Scandinavian countries (i.e., Sweden, Denmark, and Norway) have created governing structures for a cohesive public transport system, is often cited positively in international research. Scandinavia is often treated as a homogeneous unit in public transport research, which sometimes refers to the “Scandinavian model of public transport”. It is not uncommon for conclusions regarding Scandinavian countries to be based on analyses of just one country. Is there actually such a thing as a Scandinavian model of public transport? All around Europe the public transport sector is changing, taking public transport governance in various directions. This paper provides an overview of the changes and similarities in public transport governance in Scandinavian countries from the 1970s to 2011, discussing whether it is justifiable to speak of a Scandinavian model of public transport. The findings are based on public documents, reform evaluations, and statistics. This is the first paper focusing on Scandinavian public transport systems and their governing models per se, taking into account the considerable reforms of the 2000s. The results provide an important basis for benchmarking and comparative studies of countries outside Scandinavia.

Coordinating public transport with land-use and road infrastructure. Investigating mechanisms involved in two Scandinavian urban projects (Frode Longva, Lisa Hansson, Robert Hrelja, Enza Lissandrello and Tim Richardson).

Article to be submitted to *Transport Policy*.

The contribution to the overall project from this paper is increased knowledge on policy instruments available for enhanced coordination of public transport, land use and road infrastructure. By identifying coordinating practices involved in two major Scandinavian urban projects, scrutinizing their strength and weaknesses, the paper points out possible strategies for improving the ability of public transport in contributing to the development of sustainable urban transport systems. Transcending local public transport policies into a wider sustainable agenda clearly increases the number of actors and policy areas/measures involved, making policymaking and implementation a much more complex affair. As a result, coordinating efforts typically transcend existing organizational borders and professional boundaries, thus making them even more difficult. The broad nature of sustainable mobility and corresponding set of policy measures, require an approach to policy coordination that focuses on relational factors in addition to structural elements. This is evident both in Trondheim and Helsingborg where coordinating practices continuously are challenged by unlevelled set of resources, institutional constraints of routinized behavior, as well as clashes of knowledge and competencies among different planning sectors. Overcoming such constraints requires new efforts in decision-making and planners' action, and stresses the importance of trust and joint perspectives for policy coordination.

Contracting accountability in network governance structures (Lisa Hansson, Frode Longva 2013b)

Submitted for review to *Qualitative Research in Accounting & Management*.

The contribution to the overall project from this paper is increased knowledge concerning the role of contracting when providing and planning public transport in network contexts. The aim of the paper is to illustrate how accountability is expressed in contract arrangements in governance networks of public transport provision and to open up to a discussion of how we can understand the role of contracts in relation to accountability in networks. The paper takes departure in two different research traditions; literature from contracting studies and studies concerning accountability in government and governance contexts. Using content analysis contracts from two cases have been analysed; a collaborative multi-level network and a multi-level network with a large national government funding. The contracts have been categorized into four groups; contracts between public-public organizations, contracts within a public organization; contracts between public organizations and private firms; and contracts between political parties within a municipality. It is concluded that the contracts have different functions in the cases, for example the first case did not have an overall contract that defined the network, and instead different contract was used. In the other case an incentive based contract was used to bind the organizations together. From an accountability perspective such contract clarifies the roles and responsibilities between the parties and increases the possibility for citizen accountability. The paper brings new insights to both contracting and accountability studies by emerging these two perspectives. It also puts a new focus on the public – public organisational accountability relations by focusing on the contracting aspects and comparing these with public-private organisational relations.

Three Performativities of Innovation in Public Transport-Planning (Enza Lissandrello, Robert Hrelja, Tim Richardson and Aud Tennøy 2013).

Article to be submitted to *International Planning Studies*.

The contribution to the overall project from this article is to learn from the performative qualities of public transport planning practitioners. This article explores how three public transport planners have influenced planning processes and the meaning of public transport in three cases. The light rail in Aarhus (Denmark), the policy package in Trondheim (Norway) and the design of a regional public transport system in the Skåne region (Sweden) are the contexts in which the planners acted. The article explores how these planners intervene and construct planning practice by repeated acts, which the planners perform to influence actors and planning processes and move public transport planning ahead. The paper attempts to capture the skills of these planners and how they act and produce persuading stories of alternative transport futures. From their stories, planning emerges as a creative and proactive work in which planners investigate potentials, make problems visible, mobilise 'local knowledge', communicate with media, experiment and explore the possibility of 'adjustments' and change at hand.

Knowledge-based land-use and transport planning? Consistency and gap between ‘state-of-the-art’ knowledge and knowledge claims in planning documents in three Scandinavian city regions (Petter Næss, Lisa Hansson, Tim Richardson and Aud Tennøy 2013).

Accepted for publication in *Planning Theory & Practice*.

The contribution to the overall project from this paper is improved understanding of the relationship between research-driven ‘state-of-the-art’ knowledge, and knowledge claims made in practice, in planning for sustainability. By reviewing key planning documents in three Scandinavian city regions, the paper shows that the knowledge claims about travel behavioral impacts of proposed land use and transport infrastructure presented in the documents are to varying extent in accordance with academic knowledge on these topics. Some long-standing ‘planning myths’ are encountered in the documents. In one of the cities, residential and workplace location close to suburban public transport stops is highlighted as a traffic-reducing measure rather than proximity to inner-city concentrations of jobs and other facilities, and density is discussed at a neighborhood scale rather than at a city scale. In all three cities, planning documents depict road capacity increases as having no traffic-generating effect. These latter claims are used in support of more decentralized land use patterns and considerable road development. Since the likelihood of achieving sustainability goals relies heavily on whether measures chosen are productive or counter-productive, a stronger focus on the suitability of spatial development strategies for producing their purported outcomes should be welcomed in planning research and practice.

The role, use and influence of expert knowledge in land use and transport planning aiming at reducing traffic volumes: experiences from three Scandinavian cities (Aud Tennøy, Petter Næss, Enza Lissandrello, Lisa Hansson 2013).

Article to be submitted to *Progress in planning*.

The contribution to the overall project from this paper is improved understanding of mechanisms through which expert knowledge affect goal achievement potentials of plans. This could improve future planning and policy-making aiming at more sustainable mobility patterns. The expert knowledge in question is how land use and transport systems developments influence travelling distances and modes, while goal achievement potential refers to whether the plans (if implemented) contribute to improved competitiveness of other modes of transport at the expense of car usage. Main findings, based on empirical studies of planning processes in three Scandinavian cities, are that the relevant expert knowledge is to a certain degree known and used. It is introduced in planning processes mainly as embedded in knowledgeable planners involved. The knowledge affects the contents of plans through being the basis for planners’ knowing and acting, being used for understanding and explaining cause-effect relations, and as arguments. The goal achievement potentials of plans are thereby improved. However, planners also demonstrate lack of knowledge and they sometimes disregard well-documented knowledge. Some planners know that certain implications of the expert knowledge are unacceptable for politicians. Both mechanisms contribute to inclusion in the plans of traffic-inducing road projects and peripheral land use developments contributing to increased traffic-volumes.

Presentations on conferences and seminars

Presentations at scientific conferences

- Hansson, L. (2013). *A Scandinavian public transport model? A comparative study of Denmark, Norway, and Sweden*. Presented at Thredbo13: International Conference on Competition and Ownership in Land Passenger Transport. St Anna Collage, UK.
- Hansson, L. (2013). *Contracting accountability in multi-level networks*. Presented at XVII IRSPM Conference, Prauge.
- Hansson, L. (2012). *Contracting Accountability*. Presented at Statsvetenskapliga förbundets årsmöte. Växjö University.
- Hansson, L. (2012). *Regionforskning med fokus på transporter. Kollektivtrafik och regional utveckling*. Presented at Regionforskningskonferensen, Karlstad University.
- Lissandrello, E. & Richardson, T. (2011). *Governing Mobility*. Panel preparation sixth International Interpretive Policy Analysis Conference. Cardiff University.
- Lissandrello, E. (2011). *Planning Work towards a Sustainable City? The Aarhus case*. Presented at the fifth PLANNORD symposium, Aalborg.
- Lissandrello, E. (2012). *Method for analysing conversational interviews*. Paper and oral presentation for methodological workshop in Interpretive Policy Analysis Conference. Tilburg.
- Lissandrello, E. (2012) *Enabling reflexivity in the planning process* ' Presented at IST–International Conference on Sustainability Transitions. Copenhagen.
- Lissandrello, E. (2012) *Planners' work in making the light rail in Aarhus*. Presented at Trafikdage Aalborg.
- Lissandrello, E. (2013) *When Public Transport and Urban Planning Meet. Aarhus and Trondheim*. Presented at PLANNORD, Reykjavik.
- Lissandrello, E. (2013) *Planning as Mobility. The Aarhus case*. Presented at Mobility Futures Conference, Lancaster.
- Næss, P. (2013). *Knowledge-based planning? Consistency and gap between academic knowledge and knowledge claims in planning documents in three Scandinavian city regions - oral presentation*. Presented at PLANNORD, Reykjavik.

Presentations at seminars and workshops

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