The Quest for Environmentally Sustainable Transport Development

A study of Land Use and Transport Planning in 4 cities in 4 countries

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Title:
The quest for Environmentally Sustainable Transport development. A study of land use and transport planning in 4 cities in 4 countries.

Key words:
Environment, Sustainability, Land Use and Transport Planning, CO₂ emissions, Medium sized cities, Cross Border Comparison.

Abstract:
The aim of the project has been to explore how land use and transport planning can be used to achieve environmentally sustainable transport in cities. The spatial and transport development over the last decades in four cities have been analyzed, the cities are compared and lessons are drawn. All four are on an unsustainable trend, but with a marked difference between the US city Davis and the three European cities Kristiansand, Aalborg and Norwich. The European cities have expanded their area of influence across the city borders and commuting is increasing. Land use has been market-led in the three European cities and transport finance-led in the sense that they rely on and strive to get money for road building from Government. Kristiansand also finances road investments by a toll-ring. It is extraordinary how Davis has managed to control land use and prevented edge developments, and how cycling has been maintained as an important mode in a country totally reliant on cars.

The lack of goal achievement in the three European cities is caused by the fragmentation of public administration with tasks and responsibilities separated by sectors, levels and layers giving skewed opportunities and incentives. The “car society” is embedded in the institutional system and the car mode comes out as the winner; in effect the national policies in all three European countries make sustainable transport development illusionary. There is a lack of a national framework making more sustainable alternatives to this car-fuelled development possible. The principle of subsidiarity is part of the US constitution giving Davis extensive self-rule and the opportunity to follow a path towards environmentally sustainable transport development. Davis has developed several measures to control land use. Especially important is the ballot, requiring that the citizens in a referendum must confirm city council decisions on urban extensions. There is a lot to learn from Davis, not as a direct transformation of the Davis experience, but as an inspiration to facilitate change. Lastly, the report discusses what should be done to change the development trajectory towards the cities’ long held goals.
PREFACE

This study is in many ways retrospective looking into the recent city planning history and practice towards the end of my career. I thought it would be a journey in known waters, but it wasn’t. I have enjoyed the investigation all the way and learnt a lot, so much that I probably will continue to read and learn about planning. This is all the more the case since I have become convinced that land use and transport planning in cites have an important future role to play in meeting the climate challenge.

At the start of this study I looked at land use and transport planning as an aim in it self. That perspective made it difficult to see why rational land use and transport planning was not achieving its aims completely, but only partially. Through the work I came to the understanding that land use and transport planning is an instrument in “the big modernization project” and that the need for population and economic growth in the cities overruled the attempts to change the paths towards sustainable city development.

I am profoundly grateful to my tutor professor Petter Næss for his patience, endurance, meticulously scrutiny and detailed comments to all the different notes I have sent him over the years. Being the kind of person that is most enthusiastic and creative at the start of a project, and less productive when it comes to collect the lose threads and conclude, I might have dropped out of this study. Petter has challenged me intellectually by his constant questions “is that really so” and suggestions “you should read” and a list of references follow, challenges I had to take. Tusen takk, Petter.

I sincerely thank the more than fifty persons I have interviewed. Without exceptions they have let me use their time and answered my questions. Many of the interviews became a dialogue more like mutual inquiry into the role of planning, which gave me deeper insights. I have been careful not to cite any from such interviews that might be controversial.

Thanks to Aalborg University and professor Finn Kjersdam for accepting me as student and help along the way. Many thanks to the University of Stavanger for its economic support and the good services rendered by the library. UiS also gave me a one-year sabbatical, part of which I with the help of professor Mark Francis was able to spend at the University of California, Davis.

Thanks to colleagues at UiS and Agderforskninng and other friends that have been helpful with comments and support of this work. They have contributed to drive me forward. Also thanks to the many people that have been very helpful and provided statistics, documents and other data. I have tried throughout to notice the source of information and data, all mistakes or misunderstandings are my sole responsibility.

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Summary of the thesis

Background
Twenty years have elapsed since the Brundtland report *Our Common Future* was published. In these years the environmental problems associated with private car transport have increased. Car use contributes to the problem of sprawl across Europe\(^1\), to the continual depletion of fossil resources and to the CO\(_2\) emissions, as well as local emissions, traffic accidents, noise, etc. A wide gap has been created between our goals and intentions on the one side to the factual evidence with increasing car use on the other.\(^2\) Land use and transport planning is regarded as an important instrument or measure to achieve the sustainable development goals. There hardly exists a city in Europe without environmentally sustainable city transport as a goal. This project has studied the use and effects of the land use and transport planning instrument in four cities that are renown and prize awarded for their sustainable development efforts: Kristiansand (Norway), Aalborg (Denmark), Norwich (England) and Davis (California, USA). The four cities were compared cross borders and lessons were drawn.

The aim of this study
The focus of this project has been to explore how land use and transport planning have been used to achieve environmentally sustainable transport (EST)\(^3\) in cities. The research question asked: *How can land use and transport planning be used to create / increase environmentally sustainable transport in cities, what are the barriers for sustainable transport development and what promotes such development?*

Theory and method
The study starts with a model of a city that consists of two main elements: *Building Structure* and *Transport Structure*. There is reciprocal relationship or interdependence between the *Building Structure* and the *Transport Structure*. Activities in the *Building Structure* create demand for transport and the *Transport Structure* provides accessibility. This interdependence is crucial for the cities spatial development. *Development Control*, a prime tool for politicians and planners to manage development may influence both of these elements. *Development control* can be applied in an active or passive way according to the understanding of the situation and indeed according to how the politicians in charge look at intervention in the planning and development processes.

The urban development in each case city was viewed as a stream of events over time. The research process identified and described those events that had great impact on development. The events were analyzed in depth to find the mechanisms that worked together to produce each event and also those forces that represented barriers and hindrances. The analysis of the events, inspired by Critical Realism, focused on the causal relations behind an event and the mechanisms that triggered it. It was a cyclic process confronting the data with case description, redescription, more data, and so on. By placing the events in a time sequence the relationship between the events and the pattern of events that constitute a certain path could be identified and explanations looked for. The research process was both a longitudinal study

---

3. EST as defined by OECD
and cross-sectional study of the land use and transport events that formed the city development. The spatial planning system in most countries is an important part of the national government set up. How legislation, planning law and the planning tradition and practice focus on land use management was one issue. How the organization of government, the financing of transport infrastructure and public transport services impact on development another issue. A third issue was how political attitudes to the market and to public versus private solutions impacted on development. To cope with the complex relations both horizontally and vertically, between levels, sectors and layers the following themes were used for cross comparison and analysis:

- The importance of a broad, national, guiding, spatial framework.
- Integration between levels, sectors and layers of planning.
- The role of the rational planning model and planning doctrine.
- Partnerships, collaboration, cross border cooperation and mechanisms.

4 cities in 4 countries
This study shows how four cities have perceived the problem (aims), how the cities wished to solve the problem (plans) and how the cities have acted to solve the problem (realpolitik). The land use and transport planning and policy making in the three European cities are fragmented and dysfunctional. National institutional structure represents a major hindrance for a more sustainable transport development at the city level. Among the four cities, only Davis has been able to control land use and implement a policy aiming at an environmentally sustainable transport system. Below follow some key comments to the four cities, which have been characterized by these metaphors:

Kristiansand – the tale of two cities
Aalborg – the mother of the famous Charter, but…
Norwich – a puppet on a Government string
Davis – the bike city, well prepared for a climate crisis

Kristiansand – the tale of two cities
The land use and transport planning in Kristiansand “the Sustainable City” has been praised and prized for sustainable development. However the structural institutions have prevented or excluded solutions other than car based plans. Even the seven year Government Sustainable City project failed to achieve its goals. The institutional structures give the actors incentives to work for more road building with the aid of media, organizations and individuals. The tolling will for many years continue to finance a massive road building, which again will contribute to the transformation of land use and transport in the region. The CO₂ emissions keep increasing and will probably continue to do so caused by this transformation. The BusMetro has so far not shifted many people from cars to public transport. Pursuit of growth led to the road building success, but the city failed to reach their sustainability goals and targets. The market-turn and the neo-liberal thinking have supported ad-hoc decisions on private plans, reduced public plan production and undermined steering through the plan hierarchy. “The car has come to stay” is the storyline coming out of the interviews, meaning that the car must be accommodated everywhere, even in the city center. The unprecedented building activity in the city center will generate substantial car traffic and threaten the renaissance city center plan. Kristiansand is at the same time the prize-winning Sustainable City and the Climate Villain. The Climate Villain caption was caused by the rapid increase in CO₂ emissions from transport and subdued in the marketing of the city, which may be said to be double talk, or “the tale of two cities”.
Aalborg – the mother of the famous Charter, but...
More than 1800 cities have signed the Aalborg Charter, but contrary to the Charter ideals, a market-led land use and location policy has spread homes over a large region and concentrated jobs to highly accessible areas along the major trunk road. Individual car transport is a major driving force in and caused by this transport-geographical development. The forces of sprawl seem stronger than the forces of concentration. Population growth has been low for decades. This lack of growth has pushed the growth interests to use the institutional structure to maximize inward investment. The decision on the 3rd Limfjord crossing is inconsistent or even contradictory to the objectives of environmentally sustainable transport as adopted in the Charter and the Traffic and Environment Action Plan. The Traffic and Environment Action Plan from 1994, with reviews in 1999 and 2005 has all the best intentions. The same can be said about most of the many EU projects in which the city has participated. Focus has been on how to attract car users to more environmentally friendly modes, i.e. on the “pull” side of a push – pull strategy. Hardly any measures that “push”, force or compel people to make the necessary mode change have been discussed. The development in Aalborg has many similarities to that of Kristiansand, but with less growth pressure and without the opportunity to finance road building by tolls. The great success for the Aalborg Charter and the Aalborg Commitments is so far mainly symbolic, with only marginal effect on land use and transport policy.

Norwich – a puppet on a Government string
Norwich is among the Top Ten retail cities in England and very proud of the 5000 Park & Ride places established. Although the predict and provide ideology – the traditional basis for road planning in England – should cease as a paradigm, the Norwich Northern Distributor Road has emerged as a traditional road building project to reduce major urban congestion problems contrary to the sustainable development aims and the national guidelines. Land use planning is not integrated with transport planning. When combined with an unpredictable financing of transport infrastructure, a disjointed policy has become the result. The fragmented governance structure for the Norwich urban area both geographically concerning borders, across levels and organizations, and within layers (quangos, NGOs and business organizations) has made governing and a plan-led development very difficult, possibly impossible. The output and outcome of the land use and transport planning processes are very uncertain. The strong Government and formal institutional structure in England, has made Norwich the “a puppet on a Government string”, severely limited by the fragmented institutions.

Davis – the bike city, well prepared for a climate crisis
Davis has kept on a course towards sustainable development and is the US Bike City. There has for years been a contest between fast growth and slow growth. Davis is a “contained island paradise” in a sea of regional sprawl. Davis is unique in several ways, firstly as a cycling city and secondly being totally dependent on the university as job creator. As residents the environment-orientated university staff and students have influenced the city land use and transport policy. The people in Davis have so far decided to follow a slow growth and environmentally friendly development path. A different mood in the population may change this. The future for Davis will depend on how and to what extent the strong forces leading to sprawl in the Sacramento region will affect Davis. Up to now the city with extensive self-rule has in practice put Place value above Exchange value. Davis like Ulysses (binding himself to the mast not to be lured astray) has made rules that give the people power
over the city council and developers. These rules, among them referendum to be used for urban extension, enhance democracy. Davis has succeeded better than most cities to curb car use and promote public transport, walking and cycling.

What are the future challenges for medium sized cities?
Land use and transport planning is widely regarded as an important instrument to meet the future challenge of a threatening climate change, but what will be the effects of using this instrument? To explore this question three simulations have been done for the imaginary city of KAND, a city of about 200 000 inhabitants:

1. A comparison of BAU and EST paths the next decades.
2. Alternative locations of 15 000 new homes within the city close to the job, or in the region outside the city.
3. What if an oil crisis occurred?

The results of the three simulations are firstly that the present BAU policies will lead to devastating climate consequences, but also that it is possible within a consistent national framework to bend the trajectory towards EST without dramatic impact for people’s lifestyles. The second result from the simulation is that land use and transport policies that make people locate close to their workplace may reduce transport work and CO\textsubscript{2} emissions substantially. Dense, compact cities with a good bike and walk network and an efficient public transport system can to a large extent contribute to reduced CO\textsubscript{2} emissions. Thirdly, if an oil crisis occurred, then most people in KAND would reduce their car use and shift to other modes for their local travel within the city without dramatic impact on their time budgets.

Lessons and learning from the 4 cities
Land use has become market-led in the three European cities and transport has been finance-led in the sense that they rely on and strive to get money for road building from Government. The lessons are that the lack of goal achievement in the three European cities is caused by the institutional structure and the fragmentation of public administration with tasks and responsibilities separated by sectors, levels and layers giving skewed opportunities and incentives. The car mode comes out as the winner of this system. There is also a lack of a national framework providing alternatives to this car-fuelled development possible, in effect the national policies in all three countries make sustainable development illusionary.

It is extraordinary how Davis has managed to control land use and prevented edge developments, and how cycling has been maintained as an important mode in a country totally reliant on cars. There is a lot to learn from Davis, not as a direct transformation of the Davis experience, but as an inspiration to facilitate change in the three European cities where the trend is increasingly unsustainable. This study shows that there is a lack of integration, of comprehensiveness, of holistic thinking. It reveals that the need for changes is first and foremost changes at the national level – the devolution of power to the cities. An effective comprehensive planning that can underpin the development of a balanced transport system for all modes integrated with the land use is required.

The main obstacle for change is our dependency of the car in everyday life, which over the years has embedded the car deeply in the structure. The vested interests in keeping the present land use and transport planning system are strong, so changes won’t come easily.

\footnote{BAU – Business As Usual}
The general impression of the planning contribution – that denser, more compact, mixed use settlements, and medium-large settlements tend to exhibit a greater propensity for travel by public transport and on foot, and to generate shorter journeys – is one often supported by evidence, and rarely if ever diametrically contradicted.


1 Introduction

This thesis is about the worry many of us feel for the future, the challenge from climate change, the oil depletion, etc. More specifically it is about the successes and failures in the quest to make transport in four cities in four countries environmentally sustainable. How can medium sized cities contribute to solve the major global issues? In this introduction the aim, research question and the theme of the study are outlined.

1.1 Aim and research question

When Bent Flyvbjerg’s thesis about the Aalborg project was published in 1991, one of the reviewers said that he could remove Aalborg and put his city instead, and the story would still be true. That feeling was also mine\(^5\), put in Kristiansand instead of Aalborg in the thesis and the Realpolitik and the power in Kristiansand became clearer in the sense of understanding what happened and who had the ability to achieve their goals. Ever since I have pondered on urban issues and how some interests seem to achieve their goals while other interests fail. In particular this has become evident with the increasing concern for climate change and the need to reduce CO\(_2\) emissions, etc. I believe that medium sized urban areas like Kristiansand should within a national framework contribute to a more sustainable development through a shift from cars to more environmentally friendly transport. This has indeed been an aim in Norway since the late eighties and major efforts have been done to achieve a change of course towards this aim. However, the use of the car and the associated emissions keep increasing both inside the cities and outside. This increasing gap between the goals and the transport reality in urban areas is one perspective for this thesis. How can it be that cities are seemingly unable to direct their land use and transport development? The other part of this perspective is concerned with the management of land use and transport planning at the city level. How and to what degree can land use and transport planning and policy be used as an instrument to achieve overriding goals?

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\(^5\) I had then twenty years of working experience, several of these as a planner in Kristiansand.
Alexander\textsuperscript{6} wrote already twenty years ago about breakdown of the planning paradigm, but still planning continues to expand. This paradox is one basic question in this study. Land use and transport planning has been and is regarded as an important tool (OECD 2000, EEA 2006). While the criticism against planning is strong, it seems that governments increasingly use planning as an instrument to steer local authorities. Local authorities plan for several reasons: because it is self-evident and it is statutory, or because they think it is rational to plan, or because other authorities plan and it gives legitimacy to plan for the future (Kleven, 1990). But what can explain the gap between the intentions and the realities on the ground, and the lack of implementation of a comprehensive land use and transport planning as public policy?

In professional planning circles there has since the 1970s been broad agreement that land use and transport planning should be coordinated to achieve the goal of reduced (growth in) car transport, with more people traveling by public transport, walking and cycling instead of using the car in cities “However, we are moving in the wrong direction. The aim of creating a sustainable society is slipping further and further away. It is necessary to achieve a more rational use of transport modes and shift to environmentally friendly transport” (LOKTRA 2000:10). There are two distinct policy alternatives to solve this dilemma. Either one can change the goals, or the tools available must be used to implement the policy. If one wishes to achieve the goals then both the application of the instruments and the institutions together with the framework guiding the instruments, should change.

Olsen (1994) sums up the experiences with municipal planning in four points:
- It takes longer than expected
- It is difficult to make all municipalities plan
- There is poor agreement between the plan process and plan documents content and national guidelines
- It is common that plans are not followed by action

The aim of this thesis with a focus on land use and transport planning is to describe, understand and learn how four cities have developed up to the present. There is further an aim to try to explain the interests and outcomes – the power relations – that have gained of that particular development and what interests have been losing. I want to produce empirical and practically relevant knowledge through this study. Through this production and the discussions in the thesis I have also an aim to contribute to the theoretical knowledge production within the field of land use and transport planning in medium sized urban areas.

Empirical research has been carried out into governmental and political processes of the state as well as the policy-making contexts of local planning practice. There is also the duality between land use and transport. Land use structures influence transport behavior, which again influences land use structures. The study will explore land use and transport development in cities to understand and explain how land use and transport planning and policy have been used to turn development towards environmentally sustainable transport (EST) as part of the broader concepts sustainable development and sustainable mobility, what has hindered and what has promoted such change (see ch. 2.2.4 for further discussion on EST).

\textsuperscript{6}E Alexander 1984, After Rationality What? – A Review to Paradigm breakdown. APA journal
The study will also compare cities across national borders to explore how land use and transport planning and policy has developed under different regimes to highlight national policy influence versus local policy practice in cities.

### 1.1.1 Research question

Very few cities manage to break the trend of increasing car dependency even if the cities’ plans aim at sustainable objectives and that seemingly all the necessary means are there. On the contrary, travel by car increases rapidly in city regions partly because they are expanding fast (Hall and Pfeiffer, 2003). An expansion partly brought about by huge investments in transport infrastructure and the interaction with changing locations of jobs and homes. There seem to be a general need to increase our ability to attain the sustainability objectives.

The main research question in this study is:

*How can land use and transport planning be used to create / increase environmentally sustainable transport in cities, what are the barriers for sustainable transport development and what promotes such development?*

More specifically this research question is based on the assumptions that land use and transport planning can function as an *instrument* for change, and that car use *must* be reduced in cities to make sustainable development possible. A further assumption is the thought that good practices, learning and knowledge transfer from one city to the next is possible. The main research question can therefore be reframed as: *Are there any good examples of how land use and transport planning can be an important tool to reduce car use in cities and shift to more environmentally modes?*

Three sub-questions structure the analysis:

- **How was the connection and interaction between land use and transport in the cities?** What effect did planning and policy exert on the choice of transport mode? Was the development caused by a deliberate policy and was it sustainable, and in case how and why?
- **How could the observed land use and transport development be explained?** What were the factors facilitating cycling, walking and public transport; and what were the factors inhibiting more sustainable transport development?
- **What if any, are the lessons from the case cities for other medium sized cities in Europe?**

### 1.2 On the theme for this dissertation

The theme of this dissertation is land use and transport planning (LU&T) at the city level. LU&T planning is regarded as an important tool to obtain more sustainable development and in the environmental planning generally. The study looks into LU&T planning and policy in four cities in four countries: Kristiansand in Norway, Aalborg in Denmark, Norwich in England and Davis in California. All four cities have excelled in one way or another in their sustainable development efforts, and indeed been awarded prizes. Questions asked were: How has the land use and transport planning instrument been used? What were the effects of this
use? Have any of the cities changed towards a more sustainable trajectory and how was land use and transport planning instrumental in such a change?

In this study land use and transport planning are defined as:

*Land use* is concerned with the localization of activity, its scale, type, density, standard, and the pricing, charges and taxes on land. Parking as an important tool will be treated both under land use and transport.  
*Transport* is concerned with the use of the infrastructure and the development of the infrastructure like roads and facilities for cycling and walking, public transport infrastructure and services, traffic management, traffic calming, and the pricing, charges and taxes on the different transport modes. (This study concentrates on passenger transport, the transport of goods is excluded.)  
*Planning* is an activity pointing towards the future and can be defined in many different ways as for example this one: planning is a method to prepare decisions on future actions through the coordination of interests and public steering of development (PAX leksikon 1978). In this study planning is defined broadly like the RTPI7 who defined planning “as what planners do”. The reason for such a broad definition is to include all the relevant data that can be used to understand what causes change and events (see ch. 2.3.4).

The geographical scale of the study is the city or the urban area or space called the city. This area is difficult to delimit because most cities have sprawling development outside the city border and the car has further expanded the area of influence of the city. Norwich can be used as an example, the municipality (district) has 120 000 inhabitants, while the urban area has about 230 000 inhabitants and in the travel to work area there are about 370 000. There may often be dynamic change in growing cities. The fastest growing cities in Norway have above 2% population growth per year, which is low compared to cities in the developing world.

Compact versus dispersed city has been debated for years. The compact city is being favored in the sustainable development discussion. However, there is ongoing a transformation of core cities with a strong city centre towards polycentric urban fields extending over large areas. Kristiansand for example is changing towards more linear development, while Aalborg has been spreading fairly evenly from centre, yet with a tendency to increasing locations along the trunk road E45.

1.3 Car use, complacency or concern?

Environment and energy were big issues in the seventies, but during the first half of the eighties the concerns subdued as indicated by Susan Owens’ remark: “*crisis reactions have become more considered, even dulled to complacency.*” (Owens 1986:5) The same may be said of the sustainable development debate the first decade of the new millennium.

From a surge of attention about the future of the earth after the publishing of *Our common future* 1987, the environment wave lowered on the agenda during the nineties, although the sustainability debate in professional journals was kept up. The climate challenge and the

7 Royal Town Planning Institute
recent rise in oil prices may give rise to a new wave of interest in environmentally sustainable transport, but so far complacency seems to rule the debate. A typical comment is this: “The price of petrol must be very high to make me travel less. I am totally dependent of the car to get the day together, and very many people have it as me. Just now I am feeding the parking meter.”

A similar comment is that of president Bush cited in chapter 7. Both these comments from leading politicians indicate that to reduce the use of cars will be very difficult. It will be even more difficult to change the structural conditions or the framework for the land use and transport policy, because many people and politicians do not see the need to or are uncertain about the need to reduce car usage, so why then control land use with such a purpose?

Owens (1986:15) presents two alternative scenarios on the response to fuel price increases in transport. In the first scenario motorists will respond to increasing petrol prices by decreasing car use. In the short term they cut down on ‘unnecessary’ journeys such as social and recreational trips, but in the longer term they attempt to rationalize their trip making patterns, for example by changing employment or by moving closer to work or service centers. In the second scenario motorists maintain levels of car use but contain expenditure in the short term by driving more carefully or by reducing expenditure on other goods. In the longer term they buy smaller and more fuel-efficient cars, thus maintaining mobility but using less energy. In the real world a myriad of combinations will occur, but the two extreme scenarios may be interesting for planning. In a spatial land use and transport context the first reaction is more important than the second alternative.

With rising incomes, as all national forecasts predict will continue, the cost of car travel has in the past gradually taken less of the total income. In the future the rising income will therefore to some extent compensate for increasing fuel costs and the experience from twenty-thirty years ago show that people are willing to use substantially more of their income than today on car travel. It is therefore very difficult to predict how people will react to increasing fuel prices, and even more so the policies of the major political parties.

Associated with the increase in car use has been a decline in cycling and public transport. “Increasingly it is recognized that the decline in public transport is rooted in the inherent inability of public transport to compete with private transport in a system in which external costs and benefits go largely unaccounted for. In the absence of any significant restraint on car use, a ‘vicious circle of decline’ is established – driven essentially by rising incomes – which cannot be reversed by fare reductions, traffic management, or indeed appropriate urban development policies” (Hills, 1983 cited in Owens 1986:38). The increase in income has offset the subsidies to public transport, which can be read in the relative costs over time. Several later studies confirm this knowledge (see for example Hull 2003, Nordheim and Ruud 2007, Mobility2001). In general and in the four case cities, public transport mainly serves ‘captive’ users and has an increasingly ‘welfare’ image (see the discussion in chapter 4 on Kristiansand). A shift from private to public transport, and indeed walking and cycling is

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8 Siv Jensen, the leader and prime minister candidate of Frp, the biggest party at the Norwegian polls, July 4th, 2008 to Aftenposten.
9 One model suggest that for every 1% increase in income, a 3% increase in subsidies would be required to maintain ridership (Oldfield cited in Owens 1986:38).
desirable from a sustainability perspective. Savings could be significant, but not enormous as shown in the table below\textsuperscript{11}.

<table>
<thead>
<tr>
<th>Modal shift</th>
<th>Potential energy savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer of 50% of urban work trips by private vehicles to bus services</td>
<td>8-12%</td>
</tr>
<tr>
<td>Reduction 50% of shopping &amp; personal business travel by private vehicle</td>
<td>3-6%</td>
</tr>
<tr>
<td>Reduction by 50% of other personal and social travel by private vehicle</td>
<td>16-19%</td>
</tr>
</tbody>
</table>

Owens’ conclusions seem still to hold true: “\textit{Land use planning which encouraged higher densities, especially along transport routes, and clustering of employment and services could make a modest but significant contribution to the more efficient use of energy resources. But there are formidable political barriers to be overcome in transport policy before this contribution can be made. Significantly, constraints arise more from powerful vested interests than from any real conflict between energy and social or environmental objectives.”} (Owens 1986:40)

1.4 Why study Medium sized cities?

1.4.1 Focus on medium sized cities

Megacities are developing fast all over the world, with their particular problems among which transport and emissions is one. With increasing city size public transport increases in importance as transport mode, but there are major differences from one city to the next. On the other side there are shrinking cities where the population is going down (this is also a coming problem for many western countries with very low birth rates). Neither the major cities nor the shrinking cities are dealt with in this study.

The focus is on medium sized cities because

a) my background and experience is from such cities

b) there are very many medium sized cities world wide (several hundred in the European Union alone)

c) they are less researched than the major cities, and

d) they can probably rely on the car as sole motorized mode.

The last point item d) that medium sized cities can rely on the car as sole motorized mode can be shown in practice and theoretically\textsuperscript{12}. Theoretically such cities will in many countries have enough investment money to build an effective transport network and ample parking. Those without cars will have to rely on getting lifts from family or friends. In historic cities with valuable heritage I hope that such ideas won’t rise, but there are many attempts of planning for free car use in such cities. The interesting thing with size and free car use is that those who advocate environmentally sustainable transport often get a hard time to convince people that restrictions on car use is necessary, because of the belief that the car can solve the transport

\textsuperscript{11} Maltby et al, 1978, cited in Owens 1986:37

\textsuperscript{12} Traffic in Towns (1963) discussed this issue and found a theoretical limit below 200 000 inhabitants. That was a discussion on the city before the global environmental problems were on the agenda.
problem locally. It is absurd, but the western world is seemingly closing its eyes to the possibility of having to curb private car use. I will come back to this issue later.

1.4.2 An explorative study

I have worked for more than 30 years in planning and it is not without preconceived ideas I have started this research, a “pre-understanding” as it may be called\textsuperscript{13}. Such “pre-understanding” may have structured my work more than I can see. I have tried to keep an open mind starting this research, which implies looking at the object of study without a preconceived theory telling me to look for particular data at particular times and places. I believe that this study has been broader and more relevant because of this position of going to the data with as open mind as possible.

I am in no way able to distance my self from that experience and approach the research questions without being strongly influenced by that past. However, I have chosen to approach the case studies without outlining in detail a theory on which to base the research questions. That was done so that my obsessions and biases should not lead the interviews astray. Another very important side of this approach, which I didn’t see at the outset, was the impact the larger driving forces like ideology, internationalization and globalization had at the local level. With a set theory and a detailed questionnaire I feel that I might have overlooked the impact of these driving forces, which in retrospect proved very important. Because I was more open for alternative forces and explanatory factors, it was also easier during the interviews to follow up ambiguous statements with further questions. In some ways my approach resembles what Patsy Healey describes in her latest book: “I did not start off with a ‘theory’, or a hypothesis. I started off with a puzzle about practice. What was its nature? How could it be understood?” (2007:290).

1.4.3 Organizing of the work with the study

The aim was to explore how planning decisions are conceived and contested within the local context of history, economy and politics. This involves looking at the particular perceptions and understandings of the key actors involved. The case study approach allowed research to make explicit the decision making process of any given local policy and to understand how it is grounded in its particular context.

The data consists of in-depth interviews with a wide range of key actors in the four cities. As a necessary background to the case study interviews, extensive amounts of documentary material (planning documents, plans and maps, newspaper articles, local history, etc.) and other local information (statistics and other types) were collected for each city in general and for the land use and planning history in the cities. To get an understanding of the national planning history and legislation wide reading of government white papers, proposals, etc. was required. This was especially so with England because of the number of such documents

being produced by the Blair Government intending to change the land use and planning system, indeed the government system of the country.

The aim was to interview a broad spectrum of participants from all sectors of the community focusing on the key actors. The list of interviews shown in the table below was developed gradually as I through the initial interviews got greater understanding of the processes in each city. The purpose of the interviews in each city was to establish, for each actor, the actor’s decision making as he or she perceived it, the local and political context (past, present and future) in which they took part and their connections with other key actors, both in the city and nationally.

Table 1-1 Informants in the four cities.

<table>
<thead>
<tr>
<th>City</th>
<th>Interviews</th>
<th>Further talks &amp; discussions</th>
<th>Comments on additional information sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristiansand</td>
<td>22</td>
<td>13</td>
<td>3-4</td>
</tr>
<tr>
<td>Aalborg</td>
<td>10</td>
<td>7</td>
<td>4-6</td>
</tr>
<tr>
<td>Norwich</td>
<td>14</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Davis</td>
<td>6</td>
<td>6</td>
<td>2-4</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td>52</td>
<td>34</td>
<td>11-16</td>
</tr>
</tbody>
</table>

Comment: The numbers don’t add because those I had further talks with came out of the column All.

Of the more than 50 interviews, about 40 were taped, and of these about 20 interviews were transcribed. The case study was developed around Kristiansand as model case and therefore the numbers of interviews are biggest here. In the three other cities, the persons interviewed were selected with that knowledge as basis. Therefore the numbers of interviews in Norwich are larger than in Aalborg, partly due to the fact that the political/administrative system in Denmark resembles the Norwegian one. It was difficult to fathom the complex and changing governance system in Norwich/Norfolk and I had therefore to interview more persons there. In Davis the land use planning system was more transparent than in Europe, and it was possible to rely more on written documentation than interviews.

All top leaders in Kristiansand municipality from the early eighties up to 2004 have been interviewed (2 mayors, 2 deputy majors, 2 city directors and 2 technical directors). In Aalborg both the county and the city mayors were interviewed, and also another top politician in the municipality. In Norwich five politicians in the municipality were interviewed and one top politician in Norfolk County.

Two journalists, one in Norwich and one in Aalborg, were interviewed to get an outside view on the public planning. Both had followed local land use and transport planning and politics for years and gave depth to my understanding. None of the cities had active grass-root actions that had been challenging the present land use and transport policy with some effect, possible with the exception of Norwich. At the outset I also intended to interview activists and leaders of protest groups, however they were not a prominent part of the land use and transport planning history neither in Kristiansand nor in Aalborg these years. The lack of activists in these to cities the last two decades has not been pondered upon. The policy in Norwich was altered by the protest against the Inner Ring Road. Some of these protesters are now active for the Green Party and I have interviewed and had talks with some of them. In Davis action

14 Five of these interviews were done in the late nineties for another project.
groups are formed around a particular issues and their ultimate success is to force the city council to put the issue up for ballot. The referendum in the Covell Village case in 2005 may be seen as a successful action, although it was strictly within the democratic rules laid down. None of those active have been interviewed.

1.5 Structure of the thesis

The structure of this thesis is firstly an outline of the framework and theoretical perspectives in chapters 2 and 3. Thereafter one chapter each is used to describe the four case cities: Kristiansand in Norway, Aalborg in Denmark, Norwich in England and Davis in California. Kristiansand is the city where I have lived for close to thirty years and where I worked in the town planning office for seven years in the eighties. Some years ago I produced a report looking into 50 years of land use and transport planning in Kristiansand. That report and my work in the town planning office and as a consultant, has kept me interested in what planning is and what it might achieve, and is an important background of this study. I have also used the knowledge I have about Kristiansand as a model for the other three case cities.

After nearly thirty years in varied practice, I came back to academia in late 1999. Then I started working at the now University of Stavanger. My colleges urged me to start working towards a doctorate at Aalborg University and here is the result. Aalborg then became a natural second city because it in a transport geographical sense resembles Kristiansand as the sole big city in the region, but most of all because of my admiration of Bent Flyvbjerg’s thesis published in 1991. Another reason was that both cities had an impressive sustainable development agenda and cycling had been strongly promoted. The cycling city of Groningen became my third choice to start with, and Norwich in England the forth city since it was one of the model cities in the “bible” of my student days in Edinburgh, Traffic in Towns. In the spring 2005 I spent part of a sabbatical at the University of California, Davis. That was my first visit to the US and I was struck backwards of the numbers of cyclists. Davis then had to be included in my comparative study. Groningen had to be dropped if I was to manage to finish, but not without regrets. This thesis is therefore a comparative study of land use and transport planning in the four cities, which are presented in chapter 4 Kristiansand, chapter 5 Aalborg, chapter 6 Norwich and in chapter 7 Davis.

Looking at important events and going backwards through the recent history in the four case cities produced the case evidence. The last few decades up to the present situation have been studied. The understanding thus built is retrospective and the relevance of this understanding may or may not be relevant for the future. To test the case results, three hypothetical situations exploring the future for such medium sized cities, are therefore created. Questions like How would the cities fare if an oil crisis occurred to morrow? and What can be obtained through a strong land use planning? are posed. These questions are together with a Business As Usual (BAU) scenario explored and tried answered in chapter 8.

15 Langeland Anders, Planlegging i Kristiansand 1945-1995 Agderforsking
16 Flyvbjerg Bent, 1991, Rationalitet og Magt I & II, Akademisk Forlag
The four cities are compared and discussed in chapter 9. Such a comparison of four cities across borders in four countries is challenging, but may also reveal new insights made possible because my own culture and understanding is contrasted in foreign settings.

The last chapter sums up my experiences with this work and the lessons I think are relevant for land use and transport planning in medium sized cities in northern Europe.
2 Framework and theoretical perspectives

The framework and theoretical perspectives set the research question within the real world and shall guide the research to the core issues of the question. The framework shall secure that the research is relevant to the real world problems. The theoretical perspectives shall aid the search for data and the interpretation and analysis of the data. (Lysgård 2000)

2.1 The global challenges

The world population growth and the migration from the rural areas to the cities raise unprecedented challenges. We have no experience from earlier of such a fundamental change, and in addition there is the climate challenge. In this section I outline two issues on the global scale because I believe those issues to be very important also for medium sized cities.

2.1.1 Megacities and car growth

Looking at medium sized cities in the western world as in this case study may make one forget the global picture. Therefore forecasts of population change and the increase in car ownership is briefly commented here. The rural population in the world is stagnating while the urban population is growing fast, doubling in 35-40 years. Megacities with very rapid growth are cropping up many places as pointed out in The World Cities Report 2004/2005. The report focuses on the uneven socio-economic impacts of globalization on cities and the daunting challenges ahead caused by the population growth and migration to the cities.

Table 2-1 The Urban and Rural World population, 1975, 2000 and 2030.

<table>
<thead>
<tr>
<th>Population size (millions)</th>
<th>Growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000-2030</td>
</tr>
<tr>
<td>Total Urban</td>
<td>1.8 %</td>
</tr>
<tr>
<td>Earth population</td>
<td>1.1 %</td>
</tr>
<tr>
<td>Total rural</td>
<td>0.1 %</td>
</tr>
</tbody>
</table>

More than half of the world lives in urban areas for the first time in history. The number of slum dwellers of the urban population is very large and probably increasing. The huge gap between rich and poor in each country and between countries does not seem to matter much when we in the next section look at global trends in car ownership.

2.1.2 Car ownership

Global numbers

OECD expected in the middle of the nineties a formidable growth in the number of cars and vehicles the coming years. While the number of cars in the OECD area was expected to increase by 50% the growth in car numbers in the Rest of the World would be 150%.

Developing cities are thus coping with an extraordinary combination of rapid motorization, 10-15 per cent increase per annum, and an urban population that is growing by 6 per cent per annum.

<table>
<thead>
<tr>
<th></th>
<th>1995 Thousands</th>
<th>2020 Thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cars</td>
<td>Vehicles</td>
</tr>
<tr>
<td><strong>Total OECD</strong></td>
<td>383 329</td>
<td>536 174</td>
</tr>
<tr>
<td><strong>Rest of the World</strong></td>
<td>111 255</td>
<td>240 357</td>
</tr>
<tr>
<td><strong>Global Totals</strong></td>
<td>494 584</td>
<td>776 531</td>
</tr>
</tbody>
</table>

Table 2-2 The number of cars and vehicles in the World, 1995 and 2020.

A more recent forecast confirms the fast increasing motorization in the world. The next table shows the expected change in population, income per capita, total number of vehicles and the number of vehicles per 1000 population for the OECD countries and Rest of the World.

<table>
<thead>
<tr>
<th></th>
<th>Per capita income Thousands, 1995 $ PPP</th>
<th>Population millions</th>
<th>Total vehicles millions</th>
<th>Vehicles per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total OECD</strong></td>
<td>22.3</td>
<td>41.6</td>
<td>1 127</td>
<td>1 127</td>
</tr>
<tr>
<td><strong>Rest of the World</strong></td>
<td>3.6</td>
<td>9.1</td>
<td>5 110</td>
<td>6 927</td>
</tr>
<tr>
<td><strong>Global Totals</strong></td>
<td>7.0</td>
<td>14.1</td>
<td>6 237</td>
<td>8 199</td>
</tr>
</tbody>
</table>

Table 2-3 Population, income and vehicles in the World, 2002 and 2030.

The number of vehicles in the world is expected to grow from a total of 812 000 000 in 2002 to 2 080 000 000 in 2030, a staggering increase of 45 million vehicles every year. The demand for fuel or alternative energy will of course increase and indeed will the negative impacts stemming from the production and use of these cars.

Car ownership in the four “home” countries.
The expected population growth in the four “home” countries of the four case cities, all of which well positioned in the OECD area, is low except for USA. Income per capita, a key driver in auto purchase and use, will probably as the trend forecasts show continue to increase with a staggering pace. The difference in car ownership between the four countries is large, but even larger is the difference between the numbers of vehicles. Especially should the USA numbers be noticed because the very popular small truck that ”men” use for their daily travel, is not a car, only a vehicle.

<table>
<thead>
<tr>
<th></th>
<th>Home Population, 1000</th>
<th>Persons per sq km</th>
<th>Motor vehicles per 1000 persons</th>
<th>Cars per 1000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway 2006</td>
<td>4 640</td>
<td>14</td>
<td>653</td>
<td>449</td>
</tr>
<tr>
<td>Denmark 2006</td>
<td>5 429</td>
<td>126</td>
<td>470</td>
<td>371</td>
</tr>
<tr>
<td>Great Britain 2006</td>
<td>58 846</td>
<td>256</td>
<td>565</td>
<td>474</td>
</tr>
<tr>
<td>United States 2005</td>
<td>296 410</td>
<td>31</td>
<td>829</td>
<td>456</td>
</tr>
</tbody>
</table>

Table 2-4 Population and car ownership in the four “home” countries
Source: IRTAD


20 Vehicles in this table are motorized vehicles with four wheels, about 80% of the total number of vehicles are cars.
It is interesting to note that the number of vehicles keeps increasing. Only in the course of four years from 2002-2006 have the numbers of vehicles increased with a rate that if prolonged to 2030, it will overshoot the forecast in the next table.

<table>
<thead>
<tr>
<th></th>
<th>Per capita income Thousands, 1995 $ PPP</th>
<th>Population millions</th>
<th>Total vehicles millions</th>
<th>Vehicles per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>28.1</td>
<td>47.5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Denmark</td>
<td>25.9</td>
<td>46.7</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Great Britain</td>
<td>23.6</td>
<td>43.1</td>
<td>59</td>
<td>64</td>
</tr>
<tr>
<td>USA</td>
<td>31.9</td>
<td>56.6</td>
<td>288</td>
<td>370</td>
</tr>
</tbody>
</table>

*Table 2.5 Population, income and vehicles in 4 countries, 2002 and 2030.*

The number of vehicles is expected to increase by 70% in Norway and Denmark, 44% in Great Britain and “only” 34% in USA between 2002 and 2030. The number of vehicles per 1000 population in USA is already above 800 and it is expected that the growth will gradually be reduced. Still the forecast is an increase of 80 million vehicles in the 28 years period. The growth rate in vehicle numbers according to this forecast for Norway and Denmark, is about 2% per year and far above population growth rates. It is not certain that the case cities will experience the same growth rates, but it seems clear that there will be no major trend break in these four countries or four case cities in the next years without strong external forces happening.\(^\text{21}\)

The trends in population and income growth, and the increase in car ownership will continue to put strong pressure on oil resources, biodiversity and CO\(_2\) emissions the coming years. Therefore the need to shift towards environmental sustainable transport as part of sustainable development will increase in all four cities. From these staggering prospects we turn to the land use and transport planning challenges of medium sized cities.

### 2.1.3 The urban transport problems

Urban sprawl and increasing car dependence is a major issue in many countries. The gap between policy goals and transport development keeps increasing and our ability to govern city expansion is being questioned. Angela Hull stresses the role of institutions in delivering land use and transport policy: “Two recent pieces of research evaluating the delivery of more sustainable transport solutions in the UK have drawn attention to the regulatory abyss and the institutional fragmentation of policy makers and public transport providers in the UK” (Hull 2003).

Delucchi et al. (2002) points out that it is “impossible” to close the gap between policy aims and visions on the one side and the real world where people buy more and more cars on the other side: “When people get wealthy, they buy cars and live in bigger homes further away from central cities. In an era of rapidly expanding personal mobility, cities have been constructed and reconstructed for fast, heavy motor vehicles. Nothing short of outright

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\(^{21}\) The world financial crisis late 2008 may make such forecasts obsolete.
prohibition or economic catastrophe – not high gasoline prices, not better public transit, not better zoning – will stop this trend.”

Sheller and Urry remark that: Automobility has fragmented social practices that occurred in shared public spaces within each city. In particular, automobility divides workplaces from homes, it splits homes and business districts and separates homes and various kinds of leisure activities. Automobility turns access zones on urban fringes into wastelands (Sheller and Urry 2000: 744).

David Begg (Commission for Integrated Transport, 2001:24) worries about the future: “Today we all stand at a crossroads between a US-style car culture and a sustainable European multi modal system. The decisions we take now and the levels of investment that we attach to them will determine where we end up.” This challenge from increased car dependence is shared in most cities, see for example Pucher and Lefèvre, The Urban Transportation Crisis, and the UN-Habitat report, The State of the Worlds Cities 2004/2005.

If it is “impossible” to close this gap as Delucchi claims, where does that leave land use and transport planning? Firstly, general measures that make people shift to more fuel-efficient vehicles will still be necessary at the national level. Secondly, at the local level land use and transport planning will be important to create more livable and pleasant neighborhoods, cities and regions. Village Homes in Davis is an excellent example of a planned neighborhood in an ecological or sustainability perspective. There are also movements expanding these ideas to cities and regions, see for example Peter Calthorpe’s book “The Regional City” and the New Urbanism Charter.

Delucchi is pointing at an important issue, which also has emerged in this study, that the car is so embedded in the western culture that it is close to “impossible” to change our car affinity and dependence. It is not likely that reduction of our car use will come purely as the result of voters opting for such change on ethical grounds. However, I will still argue that it is possible to regain control with cars and traffic. The London Congestion Charging and the Stockholm Toll Ring both show that measures that shift people from cars to public transport can be effective, and further more that the public actually voted for car reduction. Davis is another example that car use can be contained and more environmentally friendly modes like walking and cycling are used instead.

### 2.1.4 Sustainable transportation in cities

*The Brundtland Report: Our Common Future*

After the Brundtland report was published in 1987 the use of the concept sustainable development has exploded. Both national and local governments have made numerous “sustainability” plans and set their aims high. There are probably few reports in the world that have had a similar impact.

Sustainable development was in *Our Common Future* defined as: *Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.* (World Commission on Environment and Development, 1987, page 8) This definition opens up for very broad
interpretations and some claim that that concept is so watered out that it has become insignificant. There are three dimensions to sustainable development:

- Social/cultural
- Environmental
- Economic

Spatial planners often add a fourth dimension that concerns territory or space to the three dimensions above: spatial development. In this study of land use and transport planning the spatial impact of sustainable development has a particular concern. Important issues in the sustainable development debate are:

- Inter- and intra-generational impact
- Equity (rich and poor, to-day contra to-morrow)
- Biodiversity and ecology
- Resources: renewable and non-renewable
- Recipients and environment
- Democracy, subsidiarity and governance

The report and its recommendations, which were further strengthened after the summits in Rio 1992 and in Kyoto 1997, have caused profound changes in governments. The planning profession, which in the eighties became sidelined by the strong turn away from regulation towards market decisions, got a new life many places. The number of public plans concerned with the environment, sustainable development, climate, etc. has since flourished and seems to be increasing.

**Sustainable Mobility**

Karl Georg Høyer has discussed sustainable mobility in his thesis²². Sustainable mobility is a mobility that is in accordance with sustainable development requirements. The implications of sustainable mobility in cities in relation to the requirements of our modern transport systems, lead to a further limitation of this study to look at person transport within the urban area.

Høyer has after a very thorough and broad discussion pinpointed a list of conclusions. Those most relevant for this study are:

- **The volume of private car transportation in the rich part of the world must be substantially reduced.** This is equally necessary outside as inside urban areas. Principally there is no room for private car transportation in a future fulfilling sustainable development requirements. This is a global demand.
- **The effects of these reductions are considerable reductions in levels and changes in patterns of mobility in the rich part of the world.** This applies both to person and goods mobility and on individual and societal levels.
- **The current high levels of mobility in the rich countries can not be upheld with alternative renewable energy sources, neither in regional contexts nor globally.** With such energy sources as a substantial basis for the future transportation systems the implications will be reduced levels of mobility.
- **The basis for upholding of these sustainable levels of person mobility are the public transport means on the ground, buses and various rail-systems, both inside and outside urban areas.** This applies equally to the rich and the poor parts of the world.


Vestlandsforskning, Sogndal.
Høyer also points out that such substantial levels of mobility have on average been experienced in the rich part of the world only a couple of decades ago, and substantial groups of the population within the rich part of the world do even experience such levels of mobility today. This may help to moderate the social implications of sustainable mobilities. (Høyer 2000:170)

**Environmentally sustainable transport (EST)**

To delimit and focus this study the more narrow concept environmentally sustainable transport (EST) as defined by OECD is used:

“Transportation that does not endanger public health or ecosystems and meets mobility needs consistent with

- use of renewable resources at below their rates of regeneration
- use of non-renewable resources at below the rates of development of renewable substitutes.”

I also set a distinction between sustainable transport system and sustainable mobility. A sustainable transport system – in the long term – is one consisting of components “driven” with sustainable energy supply. The premise for the study is that the level of mobility of people should and must be adapted to the carrying capacity of an environmentally sustainable transport system, which might mean a reduction in individual mobility from about 15 000 km per year to only 5 000 km (Høyer 2000).

The land use and transport trends in most cities regions are expanding urban areas and increasing car use. This contrary to the requirements of sustainable mobility and the EST aims. In this study the focus is on how to bend the trend towards more environmentally sustainable transport development, although the need is for trend break or shift in the path. The main indicator of the person travel development within cities is the volume of transport or transport work per mode, which usually is measured as person kilometer traveled (pkm) or vehicle kilometer traveled (vkm). A shift from cars to public transport, cycling and walking is one way to move towards EST, another and more long-term is to reduce the distance between origin and destination. Both of these instruments are traditional in land use and transport planning, and the study focuses on to what extent these are supportive in achieving the EST aims. The widely held belief that new technology will solve the “Automobility” problems is not looked into.

OECD produced EST guidelines already in 2000 as shown in the box below. However it takes time to spread the good practice and monitor the effects of such a policy. Twenty years after the Brundtland report, still very few cities adhere to these guidelines.
The depletion of fossil resources continues, biodiversity continues to be reduced and the emissions of CO\textsubscript{2} and other greenhouse gases keep increasing (EEA 2006). It will take time to make the change towards sustainable mobility. The first years after 1987 there were very few indicators on the progress of sustainable development: if and how it impacted. That has changed and the European Union is now developing an indicator system to measure progress towards a more sustainable Europe. The latest monitoring report for 2007 reveals that progress on land use and transport is slow: “Changes are clearly unfavorable for two indicators (out of eleven): Climate change and energy as EU-15 reduction in greenhouse gases, and The increase in renewables in energy consumption are still far from targets set in strategy.”

Already in a reader from 1992 questions were raised about sustainable development, land use planning and urban form\textsuperscript{24}. Susan Owens stated that: Sustainable urban development is a contradiction. Urban areas will always be a net consumer of resources, drawing them from the world around them. She pointed out the limited role that urban planning can have on environmental issues. Potentially the biggest contribution that planning could make to the

\begin{tabular}{|p{1.0\textwidth}|}
\hline
EST – Environmentally Sustainable Transport Guidelines. OECD 2000 \\
Guideline 1. Develop a long-term vision of a desirable transport future that is sustainable for environment and health and provides the benefits of mobility and access. \\
Guideline 2. Assess long-term transport trends, considering all aspects of transport, their health and environmental impacts, and the economic and social implications of continuing with ‘business as usual’. \\
Guideline 3. Define health and environmental quality objectives based on health and environmental criteria, standards, and sustainability requirements. \\
Guideline 4. Set quantified, sector-specific targets derived from the environmental and health quality objectives, and set target dates and milestones. \\
Guideline 5. Identify strategies to achieve EST and combinations of measures to ensure technological enhancement and changes in transport activity. \\
Guideline 6. Assess the social and economic implications of the vision, and ensure that they are consistent with social and economic sustainability. \\
Guideline 7. Construct packages of measures and instruments for reaching the milestones and targets of EST. Highlight ‘win-win’ strategies incorporating, in particular, technology policy, infrastructure investment, pricing, transport demand and traffic management, improvement of public transport, and encouragement of walking and cycling; capture synergies (e.g., those contributing to improved road safety) and avoid counteracting effects among instruments. \\
Guideline 8. Develop an implementation plan that involves the well-phased application of packages of instruments capable of achieving EST taking into account local, regional, and national circumstances. Set a clear timetable and assign responsibilities for implementation. Assess whether proposed policies, plans, and programmes contribute to or counteract EST in transport and associated sectors using tools such as Strategic Environmental Assessment (SEA). \\
Guideline 9. Set provisions for monitoring implementation and for public reporting on the EST strategy; use consistent, well-defined sustainable transport indicators to communicate the results; ensure follow-up action to adapt the strategy according to inputs received and new scientific evidence. \\
Guideline 10. Build broad support and co-operation for implementing EST; involve concerned parties, ensure their active support and commitment, and enable broad public participation; raise public awareness and provide education programmes. Ensure that all actions are consistent with global responsibility for sustainable development. \\
\hline
\end{tabular}

\textsuperscript{23} EUROSTAT 2007 Measuring progress towards a more sustainable Europe. \\
reduction of energy consumption and pollution is to design urban forms to minimize the need for travel (cfr. Petter Næss’ book *Urban structure matters* (2006) and NOU 2006:18 Lavutslipputvalget). Andrew Blowers in his article was skeptical regarding the political prospects for achieving sustainable development:

- “self-interest will always be the determinant of change. Politicians will be motivated by: the net benefits of resource use, international competitive advantage and short term political survival.”
- “only when the disbenefits arising from environmental damage outweigh the benefits, is self-interest likely to be compatible with sustainability”

This skepticism seems to be right compared to the EEA reports, and I may add that national politicians always are in a squeeze between national/global aims, party politics and local/regional constituency politics. This squeeze entails maximizing local benefits (say public investments, new state offices/departments, etc) and minimizing local disbenefits (say prevent the pulling of existing resources out, restructuring hospital structure, closure of defense institutions, etc). Blowers argues that four initiatives are necessary (but not sufficient) for sustainability to become anything like reality:

1. for the nation state to surrender power upwards to supranational authorities and to devolve powers to regional and local authorities
2. for the environmentally damaging operations of multinational corporations to be prevented by effective national and international controls
3. planning within a participative democratic political system must be introduced at all levels to coordinate and enforce the conservation of resources and control of pollution
4. resources must be redistributed to give priority to environmental conservation

Peter Hall and Ulrik Pfeiffer express a similar type of thinking when they formulated the sustainable development challenge to planning as a need of a paradigm shift: “We need a new paradigm that starts from this meta-concern for the maintenance of every kind of irreplaceable resource, but then combines it with acceptance of market forces and also with an indicative style of planning that can gently bend those market forces, thus producing a series of policy innovations. The outcome, we believe, could be a pattern of integrated urban growth that is flexible and adaptive, but that also respects the demand for sustainable urbanism.” (Hall and Pfeiffer, 2000:38.)

2.1.5 The wearer of the shoe feels the pinch - - - -

Environmental problems are often of the kind that can have consequences at many levels and different spatial places. A dentist’s waste of small amounts of quick silver in a municipality will also contribute at higher levels if the quick silver concentrates upwards in the food-chain. Emissions in one place may lead to serious effects in quite another place, e.g. the SO$_2$ emissions in UK contributing to acid rain in Norway. It is also the small amounts of CO$_2$ emissions from our local car use that contribute to the green-house effect.

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In the next figure, the environmental problems are divided into four categories after the emissions being concentrated or distributed and if the effects or damages are concentrated or distributed. The figure illustrates that the environmental problems have to be met by a comprehensive policy, both the national level and the local level therefore need to work together. The point is that both the problem generated and the environmental damages caused cannot be confined to only one square, but it illustrates what kind of measures that may have effect at what level.

![Figure 2-1: Environment damages and problem generation in a two by two table.](image)

Even in square I local problems like traffic noise that is created locally and may be “solved” in different ways locally (noise barriers, speed limits, etc.) there is also a general component. The Government sets limits to how much noise vehicles are allowed to emit and it could set similar noise standards to the tires.

Square IV represent the problem of the “commons”. The environmental problems are produced distributed and the consequences are common for all, collective problems. Typical for this square is emissions from cars, which may lead to lead concentrations along the roads (not in the western countries any more), NOx concentrations in areas with heavy traffic and green-house gas emissions with global effects.

The focus in this study is on the car and the problems it causes, which one finds in box II, e.g. NOx and particle emissions from traffic, and in box IV, the car transport contribution to the climate challenge.

### 2.1.6 The European Union policy

The EU Thematic Strategy on the urban environment points out that four out five Europeans live in urban areas. They share the same type of problems, albeit with varying severeness of the situations: poor air quality, high levels of traffic and congestion, very high levels of ambient noise, poor-quality built environment, derelict land, greenhouse gas emissions, urban sprawl, and waste and sewage disposal.

The cross-cutting nature of urban management issues means according to EU that any strategy for improving the urban environment needs to be coordinated with the other environmental

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27 Communication from the Commission of 11 January 2006 on a thematic strategy on the urban environment. COM(2005) 718 final
policies concerned, including climate change policy (sustainable construction to improve energy efficiency, urban transport plans, etc.), protection of nature and biodiversity (reducing urban sprawl, converting industrial wastelands, etc.), quality of life and health (reducing air pollution and noise, etc.), sustainable use of natural resources and prevention and recycling of waste.

Because the problems are highly complex, and the causes are inter-related, an integrated approach is needed. Due to the wide variety of urban areas and the difficulties encountered in setting common urban environmental standards, the Thematic Strategy states that guidelines and coordination measures are more appropriate instruments than legislation. The strategy is therefore based on subsidiarity, giving priority to local initiatives while promoting cooperation between the different levels of decision-making (Community, national and local) and interweaving the various strands of urban management. (The principle of subsidiarity is discussed below)

Transport in urban and metropolitan areas was discussed in the EU Economic and Social Committee: Improving the quality of life and environmental protection in cities and achieving climate change and energy efficiency objectives are necessary. Top priority for urban planning or transport policy should be, first, to prevent traffic 'arising', or at least to limit it, second should be meeting the mobility needs wherever possible through environmentally favorable means of transport such as public transport, cycling or walking. Municipalities should draw up transport plans for sustainable urban transport, with a binding objective of a modal shift to environmentally friendly transport (local public transport, cycling, walking), in accordance with minimum European requirements, which have not yet been established. If they fail to draw up such plans, they should be barred from receiving support from Community funds. This is another example of policy documents full of intentions, but without any measures to implement the aims. Have you heard before that traffic should be limited as a first priority? The EU committee demonstrates what Brunsson (see 2.2.8) calls double talk, talk which is not followed by action. The EU committee should primarily give the Commission advice, however it also gives plenty of advice to the municipalities, even demands as underlined above, but without being able to produce an effective EU policy supporting public transport. For this study there are two elements of particular interest. One is the principle of subsidiarity and the other is the general effect of this discourse on people’s attitudes and the lawmakers/politicians attitudes.

2.1.7 The principle of subsidiarity

Subsidiarity is an organizing principle that matters ought to be handled by the smallest, lowest or least centralized competent authority. The Oxford English Dictionary defines subsidiarity as the idea that a central authority should have a subsidiary function, performing only those tasks which cannot be performed effectively at a more immediate or local level.

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29 The word subsidiarity is derived from the Latin word subsidiarius and has its origins in Catholic social teaching.
The concept or principle is found in several constitutions around the world, and subsidiarity is, ideally or in principle, one of the features of federalism. The principle of subsidiarity is defined in Article 5 of the Treaty establishing the European Community. It is intended to ensure that decisions are taken as closely as possible to the citizen and that constant checks are made as to whether action at Community level is justified in the light of the possibilities available at national, regional or local level.  

It is also interesting that the principle of subsidiarity is a guiding principle for the Aalborg Charter, which is discussed in chapter 5.3.5. A practical definition of the principle of subsidiarity used in this report is: that decisions should be taken at the lowest possible level commensurate with the achievement of the overall objectives.

### 2.2 Theoretical perspectives

In this section the focus is on the city level. First a typology of regimes is outlined followed by a discussion on the importance of growth. New institutionalist theory is briefly commented on and the definition of planning used in the study is discussed.

#### 2.2.1 Typology of regimes.

Cities can be in different circumstances, the economy may grow or stagnate, the population may increase or decrease due to migration and so on. This will influence the city leadership and land use and transport planning as part of the management of a city. Attitudes are formed over time. Some say the bottle is half full, others that is it half empty. Some cities are known to have caretaker regimes, while others have more activist regimes striving for change. Attitudes may be influenced by the assessments of what economic situation a city is in: growth, stagnation, depression, as it may also influence individual and political outlook on the dimension market rule versus regulation.

Nordregio in the report *From trends to visions* points out two major urban problems: uneven economic development and the competitive position: “some of the Community’s most acute problems associated with the lack of economic opportunity, low incomes and generally poor quality of life are found in urban areas. The growing tensions within European society are evident particularly in the serious level of social exclusion in an increasing number of inner city or peripheral urban areas”  

These problems of lack of cohesion and competition underline that the economic situation of a city is important and will together with the political ideology influence the city’s planning response. Brindley et al have proposed a typology based on these dimensions, the connection between the felt economic situation, the attitudes to the market and the strategic (land use) planning taking place.

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32 Brindley Tim, Yvonne Rydin, Gerry Stoker 1996 *Remaking planning. The politics of urban change* Routledge
The typology will be used to analyze planning response and in the comparison of instruments used.

<table>
<thead>
<tr>
<th>Perceived nature of urban problems</th>
<th>Attitude to the market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buoyant area: minor problems and buoyant market</td>
<td>Market critical</td>
</tr>
<tr>
<td>Pockets of urban problems and potential market interest</td>
<td>Perceived nature of urban problems</td>
</tr>
<tr>
<td>Serious problems and stagnation</td>
<td>Market rules</td>
</tr>
</tbody>
</table>

Figure 2-2 Typology of urban problems and attitudes to market or regulation.

Stoker and Mossberger present another typology of regimes, which also can be useful in an analysis of city development:

<table>
<thead>
<tr>
<th>Defining characteristics</th>
<th>Organic</th>
<th>Instrumental</th>
<th>Symbolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Maintain status quo</td>
<td>Realize projects</td>
<td>Redirect / transform ideology or image</td>
</tr>
<tr>
<td>Main motivation of participants</td>
<td>Local dependency</td>
<td>Tangible results</td>
<td>Expressive politics</td>
</tr>
<tr>
<td>Basis for sense of common purpose</td>
<td>Tradition and social cohesion</td>
<td>Selective incentives</td>
<td>Strategic use of symbols</td>
</tr>
<tr>
<td>Quality of coalition congruence of interests</td>
<td>Political communion</td>
<td>Political partnership</td>
<td>Competitive agreement</td>
</tr>
<tr>
<td>Relationship with environment:</td>
<td>Exclusive orientation</td>
<td>Exclusive orientation</td>
<td>Inclusive orientation</td>
</tr>
<tr>
<td>Local</td>
<td>Independent</td>
<td>Dependent</td>
<td>Dependent</td>
</tr>
<tr>
<td>Non-local</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2-3 Typology of urban regimes.

When I have been looking for the role and impact of land use and transport planning in the cities, I have been struck that politicians and top administrators in the interviews were primarily occupied with the future livelihood and conditions for people. Land use and transport planning were seen as a tool to safeguard and improve people’s daily life. How they perceived the future problems and their attitudes to the market would therefore guide their actions within the institutional framework given.

2.2.2 The growth of cities

Jane Jacobs inspired a whole generation of city planners with her book *The Death and Life of Great American Cities*. She criticized the planning and urban renewal policies of the 1950s, which destroyed communities and created isolated, unnatural urban spaces. Instead of zoning, Jacobs advocated dense, mixed-use neighborhoods. In the books *The Economy of Cities* and *Cities and the Wealth of Nations* she claims a) that cities are the primary drivers of economic growth...
development, and b) that it is the city not the nation-state, which is the true player in the global economy. Both these ideas are important theories for this study. Firstly the city as the main driver in the economy underpins the Logan and Molotch argument commented on below and indeed the policies making cities “engines” in development. Jacobs’ main argument is that all economic growth derives from urban import replacement. Import replacement is when a city starts producing locally goods that are formerly imported, e.g., Tokyo bicycle factories replacing Tokyo bicycle importers in the late 1800s. She claims that import replacement builds up local infrastructure, skills, and production, and also that the increased produce is exported to other cities, giving those other cities a new opportunity to engage in import replacement, thus producing a positive cycle of growth.

In the book *Cities and the Wealth of Nations* she takes this role of the city further and discusses the consequences of considering the city first and the nation second, or not at all. There are two sides to this argument, firstly, as this study will show, that cities are far more ingrained and involved in the global economy than before and possibly this process is increasing in speed (the term *Glocal* - the global economy impacting on the local area, is often used of these processes). Secondly, land use and transport planning in the cities is clearly influenced by the changing role of the nation state. The nation state is “attacked” from the above by international and supra national organizations like the European Union and from below by demands of more self-rule and following Jacobs’ theory by more self-reliant city economies. This development has been coined the “worm-eaten national state” (Veggeland, 1998). The division of labor is the basic formative force of cities “cities are places where adding new work to older work proceeds vigorously. Indeed, any settlement where this happens becomes a city.” (Jacobs 1970:6 cited from Omland, 2002). The continual development of new products and work methods are the necessary conditions for and the engine in cities development and growth. The growing numbers of activities the division of labor creates, tend to seek together and form an agglomeration or a cluster of firms exchanging products and services. In the theory of agglomeration economies the closeness between firms creates a basis for confidence, trust and cooperation that reduces transaction costs, and makes a good atmosphere for innovation and growth. The complexity, diversity and versatility of the city should be protected according to Jacobs, and not be reduced as planners do by their zoning: “The future cities will be more intricate, comprehensive, diversified, and larger than today’s, and will have even more complicated jumbles of old and new things than ours do. The bureaucratized, simplified cities, so dear to present-day city planners and urban designers, and familiar also to readers of science fiction and utopian proposals, run counter to the processes of city growth and economic development.” (Jacobs 1970:250 cited from Omland, 2002)

Logan and Molotch have developed the theory of cities as growth machines, a view not far from Jane Jacobs. “Markets are not mere meetings between producers and consumers, whose relations are ordered by the impersonal “laws” of supply and demand. The fundamental attributes of all commodities, but particular of land and buildings, are the social contexts through which they are used and exchanged.” Any piece of real estate has both *use value* – your home, and *exchange value* – generating rent to owners.34 The sharpest contrast and the most important is between residents who use place to satisfy essential needs of life, and

entrepreneurs who strive for financial return, ordinarily achieved by intensifying the use to which their property is put.

They explore the conflict between use value and exchange values in cities, examine the forms of this contradiction, and analyzes how it is ordinarily managed. This conflict they claim determines:

- The shape of the city
- The distribution of people
- The way they live together

In light of this tension a better understanding of the political dynamics of cities and regions can be made, and also to discover how inequalities in and between places – a stratification of place as well as individuals and groups – are established and maintained. The importance of land use and transport planning in allocating and deciding the conflict between use value and exchange value is underlined: “The planning process is, of course, inherently political, any land-use designation distributes use and exchange value. Whether building a public amenity or allowing a high-rise office tower, officials making decisions on location, parking, security, and access to transportation will affect the balance between public and private gains.” Even if this statement of planning as a political process and hence that planners take part in such processes is fairly obvious, very many professional planners view their role as neutral and objective. That role comprehension came through in the interviews for this study, but there were also other planners who openly admitted they enjoyed such a political role and the impact they could make.

According to Logan and Molotch there is one issue that consistently generates consensus among local elite groups. The desire for growth creates consensus among a wide range of elite groups, no matter how they are split on other issues. “elites use their growth consensus to eliminate any alternative vision of the purpose of local government or the meaning of community. The issues that reach public agendas (and are therefore available for pluralists investigations) do so precisely because they are matters on which elites have, in effect agreed to disagree. Only under rather extraordinary circumstances is the consensus endangered.” This view of elite groups as important in city growth processes brings us to the new-institutionalist theory and the theory of Clarence Stone on how cities are governed.

### 2.2.3 Instruments and Institutions

In development the planners use land use planning instruments (zoning, density, type of use, access, etc.) that are defined by the planning act. When a local plan (reguleringsplan) with ordinances (reguleringsbestemmelser) is adopted, the type of value and the amount of value of the land/properties is decided, but also new rules of how the area can be used are created, a new institution is formed. In the development process, one land use is converted to another, but the same occurs for the institutional arrangements regarding land use as these are also converted. The concept of institution has a multiple and complicated character. Planning is at the same time ‘an institutionalized practice’ and ‘a factor of institutionalization’, a duality that is according to Buitelaar (who builds on North, see below) complicated to capture.35

Uncertainty can be and is often reduced by using institutions. Property rights on land, means that there are rights and consequently duties with respect to a particular piece of land. Institutions are created and changed, after which they are used. The advantage of this more dynamic and less deterministic view on institutions is that the ‘duality of structure’, that is, the difficulty of separating structure and agency when it comes to explaining social behavior is incorporated. “It is with this approach not necessary to distinguish between the transaction costs that are caused by agencies using the institutions and the transaction costs that are caused by agencies when they make these institutions, these are interwoven” (Buitelaar 2007:49).

In chapter 2.4.2 Critical Realism a further discussion on structuration and Bhaskar’s Transformational Model of Social Activity follows.

**Ruling coalitions.**
Cities may have huge transport problems and are therefore important places where to develop more sustainable transport. Hence, managing the city land use and transport development – the ability to change the course – is important. Regime theory as developed by C Stone, is one theory I will use in the comparison of Kristiansand, Aalborg Norwich and Davis.

A regime is defined as a set of arrangements by which a community is actually governed, or the informal arrangements by which public bodies and private interests function together in order to be able to make and carry out governing decisions. (Stone 1989:6) The informal arrangements by which a community is governed vary from city to city, but is driven by two needs:

1) **institutional scope** (that is the need to encompass a wide enough scope of institutions to mobilize the resources required to make and implement governing decisions)
2) **cooperation** (the need to promote enough cooperation and coordination for the diverse participants to reach decisions and sustain action in support of the decisions)

**The rules of the game and players.**
The Nobel laureate Douglass North defines institutions as:

- **formal rules** (the state system with laws, judiciary, decisions, apparatus)
- **informal rules and constraints** (norms for behavior, conventions and rules of conduct, etc.)
- **sanction mechanisms** to both the formal and informal sphere (from psychological constraints to police by-laws and planning ordinance)

The institutions define the rules for human conduct and what organizations may and may not do (and think). The **Institutions are the rules of the game** and the **Organizations are the players**, as North formulated it: “institutions are the rules of the game – or – humanly devised constraints that shape human interaction in consequence they structure incentives in human exchange, whether political, social or economic.” (North, 1990 page 145)

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36 Hedegaard Sørensen (2001) define institutions as *Eksisterende rutiniserte praksisser og forståelser*
37 Johan Galtung had a similar concept in the BCR-gang (BKF-gjengen), the Bureaucrats, the Capitalists and the Researchers, 1977 Gyldendal
Incentives for innovation:
“The institutional structure defines organizations that will be viable at any moment of time. Organizations exist in the economic world of scarcity and hence competition. The degree of competition will be the primary determinant of the incentives of organizational entrepreneurs to innovate new institutional rules. Secure monopolies will have little incentive; competitive markets will produce more incentive to innovate, although it is not the competitive conditions of the economic theory of perfect competition but rather the institutional environment of organizations – the framework of rules and norms – which determines the incentives for innovative activities.” (cited from LOKTRA op. cit. page 26)

The World Business Council for Sustainable Development highlight the role of institutions in the report: Mobility 2001. World Mobility at the end of the Twenties Century and its Sustainability. Institutions establish the context by which a city or region or country determines:

1. which sustainable mobility goals to pursue and the priority given to each.
2. which levers are acceptable to use to achieve any particular goal
3. how intensively these levers can be used
4. the constraints that may be imposed on their use

“Cities are the ultimate determinant of whether and how sustainable mobility is achieved.”

Being active or passive matters:
“New technology is intriguing and dominates in the media, but institutional capability determines the pace and direction of change in mobility systems. Political institutions determine which transportation modes get favored through subsidies, regulations, and protection from competition. Political and social institutions exert enormous influence over whether infrastructure can be built, where it can be built, and what it costs to build. Economic institutions – especially large corporations – can either take a lead in encouraging change or drag their feet and make change difficult and expensive.” (Mobility 2001 pp 7-9)

2.2.4 Definition of planning

Andreas Faludis’ A Reader in Planning theory from 1973 introduced the distinction between theory of planning and theory in planning. The reader also collected some of the most influential papers on planning, like Banfield’s Rational planning model and Lindblom’s Incrementalistic model. This study is mostly concerned with the theories of planning in trying to explore the role of land use and transport planning and how it functions. The rational planning model, also called the synoptic model, as described by Banfield has been the norm for planning legislation and practice in many years. It implies the setting of goals and identifying the possible alternatives and means to achieve the goals, an ends-means process. This definition of planning fits the rational model: “Planning is the process of preparing a set of decisions for action in the future, directed at achieving goals by preferable means” (Dror in Faludi 1973:330). There is a vast literature on normative and positive planning theory and planning models, which we are not going into here.

The needs of this study is a planning definition that covers its role in relation to the three following themes:
• The development wanted, aimed at, wished
• Vulnerable society. Risk and resilience. Preventive of unforeseen consequences, Brox’
demand for planning not to lead to: “Where we don’t want to end.”
• Impact on the discourse, to what extent has planning facilitated change, innovation or
laid the ground for a new course?

Assessment of planning then can be related to these three sides of the planning definition:
1. Conformance: to what extent is the goals achieved?
2. Performance: to what extent has the planning and plans opened up for alternative
views of the future?
3. To what extent has planning and plans contributed to a broader discourse and
challenged any hegemonic discourse positions?

Patric Geddes advocated a regional view and the following slogan for planning: Survey,
Analysis, Plan. Erik Lorange the former planning director in Kristiansand, followed Geddes’
ideas to a large extent when the plans for the Kristiansand region were outlined in the fifties.
The Norwegian peace researcher Johan Galtung uses a similar metaphor for planning and
problem solving as Geddes: Diagnosis, Prognosis, Therapy. Amitai Etzioni “Mixed
scanning” (in Faludi 1973) argues for a rough scanning of the field from high above and then
go into more detailed planning on the most important issues. The most important problems
should be adhered to while for most of the other problems solutions can be improvised. He
puts more weight on the problems than on the opportunities, more use of tactics than strategy.
Rolf Jensen advocates a similar planning model in his article “Nær og Fjern analyse” (Jensen
1975).

Ottar Brox defines planning as: “Planning is to clarify as far as possible, the connections in
the world, create a collective conscience about these connections, and localize those
opportunities to change the path of those processes, the results of which we in the longer term
This normative definition differs from the broad planning definition in ch.1.2, which was used
to explore planning practice in the cities.
2.2.5 Urban structure and transport

I will use much of the theory and models presented by Karin Book and Lena Eskildsson who have asked the question “The urban structure – why and how?” The urban structure is affected both by general social forces and by power/development control. Development control is the concept they use for the structure of control that affects, influences or controls the physical changes in a city. The following model shows the relationship between the urban structure, the transport structure and development control.

*Figure 2-4 Model of land use and transport system and control.*

![Model of land use and transport system and control.](source)

The shift from the “blueprint” land use and transport planning the first decades after World War Two, to the market turn in the new 21st century affects firstly the Development Control in the model. Depending on political ideology the Development Control can be applied with different strengths and timings (reactive, active, proactive – a term closer to pre-emption). The use of this instrument is also very dependent on the dual relationship between the urban structure and transport structure. New activity influencing transport demand, which again put pressure on the transport structure, can be viewed in different ways and hence the Development Control can be used to support new activity or limit such activity. On the other side the accessibility (the car being the most important mode) generates demand on the urban structure. This demand for improved accessibility has to a large extent led to urban expansion in the recent years, demonstrating a lack of willingness or ability to use Development Control to guide urban development or an acceptance of this development by the politicians.

This model is in the next figure detailed further to show the contexts in the two structure boxes.

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The urban structure is mainly formed by the building structure where land values, localization of homes and jobs, density and centre structure are important elements. Likewise the transport structure is formed by the demand for transport showed by the origin and destination of trips, the modal split and the transport supply decided in parts by the infrastructure. Accessibility refers to the ease of reaching destinations. People who are in places that are highly accessible can reach many other activities or destinations quickly, people in inaccessible places can reach many fewer places in the same amount of time. The mode of transport is also important. Dense cities are highly accessible on foot and hence ideally a feed-back from the Building structure box to the Accessibility box could included.
The elements in the model are:

I  Land use and transport planning and control
II  Building structure
III  Transport structure
IV  Accessibility
V  Transport demand

These elements form the mental picture I have used as guiding for the study in order to acquire knowledge about each city, to collect data and as background during analysis.

2.2.6 The municipality set in a national context

Above we have focused on the city and a model on how land use and transport in the city can be managed through development control, which is a model that goes in depth of the changes in the built city environment and how urban structure and transport interact. In the next model the focus is on the how the city interacts with the outside stream of events and driving forces.40 A key focus of the research was on understanding how different forces and the ways in which the participants in the local policy process understood and acted on the land use and transport challenges ahead. The concept of sustainability in a market-led economy is ambiguous and requires redistribution of values. Different actors will, according to their time horizon and how costs and benefits relate to the particular context and spatial impact, view sustainability differently. The different actors have also different material interests in the local policy. The research attempted to clarify the decision making process in each city and through the comparative study highlight the different local processes.

The approach to understand land use and transport planning and processes over time can be called broadly interpretive. Three dimensions or realms are distinguished: Territory, Sector and Politics. The three forces will entrench and influence the municipality (city). They may pull in the same direction and be creative forces in building the city, but they may also be dispersive and work in opposite directions. In the next figure the land use and transport events in the city are shown in the circle in the middle. Around this circle the three dimensions are symbolized with a triangle.

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**Territory / geography**

*Territory* is used about city life in general and how people see their daily life, which is very dependent on their time budgets. The land use and transport structure and the modes available decide to a far extent how the daily tasks of bringing children to the nursery, getting to work, shopping, etc. are put together. The spatial context is also influencing their views on the local discourse on sustainability and the measures to be used.

In the city the national regulations are transformed into spatial effects with both wanted and unforeseen consequences. Effective land use management is often seen as a key to meet the climate challenge but requires control of land use across municipality borders not yet achieved in Norway. The territory of a city may or may not be the same as the municipal territory. This gives rise to border effects and these will vary in strength and importance according to the local geography. The well-known example is the rich jurisdiction close to the city where wealthy people have located to live in a better environment than in the city.

**Sector**

*Sector* is used about the land use and transport planning realm covering the land use and transport planning process and the organizations and actors participating, such as the city planning office, the Highway Agency, the bus companies, etc. An important part of the *Sector* is that most of the Government interventions come through the vertical relationships between the levels. This put the *Sector* in special position regarding information, knowledge and
agenda setting. There exist an information privilege and an agenda setting privilege in such organizations with strong vertical relations and networks (Falkemark 1999).

There are doctrines and forces tied to the different sector administrations and agencies, and to the professions as transport planners, spatial planners, etc. that may override local interests. These organizations are central in communicating between the levels; both in expressing the local needs to the central authorities and in designing how national requirements shall be handled locally. Planning professions and sector are elements in an institutional perspective, in which norms, history and organization are important parts. Such organizations may develop self-interest in the upkeep or development of its field because they represent sector interests, traditional organizations, professional careers and jobs. The Highway Agency (HA) comes in this study out as the “winner” in the sense that this organization has achieved its goals, while the strong visions and goals of creating a more environmentally sustainable transport system in cities lost.

**Politics**

The third group of forces is attached to local politics and party politics. Politics cover the formal decision making in the city council, but also the wider governance processes involving from time to time with different intensity stakeholders and the public. Public engagement tends to rise when projects are implemented. Politics therefore represent the much wider networking and social life than a more limited focus on land use and transport planning decisions would reveal.

Party politics, which is the most important institution and group of actors in the political system in Norway and Denmark, are also organized along party lines in the municipalities. They decide to a large extent the local priorities of tasks and resources. An example that will be outlined below is how the task of improving the public transport had to be put at rest, in order not to interfere with the task of getting road investment money from the government (see ch. 4.5.2). The political parties have an important function to mobilize local support and participation for national policies, they thereby create integration between the local and central level, and give legitimacy for the national politics implemented locally. In England and USA, as will be seen in the case studies, this dimension – Politics – had a different function.

Party political programs did not come out as important in the cases looked into in this study, but the liberalist ideology and how the local politicians have transformed it into local strategies seems very important in the explanation of local actions. It may be argued that this is part of the pressure on the “Scandinavian welfare” model in which the unitary state (enhetstaten) is the tradition, towards more market solutions and federal models with local self-rule. In the cases addressed in this study, a continual power game between the national level and local level seems to be ongoing, albeit with different strengths and effects. In some cases there is active cooperation between the national and the city level, while in others the city acts more like an autonomous authority.

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42 Well-known from transport planning, but spatial planners also have fixed doctrines they try to implement regardless of local context.


**Analytical model**

Territory, sector and politics can be looked at as complementary and overlapping dimensions. Successful national interventions on the local level require local support, both politically and through the sectors. The territory is the arena where the intended and unintended effects of the interventions will be felt. The politicians and political parties meet the reactions from the public directly and they have to be accountable for the policies and interventions in local elections. Politicians and planners in the sectors may or may not have a strong local foundation, and they may or may not try to influence the interventions to “fit” the local circumstances and territory. The politicians seeking reelection, must be very attuned to the common feeling among people and their experiences in their daily lives.

The relationship between the three forces territory/geography, sector and politics can be described as theoretical and empirical connections. They may constitute an analytical model to map the strength of each of these forces and the relation between them. They have both formative and constructive effects, as well as conflicting effects, and hence they may both be complimentary and in opposition to each other.

Institutions are the “rules” and organizations the “players”. The rules can be changed from above as intended changes, but they are also formed and developed from the bottom through daily practice. Informal institutions play an important part, but a part which is difficult to reveal.

The relationship between the three groups of forces, regardless of whether one sees them as conflicting forces or constructive forces, will affect both how far and in what direction the development will go towards stronger or weaker institutions, with democracy and with the integration on the local level.

### 2.2.7 Double talk and fuzzy planning.

Many of the key notions associated with spatial planning are essentially ‘fuzzy’ in their nature. For example, while almost everyone accepts ‘sustainability’ as an important goal of planning, the actions of the actors involved can make the achieved ‘sustainability’ minimal, or even counterproductive. Decision-makers may delegate implementation of policies with insufficient powers to ensure that the desired outcome, i.e. non-implementation of an adopted policy can be achieved. The planners have then been defeated by a lack of clarity in their basic concepts and doctrines.45 Such situations and defeats are common in planning.

Brunsson talks of such situations where goals and actions are widely apart as hypocrisy and double talk46. Decisions can be seen as a special type of talk that indicates a will to act and choice of action. A decision is in traditional theory taken to be indicative of a corresponding action that will occur in the future, or at least the decision is assumed to increase the probability of such action. The following is an example of how organizations talk: “The


intensity of car traffic within the city of Stockholm has long been a controversial issue. Traffic increased in Stockholm during the 1990s but city officials could refer to the decision they made at the beginning of the decade to reduce traffic by 30 percent in fifteen years.” (Brunsson 2007:111) Traffic was allowed to grow without interference from politicians since the politicians had expressed their intention “in principle” to reduce traffic. To talk is one thing, to decide is a second, and to act is yet a third. It is possible to act without making a decision or talk about it, and it is possible to talk and decide without acting on it. The example demonstrates that it is possible to act contrary to what has been said or decided. The result is hypocrisy which means “the assumption or postulation of (moral) standards to which one’s own behavior does not conform.” Hypocrisy is tied to actors: individuals or organizations, and is a kind of inconsistency within an actor. It is common to talk of implementation problems when the organization does not execute the visions stated or the decisions made, but hypocrisy is not necessarily a problem, sometimes it can be a solution according to Brunsson. However, this raises ethical questions about politicians’ accountability, which I will come back to in chapters 9 and 10.

Hypocrisy is a response to a world in which values, ideas, or people are in conflict, the fuzzy and contradictory world that planners are confronted with daily. There are conflicts or tensions between ideology (reduced car transport) and practice (traffic generating projects). Modern organizations are squeezed between ideology and practice. Success in one dimension often decreases the success in another. Hypocrisy is a way of handling conflicts by reflecting them in inconsistencies among talk, decisions, and actions. The decision to decrease traffic in Stockholm is the decisive precondition for the traffic to keep growing. The decision to decrease traffic in Stockholm made it easier to gain acceptance for the fact that it was actually increasing; it weakened the arguments of those who opposed the increasing traffic – eventually.

Municipalities are subject to strongly conflicting demands. Moreover, it is integral to them that they are able to deal with conflicts that cannot be dealt with elsewhere, and that they are structured to facilitate this task. For local and central governments that must handle controversial issues, it is according to Brunsson often easier to act contrary to the ways in which they talk, and wise to talk contrary to the ways in which they act – double talk.

The political organization is characterized of a large variety of ideas, needs, demands and try to meet the values and inconsistent expectations of different groups in society. The surroundings are characterized by constant change.

Political organizations have three characteristics:

- Talk (speech, understanding, social interest, development of ideas, values)
- Decisions, often ambiguous
- Products – ideologies, e.g. a prestige building as a product sold to gather more support and supporters

Brunsson uses the term hypocrisy about the double talk one finds when plans and decisions are separated from action. For example: promote sustainable development and more public transport use, but reduce the subsidies to PT next day.
2.3 Methodology

Methodology is concerned with the form of knowledge one assesses to be valid related to the research question. In other words, methodology is guidelines on how the research shall, ought to and can be performed to make the research results acceptable as valid knowledge. A method consists of rules and techniques on how to collect, adapt, analyze and present empirical evidence. Rationality is not only logical, analytical rationality, but rationality is also based on experience with aspects tied to the context and subjects intuition (Lysgård 2000).

2.3.1 Theory based search for data?

As soon as the historian E H Carr found the main data sources he started to write, usually not the introduction, but anywhere, and thereafter reading and writing took place simultaneously Clausen (1986:56). My working method has been similar and I have used the historians’ cyclic methodology starting with a more or less well defined research question, which was refined through the research process:

Search for data > analyses > build hypothesis > back to the empirical > revise hypothesis > search for data >>> and so on in a cyclic research process.

The following figure attempts to illustrate this cyclic process.

![Cyclic research process diagram](image)

Figure 2-7 The cyclic research process

In addition to the main stream in this cyclic process one should according to Kleven look for the “unexpected”, the little “extra” which made that the situation never became as expected because mechanisms interacted. These comments are based on his own experiences on such a research process (Kleven 1990 translated by author):

1. Repeated shifts between empirical data and theoretical reflection
2. With increasing understanding the theoretical perspective has shifted and with that the direction of the study
3. Research questions, which at the outset made up a driving force became less interesting and were replaced. Several thoughts may rise as what about intentional acts and non-intentional acts, what about feelings, were different sorts of rationalities are involved.
4. At a particular point the alternation between the search for understanding and the
search for possible explanations must close. The hermeneutical circle must be
transformed to a linear description, which is very difficult.
5. The unbalance or time-difference between the collection of data and the reflection on
the data raises a validity question. Is the “final” reflection based on the most relevant
or interesting data?

2.3.2 Critical Realism as philosophical basis

The research approach has been inspired by the philosophy of Critical Realism (CR), strongly
associated with the works of Roy Bhaskar. CR acknowledge that the world consists of objects
that possess emergent powers in virtue of their relations to other objects, and that these
relations can form structures and exercise powers in the form of mechanisms, that may not be
perceived by us as related to empirically observable effects. Mechanisms are then understood
as structures that exercise powers and have real effects, although there may not be any
immediately observable connection between mechanisms and their effects. Science should be
understood as an ongoing process in which scientists improve the concepts they use to
understand the mechanisms that they study. It should not, be about the identification of a
coincidence between a postulated independent variable and dependent variable.

CR prescribes a social scientific method which seeks to identify the mechanisms producing
social events, and makes the observation that it is also highly plausible that a mechanism will
exist but either a) go unactivated, b) be activated, but not perceived, or c) be activated, but
counteracted by other mechanisms, which results in it having unpredictable effects.47

The Critical Realist approach places emphasis on the mechanisms that produce events and on
the structures that support and underpin those mechanisms. The major importance is set not
on the empirical level of the observable events, but on what produces events, i.e. on their
causes. This approach draws attention to the crucial factor that not all reality is perceived
through empirical procedures, and the mechanisms we are looking for are in general not
evident from observation. Reality is more than what our senses perceive. According to
Critical Realism the reality is layered in three levels or domains: the empirical – containing
our experiences of the world, the actual – containing the events, part of which we never get to
experience, and the real – containing the causal mechanisms we want to identify. Below is a
figure showing the relationship between the concrete and the abstract.

47 Based on Wikipedia: Critical Realism.
The three different domains spring out of the belief that objects possess emergent powers, i.e. capacities within the objects which exist whether exercised or not. At the lowest level called structure in the figure are the causal forces and tendencies, which may or may not lead to observable events. That is because causal forces may neutralize, prevent or reinforce a causal tendency, thereby both produce or prevent empirical events.

Bhaskar draws a distinct border line between the more basic strata of the natural world and the more complex strata of the social world, a discussion that leads to the Transformational Model of Social Activity: “Society is both the ever-present condition (material cause) and the continually produced outcome of human agency. And praxis is both work, that is, conscious production, and (normally unconscious) reproduction of the conditions of production, that is society. One could refer to the former as the duality of structure, and the latter as the duality of praxis”.

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This Transformational Model of social activity is often drawn as in the following figure:

![Diagram of the CR Transformational model of social activity](image.png)

*Figure 2-9 The CR Transformational model of social activity, after Bhaskar 1989.*


Societal *structures* can be understood as framework conditions that through *mechanisms* guide and direct actions and shape *events*. Structures and agency/actors exist in a reciprocal relationship, but with an important time-lag: We are as humans born into societies already characterized by a number of structures (economic, legal, cultural as well as spatial/physical). Through our actions we may reproduce, modify or even replace some structures, but we do not as individuals create the structures from scratch when we awake in the morning – they are already there, enabling some actions and putting constraints on other activities.

In this study I try to trace the mechanisms having caused the events, and through that also throw light on the structures framing and directing the mechanisms. Moving from the concrete empirical events to the domains of the *actual* and the *real* is done by abstract thought processes opening up for different interpretations, but always with the aim of creating holistic explanations.

### 2.3.3 A stream of events

*History of land use and transport planning*

The recent history of land use and transport planning in the cities is looked into covering a perspective of twenty years. It is therefore a study of what has happened after the Brundtland report was published in 1987, but some paths were followed further back in history. Cities are fast changing many places, from core cities hierarchically positioned in the geography (Christaller) to sprawling polycentric urban fields, a change both facilitated by the car and driven by the car. The ideologies of new liberalism and new public management have forced changes in, and are changing contemporary planning; some call this a shift from Government to Governance.

The driving forces that produce changes in land use and transportation at the local level are many. In this study we look at a stream of events over time. The events are those representing or leading to distinct changes in land use and/or transportation planning, policy and on the ground. At one level we describe the events and their role among the total stream of events forming the land use and transport in the local community. At another level we look below the surface and ask how initiatives were conceived and how they were applied, we are
especially interested in the three elements that can be conceptualized as mechanisms, relationships and agencies.

In a city there are over time certain events, which make a profound change, like the building of the Guggenheim museum in Bilbao. On a smaller scale building a big multi-storey car park changes the supply of parking over night, which in a market leads to lower parking prices and greater demand for parking. Some of the incremental events sum up over time to become important, while other events make a substantial impact straight away, like location of a superstore.

A model can be used to illustrate and explain complex situations as this illustration of the city in a stream of forces. It is a tool to systemize, make clear and explain the complex reality.

Simplicity can be very valuable for oversight and understanding, for how this and that are joined together. But simplicity is also the weakness of the model, the difference between the model and reality tends to increase the more complex, dynamic and conflicting the real world becomes.

2.3.3.1 Path dependence

In this project we use two different models for exploring and understanding the city viewed as a stream of events. The first model is how Thomas P Hughes\textsuperscript{49} used path dependence to explain changes in socio-technical systems. Hughes defined the model with these concepts:

\textbf{System builders} goal driven entrepreneurs who form, develop and try to manage the development and expansion of the system.
\textbf{Phases of Development} time periods, each recognized by special tasks and problems to be solved.
\textbf{Bottlenecks} technological, institutional and organizational problems occurring in a system, which must be solved before the system can develop further.
\textbf{Momentum} is the inertia or self-weight of the system, which makes it difficult to change track. This has relevance for the competition with other systems.

**Veto-points**  *decision points in a planning process where different interest groups or stakeholders can block, delay or change the actual plans or proposals.*

It is not possible to recreate history, as it was. A true as possible story is the aim. Path dependence is used to explain the relatively stable, long lasting political and institutional patterns that can be observed – but also changes and breakdown in these patterns. Path dependence – self-reinforcing forces or learning – can be a helpful tool to explain change in complex socio-technical systems as city land use and transport planning is.

### 2.3.3.2 The Garbage Can model

The Garbage Can model as developed by Cohen, March and Olsen (1972) can be used to describe flows and events in planning and decision-making processes. The model can be looked at as the meeting of four streams (after Olsen 1994):

- **A stream of decision opportunities.** Situations were the organization shall take action on a problem and make choices regarding organization or contents of policies.
- **A stream of problems.** All kind of problems crop up in processes. They may be created internally in the organization or may be coming from the outside.
- **A stream of solutions.** The solutions may be answers to a problem, but solutions can also be the source of problems. Until solutions are proposed, one often may have unclear ideas about the problem. The solutions may be new techniques, standardized solutions i.e. from traffic models, increased budget or employing new people.
- **A stream of participants.** These participants bring interests, knowledge, energy, contacts and both problems and solutions.

This model breaks the conditions set for Banfield’s rational planning model. The Garbage Can model sees decisions as the more or less contingent meeting of these four streams of participants, decision opportunities, problems and solutions. There are two processes, which are particularly important for the output:

- **The process of activation,** which concerns who will be activated and how they will be organized. It is a process that lead to who may and will be coupled to what decision opportunities.
- **The process of defining,** which decides which problems and which solutions are defined into decision processes and how important the participants regard the decisions made.

The organizational structure often decides how the four streams are coupled together and thereby it influences the decision outcome. If the coupling of the streams is based on structural and administrative set ups, then to a large extent it is clear which actors solve which problems. If four flows flow together with no restrictions on who participates and what problems taken up, the decision process will be more uncertain and contingent.

The Garbage Can model is an empirical model that many regard as suitable to study decision processes with many goals, unclear means – ends relationships, and unstable and unclear patterns of influence and participation. With the shift towards more market solutions and increasingly more participants in LU&T planning, I see this model as very helpful in
describing and understanding the course of events in each city. Combined with the philosophy of Critical Realism outlined above it will be used to explain the mechanisms that cause the events.

2.3.4 Power

Robert Dahl in his classic book *Who Governs? Democracy and power in an American City* studies how the city of New Haven (164 000 inhabitants) was governed over a period of 250 years (Dahl 1961). For the study he asked the question:

> In a political system where nearly all adults may vote but where knowledge, wealth, social position, access to officials, and other resources are unequally distributed, who actually governs?

Dahl formulated this view of power “power is a relation among social actors in which one social actor A, can get another social actor B, to do something that B would not otherwise have done”

The ideals about democracy lead to: “the relationships between leaders and sub leaders will be clothed in the rituals and ceremonies of "democratic” control, according to which the leaders are ”representatives” of a broader community.” (page 102). Dahl also points out the importance of feelings and tacit knowledge (page 307) “Surrounded by uncertainty, the politician himself necessarily imputes a structure and meaning to the situation that goes beyond empirical evidence and scientific modes of analysis. What the politician imputes to the situation depends, in sum, not only on the information at his disposal but also his inner predispositions (optimism or pessimism, negotiation or toughness, caution or boldness, etc).”

The pillars of democracy (albeit far from the ideal) are, according to Dahl:

1) the physical, economic and social conditions,
2) the laws and
3) the customs, the customs or traditions often is the dividing difference between democracy and not.

He also ends up with a question: *An elite no longer rules New Haven, but the disappearance of the elite rule has not led to the emergence of rule by the people. Who, then, rules in a pluralist democracy?* (Page 86)

Weber’s view of power (1971:88):

- Legal command as in the bureaucracy. Through a system of rules and norms, legitimate power can be exercised.
- Traditional command. The exercise of power is legitimate in the belief that the authority that is exercised is holy.
- Charismatic command. The authority lies in the belief that the person wielding power has special gifts.

Lukes (1974) includes both individual and structural aspects of power when draws three dimensions of power: The first dimension is “power as force over”. The second dimension of power is the hidden power in structures, etc. that prevent certain views to be expressed, as power to set the agenda. The third dimension of power is the powerlessness caused by
interests not being articulated “by influencing, shaping, determining (men’s) very wants and thereby secure compliance by controlling their thoughts and desires” (1974:23)

Haugaard is in an interesting article reflecting over the seven ways of creating power. He discusses among others Giddens’ structuration concept: “While it is true that the reproduction of structure presupposes structuration by actor A, it also presupposes the recognition of that action as ordered, or meaningful, by an actor B (structuration is a necessary but not sufficient condition for the reproduction of social structure).” This second act Haugaard calls confirming-structuring, a concept he prefers to restructuring. “This process of structuring and restructuring is central in the working of democracy: the losers in an election “are willing to confirm-structure the structuration practices of the victors so, in a sense, they consent to their own defeat”.

Flyvbjerg claims that to understand power one must widen Lukes’ perspective beyond structures to ask questions on relations. One must look at power as something more than possession of power, one must be concerned with how power is wielded (Flyvbjerg 1991:105-106): “Power is not something that is acquired, seized, or shared, something that one holds on to or allows to slip away...... power is exercised rather than possessed ......power is not an institution, and not a structure, neither is it a certain strength we are endowed with, it is the name that one attributes to a complex strategic situation in a particular society.”

This weight on strategy – the dynamic and the execution of power – leads to studies of processes in which How-questions are the important. Foucault according to Flyvbjerg wants to expand studies of power from the structural questions of who, what, where and why, to also include the question about How (Flyvbjerg 1992:107): “If I grant a certain privileged position to the question of ‘how’ it is not because I would wish to eliminate the questions of ‘what’ and ‘why’. Rather it is that I wish to know if it is legitimate to imagine a power which unites in itself a what, a why and a how”. The traditional view on power as represented by Dahl and Weber, was that power was held, but later power became something that was exercised through strategy and struggle. Power therefore is concerned with the relation between actors, but it is also attached to context and a specific time.

Bent Flyvbjerg develops a set of methodological guidelines for a ‘phronetic social science’ (2001) based on the old Greek intellectual virtues episteme, techne and phronesis. These can according to Flyvbjerg be characterized as:

**Episteme** Scientific knowledge. Universal, invariable, context-independent. Based on general analytical rationality. The original concept is known today from the terms ‘epistemology’ and ‘epistemic’.

**Techne** Craft/art. Pragmatic, variable, context-dependent. Oriented toward production. Based on practical instrumental rationality governed by a conscious goal. The original concept appears today in terms such as ‘technique’, ‘technical’, and ‘technology’.

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51 Cited from Flyvbjerg 1991 where he refer to Foucault (1980): The history of sexuality

52 Cited from Flyvbjerg 1991 where he refers to Foucault (1982): The Subject and Power
**Phronesis** Ethics. Deliberation about values with reference to praxis. Pragmatic, variable, context-dependent. Oriented toward action. Based on practical value-rationality. The original concept has no analogous contemporary term.

Phronesis (prudence) is a sense of the ethically practical rather than a kind of science. Flyvbjerg combines this concept with the consideration of power and poses four phronesis questions:

1. Where are we going with democracy?
2. Who gains and who loses by which mechanisms of power?
3. Is it desirable?
4. What should be done?

These four questions are the overriding questions guiding this case study. In this study both the structural side and the dynamic side will be used in the study of the four cities.

### 2.3.5 Agencies and actors

An understanding of the role and approach of the many agencies involved in the urban policy process will greatly aid effective policy development and implementation. Such understanding will also be concerned with issues of leadership and coordination in the policy process (Hambleton 1995:216).

Following Giddens: “structural power relations provide the context, but agency is vital in having the potential to continually transform this context through a process of structuration” (cited from Vigar 2002:23). Structuration theory aims to avoid extremes of structural or agent determinism. The balancing of agency and structure is referred to as the duality of structure: social structures make social action possible, and at the same time that social action creates those very structures. Agency, as Giddens calls it, is human action. To be human is to be an agent, although not all agents are human beings. Agents' knowledge of their society informs their actions, which reproduce social structures, which in turn enforce and maintain the dynamics of action. For Giddens, structures are rules and resources (sets of transformation relations) organized as properties of social systems. Rules are patterns people may follow in social life. Resources relate to what is created by human action; they are not given by nature (Wikipedia on Anthony Giddens, accessed June 2008).

The theory of structuration distinguishes between discursive and practical knowledge, recognizes actors as having knowledge that is reflexive and situated, and that habitual use becomes institutionalized. A social system can be understood by its structure, and interaction. Rules and resources available to and governing agents constitute structure. Authoritative resources control persons, whereas allocative resources control material objects.

For the purposes of this study I adopt the same view as Vigar on structuration theory: “a useful way of thinking about embedded rules and societal structures within which stakeholders (among them LU&T planners) operate, and subsequently how this limits their action. At the same time we should be aware that active agency may transform this structural context” (Vigar 2002:23)
Individuals play often a decisive role in change, but it is very difficult to reveal their true influence as this statement tells: “Sociological institutionalism does not explicitly allow for one crucial dimension of power: That of the power, will and capabilities of individuals and the values and ethics they bring given policy dilemmas.” (Mule, 1999, p 149, in Vigar, 2002, page 216) “It is certainly true that alternative explanations for many processes described in this book could lie in the whim, capabilities and will of powerful individuals.”

In a study of the location of out of town shopping centres Holsen showed that the developers used varied approaches to promote their cases:
1) informal (closed politics to secure support and “kill” alternatives) until carefully timed formal case handling start,
2) timing also important in relation to what otherwise attracts attention (other cases with conflicts, celebrations and holidays, before the summer recess, etc.)
3) choice of process and type of plan (confer the practice in Kristiansand, ch. 4.9) (Holsen 1993:12)

Lastly, on agency a comment on public choice theory, which is often according to Wikipedia referred to when discussing how individual political decision-making results in policy that conflicts with the overall desires of the general public. For example, many special interest and pork barrel projects are not the desire of the overall democracy. However, it makes sense for politicians to support these projects. It may benefit them psychologically as they feel powerful and important. It can also benefit them financially as it may open the door to future wealth as lobbyists (after they retire). The project may be of interest to the politician’s local constituency, increasing district votes or campaign contributions. The politician pays little or no cost to gain these benefits, as they are spending public tax money. Special interest lobbyists are also behaving rationally. They can gain government favors worth millions or billions for relatively small investments. They face a risk of losing out to their competitors if they don’t seek these favors. Everyone involved has rational incentives to do exactly what they're doing, even though the desire of the general constituency is opposite. (Wikipedia: Public choice theory) Although this was written with a perspective on the USA, it may be useful to think in terms of public choice theory when agency on the city level is analyzed.

2.3.6 The market turn, does it make long-term planning less important?

Globalization and increased economic competition together with fundamental changes in the geographical production and consumption structure, has put cities in a new competitive situation. (Amin and Thrift, 1994, Castells 1996) Globalization and internationalization has of course been with us for centuries, but the information technology and especially the Internet has brought faster change and greater complexity. The terms *Glocal* – that the global economy impacts on and becomes intertwined with the local – and *Raplex*\(^{53}\) – rapid change in complex systems – can be said to describe the world after the millennium. Castells (1996) has in his books on the information age and network society coined the concept “the space of flows” as a contrast to the traditional “the spaces of places”. Cities are conceptualized as “processes” and as nodes or hubs in globalizing networks. London for example has now

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become the centre in a polycentric system of some 30-40 cities within a 160 km radius from Central London, South East England.\(^\text{54}\) Other examples of how the global networks impact are the successful participation in the world economy on oil drilling technology in Kristiansand, and the moving out of concern headquarters from Norwich. The implications of the space of flows are twofold, firstly it makes it difficult to delimit the area for this study of land use and transport to medium sized cities, and secondly it makes it more complicated to assess to what extent “global” flows are associated with the physical development at regional and city scale.

This competitive situation is met with a turn to city branding and marketing to make the city more competitive and to attract inward investment, employment and people. The new competitive situation has also supported cooperation between business and authorities on a wider scale, with the effect that decisions are transferred from the formal democracy to the market, which puts more emphasis on the exchange value of place than the use value (Logan and Molotch 1987). There is a serious danger that citizens will lose influence that the Governance relations gain and is it likely that LU&T gradually will become marginalized by this public private cooperation and partnerships?

The LU&T planning context in the cities varies with: population structure and growth, migration, business structure and economic growth, land use and building land availability, transport infrastructure and city economic viability. These contexts are probably important factors in each city’s development. The history and tradition with regards to the relationship with central authorities (centre-periphery dimension) and local attitudes (demanding, begging, suffering) may influence the course of events greatly (the prime example in Norway is the mayor in Kristiansand who went out in the press and announced that the city did not want the headquarter of the dirty oil business, which went to the city neighbor Stavanger). Party political majority in the city council may influence LU&T planning in many ways. This will particularly be the case when a majority is constant over many years. Kristiansand is the only major city in Norway where Labour (Arbeiderpartiet) never was in position\(^\text{55}\). It has been ruled by a centre-right coalition for decades with the labour party more or less supporting the regime. Another example of long-time rule is Norwich where the Labour had the majority in the city council for seventy years. These questions have been used to guide the collection of data in each city and when analyzing the events and the mechanisms causing the events.

\(^{54}\) Hall Peter, and Kathy Pain (2006) The polycentric metropolis

3 Case study approach and research design

3.1 Case study methodology

3.1.1 Foucault and Critical Realism

The case study approach is inspired by the reconstruction of Foucault’s research and method done by Bent Flyvbjerg in volume one of his thesis from 1991: *Rationalitet og magt. Det konkretes videnskab*, and by Niels Åkerstrøm Andersen in *Diskursive analysestrategier*. Foucault never asks why or what to the statements, only *how*. Statements are positive events that through speech bring existence. This existence has four aspects: *object*, *subject*, *network of events* and *strategy*. The statements are always statements in a discourse. The discourse analysis field is “the collection of all actual statements (spoken and written) in their historic spread and their specific momentary value. The discourse is the final and factually delimited corpus of the spoken sequences that was formulated.” The discourse analysis is concerned with circling this corpus. It is a question about constructing the archive of a discourse, which in the end regulates what has been said and not said in a society. Only through the description of the archive of a discourse is it possible to see the discursive formation and transformation (Andersen 1999, translated by author).

Archaeology is the science of this archive (Andersen 1999:47). When the archive is formed, one can ask about the discourse formations. There are four discourse formations, or four collections of rules for the generation of statements:

- The forming of objects
- The forming of subjects
- The forming of statements
- The forming of strategies

Archaeology as method implies registration and mapping of events and practices, description of what they consist of and how they are put together. With focus on single and contingent events instead of causal connections, one tries to describe regularities, differences, transformations and other events that have been more or less important elements in the development and the formation of the practices and discourses studied. Confrontations, dominance and power struggles are important events to be recorded, since these are central elements in the further analysis of practice’s historical birth. Archaeology focuses on how a discourse looks in a historical cross-section (event) and is oriented towards description and explanation of what the practice consists of and how it is put together.

*Genealogy* is a further development of the archaeology method by attempting to understand the historical and political importance of practices, and is trying to reveal the power relations that lie behind the start and growth of the practice studied. “*Genealogy is to identify accidents, the minute deviations – or conversely, the complete reversals – the errors, the false
appraisals, and the faulty calculations that give birth to those things that continue to exist and have value for us.”

Genealogy is concerned with probing the discourses and practices by showing the power relations they were generated by, and also the cracks in the terrain within which strategies, institutions and practices are formed. It is concerned with the dissolution of the obvious with the help of history. The genealogical strategy tries to open the discursive field through the tracing of practices’ historical and political influences and is focused on revealing the power relations behind the origin and growth of the practices studied.

The concepts of strategy and power-relations are according to Flyvbjerg central in the study of power. Strategies are concerned with 3 points:

- First, ends-means rationality, what means are necessary to achieve what goals.
- Second, how to act under the presumption of how the other will act, and what to believe about the other parts believing what I will do.
- Third, procedures to remove the opponent’s weapons and force him to give up (see also 2.4.4).

In sum a strategy is according to Flyvbjerg the totality of means used to implement power and to keep power (Flyvbjerg, Vol. I, 1991:113, with reference to Foucault). Foucault has two different strategies for analysis, the *archaeological* and the *genealogical*. Together the two strategies have been an inspiration and framework for the analysis strategy for the case studies of the four cities. The relationship between them can be illustrated thus (Andersen 1999:63):

![Figure 3-1](image)

*Figure 3-1 The archaeology analysis strategy, after N. Åkerstrøm Andersen 1999.*

This represents an understanding of history as a vast amount of contingent events without purpose, overriding principles or built in stability. There are parallels to the Garbage Can model and the main model of analyzing the history as a stream of events in this picture of Foucault’s two main strategies.

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Critical Realism places contrary to Foucault emphasis on causality and hence the *why* question, as discussed in chapter 2.4.2. The *why* question refers to the belief in Critical Realism that objects possess emergent powers in virtue of their relations to other objects, and that these relations can form structures and exercise powers in the form of mechanisms. Asking *why* questions is helps to reveal these mechanisms.

The figure above combining the genealogy with the in depth focused archaeology has been an inspiration for the longitudinal time series study combined with cross section studies of particular events performed in this thesis. Contrary to Foucault I have put a lot of emphasis on causal explanations and the motives behind mechanisms causing events. There are structural conditions that give some actors greater propensity to act than others, and some contexts make certain behavior and practice more likely than others.

### 3.1.2 Case Study research

Yin’s very popular book on case study research has been the manual for this study. One of the first issues in the book is a comparison of different research approaches, as shown in the table below:

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires control over behavioral events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>How, why</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

A case study has advantages when a “how” or “why” question is being asked about contemporary set of events over which the investigation has little or no control. It therefore was fitting well with my theme of studying the effects of land us and transport planning in cities. Yin sees a case study as a comprehensive research strategy, defined as: *A Case Study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.*

Because phenomenon and context are not always distinguishable in real-life situations, Yin add a second part to the definition: *The Case Study inquiry a) copes with many more variables than data points, b) relies on multiple sources of evidence, c) benefits from prior theoretical propositions to guide data collection and analysis.*

The case study is particularly suitable when believing that the *contextual conditions* are highly pertinent to your phenomenon of study (Yin 1994:13). This also fits with Flyvbjerg’s insistence that daily practices and cases only can be understood in their relevant context.

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57 Yin Robert K, 1994 *Case Study Research. Design and methods* Sage London
(Flyvbjerg 1991). Based on Aristotle’s’ three intellectual virtues *episteme*, *techne* and *phronesis* as starting point he argues that progressive phronesis research is the way forward for the study of man and society. Phronesis (prudence, ethics, morals) research should imply the analysis of values and interests in practices in their contexts. The emphasis on context also fits with the philosophy of Critical Realism as outlined above.

Five components of research design are especially important:

1. a study’s questions
2. its propositions, if any
3. its unit(s) of analysis
4. the logic linking the data to the propositions, and
5. the criteria for interpreting the findings

The five components of research designs force the researcher to begin constructing a preliminary theory related to the topic of study. This role of theory development, prior to the conduct of any data collection, is one point of difference between case studies and related methods. In this sense the complete research design embodies a “theory” or a “blueprint” of what is being studied. The complete research design will then provide strong guidance in determining what data to collect and the strategies for analyzing the data. The theory development prior to the collection of any case data is an essential step in doing case studies. The appropriately developed theory is the level at which generalization of the case study results will occur, called “analytical generalization” as opposed to statistical generalization. Multiple cases should be considered like multiple experiments and the method of generalization is “analytical generalization” in which a previously developed theory is used as a template with which to compare the empirical results of the case study (Yin 1994:28-32).

The research design can be seen as a “quasi-experiment” where the aim is, informed by theory, to single out and delineate phenomena in way where interrelations between variables can be given sufficient control by the researcher. The study’s research question was presented in chapter 1. Chapter 2 outlines several theories that were used in the studies of the four cities guiding the search for and analysis of data. These have formed the propositions or hypotheses used in the confrontation of data and theory in the cyclic research process outlined above.

The unit of analysis is related to the fundamental problem of defining the case. Simply, this thesis is about environmentally sustainable transport in cities. A model of “the city” is shown in figure 2.4, which is the main unit of analysis. This model more specifically can be divided into city structure with land use and activities, transport structure and interconnections, and management system called “development control” in the figure. The transport system makes the activities possible, and hence it is not only physical structure but also how the activities in buildings interconnect. The main unit of analysis is therefore in the research divided into several subunits.

This work has had the following statement as a guideline: an exploratory case study should be preceded with statements about a) what is to be explored, b) the purpose of the exploration, c) the criteria by which the exploration will be judged successful (Yin 1994:28).
Case protocol
For each of the cities a case protocol was formed. In the beginning it functioned as a register documenting the work. After some time the protocol took on a wider role when the work on the case descriptions started. It became, I can see in hindsight, a process of interaction between the writing of the case description and the protocol, a process I think was very helpful in producing this result.

3.1.3 Research method

In this thesis the focus is on land use and transport planning in cities, with the aim to understand how this instrument has been used and can be used to facilitate policy goals. The city is seen as an object situated in a stream of forces that change the city over time. These forces are both external, working on the city, and internal forces responding to external forces.

The research method is first to delimit the city and the land use planning policy in the city through finding the land use and transport events that has had important effects on the city development. Secondly an in depth exploration into each event is done to find the mechanisms that has caused that event. After the events are investigated the external forces are looked into to explore the vertical relationships from the global via the national to the local level, and how these relations are connected to the horizontal forces and spatial dimension on the city level.

The research process was in practice a cyclic process with finding and analyzing data, back to the data for more information, then analyzing data and back to the data again, and so on as described in chapter 2.3.1. This cyclic process shifting between data analysis and drawing inferences from the data is similar to what can be called the methodology in historic research.

3.1.4 Reliability and validity

How the city has changed over time will be described based on a list of important events in a land use and transport perspective. The description will for example note that the highway was built contrary to the Sustainability Plan for the city. How can that be explained? One explanation can be that the description was wrong, the highway will support the development of a more sustainable city. Another explanation can be that the Sustainability Plan was only made to appease the central government.

Thus, both description and explanation raise questions of reliability and validity. The data and methods used may strengthen reliability. Validity will mainly be judged by the extent to which the story, the connections and causes described are plausible or “truthful”. According to Yin the possibility of case study research lies in analytical generalization, i.e. generalizing in relation to a theoretical universe aiming at expanding theories. The validity test or the study’s “truthfulness” will therefore be how well this research explains the particular outcomes.

58 Clausen, H.P. (1998): Hvad er Historie?
Even if the knowledge produced by the research is valid, it need not be reliable. Yin (1994:33) using the traditional social science concepts of trustworthiness, credibility, confirmability and data dependability, discriminates between four tests of research designs: construct validity, internal validity, external validity and reliability. These tests should be used in case study tactic and the different phases of the research.

As Stone points out in Atlanta the tacit understanding and knowledge were the important glue that held the governing coalition together (Stone 1989). Events create expectations among those participating in causing the event. There is a mutual understanding and trust from past events, which can be drawn upon at future situations. To identify governing coalitions in the cities and how tacit knowledge is used are a major research task in the project, which again raises reliability and validity questions.

### 3.1.5 Evaluation of Land Use and Transport policy

According to Salet and Gualini (2001) plans can be evaluated along three dimensions:
- Institutional context
- Planning strategies and tools
- Best practice

Hambleton claims that a good evaluation should satisfy the three E’s of evaluation: *Effectiveness, Equity and Efficiency*. An evaluation should permit the program to be improved in these three dimensions, however the policy-makers define them. The evaluation must meet minimum criteria of political acceptability, i.e. if the evaluation is not credible it will fail (Hambleton and Thomas, 1995:92).

- **Effectiveness**: the extent to which the objectives are met by a given program. For the evaluation to be able to assess the extent to which a program achieves its ends, the policy objectives must be well understood, but also accepted as legitimate by the constituents affected.
- **Equity**: is defined situationally, it is not synonymous with equality. Equity in program outcome may call for inequality in distribution of resources, conflict about how equity is to be defined is inevitable.
- **Efficiency**: this criterion refers to the costs (monetary or otherwise) of the means used to attain the intended end: can the same effect be attained at lower monetary, social and environmental costs?

A distinction between programmatic *activity* and *impact* must be drawn if an evaluation is to promote the three Es. All interventions have specific *outputs*: number of people trained, buildings rehabilitated, and so on. If however the trainees find no jobs, the rehabilitated buildings no buyers, etc. these activities may have zero or even negative *outcomes*. The evaluation of Land Use and Transport policy should look at:
- Strategic proficiency
- Innovation capacity
- Consensus building
The conflict between economic growth and sustainable transport, how is it treated? Admitted, ignored – analyzed, prioritized? To what extent does marketing overshadow the real content? In Kristiansand the city council executive had a very positive evaluation of the Sustainable City project, the need to paint a picture of success was great and the strategic positioning towards the MoE another concern. In Aalborg several prizes have been bestowed on the LU&T planning, clearly with different strategic aims.

Questions to be asked are: What are the effects of LU&T planning? How do the plans impact in the decision-making process? Are the plans implemented, fully, partly or not at all? How and to what extent did LU&T planning lead to events and did it influence other events? Conformance between LU&T plan and result? Performance of the LU&T plan as decision support, actual use and decisions according to or contrary to plan?

Planning as have to, ought to, want to or nice to have? Planning as adaptation to the course of development or instrumental to guide and change development? To what degree was the instrumental use active or passive? Is it possible to have high ambitions on car traffic reduction, and outlining strong measures to achieve this reduction, but never implementing the aims and measures? In a conformance perspective it may seem that a plan has been used instrumentally in achieving the result, but in fact the use was clearly an adaptation to what would have happened in any case.

**Before and After studies**

*Before* evaluation asks the question how the plan’s strategies and proposed actions would be effective according to the aims of the plan. 

*After* evaluation asks the question about how effective the plan’s strategies and proposed actions actually turned out to be, seen in relation to the aims of the plan and judged from the development experienced after the plan was adopted.

Plans are produced to promote development and control the actual development gradually emerging as small steps at a time. Plans may have a very long life (e.g. the planning ordinance from 1907 is still the guideline for the planning office when applying development control in my home area!).

Evaluations of public projects are often done by organizations close to the project makers, which raises validity and reliability questions of how the evaluation is used, who paid for the evaluation and who is to gain and lose?

### 3.1.6 Theoretical perspectives and relevant research questions

Three core questions guide the study. First, what is understood by environmentally sustainable transport development? Reduction of emissions from cars can be done in several ways, such as better technology, different types of fuel, etc. These are not dealt with here. In this study we concentrate on the how land use and transport planning can contribute to less travel, shorter travel distances and shift from cars to other modes. The prime interest is the outcome: how can the environmentally sustainable transport development goals be reached?
Secondly, what is understood by local land use and transport planning? I defined in the
beginning planning as what planners do. In Norway the planning system requires the
municipalities to produce a Kommuneplan, which is a general plan for the development of the
municipality and a specific land use plan. The Kommuneplan is meant to be a strategic plan
for the guidance of development and the content of local plans for parts of the municipal
territory or specific themes like road structure. Reguleringsplan is the vehicle that decides the
design, location and rules determining which buildings/structures to be permitted. There is an
important judicial difference between the legal statuses of these two plan types. The
Kommuneplan defines future land use, a definition that can be changed by the city council
without having to pay compensation. A Reguleringsplan both defines land use and puts rights
and obligations on the land, which has to be compensated if the Reguleringsplan is changed.
The planners’ prime tasks are those associated with making this planning system work, as
producing background documents for politicians’ decisions, plans, permits and planning
guidance. As the New Public Management has spread as an ideology, the municipalities are
producing fewer plans than before, a fact that has changed their role from content producers
to more and more control of procedures\textsuperscript{59}.

New modes of planning are surfacing in the form of strategies, visions, partnership and other
measures as the guiding principle for municipal or local planning. The changes facing
statutory land use planning are not only emerging through institutional measures, but also via
basic changes in practice and a move towards non-statutory initiatives. This shift from an
administrative regulatory practice to a more negotiative one has been described by Healey
(1997): “In many of Europe’s planning systems, the formal machinery for articulating
strategies has become discredited and formal systems have ceased to be the key arenas and
procedures for spatial strategy-making. This new impulse towards strategic planning has
however taken place rather informally, beyond the formal arenas provided by the planning
system itself”. Such processes are ongoing in all the four case cities, probably with different
shape and speed according to the local traditions and needs. The broad definition of planning
is meant to cover all the activities that form the land use and transport system.

Thirdly, what type of knowledge to be dealt with? One may distinguish between two levels of
knowledge. The first being what type of research questions to be asked, and the second being
what theoretical discourses the research is part of. The Norwegian sociologist Ragnvald
Kalleberg\textsuperscript{60} distinguishes three types of basic research questions:

- Probing questions – that ascertain, establish, show something (konstaterende)
- Evaluative questions – that judge, assess, evaluate a phenomena (vurderende)
- Constructive questions – that focus on the normative and what things ought to
  or should become (konstruktive)

The probing research questions relate to what a phenomenon is, and how it has become what
it is and why it is like that. The evaluative questions relate to what the phenomena is in
relation to what it should/ought to be, hence the evaluative questions also have normative
dimensions. The constructive questions ask how a phenomena/situation can and should be
changed, thus revealing the researchers normative position.

\textsuperscript{59} Private firms produced 70\% of the plans according to The national accounts review, 2007.
\textsuperscript{60} Kalleberg, R. (1996): “Forskningsopplegget og samfunnsforskningens dobbeldialog.” I: Holter, H. Og R.
Kalleberg (red.): \textit{Kvalitative metoder i samfunnsforskningen}. Oslo: Universitetsforlaget.
In my context this becomes: A) How are land use and transport considerations maintained? B) What limitations and possibilities for land use and transport exist? and C) What can be done with land use and transport planning to better achieve the environmentally sustainable transport development goals set? In this project knowledge has been developed in relation to all three types of research questions. This implies questions of how today’s planning systems function, how to utilize the systems better and what learning can be drawn from cross city (country) comparison, and what changes should be made to make the systems more effective.

This project is part of three different, but closely related theoretical discourses. They are sustainable development and planning, planning theory and implementation theory. The discourse on sustainable development and planning encompasses among other questions on relations between physical characteristics of urban land use and mode of transport use and the associated amount of transport. The question of sprawl or concentration related to urban design is one important dimension. The discourse on planning theory deals with questions on the various forms of planning, which ranged in the 1960s from Banfield’s rational or synoptic model on one side to Lindblom’s incrementalism. Later this discourse turned towards communicative and participatory planning models, which have dominated planning theory discussions the latest decades. More specific questions are how and under what conditions land use and transport planning is a suitable tool for reaching specific goals regarding localization, land use and transport modes. Implementation theory in this context refers to theories shedding light on conditions for implementing strategies to reduce the fossil fuel consumption and GHG emissions from cars in cities. A focus on the implication of different types of barriers, structural, actor-related and socio-cultural, is embedded in this.

This study is related to the theoretical discourses in three different ways. First, the theoretical perspective gives the study the necessary basis for asking the fruitful, more detailed research questions based on the theoretical and empirical knowledge developed in earlier research. This is helpful for the identification of and raising of new critical research questions. Second, the attachment to several theoretical discourses gives basis for looking at complex problems from different angles. Lastly it is an ambition that the study will produce knowledge that contributes to both the theoretical and practical worlds.

### 3.2 Comparison across cities and countries

#### 3.2.1 Six themes to be explored

The spatial planning system in most countries is an important part of the national government. Most have their own planning law with instruments and organization to match. At the local authority level (in Norway municipalities) the territorial dimension of the law comes into effect, both as guiding and monitoring building, development control and strategic planning for the local administrations territory. At this level the individual property owner, neighbors to building land and the public at large becomes part of the planning process.

To cope with these complex relations both horizontally and vertically, between levels, sectors and layers I will look at six issues or areas in each city, to be used for cross comparison and
analysis. Focus will be on how differences in contexts and in the organization of land use and transport planning impact on planning and how the plans function as strategic instruments. These six areas are (after Beatley and van der Brink, 2003):

- The importance of a broad, national, guiding, spatial framework (guiding lower level, providing mechanisms for catalyzing and rallying political and popular support)
- Integration between levels, sectors and layers of planning.
- The role of the rational planning model and planning doctrine (e.g. the Dutch ‘Green Heart’).
- Tools for engaging citizens and the public.
- Partnerships, collaboration, cross border cooperation and mechanisms.
- Harnessing the power of the market place: new market oriented tools.

### 3.2.2 Methods of comparison

Knut Kjellstadli\(^61\) has in a book on methodology built on John Stuart Mill and the concepts *Method of Agreement* and *Method of Difference*. In the *Method of Agreement* one asks *what is equal despite being unequal* in size, scope, location, tradition, etc. and in the *Method of Difference* one asks *what is unequal despite being equal* in size, scope, location, tradition, etc.

I have used these methods of comparison in this study. What is compared is decisive in finding the factors of explanation. In Kristiansand for example most things were the same in the 1980s and 1990s except for:

1. Change of leadership (new mayor, new city director, new technical director)
2. The municipality role was strengthened in the planning act
3. Ideology changes, the new liberal ideas and sustainable development
4. The Highway Agency finds new roles, and toll road financing spreads

In the comparison everything is not compared, but description is done in a way where all the factors we believe are important when a phenomenon shall be explained are included. Good results and “research economy” can be secured by concentrating on one main object and compare with other objects only on the factors we think are important to test. (Kjellstadli 1999:268) An important issue to be aware of is that the comparison is done on indicators and event at different times.

Bergene argues that traditional approaches to comparative methodology are not compatible with the ontology of critical realism.\(^62\) Especially the notion of causality and their reliance on inductive inferences are criticized and a combination of intensive and extensive research designs is proposed. In this study causality is understood as a generative and contextual concept and therefore adheres to the critical realism ontology. The methodology presented by Mill is useful to identify possible causal connections, both positive and negative, and then investigate causality by identifying plausible causes and the mechanisms that have worked to produce the events.

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\(^61\) Kjellstadli Knut, 1999. “Fortida er ikke hva den var” Universitetsforlaget, Oslo

"A theory is the language that allows us to move from observation to observation and make sense of similarities and differences" (Rudestam & Newton 1992:6). This definition of a theory is well suited to my comparative project. The task then becomes to form the “language” or “description” or “theory” in a way that makes it possible to move from observation to observation to reveal likenesses and differences. Examples from the four cities of this thinking are shown in the following box.

<table>
<thead>
<tr>
<th>Likeness / Unlikeness</th>
<th>Comment on differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of population</td>
<td>Norwich urban area population larger than the other cities</td>
</tr>
<tr>
<td>Regional impact on city</td>
<td>Davis develops independent of the Sacramento region</td>
</tr>
<tr>
<td>Legislation: planning acts</td>
<td>Similar planning legislation in all four cities: an overall strategic plan for the territory, and a detailed plan for controlling development</td>
</tr>
<tr>
<td>Organization of planning</td>
<td>Referendum in Davis. The role of the state.</td>
</tr>
<tr>
<td>Role of national state</td>
<td>US federal: Davis</td>
</tr>
<tr>
<td>University city</td>
<td>All four cities are university cities, but UCD/Davis special because of separate jurisdiction outside city area and being the major (sole) employer.</td>
</tr>
<tr>
<td>Municipal territory</td>
<td>Norwich has no building area reserves within the district, expansion in other districts. Davis expands by acquiring land, UCD separate jurisdiction. Both Kristiansand and Aalborg have big land reserves that can be used for building.</td>
</tr>
<tr>
<td>Growth</td>
<td>Aalborg has far slower growth than the three others.</td>
</tr>
<tr>
<td>Territory</td>
<td>Ample building land, except Norwich cannot expand within municipal territory.</td>
</tr>
<tr>
<td>Bike use</td>
<td>Norwich has low bike use and poor network</td>
</tr>
<tr>
<td>Self-rule</td>
<td>The room for autonomous action varies considerably between the four cities.</td>
</tr>
<tr>
<td>Urban expansion</td>
<td>All three cities drive urban sprawl, except Davis.</td>
</tr>
<tr>
<td>Area/density</td>
<td>Only Norwich has density above 3000 persons/ha.</td>
</tr>
<tr>
<td>Plan/development control and management.</td>
<td>US litigation/individual rights secured in law. Only in Davis can citizens test council/plans in courts.</td>
</tr>
<tr>
<td>Referendum</td>
<td>Davis is the only city using referendum</td>
</tr>
<tr>
<td>Subsidiarity</td>
<td>Davis is the only city that can decide LU&amp;T without intervention from above (county, region, state)</td>
</tr>
</tbody>
</table>

### 3.2.3 Case study of four cities

This study is part of a multiple case study limited to medium sized cities: urban areas between 50-300,000 inhabitants. The focus is on person transport and the effects of the instrument or tool: *land use and transportation planning, programs and policy*.

The key indicators are:
1. trend in land use and density, person kilometer traveled, consumption of fossil resources, emissions
2. mode share (car, PT, walk, cycle)
3. urban land use and transportation policy: aims, measures, outputs and outcomes.

In the following the “level of sustainability/unsustainability” or the best practices among comparable cities are assessed:
- Share of walking, cycling and public transport usage.
- Infrastructure supporting these three modes of travel.
• Land use policies that increase densification (dwellings/ha) and limit urban sprawl
• Social cohesion and accessibility in the area: Public Transport at a level of service that gives a minimum standard of access to the city centre for all.
• Policies that
  a) support car sharing, car pooling, etc.
  b) promote walking and cycling
  c) use parking as an instrument to reduce the use of cars
• Gaps between policy aims and actual development

Lack of integration of land use and transport policy across levels and layers is often a major problem (Beatley 2003). Planning and implementing of such policies are dependent on several actors and agencies cooperating, for example the planning office, the road engineers, consultants and highway authorities. “Each of these has vested interests, ideas of how things are done and indeed a knowledge of institutions and processes, which may be used to set up barriers to all policies that do not suit their interests”. (Bijker et al. 1987, cited from Tengström 1999:23) Planning and Action has been a theme in the planning debate for decades. A conformance view treats the effectiveness of plans or strategies as goals achievement. The Dutch school on the other hand says that the performance of the plan is important, not the result. Plans have effect during the planning process, and plans can perform well without influencing actions (see Alexander and Faludi 1988).

In this case study I try to use both the conformance and the performance view, when analyzing land use and transport planning. The output of land use and transport policy is the decisions on visions and goals and the strategy to reach these goals. This may be called formal policies, and are of secondary interest in this study. The outcome of land use and transport policies are decisions on budgets and instruments to be used to implement the policy. This may be called Realpolitik, and are of prime interest in this study (Flyvbjerg 1998).

63 Accessibility to other parts of the city should ideally also be above a minimum standard, but that seem utopian in most cities due to the costs of providing public transport at low demand spatially distributed
4 Kristiansand

The case study of Kristiansand, the first of the four cities studied, is described in this chapter. The study itself started with the present situation looking at the major land use and transport trends and asking several questions of what events, processes and plans have led up this situation and trends. A timeline through the planning history was thus created and the paths of events could be followed through time. Each important event on the path has been analyzed and set in perspective. The result of this study is contained in the metaphor “A tale of two cities”. One of the city tales is how Kristiansand presents itself as a sustainable city with all the right goals and visions. The other tale is about the sprawling “engine” in the region, increasingly car dependent and also called “the climate villain”. The gaps between the planned city and the regional change, between the aims of reducing the car traffic (growth) and increasing the use of public transport, walking and cycling, between emissions from transport as CO$_2$, etc. and aims and international commitments are increasing fast. The causes behind these two tales are complex and deep, including fragmented institutions and not accountable politicians. Extensive use of the principle of subsidiarity may be one way to go to redress the situation.

Below follows first the setting, then data on land use and transport followed by a description and analysis of the story of events. In the last section of this chapter the findings from the case study of Kristiansand are discussed and lessons are drawn.

4.1 Introduction

The city of Kristiansand, the fifth largest in Norway, is a municipality on the southern coast of Norway. Some key figures are:

**Kristiansand located in Vest-Agder County, Norway**
**Area: 276 km$^2$**
**Population: 76 000 (2005)**
**Admin. centre: Kristiansand Kvadraturen**

<table>
<thead>
<tr>
<th></th>
<th>Year</th>
<th>Kristiansand Municipality</th>
<th>Vest-Agder County</th>
<th>Norway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population per 01.01</td>
<td>2004</td>
<td>75 280</td>
<td>160 127</td>
<td>4 577 457</td>
</tr>
<tr>
<td>Pop. change last 10 years</td>
<td>7 417</td>
<td>11 537</td>
<td>252 642</td>
<td>5.8</td>
</tr>
<tr>
<td>Pop. change last 10 years %</td>
<td>10.9</td>
<td>7.8</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Population per km$^2$</td>
<td>2004</td>
<td>290</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Population share within urban area</td>
<td>2003</td>
<td>96</td>
<td>79</td>
<td>78</td>
</tr>
<tr>
<td>Cars per 1000 inhabitants</td>
<td>2006</td>
<td>390</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 4-1 Basic data Kristiansand, Vest-Agder, Norway*
4.1.1 Contemporary issues - Kristiansand in the new millennium

Some of the important drivers and issues that probably will be of great importance for land use and transport change in Kristiansand are:

Very strong economic growth (the companies: Xtrata, Elkem Solar, Aker Kverner MH, National Oilwell are some of the major drivers)
Major highway investment through city NOK 1.5 billion completed, 4.5 billion planned.
Cross-border pilot projects Knutepunkt Sørland and ATP project.
Kommuneplan 2005
National Transport Plan 2010-2019

Kristiansand has also serious lasting challenges as women’s access to jobs, high medication usage and scoring low on several life quality indicators. The challenges put aside,
Kristiansand was bursting of confidence at the start of the new millennium as the following box shows.

**Kristiansand is on the map!**
*The city sparkles, struts of self-confidence. There are talks of a southern gold age down south with hope of gold for Start, Quart-success, Idol-Jorunn, prize rewarded super-beach, blooming businesses and Mediterranean atmosphere on Fiskebrygga.*

4.1.2 Research question and case study aim

The aim of this case study of land use and transport planning in Kristiansand is to describe and understand how the city has developed up to the present, with a focus on land use and transport. It is further an aim to try to explain the interests and outcomes – the power relations – that have gained from that particular development and what interests have been loosing. I want to produce **empirical and practically relevant knowledge** through this study. The empirical research will explore both governmental and political processes of the state and the policy-making contexts of planning practice. The focus of the research is land use and transport development, with an aim to understand and explain how land use and transport planning and policy has been used to change development towards environmentally sustainable transport (as part of sustainable development), and what has hindered and what has promoted such change.

Through the knowledge production and discussions I have also an aim to contribute to the theoretical knowledge production within the field of land use and transport planning in medium sized urban areas.

There is the duality between land use and transport. Land use structure influences transport behavior, which again influence structure. This study of environmentally sustainable transport focuses on one key questions and three sub-questions:

*How can land use and transport planning be used to create / increase environmentally sustainable transport in cites, what are the barriers for sustainable transport development and what promotes such development?*

- How was the connection and interaction between land use and transport in the cities? What effect did planning and policy exert on the choice of transport mode? Was the development caused by a deliberate policy and was it sustainable, and in case how and why?
- How could the observed land use and transport development be explained? What were the factors facilitating cycling, walking and public transport; and what were the factors inhibiting more sustainable transport development?
- What if any, are the lessons from the case cities for other medium sized cities in Europe?

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64 Fædrelandsvennen, 100705, Start is the elite football club, Quart a music festival, Idol-Jorunn won a TV competition and Fiskebrygga is the Fish market.
4.2 History and situation

4.2.1 The planning legacy in Kristiansand and the status 2005

Kristiansand carries a proud legacy of being in the forefront in Norway on land use and transport planning for decades. After 1985 things changed, planning lost status and market rule became the leading ideology, still Kristiansand got the City Planning Prize in 2002. For seven years 1993-2000 the city was appointed Sustainable City. Even if several good results and learning were achieved, it failed to reach the main goal to reduce car traffic and shift travel to public transport. Contrary to the objectives for the Sustainable City, a massive highway project through the city was planned, decided and implementation started during this seven-year period.

Congestion on the main trunk road through the city and the lack of investment in road capacity made road financing the prime political task. The expansion of the highway network is heavily dependent upon the amount of local toll road financing. It has become a finance-led instead of demand-led transport planning. Land use planning and development has become a consequence of the road plan. When the transport system has been decided, the municipal land use plan has been adjusted accordingly. The expansion of the highway system is done to cater for car growth and avoid future congestion. Such a massive highway investment as in Kristiansand will both reduce travel time for cars (at least in a short term perspective) and generate new traffic. This again contributes to reduction in the use of public transport, cycling and walking, and more dispersed housing settlements and increased commuting. The paradox is that the BusMetro project, which is aiming at reducing car transport, is developed at the same time.

Why all these paradoxes? One reason is the way land use and transport are organized. The municipality has a monopoly in land use planning of the area of the municipality, accordingly the Highway Agency must propose highway plans that the City Council accept. However, the municipality has few active or positive instruments to develop the land use according to the plan. The second reason being the way highways and public transport are financed. Public transport is the responsibility of and financed by the county. The county has to prioritize its funds between secondary schools, culture and public transport, and further between rural or urban buses. Private operators run the bus services on contract. Highways on the other hand are planned and built by the Highway Agency that gets it funds by decisions in the Parliament. The Highway Agency is organized like a concern, with the Highway Director on top of the bureaucracy and regions and districts underneath. It answers directly to the Ministry of Transport. Lastly, it is also leading the work with the National Transport Plan, which is both a strategic plan and a program for allocation of funds.

The situation in 2005 can be characterized by:

- Hardly any integration of land use and transport planning.
- Huge investments in highway expansion.
- Increasing distance between city centre and the location of new employment and housing.
• Commuting increases rapidly.
• VKT increases and also the emissions of CO$_2$, etc.

There is a lack of discussion on the following important issues:
• Increased road capacity > increased traffic > congestion > increased road capacity and so on
• Sector politics instead of integrated, comprehensive, holistic policy
• Increasing gap between sustainability goals and transport development
• Travel Demand Management. The need to control car traffic growth (“New realism”).
• New forms of governance. Public participation in planning.

In short, the “Sustainable City” Kristiansand has never been further away from a sustainable transport system than in 2005. Neither have more money been used to increase car travel in the city. The city population has never had higher standard of living. Car dependency and mobility increases every year. The threat of global warming and depletion of natural resources is part of the local discourse, but far away from having more than symbolic influence on the land use and transport decisions made in the City Council.

4.2.2 Planning history is important – a timeline

The past plays an important role for the understanding of the present environment and the planning discourse. Major road investments have to a large extent formed the urban structure in Kristiansand. History and earlier planning lives both in the minds as tacit knowledge, and as plans and built structures.

Why have these events been picked out as important, and which events are left out? Those land use and transport events that led to marked and long-time consequences have been picked out, based upon a thorough knowledge of the development in Kristiansand. It should be noted that in this listing the smaller projects are not mentioned, although they often may have substantial influence both symbolically and materially (Tinghuset is such an example).

Some of the most important plans and projects, which have had considerable and permanent impact, are listed below. They are fundamental to the understanding of land use and transport planning in Kristiansand:

The story line “The car has come to stay” is the commonly accepted and taken for granted premise for land use and transport in Kristiansand. The tradition and history of land use and transport planning in the city has been one of Predict and Provide, which made Kristiansand famous for solving the after the war housing crisis. The mechanism used was to control both the demand for housing and the supply of land for building. Since then the control of land for building through ownership has been abandoned and the role the Highway Agency has changed. Planning of land use and transport and the implementation of road transport plans are placed in different organizations causing a gap between the two. The gap between government funds for road building and the local demand for road capacity has increased over many years. Queues have thus become a major political problem. A vast majority in the city council voted in 1996 for a city “Toll ring”, many against their principles and political program. The funds collected financed E18 into the centre of the city.
### TIMELINE THROUGH KRISTIANSAND LU&T HISTORY

<table>
<thead>
<tr>
<th>Hendelser</th>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bru nummer 2 over Otra debattet i Bystyret</td>
<td>1948</td>
<td>City Council discuss 2nd crossing of river Otra</td>
</tr>
<tr>
<td>Regionplan (Høvåg - Høllen)</td>
<td>1955/63</td>
<td>Plan for urban region</td>
</tr>
<tr>
<td>Varoddbrua</td>
<td>1956</td>
<td>Varodd bridge opened</td>
</tr>
<tr>
<td>Generalplan</td>
<td>1969</td>
<td>The famous General Plan</td>
</tr>
<tr>
<td>Sentrumsplanen</td>
<td>1978</td>
<td>Plan for city centre</td>
</tr>
<tr>
<td>Generalplan</td>
<td>1978</td>
<td>General plan review</td>
</tr>
<tr>
<td>Vestervegbrua</td>
<td>1980</td>
<td>Vesterveg bridge opened</td>
</tr>
<tr>
<td>Sørlandssenteret</td>
<td>1986</td>
<td>Sørlandssenteret Shopping Mall &amp; Business Park</td>
</tr>
<tr>
<td>Kommunevalg: Baneheia, Byfjorden, Bom</td>
<td>1987</td>
<td>Local election about Tolls, Green, Fjord</td>
</tr>
<tr>
<td>VA Sykehus</td>
<td>1989</td>
<td>New County hospital</td>
</tr>
<tr>
<td>ADH (HIA)</td>
<td>1990</td>
<td>New localization of regional university</td>
</tr>
<tr>
<td>TP 10</td>
<td>1989-1991</td>
<td>Transport Plan for 10 largest cities</td>
</tr>
<tr>
<td>Kommuneplan</td>
<td>1990</td>
<td>General plan review</td>
</tr>
<tr>
<td>Jubileum Kristiansand 350 år</td>
<td>1991</td>
<td>Jubilee Kristiansand 350 years old</td>
</tr>
<tr>
<td>Krigskolen nedlagt</td>
<td>1991</td>
<td>Military Academy closed</td>
</tr>
<tr>
<td>Forsøksordning Kollektivtransporten</td>
<td>1991-1994</td>
<td>Public transport demonstration projects</td>
</tr>
<tr>
<td>Miljøhandlingsplanen</td>
<td>1992</td>
<td>Action plan for Environment</td>
</tr>
<tr>
<td>Varoddbrua</td>
<td>1992</td>
<td>Second Varodd bridge opened</td>
</tr>
<tr>
<td>Miljøby</td>
<td>1993-2000</td>
<td>Sustainable City</td>
</tr>
<tr>
<td>Odderøya</td>
<td>1995</td>
<td>Odderøya military camp abandoned</td>
</tr>
<tr>
<td>HiA til Gimlemoen</td>
<td>1997</td>
<td>University college to Gimlemoen</td>
</tr>
<tr>
<td>Kommuneplan</td>
<td>1995</td>
<td>General plan review</td>
</tr>
<tr>
<td>E18 planlegging</td>
<td>1992-1999</td>
<td>E18 plan and Toll Ring</td>
</tr>
<tr>
<td>Kommuneplan</td>
<td>2000</td>
<td>General plan review</td>
</tr>
<tr>
<td>BusMetro</td>
<td>2003</td>
<td>BusMetro opened September 2003</td>
</tr>
<tr>
<td>ATP forsøket</td>
<td>2004</td>
<td>LU&amp;T pilot project organization</td>
</tr>
<tr>
<td>E39 og Bompenger</td>
<td>2002-2006</td>
<td>E39 plan and Toll collection</td>
</tr>
<tr>
<td>Kommuneplan</td>
<td>2005</td>
<td>General plan review</td>
</tr>
</tbody>
</table>

In 2007 the City Council has adopted a “new” toll scheme to finance the motorway from the city centre and further west. The increased funding thus available strengthen the Predict and Provide tradition, and indeed will make any alternative transport strategy as “rush-hour pricing” irrelevant for many years unless the law is changed. Interesting enough congesting charging or “rush-hour pricing” has in the autumn of 2007 become a key political issue in several cities after the Minister of Transport raised the question as part of a carrot and stick strategy.

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65 Under the present law, road pricing is prohibited until the toll road collection has ceased (Vegtrafikkloven §7)
4.2.3 Land use structure and plans

Kristiansand was one of the first cities in Norway to make a Generalplan in 1969. The plan laid down the future physical structure of the city and allocated land to cater for an increase in the number of inhabitants from less than 50,000 to 100,000 inhabitants in the year 2000. This huge, planned city expansion with industrial areas, dwelling areas, hierarchy of centers, and so on, could well be confined within the municipality borders. A tremendous surplus of land for building was allocated, and still the areas reserved in the Generalplan provide ample land for city expansion. The subsequent strategic spatial plans have contracted and expanded the amount of land to be built upon according to the mood and projections at the time they were made. In none of these plans is the commuting across the town border discussed; even though this car based commuting has a profound impact upon the development of the whole region. The economic growth, agglomeration and clustering of economic activity in Kristiansand is the major driving force or the “engine” for the regional development.

There has been a continued expansion of the urban area for a long time period. The speed of the outward expansion has fluctuated with the economy and the population growth. There has also been stand still for some years and then a jump when a new area of land for building has been opened up. The development in Kristiansand has induced growth in housing demand in the neighboring municipalities mainly along E18/E39.

4.2.4 Transport structure

When Varoddbrua was finished in 1956 the main structure of the road network was fixed. The trunk road (E18 and E39) is the main artery through the city and most other main roads branch out from this. The only major change of plans happened in the early eighties when it was decided that E18 should follow the present alignment instead of a tunnel underneath Kongsgård. There has been discussions on building a by pass for the city centre as KrF-linja, a line named after a political party, but all such attempts have been in vain. There have been two important changes in road planning during the last thirty years, which also have impacted on Kristiansand:

- Tunnel technology revolution opens for new opportunities, formerly unthinkable.
- The environment concern for greener cities has involved landscape architects in road planning.

In Kristiansand these two changes led to sinking the road down in the ground and reusing the land on top for recreation, etc. and extensive tunnels and grade separated junctions below ground inside Baneheia.

4.2.5 Many prizes

In Kristiansand some of the most prominent Norwegian planners have worked, and many years ago the city got a reputation of being in the forefront, a reputation it has kept. Already in 1967, in a country still with a housing shortage after the second World War, the major

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67 Baneheia is the “sacred” natural area close to the centre.
newspaper gave the city the title national house-building champion (Norgesmester). Some of the prizes are shown in the list. Notice that the Ministry of the Environment has given the last two:

- Aftenposten 1967 Norwegian Champion in Planning
- Sofus prisen 1983 The National Cycling Town
- Bygg for fremtiden 1984 Housing for the Future
- MoE 1996 The best of environment planning
- MoE 2002 Prize for the best environmental city

4.2.6 The virtuous city with the best intentions.

A figure from 1994 show how Kristiansand intended to quit Ad-hoc or Incremental planning and use Comprehensive or Holistic planning to turn towards sustainable development. The intention of doing the things the best possible way to achieve good results for the city is clearly expressed. Although formulated slightly differently it resembles the approach in the Sentrumsplan 1978, but the politicians rejected the philosophy of plan-led development.

<table>
<thead>
<tr>
<th>Holistic planning</th>
<th>Rather than</th>
<th>Bit by Bit planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrated city development and densification</td>
<td>Rather than</td>
<td>Further city sprawl, increasing land consumption &amp; increasing travel demand</td>
</tr>
<tr>
<td>Public transport and walking / bicycle transport</td>
<td>Rather than</td>
<td>Sole planning for the car</td>
</tr>
<tr>
<td>Living and attractive city centre and sub-centers</td>
<td>Rather than</td>
<td>Shopping malls along the highway</td>
</tr>
<tr>
<td>Living neighborhoods and local areas with daily activities and services in walking distance</td>
<td>Rather than</td>
<td>Contingent distribution of services and activities based on car transport</td>
</tr>
<tr>
<td>Parks and shoreline for recreation</td>
<td>Rather than</td>
<td>Barriers between housing and sea shore</td>
</tr>
<tr>
<td>The precautionary principle</td>
<td>Rather than</td>
<td>Repairing damages after</td>
</tr>
</tbody>
</table>

Figure 4-2 Kristiansand statement of “How to do it” 1994

The stated Kristiansand policy aims falls clearly in the left column of the table, and the implemented results of that policy just as clearly on the right hand side as we will see in this study.

4.3 The trend: More cars and less sustainability?

The Kristiansand urban region is expanding, the length of journey to work is increasing and so is the use of the private car. The political attitudes seem to have become more environmentally friendly. Plans and program aiming at sustainability and better environment are prolific. True to say, there have been huge investments in repairing former sins (sewage treatment plants and deep-sea discharge of waste have substantially improved the quality of the both river- and seawater). But still, the car is used more than ever and in comparison the

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68 The first full scale exhibition of a housing estate, prizes for individual houses only.
69 Kristiansand Miljøbyprogrammet (sak B 201/94)
road investment is far greater than before. In this section we look at some important changes in population and transport.

4.3.1 The population concentrates in the big cities in Norway

The net migration within Norway is shown in the figure below. The general picture is that people move from the periphery towards the centre, or from the north and west to the big city regions, and to Oslo in particular. The big city regions are therefore growing fast. This growth is further strengthened by a net migration from abroad, with most of the immigrants settling according to the same pattern in the big city regions.

![Net migration in Norway 2006](image)

There is a strong concentration of the population in Norway into the big city regions as the table below show. In the big city regions the population grew with 10% between 1995 and 2005, while the population in the rural areas decreased with 4%. Within the big city regions there are both an outward expansion and a re-migration into the city centers. These trends will be discussed for Kristiansand below.

<table>
<thead>
<tr>
<th>Region</th>
<th>1995</th>
<th>2005</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big city regions</td>
<td>2,278,000</td>
<td>2,512,000</td>
<td>+10.3</td>
</tr>
<tr>
<td>Town regions</td>
<td>1,103,000</td>
<td>1,154,000</td>
<td>+4.7</td>
</tr>
<tr>
<td>Village regions</td>
<td>323,000</td>
<td>323,000</td>
<td>+0.1</td>
</tr>
<tr>
<td>Rural areas</td>
<td>645,000</td>
<td>617,000</td>
<td>-4.4</td>
</tr>
<tr>
<td>Norway</td>
<td>4,348,000</td>
<td>4,606,000</td>
<td>5.9</td>
</tr>
</tbody>
</table>

*Source: SSB*
4.3.1.1 The Kristiansand area population changes

First, a table showing population change in Kristiansand compared to the county and country:

<table>
<thead>
<tr>
<th>Population 2008</th>
<th>Area 2008</th>
<th>Change 2000-2008 %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>On built area</td>
</tr>
<tr>
<td>Norway</td>
<td>4 737 200</td>
<td>3 722 786</td>
</tr>
<tr>
<td>Vest-Agder</td>
<td>165 944</td>
<td>131 661</td>
</tr>
<tr>
<td>Kristiansand</td>
<td>78 919</td>
<td>75 852</td>
</tr>
</tbody>
</table>

The total population in Norway in 2006 was as the table above shows 4.6 million and out of this population 3.6 million lived in built up areas. While the population changed with 0.73 percent from 2005 to 2006, the population living in built areas rose with 1.34 percent and the extent of the built areas rose with 2 percent. The population on the built area grows far faster than the total population reflecting the general urbanizing trend. The figures for the county of Vest-Agder are fairly similar to those for the country as a whole, except the built area grew slightly faster.

4.3.1.2 Kristiansand and Oslo compared

The population development in Kristiansand resembles that of the Oslo area, but on a smaller scale. Akershus the surrounding county of Oslo has grown steadily and far above the national average the last fifty years. Oslo’s inner city population was halved from 1950 to 1980, from about 300 000 inhabitants to 150 000. This reduction was compensated by the growth in the outer city. From 1990 onwards the inner city population of Oslo has grown fast, in line with re-concentration in city centers experienced in many cities both in Norway and abroad.

<table>
<thead>
<tr>
<th>Population, thousands</th>
<th>Oslo Inner city</th>
<th>Oslo Outer city</th>
<th>Oslo pop total</th>
<th>Akershus pop total</th>
<th>Oslo Akershus pop total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>310</td>
<td>124</td>
<td>434</td>
<td>182</td>
<td>616</td>
</tr>
<tr>
<td>1960</td>
<td>253</td>
<td>223</td>
<td>476</td>
<td>234</td>
<td>710</td>
</tr>
<tr>
<td>1970</td>
<td>201</td>
<td>277</td>
<td>478</td>
<td>322</td>
<td>800</td>
</tr>
<tr>
<td>1980</td>
<td>153</td>
<td>299</td>
<td>452</td>
<td>369</td>
<td>821</td>
</tr>
<tr>
<td>1990</td>
<td>136</td>
<td>326</td>
<td>462</td>
<td>418</td>
<td>880</td>
</tr>
<tr>
<td>2000</td>
<td>153</td>
<td>360</td>
<td>513</td>
<td>476</td>
<td>989</td>
</tr>
<tr>
<td>2007</td>
<td>158</td>
<td>390</td>
<td>548</td>
<td>509</td>
<td>1057</td>
</tr>
</tbody>
</table>

In Kristiansand a similar development to that of Oslo has occurred with a long period of decline in central areas, and outward expansion and increase in population in the outer areas. In the mid eighties the movement back into the city centre started in Kristiansand as in Oslo, see below for further discussion on the city center Kvadraturen.
4.3.1.3 The changes in the urbanized area and urban density.

The built area in Kristiansand increased from 35.61 km$^2$ in 2000 to 39.06 km$^2$ in 2008. This is an increase of eight percent. At the same time the population on the built area increased by nine percent, hence Kristiansand became slightly denser from 2000 to 2008. The number of inhabitants within the built up area of the city was in 2008: 1942 persons/km$^2$.

Below figures for Kristiansand and Vest-Agder County are shown. First, a figure showing change in population on the built up area and second a figure showing the change in the built up area. Both figures show a steady and fairly parallel change, both in population and in the built up area, the last eight years.

The Kristiansand area of influence as engine in the local development has spread into the neighboring county Aust-Agder. This area of influence has been coined Agderbyen, a fairly narrow spatial structure along the trunk road, which will be discussed below. The change in the population on the built up area in Kristiansand and Agderbyen is shown next:

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70 Built area is in this document used as the term settlement (tettsted), a circumscribed area of buildings, parks, etc. with at least 50 houses not further than 200 m apart.

71 The area of influence can be defined in different ways, e.g. travel to work area, hierarchy of centres, regional identity, etc. Agderbyen was coined as metaphor to create a common feeling of identity across county borders.
The yearly change 2000 – 2008 in the number of inhabitants per square km in Kristiansand and Agderbyen is shown in the next figure. It shows that the urban density in Kristiansand has been fairly constant just below 2000 per square km and in Agderbyen 1500 persons per square km.

The increase in built up area from 2005 to 2008 was for Kristiansand 2.14 square km (0.7 sq km per year) and for Vest-Agder 5.69 square km (2.9 sq km per year). This is a far higher yearly growth in the Kristiansand built up area than before (0.4 sq km per year 2000-2007), which may indicate that the urban expansion is accelerating.

![Graph showing population change](image)

*Figure 4-6 Change in density, Kristiansand and Vest-Agder, persons per square km.*

The density in Kristiansand has not been increasing the last decade, although that has been a goal for the municipality. The population in Kristiansand grows far faster than in the county, which has been the case for many years. This fact confirms for many persons the idea of Kristiansand as the “engine” in development.

### 4.3.1.4 Kvadraturen

The downtown or central business district in Kristiansand is called Kvadraturen and shown on the map below. The renaissance town plan from the seventeen’s century has given the center it’s nickname and consists of 54 quadrants.
Around 15,000 people were living in Kvadraturen just after the second world war, which was reduced to around 4000 in the seventies. In the last twenty years the Kvadraturen population has grown steadily due to the building of new flats for sale. From 1995 to 2007 the population in Kvadraturen grew by 19% while only 13% for the city as shown in the next table.

Table 4-5 Kristiansand and Kvadraturen, population time series.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kvadraturen</td>
<td>4782</td>
<td>5227</td>
<td>5510</td>
<td>5669</td>
<td>5671</td>
<td>19 %</td>
</tr>
<tr>
<td>Kristiansand</td>
<td>68,609</td>
<td>72,395</td>
<td>76,066</td>
<td>76,917</td>
<td>77,840</td>
<td>13 %</td>
</tr>
</tbody>
</table>


The population growth in Kvadraturen far outstrips the growth in the neighboring central zones Grim and Lund the last decade. However, the growth in the Kvadraturen was far below the relative growth in the outer areas of Kristiansand. In numbers the outer areas got 57% of the population growth 1995 – 2005 (4236 out of 7457). These areas are located more than ten km from the city centre. It is therefore probable that the average trip distance increased in this period.

There are three areas planned for major urban development in the city centre of Kristiansand which belong to the built up area zone Kvadraturen, these are Odderøya, Tangen and the railway station area called “NSB tomta”. In the statistics they will show up as increase in the population on the built up area of Kvadraturen. The planned developments on these three
areas are of very high density and thus they will increase the average density in the Kvadraturen zone. Another such development or “transformation” area is “Nybyen” which is part regeneration, part reclaimed road area and part green area. When the developments on these four areas are finished the brown-field areas within the Kvadraturen zone is completely built up within the present limits for development, only regeneration of the existing buildings remain.

4.3.2 What are the outlooks towards 2025?

The population forecast made by Statistics Norway for Kristiansand shows a population of more than 91 000 in 2025, an increase in population of just below twenty thousand in twenty years and a yearly growth about 1.1 %, see the table below. What amount of building land will the population growth and the associated business growth demand over the next 20 years? This demand is difficult to foresee because the uncertainty is great, an example of this uncertainty is discussed in chapter 4.12. In table 4-6 below the built up area in Kristiansand and the number of persons living on the same area are shown for a period of years. The statistics shown in the table is not directly comparable before and after the year 2000 and therefore only illustrative for the long-term development in density. Over the last three years 2005 to 2008 both population and urban expansion have been faster than before. There was an increase in the built area of 2.1 km$^2$ in the three-year period from 2005 to 2008 (0.7 km$^2$ per year). It may be that this faster growth will continue. However, in the forecast below we have chosen a conservative estimate for the urban expansion, far below the marginal growth as at present.

In the next table a forecast for 2025 and an estimate of the density is shown. The forecast is based on a future yearly growth in the built up area of 1.5 %. The built area will then accordingly become 50 km$^2$ in 2025. We assume that the 2025 population will as forecasted by the National Statistics, become 91 482 persons and 96% will be living in the built area.

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1999</th>
<th>2000</th>
<th>2005</th>
<th>2008</th>
<th>Forecast 2025$^{72}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built up area</td>
<td>25.9 km$^2$</td>
<td>28.9 km$^2$</td>
<td>35.6 km$^2$</td>
<td>36.9 km$^2$</td>
<td>39.1 km$^2$</td>
<td>50 km$^2$</td>
</tr>
<tr>
<td>Population on same area</td>
<td>53 414</td>
<td>60 350</td>
<td>69 323</td>
<td>72 672</td>
<td>75 852</td>
<td>88 000$^{73}$</td>
</tr>
<tr>
<td>Inhabitants per km$^2$</td>
<td>2063</td>
<td>2088</td>
<td>1960</td>
<td>1968</td>
<td>1942</td>
<td>1760</td>
</tr>
</tbody>
</table>

Source: SSB. Forecast by author.

To keep the density at 1968 persons per km$^2$ as in 2005, the built up area must not increase by more than about 10 km$^2$ in the twenty years up to 2025, which is lower than the present trends. The forecast shows that the number of people per square km will be further reduced to 1760 persons/km$^2$. This rough forecast indicates that Kristiansand may face a great challenge in stopping the decline in density and it will be necessary to manage land use far more effectively in the future than so far.

$^{72}$ Trend exploration made by the author.
$^{73}$ SSB Population forecast for the total municipality multiplied by 0.96, the rest 4% live outside the built area.
### 4.3.3.1 Commuting trends

Commuting, one may note, is a two way process: If one changes job from own municipality and starts commuting to a new job in the next, one also starts another process. Someone fills the old job, and this new employee may commute from another municipality. Thus changing job or changing house may start complex processes of changes.

14 300 persons commuted between the municipalities of Agder in 1990. In 2000 the number of commuters had risen to 23 905. For the ten-year period the number of commuters increased with 67 %. The trunk road E39/E18 passes through seven municipalities between Mandal and Arendal, nicknamed “Agderbyen”. The major growth in commuting has been along this stretch of road. In 2000 the commuting between these seven municipalities was 10 390 persons. This number of commuters represents some 15 000 car journeys per working day (9000 average annual daily traffic). The change in employment and commuting in Agderbyen from 2000 to 2005 is shown in the following table:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristiansand</td>
<td>1405</td>
<td>1822</td>
<td>417</td>
<td>130 %</td>
</tr>
<tr>
<td>Agderby commuting</td>
<td>12 648</td>
<td>14 061</td>
<td>1 413</td>
<td>111 %</td>
</tr>
<tr>
<td>Agderby employment</td>
<td>75 018</td>
<td>77 910</td>
<td>2 892</td>
<td>104 %</td>
</tr>
</tbody>
</table>

Employment in Agderbyen increased by four per cent from 2000 to 2005, while the number of commuters increased by eleven per cent in the same period. In other words, the number of commuters increased nearly three times more than the increase in the number of jobs from 2000 to 2005. This is an indication that the complex criss-cross interaction between the municipalities in Agderbyen keep increasing and making the population more and more car dependent.

### 4.3.3.2 Agderbyen – an emerging region

Agderbyen resembles a ”pearls on a string” settlements dotted along the major trunk road, 120 km long and less than 10 km wide. Agderbyen is the term used for “working and living region” a concept close to the English concept Travel to Work Area. It crosses the border between two counties, and this makes it a concept, which has been politically “impossible” to use locally, because of the scare for merging the two counties into one. The Government, however, has used the concept of Agderbyen actively to promote moving out offices from Oslo. The Agder Region has 30 municipalities, out of which seven form Agderbyen. The population changes from 2001 to 2002 are shown in the following table:

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74 Norwegian Post and Telecommunications Authority (Post- og Teletilsynet) to Lillesand.
Agderbyen had a population growth of 0.8% while the rest of Agder decreased by 0.3%. This pattern mainly caused by migration, goes many years back. The population increases far above the national average in Agderbyen, while the rest of Agder is stagnating. This fast growing population in the Kristiansand region will probably also use the car for work journeys, as it in practice is the fastest mode available.

### 4.3.4 Travel studies and modal split

A traffic study in 1949 gave the cycling traffic to and from the city centre. The number of bike riders passing the three entry points was 13,316 cyclists. Oddernesbrua was not built at that time and the thirteen thousand cyclists in 1949 is comparable to less than three thousand in 1980. The bicycle traffic to and from Kvadraturen was reduced by three quarters in these 30 years. The 1980 mode split of the traffic to and from the city centre in Kristiansand "Kvadraturen" is shown in the table below (based on counts). About 57,000 persons traveled to and from Kvadraturen an average day. Two thirds traveled by car and one quarter by bus, the remaining nine percent walked or cycled.

<table>
<thead>
<tr>
<th>Kristiansand, Kvadraturen, mode split 1980.</th>
<th>24 hours</th>
<th>0800 - 0900</th>
<th>1500 - 1600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>76,200</td>
<td>4,400</td>
<td>5,400</td>
</tr>
<tr>
<td>Public Transport</td>
<td>27,000</td>
<td>2,300</td>
<td>2,900</td>
</tr>
<tr>
<td>Walking</td>
<td>6,000</td>
<td>630</td>
<td>530</td>
</tr>
<tr>
<td>Cycling</td>
<td>3,900</td>
<td>370</td>
<td>260</td>
</tr>
<tr>
<td>Total</td>
<td>113,700</td>
<td>7,700</td>
<td>9,090</td>
</tr>
</tbody>
</table>

The travel survey 2005 Main results for Agderbyen

There are only small variations between the municipalities, but large variations between sex and age/income. The main results were:

- The total number of trips was 537,354.
- Each person in Agderbyen performed on average 3.58 trips per day.
- The total daily travel time was on average 68 minutes.
- Total daily traveling distance was on average 35 km.
- On average each trip took 19 minutes and was 9.9 km long.

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76 Meland, Solveig. 2007 RVU Hovedresultater for Agderbyen. SINTEF STF50 A070227 VEDLEGG
77 The report covers nine municipalities in Agderbyen.
The household-based national travel surveys show that mobility in Kristiansand increases. In 1998 the number of trips per day, all modes included, was 3.34 trips/person & day. There are variations between those with high and low income, between age groups and men and women. Women for example did 3.62 trips/person & day while men 3.53 trips/person & day. The opposite is the case for travel distance. The average distance for women was 30.19 km per day while the men traveled longer with an average distance of 40.30 km per day. On average each citizen in Agderbyen did 1.97 trips as car driver per day in 2005. In 2001 this number was 1.91 and in 1997/1998 much lower at 1.68. Among the municipalities Songdalen was on top with 2.65 car trips and the lowest was Kristiansand with 1.77 trips as car driver daily.

### 4.3.4.1 Mode split or the share of trips per mode

The mode split for Kristiansand shown in the next table is based on the 2005 travel survey with “other modes” excluded, and adjusted to hundred percent:

<table>
<thead>
<tr>
<th>Kristiansand Mode split</th>
<th>2005 adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>69</td>
</tr>
<tr>
<td>Public Transport</td>
<td>5</td>
</tr>
<tr>
<td>Walking</td>
<td>20</td>
</tr>
<tr>
<td>Cycling</td>
<td>6</td>
</tr>
</tbody>
</table>

Mode split figures are used in several contexts and for different purposes. There is often no documentation available that shows how these figures are calculated or what statistics have been used. Also there might be lack of clarity as to whether the basis is cross-section data or time series data, and it may not be stated if it is the number of trips or transport data with length of trip included, which is presented. In the next table mode split data from reports and documents produced locally are shown and may therefore differ from the travel survey data.

The data in the table below is based upon several sources and compiled by the author:

<table>
<thead>
<tr>
<th>Source:</th>
<th>TP10</th>
<th>SC 1992</th>
<th>SC 1998</th>
<th>NTP Krs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>45</td>
<td>65</td>
<td>69</td>
<td>65</td>
</tr>
<tr>
<td>Public Transport</td>
<td>19</td>
<td>10</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Walk</td>
<td>18</td>
<td>11</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Bike</td>
<td>18</td>
<td>11</td>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: Collected by author from many sources TP10 report, Sustainable City documents, National Transport Plan, etc.

The mode split in the two Sustainable City (SC) columns show an increase in public transport and cycling, and a reduction in car share to 63%, which is 6% down from 1990. This picture fits well with the aims for the Sustainable City project, but hardly with reality. Two years later the National Transport Plan, Kristiansand City Report, shows completely different numbers

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78 An average Norwegian household consisted of 2.2 persons 2007. Vest-Agder County had 2.4. The lowest number of persons per household had Oslo:1.9, and the highest Sogn og Fjordane: 2.5.

79 The data are from the Transport Plan Kristiansand (TP10), the Sustainable City (SC) project and the National Transport Plan Kristiansand City Report (NTP Krs). I assume that trips to the city centre (vaguely defined) are the basis for these calculations.
for the year 2000. The increase for public transport to 20% for the year 2000 in the NTP Kristiansand column is probably wrong, because the total number of bus passengers in Kristiansand has varied slightly around 8.5 million per year from mid nineties to 2005. The total number of trips has increased in this period, the public transport share should therefore fall. The national travel survey 2001 had some extra data for Kristiansand, and extra interviews were done for Agderbyen in the 2005 survey. The next table is probably the most reliable time series of modal split for Kristiansand 1985 - 2005.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>57</td>
<td>67</td>
<td>68</td>
<td>67</td>
<td>69</td>
</tr>
<tr>
<td>Public Transport</td>
<td>12</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Walking</td>
<td>20</td>
<td>19</td>
<td>19</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Cycling</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>


In the table above there is reasonable consistency from 1985 to 2005. The most noticeable in the table is the change from 1985 to 1992 when the public transport share was halved, which is probably due to different definitions in the statistics for these years. From 1992 and onwards there seem to be a steady and slow growth in the car share, the walking share is constant while the public transport and cycling share fluctuates around a low level.

The two last tables illustrate that modal split is very dependent upon what has been measured or calculated, and that “strategic misrepresentation” may occur. The travel surveys (data are usually collected by telephone) are representative for the area where those interviewed live. Other surveys can be based on cross section data from different sources and calculated as to and from the city centre or across the “inner ring”. Some surveys use cut-off for very short trips, e.g. below 300 meters, others don’t. In the Norwegian national travel survey it seems that more walk trips have been included in 2001 and 2005, than the years before.  

In the next table the mode split in Kristiansand for motorized transport only, is presented. The resulting matrix shows that 93% of the trips were done with the car and 7% with public transport. This indicates that public transport mode probably mainly caters for “captive” users, those without access to a car, and that the car mode has become so embedded that a modal shift will be very difficult to obtain.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>83</td>
<td>92</td>
<td>91</td>
<td>91</td>
<td>93</td>
</tr>
<tr>
<td>Public transport</td>
<td>17</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

In the national survey interviews all walk trips outside the house regardless of length are included.

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80 In the national survey interviews all walk trips outside the house regardless of length are included.
4.3.5 The travel pattern is becoming more complex.

The car traffic has grown for many years. On the trunk road E18 Varoddbrua, which give a good indication of traffic in Kristiansand, the average traffic\textsuperscript{81} was 34,699 in 2005. The traffic has been growing with more than three percent per year the last decade as shown in the table:

<table>
<thead>
<tr>
<th>E18 Varoddbrua</th>
<th>1995</th>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yearly traffic</td>
<td>25,486</td>
<td>29,679</td>
<td>34,699</td>
</tr>
<tr>
<td>Yearly growth over 5 years</td>
<td>3.1% pa</td>
<td>3.2% pa</td>
<td></td>
</tr>
</tbody>
</table>

This growth has many causes among them a growing population, increase in the number of car trips per day and the changes in location and activity patterns. Especially important are the changes in origin and destination location to follow how the traffic pattern changes. In Kristiansand there has been a strong growth in the number of jobs outside the city centre. Sørlandsparken and the “oil service industry” in Korsvik are two of the largest new job locations. The shopping mall in Sørlandsparken is another large traffic generator.\textsuperscript{82} Both of these locations have been developed to cater for the car, without any thought of public transport at the start of the development. Looking at the traffic pattern, some main points are:

- Traffic to/from Kvadraturen (CBD) stagnates
- Traffic bypassing Kvadraturen grows, 60% increase on Oddernesbrua 1980-1999
- Traffic east of and west of Kvadraturen increased with a third 1985-1999
- Traffic on the municipal borders doubled in the period 1980-1999

In the western world the car is used more than ever, well documented in several reports.\textsuperscript{83} Still the countries in Western Europe have for many years followed a trajectory in car ownership and usage seemingly parallel to and some twenty years after the USA. Without saying that this is good or bad development, it represents a challenge if such a growth will continue. The car is a central driving force in the suburbanisation in the Kristiansand region and other major city areas in Norway, in Europe and indeed in the USA\textsuperscript{84}. The problems the steady increasing car usage produce are well known and related to: congestion, environment, energy, safety, finance and equity.\textsuperscript{85}

4.3.6 Public transport in Kristiansand

Public transport in Kristiansand is mainly bus transport. The length of the average trip is 11 km, bus occupancy is 12.6 and the average inhabitant uses the bus for about 90 trips per year. The following table shows some key figures:

\textsuperscript{81} AADT average annual daily traffic in USA, ÅDT in Norway

\textsuperscript{82} The Center director complained in the news that “The Kristiansand Climate Plan will kill the Sørlandspark because of proposed restriction on the car” NRK web 220908.

\textsuperscript{83} EU Commission “Time to decide” 2001


Table 4-15 Kristiansand, public transport, key figures 2005 & 2006

<table>
<thead>
<tr>
<th>Kristiansand</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of bus trips per person&amp;year</td>
<td>88</td>
<td>91</td>
</tr>
<tr>
<td>Length of bus-trip km</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Bus kilometers total – veh. km</td>
<td>5 857 082</td>
<td>6 076 443</td>
</tr>
<tr>
<td>Total number of trips. Number</td>
<td>6 693 808</td>
<td>6 999 447</td>
</tr>
<tr>
<td>Passenger km traveled - pkm</td>
<td>73 784 020</td>
<td>76 532 415</td>
</tr>
</tbody>
</table>

Public transport statistics on the municipal level has been poor. The following table from has been compiled from different sources. Note that the figures for Kristiansand include some of the neighboring municipalities because the bus routes also serve parts of these municipalities.

Table 4-16 Kristiansand area, public transport economy data, 2000

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>Per inhabitant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticket revenue NOK 1000</td>
<td>79 930</td>
<td>800</td>
</tr>
<tr>
<td>Public contribution NOK 1000</td>
<td>60 300</td>
<td>534</td>
</tr>
<tr>
<td>Total costs   NOK 1000</td>
<td>134 020</td>
<td>1341</td>
</tr>
<tr>
<td>Public contribution %</td>
<td>45 %</td>
<td></td>
</tr>
<tr>
<td>Passengers 1000</td>
<td>8 750</td>
<td>88</td>
</tr>
<tr>
<td>Passenger km 1000</td>
<td>70 600</td>
<td>707</td>
</tr>
<tr>
<td>Bus km 1000</td>
<td>7 859</td>
<td>79</td>
</tr>
</tbody>
</table>


The public transport patronage went down to reach a low level of 8 311 000 trips in 2001. Thereafter the number of passengers has increased to reach close to 9 million in 2007. Further discussion of the role of public transport in Kristiansand will be presented under the section on the BusMetro below.

4.3.7 Green house gases emissions

Road traffic emitted 145 000 tons of green house gases\(^{86}\) in Kristiansand measured as CO\(_2\) equivalents, nearly half of total emissions of 276 000 tons in the municipality in 2006. The CO\(_2\) emissions from road were bigger than ever before\(^{87}\). The increase from 1991 was 27.3% and far above the national goal. In the next figure the relative amounts of emissions per head from the main sources are shown. The total climate gas emissions measured as CO\(_2\) equivalents were 3.6 tons per head in Kristiansand and from land transport only 2.0 tons per head in 2006\(^{88}\). The amount from road traffic was 1.885 tons per person and represented 53% of the total green house gas emissions in the city.

\(^{86}\) CO\(_2\), CH\(_4\), N\(_2\)O

\(^{87}\) http://www.ssb.no/emner/01/04/10/klimagasst/

\(^{88}\) In comparison CO\(_2\) emissions per head was in Stavanger 2.2 tons total/1.4 tons transport, and in Sandnes 3.5 tons total/1.9 tons transport.
A rough calculation has been done to estimate the amount of CO₂ emissions from private car use in Kristiansand: Every day there were in 2005 about 240 000 trips or journeys, and for the whole year it was 85 million trips in Kristiansand with a total distance traveled about 850 million km. The distance traveled by car was about 420 million km causing CO₂ emissions that can be estimated to 80 000 tons in the year 2005 from car transport in Kristiansand (based on an average CO₂ emission per car of 200 g/km)⁸⁹. This gives an average amount of emissions of one ton per person from local car transport in Kristiansand (in addition there are the emissions from the long journeys). The figure below shows CO₂ emissions of about 140 000 tons from road transport in Kristiansand. This include both transit traffic and goods vehicles, hence the rough estimate give a fair estimate of the CO₂ emissions from private car use in Kristiansand.

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⁸⁹ The estimate gives only an indication of the CO₂ emissions, the average distance 9.9km includes all modes and overestimate emissions, emissions per car is probably lower than 200g/km and the average distance traveled with cars are longer than the figure used.
4.4 After the Brundtland report

4.4.1 The car has come to stay?

The 1978 plan for the city centre, Sentrumplanen, was a very modern and radical plan. Not because of the traffic plan shown below, but because of the intention to reduce car use and the associated parking proposal in the plan.

*Figure 4-11 The Traffic plan for Kvadraturen in Kristiansand from Sentrumsplanen 1978.*
Both the *Generalplan 1969* and the *Sentrumsplan 1978* discussed the future growth in the number of cars and the consequences for the city centre. The next figure shows the impact of parking in five year intervals superimposed on Kvadraturen and a “parking-roof”. It said that the city centre Kvadraturen would be “run over” by the car if unrestricted car use was facilitated. It therefore proposed an upper limit to how much traffic the centre could sustain and the necessary tools to manage the development, partly through the parking policy and partly through land use planning and policy. In hindsight the plan is an excellent example of integrated land use and transport planning, at the time unique in Norway.

The following figure from Sentrumsplanen shows to the right the space required for parking after 5, 10, …25 years superimposed on a map of Kvadraturen, while the drawing on the left shows the maximum level of cars Kvadraturen can cope with. When the number of jobs (arbeidsplasser) increases over time (tid), demand for traffic capacity will increase above the limit for Kvadraturen and then private cars (privatbiler) have to give way to buses (busser) and goods vehicles (varelev. kjøretøy).

*Figure 4.12 The upper limit to traffic capacity in Kvadraturen.*

The city development committee approved the plan unanimously, but the technical director went against it and the City Council followed the director’s advice. *Sentrumsplanen* became therefore like many plans a guiding instrument, instead of a sharp tool in a plan-led system. The City Council chose to continue with a management philosophy of incrementalism and relying on ad hoc solutions. The reasoning put forward in the *Sentrumsplan* was to discuss how the transport demand should be solved, and how to achieve balance between the car, public transport, walking and cycling modes, disappeared by the council decision. Traffic congestion on the trunk road got all the attention and the ”predict and provide” ideology became the obvious answer that soon got a hegemonic position in the debate. However when *predicted* demand led to increasing congestion, the *provide* part of the ideology did not provide more capacity. The state was responsible for financing the trunk road and the

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90 In accordance with the Buchanan report.
91 The author came to Kristiansand after the Sentrumsplanen was published. It was Per G Glüersen og Arne Schanke who wrote it.
frustration among local politicians increased with the increasing gap between traffic growth and capacity. This misfit between demand and supply soon became a critical problem: we’re not getting a “fair” share of the road funding. P. O. Johnsen who through the eighties was mayor, was an active fighter for more road money, but in vain. “Especially with a prime minister from own party, it is frustrating not to get a break-through for our demand for road funding.” he said later.\footnote{Intervju med P O Johnsen, 1998}

Kristiansand received in 1983 the Sofus-prize as the leading cycle city in Norway. This was a reward for systematic planning, developing and facilitating for cycling over ten years. During the eighties the money for the cycle network program disappeared and Kristiansand lost gradually the position as the leading cycling city.

Kristiansand had from the creation of the political county council (“fylkeskommunen”) in 1975 a very strained relationship with the county: Vest-Agder fylkeskommune. That was one of the causes of often-negative reactions from the city to public transport proposals from the county. The county is the public transport authority and a key to achieve more public transport and in the development of a balanced transport system. This animosity may also be part of the reason that neither Sentrumsplanen nor Transportplanen\footnote{TP10 was transport plans in the 10 largest Norwegian cities, 1991.} was implemented by the city. Both of these plans had increased public transport and an integrated transport system as their aim. When the county then increased the number of bus passengers with 30% 1990-1994, a unique success, the city refused to contribute to keep the success going.

\section*{4.4.2 The 350 years Jubilee and the start of a new era}

Kristiansand was 350 years old in 1991, founded by King Christian IV in 1641. The Jubilee was a mechanism that released funds from many sources. It was the last of the twelve years as mayor for P O Johnsen. It was a big day when King Harald of Norway and Queen Margrethe of Denmark met in Kristiansand, a city their forefather King Christian IV founded.

The team Johnsen and Johnsen\footnote{Former teknisk rådmann Yngvar Johnsen} who had worked well together for years, mobilized all forces to present Kristiansand in the best possible way for the jubilee in 1991. All the old plans were looked into to find out what could be realized. The radical propositions of an extensive pedestrian area and a car free market place in the Sentrumsplanen, formerly not politically acceptable, were implemented. In summary, many of the earlier very controversial cases got a break-through caused by the jubilee. Or is the explanation that the jubilee was used as leverage for implementation? Either explanation, the jubilee created a feeling of pride among people and reinforced the place-identity with the city and the centre, making it very difficult to go back and give the car more space.

\section*{4.4.3 The new men and woman.}

The new female mayor replaced the very popular old mayor in 1992, a daunting task many thought. But, in a short time her first name became known to all and cherished. There were a
lot of other changes about the same time. In the municipality the town clerk, the technical director and other leaders were new and so the Highway Director. The Highway Director is employed by the national Highway Agency (HA) and came new to the area, contrary to the municipality leaders all recruited from within. “I wanted to know what the problems were, so first thing I went around and talked to people in key positions” said the Highway Director. “The problem over-shading all other problems was to get the trunk road E18 built.”

Congestion on E18 east of the city centre had for years been a story in the press and positioning the city politicians as not delivering, even if they were not responsible for the national trunk road. Part of this was also a legacy in Kristiansand for successful land use and transport planning, a reputation badly flawed by the daily congestion. This reputation was deteriorating further when more and more houses were built towards the east and congestion grew with the same pace.

4.4.4 The land use planning concept and design model

The design concept underlying the planning in Kristiansand for housing, for shopping and for business is based on the car as the main transport mode. From the main road a distributor road is drawn into an area as a cul-de-sac. Around the road the buildings are arranged with the highest density around the local shopping centre for that area. Several very well designed housing estates with separated systems for driving and walking-cycling have been built in Kristiansand (Tinnheia, Slettheia, Hånes, etc.). The housing estates were usually designed with concentrated parking for multi-storey housing and parking on each site with single detached housing. The retail and business park Sørlandsparken, which is the major growth centre in the region, was developed around a single main road into the area and individual sites with access from roads branching of the from the main road.

Figure 4-13 The plan for the Sørlandspark.

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95 Interview Andreas Setsaa
96 The majority of the 500-600 houses built per year.
97 Slettheia was for many years a model for good housing estate design in Norway.
98 Detached housing outside the centre is required to have 2.25 parking spaces per dwelling.
The individual building sites are developed as the figure below. A building is placed at one side of the site and the rest is used for parking. There is hardly any provision for walking or cycling between the individual sites.

*Figure 4-14 Design concept used extensively in Kristiansand.*

At the turn of the millennium, this design model is still alive as shown in the picture below:

*Figure 4-15 Design concept used at Telenor building in Kristiansand.*

Central place theory\(^{99}\) was the conceptual basis for planning a hierarchy of centers in Kristiansand. This concept, which implies that there are thresholds for goods and services (the minimum volume of business necessary for an establishment to be commercially viable), was used to outline a hierarchy of centers from CBD on top, via two major centers on the next level, via the housing estate centers on the level below and the neighborhood shop at the bottom.\(^{100}\) This centre structure has not been successful, such blueprint thinking and the individual location of each centre did not fit with the structural changes in retail or the services as post, public offices, etc. Still the planners keep this concept alive and Strømme centre on level two is being developed although the big shopping magnet Sørlandsparken is only a short distance away.

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99 Developed by Christaller to describe the size and distribution of settlements.

100 On top of the hierarchy Kvadraturen, then Vågsbygd og Strømme, then Hånes, Tinnheia, Slettheia, Voie, etc. and at last the local shops.
The former City Director\textsuperscript{101} pointed out that it was not sustainable that those living in Hånes had to drive far into the area to access the shopping centre (which never became a success) instead of putting the shops at the entrance of the area so that people could pick up groceries on their way home. Some twenty years later the market forces has turned the design model used for Hånes upside down. The centre never became what was intended in the plan and commercial activity has developed at the access point to the area. At the near by Sørlandspark the commercial interests are transforming part of the area by connecting buildings and creating indoor shopping streets, contrary to the design model. But on other parts the park the single plot design model as shown in figure 4-16, is still used.

*What is the alternative to such a development design model?*

How should centers and sub-centers be designed, planned and created? Firstly I think that individual transport with the car will dominate in many years to come. The question then is how to harness the use of the car and create a balanced transport system both within the areas/estates/parks and for access. The land use plan should not allow a vast parking area in front of a building without other access than the road itself for people walking (if you don’t drive we don’t need you as a customer seems to be the idea). Instead access with cars should be from a service road on the back and parking on ground limited. The single use road should be abandoned and the multi-use street recreated.

The land use planning philosophy and the design model should be scraped. The alternative philosophy is to create cities that are both livable and sustainable. Jane Jacobs criticized urban renewal, zoning and told us how to plan cites, and others like Engwicht talk of “Reclaiming the streets”.\textsuperscript{102} The garden city inspired suburbs of Oslo has been met with similar criticism: “The suburbs of Oslo are the true face of the class society. The plan is very poor.”\textsuperscript{103} The New Urbanism charter and ideology points towards the same need to break with the car ideology in city planning and propose a new urban planning doctrine (see ch. 7).

4.5 The E18 plan and implementation

4.5.1 The traffic problem

In the early 1990s only a few years after the Brundtland report *Our Common Future* was published, one might think that the environment was the prime political challenge in Kristiansand, but my interviews showed that the main planning problem was and had been during the last 15 years to solve the capacity and congestion problems on the main trunk road, the E18. How should E18 be built and when? With the then state road program, E18 would not be built until 20-30 years had passed by, and meanwhile the traffic growth continued. This threat of increasing capacity problems was overruling all other planning problems.

\textsuperscript{101} Interview Erling Valvik


\textsuperscript{103} Jan Carlsen, Klassekampen 050508
The planning process for the E18 trunk road started early 1992 with talks between the mayor and the county Highway Agency (HA) director, both new in their positions. The HA director continued the talks with other major stakeholders who confirmed the goal of getting the E18 built as soon as possible. Then the E18 planning process was designed, from start to the finish, and the end result was the finished road. The HA director’s story goes like this:

“"When I started as road director I came from another place with clean sheets. People came to me and gave me advice and I went around and talked to people to get an understanding of the situation. It soon became clear that there was a lot of frustration of not being able to get the main road system solved. To me the problem had two separate parts:

- I had to get understanding and support in Vegdirektoratet both for the seriousness of the situation and the need for Road Tolls, and
- Road Tolls had to be accepted by the City Council, and the necessary plans had to be accepted ending up with a Reguleringsplan for E18, so that we could build the road.”

The whole process was then designed, with ample time put in for talks and getting support from people both locally and centrally. “We took the key actors in Vegdirektoratet down here so that they could inform on the latest road building techniques and experiences from other places. This was a very good learning process which went both ways!” said the HA director.

The start was a period of deliberations and a seminar, with all the important stakeholders taking part. In this seminar agreement on the end goal was reached, and support for the timing and the means to be used was secured. The question of using tolls to finance the road was at the time only five years after the “green election” in 1987 a very delicate issue, which easily could jeopardize the project.

4.5.2 The E18 problem and solution.

The E18 planning problem was the lack of capacity on E18 through the central parts of the city. This had not found a solution mainly because of the lack of Government funding, even though one had tried hard to find a solution for a decade.

Figure 4-16 Kristiansand, the trunk roads through the central part of the municipality.
The major problem in Kristiansand in 1992 was fourfold as the Highway Director put:

1. Kristiansand had to decide on a plan for E18 through a very sensitive area, which also decided the costs.
2. The Highway Agency (HA) had to accept that congestion on E18 in Kristiansand was a problem deserving national funding.
3. The City Council had to accept the finance plan, including the continuous toll road financing (the toll amount to be collected, the price per passing and the number of years during which toll was to be collected).
4. The Highway Agency had to approve both the road plan and finance plan (state grant, municipal grant and local toll road).

This 2 by 2 planning problem is shown in the following four-quadrant figure:

<table>
<thead>
<tr>
<th>Authority</th>
<th>Local</th>
<th>Central</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Approve design and decide plan</td>
<td>II Accept the plan Decide priority for funding</td>
<td></td>
</tr>
<tr>
<td>III City Council decide to apply for toll financing</td>
<td>IV HA approve toll package for decision in Parliament</td>
<td></td>
</tr>
</tbody>
</table>

Road plan financed by tolls Finance

The solution of the E18 planning problem had to address all this four issues and create a common agreement on how to solve the problem. There are complicated relationships between the four quadrants, requiring both horizontal and vertical coordination on both the local and central level involving actors in several organizations that may or may not pull in the same direction to promote the case, but could also raise barriers to it.

It was the HA after these four major problems were solved who recommend the road project and the Toll Road Package for the Ministry of Transport and the Parliament. After very skilled planning, the process ended successfully and the motorway into the city centre was completed in 2004. The whole process took only twelve years and about a billion NOK (125 million Euro) was spent. The process went smoothly, apart from more than a year’s delay, when an alternative junction107 was forced into the process. “That was the biggest problem in otherwise a very effective planning process” as the county HA director put it.

Throughout the process the HA director kept in close contact with the mayor and a small group of politicians advising on the process. To solve the E18 problem overshadowed all other projects, even the Sustainable City project that run at the same time. All of the interviewed had E18 as one of the major tasks, but none of my informants mentioned the Sustainable City directly as one of the most important land use and transport issues for the city. Indirectly several mentioned the Sustainable City through land use policy, densification, public transport, etc. To understand the lack of importance the SC had, the old saying “Follow the money” can be used. E18 costs 700 million NOK to build, while the Sustainable City used 10-15 million. “Garnish” the road director called rebuilding Dronningens gate “we used some millions to make the street nice, it gave us a lot of good will.”

107 KrF’s “Julegave til Kristiansand”, Fædrelandsvennen 1996
“Lommerusk” – the term for petty cash – was used by the conservative group leader to describe the Sustainable City project in Kristiansand “The MoE gives us lommerusk, at the same time the Ministry of Transport cuts severely in the public transport grant! We, the city and the county, have to put up a lot of money to follow up their ideas. That is not interesting!” Thus the Sustainable City never caught on as the vision for the future among the actors or players with power, who were dealing with the big issues in Kristiansand.

4.5.3 Evaluation of the E18 process

Pre 1992 case history
The legacy was: a) Land use planning “top in class”, b) Transport financing “impossible” to get the normal way, c) Varoddbrua opened 1992 proved that tolls were an effective way to finance roads, d) The 1987 local election “No to Toll Ring” showed a strong green shift.

Easy or difficult (wicked) problem field?
Difficult problem because the Toll Ring was rejected in 1987 elections, but also supported by the E18 Varoddbrua success.

Problem definition as the difference between Facts and Expectation
Fact: Queues on main roads, public grievance, business expectations. Common talk. Media. Expectation: New road will increase capacity. Opinion among national-government agencies in Oslo: the congestion problems in Kristiansand small, hence the need for more capacity and funds is low.

What ideas and direction did these facts and expectations lead to?
Planning results: Concrete result was toll financed new E18 after bottom-up process led by the HA. The politicians took an active role as “municipality developers”.
Understanding of power: Experience told that to succeed it was necessary: a) to fight locally, within HA, towards MoT and Parliament, b) that a broad consensus in Kristiansand was necessary, and c) closed politics in the initial phase of the big project would help.

Plan process and implementing
Important incentives and benefits: Success gives many winners:
- Huge time savings for car users.
- Inward investment gives jobs.
- Building gives jobs and profits.
- Deserved “just” allocation of money
- Both politicians and planners are considered “clever” and gain increased “status”

Counter factual discussion: Was the E18 project a success only in conditions with queues and planning for the car? Is it conceivable with a more balanced transport system including car, bike, walk and priority to public transport? What in case would have been the necessary conditions? If for example the E18 aim had been the new road plus 20% public transport increase and completion of the BikeWalk net? At the time it was formally impossible, but so was the Bergen toll system a few years earlier. Perhaps wishful thinking, but I believe that a
more innovative E18 process might have succeeded. For years transport policy was led by tactical considerations without an overall strategy for the region. When the strategic level is lacking the tactic becomes of little value. If the Agder region had had a strategy for the trunk road through the whole region, then a more active instead of reactive tactic could have been used. Why not more flexible, creative and innovative processes and solutions? Playing on existing power relations as shown in the 4-quadrant table solved the E18 problems. The risk of failure for the main objective was too large to include other objectives as a greater share should go to PT and BW.

4.6 The Sustainable City.

4.6.1 Introduction

During the 1990s and parallel to the E18 process another land use and transport planning process took place. The Sustainable City Kristiansand came as a result of the great success with the municipal environmental planning project (MIK). The MoE wanted to continue and broaden that experience and asked cities to apply to become a Sustainable City. Kristiansand\textsuperscript{109} was after sending an application in the autumn 1992 appointed by the Ministry of the Environment (MoE) in Norway to Sustainable City (SC) together with Fredrikstad, Bergen, Tromsø and Gamle Oslo\textsuperscript{110}. “The aim for the Sustainable City experiment is to direct the development in a more environment friendly direction where the long-term perspective is to produce models for a sustainable town development.” It was six priority areas for Sustainable City:

1. Land use and transport planning
2. City centre development
3. City dwellings and densification
4. Green structure, nature and recreation
5. Waste and recycling
6. Urban design and cultural heritage

As mentioned before Kristiansand with about 75 000 inhabitants has a fifty-year-old reputation of being a “front-runner” in city planning. Both politicians and planners were therefore very positive to become a “Sustainable City.” Also the MoE was keen to get Kristiansand as part of the program, due to its reputation and record. Hence, the outlook towards success was soon established. Indeed, the MoE appointed Kristiansand The best of environment planning in Norway already in 1996. The development concept model for Kristiansand is shown in figure 4-11.

With the goals set out in the application, the seven-year project could outline the process and design the use of the means and instruments to achieve these goals. Instead of a plan process involving the city population, it became a process in which the focus was put on communication between the MoE/the central project task force and the Sustainable Cities in

\textsuperscript{109} See K H Olsen 1994:220 about the application and appointment of the SC
\textsuperscript{110} National program for the Sustainable Cities can be found on http://odin.dep.no/md/norsk/dok/andre_dok/rapporter/022005-990517/dok-bn.html
seminars and meetings. Information was spread to the public through leaflets, articles and media stunts.\textsuperscript{111} The controversial goal of shifting people from cars to public transport was to a limited extent addressed. In Kristiansand the emphasis was put on changing people’s attitudes and actions (?) through information and appealing morally to make people do the right things. Several smaller projects were run like “Don’t pollute! Use the bus”, “Don’t throw waste around”, “Stop idle running”, and “Drive without studded tires”.

The five Sustainable Cities set different goals. However, for the priority area - Land use and transport planning – all five including Kristiansand, should reduce car usage and CO\textsubscript{2} emissions by increasing the use of public transport. This public transport effort did not succeed. The MoE which also was the project maker, has funded expert evaluations of the SC-program and also carried out its own evaluation. “The most important result of the SC-program was to exemplify how difficult it is to obtain a more sustainable development in a city” was one comment\textsuperscript{112}. The full-scale experiment was closed in September 2000 with meager results.

4.6.2 Public transport share 1985, 1992 and 1998

In the following figure the traffic change in four of the Sustainable Cities and Stavanger are compared\textsuperscript{113}. The national travel surveys have a low confidence level when broken down on individual cities, but are the best data there is. In all the five cities the public transport share fell from 1985 to 1998. In Kristiansand there was already in 1993 a 30% increase in public transport usage due to another experiment ”Kristiansand package 1”. However, this patronage was lost thereafter and in 1998 the figure shows a public transport share of 10% for the Kristiansand region.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|}
\hline
\textbf{Public Transport share} & 1985 & 1992 & 1998 \\
\hline
Kristiansand & 20 & 15 & 10 \\
Stavanger & 15 & 10 & 5 \\
Bergen & 25 & 20 & 15 \\
Tromsø & \\
Nedre Glomma & \\
\hline
\end{tabular}
\caption{Public transport in five cities, 1985, 1992, 1998}
\end{table}

\textsuperscript{111} The signing of the Fredrikstad declaration (inspired by the Aalborg project?) was one such stunt. Who has heard of it later?

\textsuperscript{112} Strand et al evaluation of the SC project

\textsuperscript{113} Data is a collection made by Civitas from the national travel surveys, and supplemented with data from Stavanger, not part of the SC project.
4.6.3 Kristiansand and the Sustainable City project

Background and organization
The MoE described the Sustainable City experiment in several reports. In the main report it is stated: “The main challenge is to change the course away from the car driven expansion of the urban areas.” With this as the basic perspective, six tasks were defined. For each task a professional task force was set up to guide and advice the towns in their planning and implementation of projects. The process was a Top Down exercise with the task force as the obvious authority. However, in one of the evaluation reports the process has been said to be Bottom Up. The planning process and the organisation of the work was designed to get close co-operation between the central and local government, meetings were held regularly and series of yearly national conferences. The design of the experiment seems rather Top Down.

The goals of the Sustainable City experiment
The idea behind Sustainable City Kristiansand (and the four other cities) was both to develop a comprehensive approach for planning and administration, and models on how sustainable cities could be developed. The government clearly aimed at initiating comprehensive planning for sustainability in the cities, and indeed as an experience from this work, models to be used as examples for other cities should result. The government also gave the cities full responsibility for a successful result: “the municipalities are to be the driving force and integrating the work towards sustainability in their own planning and administration.”

Means to develop Public Transport
The transport committee in the Parliament initiated 1990 a broad government exercise in improving public transport as part of the Norwegian government’s follow-up of the Brundtland report. The counties applied for grants to the Ministry of Transport to run public transport projects. For Kristiansand a series of projects were designed as a comprehensive package to improve public transport, “Kristiansand package I”. This was very successful and the number of passengers increased with 30% from 1990 to 1994, a unique result.

Hence, when Kristiansand became a Sustainable City, the county wanted to follow up this success with a new comprehensive package “Kristiansand package II”. However, the Ministry of the Environment rejected to finance “Kristiansand package II” and the same was the case with MoT. Locally, it was not possible to get influential persons like the local Member of Parliament, to lobby the government for a grant for “Kristiansand package II”. The reason for this was that funding of roads was the top priority and the only one. “Nothing should interfere with the E18 process. Nothing!” In sum the county and the SC Kristiansand put together the plans for an improved public transport system, but were unable to implement the comprehensive plan or package.

115 Forsøksordningen for bedre kollektivtransport
116 Interview Kjell Abildsnes
Figure 4-17 Kristiansand Sustainable City, development concept model.
Results?
After the first few years, negative comments about the Sustainable City Kristiansand started to crop up in the press. People seemed to have lost faith in the project. Even though the leaflets and information spread the sustainable city gospel, people didn’t notice any change. Public transport was not improved, the bike lanes were still poorly maintained and the crossings complicated and unsafe. Car usage increased and public transport patronage fell during the seven years the project lasted.

The Ministry of Environment main evaluation report described the results:
- It will take a long time to change the course towards more sustainability.
- Key projects make the future vision more clear.
- Sustainable development is in the cities more embedded both politically and administratively.
- A new policy for local community development was tried out.
- City Centre development was improved

Specifically for Kristiansand is mentioned:
- Co-operation between central government, the roads authority, the county and Kristiansand was formalized (Kristiansand package II, Areal og Buss)
- City expansion was curbed and densification promoted.
- The market place\textsuperscript{117} has been changed from parking place to “the city living room”.

The MoE questionnaire
The basis for the Ministry’s evaluation was a questionnaire asking about the Sustainable City project, which were sent to all five towns in the experiment. The questions were:
1. The most positive results?
2. Changes in the cities’ way of organizing the work?
3. Has the SC changed economic priorities?
4. What was difficult to implement and why?
5. Future SC work?
6. Demands to county and central authorities?
7. The most important experiences?

One may guess the answers! Of course the SC experiment was a grand success in all the five cities, even with similar results as Sustainable City Kristiansand. Here we only look at the land use and transport planning and the cities answers may reflect successes on the other tasks, however it may be that the cities in their answers also had other and hidden intentions.

The City Council Executive in the Sustainable City Kristiansand had the following answer to the above questions:
1. Greater insights and willingness.
2. The Environment committee was removed, and formal co-operation to improve PT established.
3. More funds to SC projects.
4. No reduction in car usage. Lack of funds to PT has hampered the work. Land use management difficult.
5. Develop a sustainable land use policy in the long term.

\textsuperscript{117}This was finished for the city jubilee in 1991, long before the SC experiment started, but still used to sell the SC project!
6. **Consistent and adequate PT funding.**
7. **A very good example of co-operation between local and central government.**

The answer to questions 1 and 2 is a good example of using the language rhetorically. Greater insight and willingness was according to the Executive obtained, but how much were attitudes changed and what were the starting point for change, zero? Many will disagree that the removal of the Environment committee was a positive result. This committee was established in 1988 as part of the environmental project and became an active voice for sustainable development, to the annoyance of the establishment. The answer, which passed through the city political executive, was very positive. How can that be explained? My suggestions are:

- The city wants to be polite towards the people who took part in the seven-year project, and signal that the city is interested to take part in future experiments hopefully with some extra money.
- The politicians and administration tend to present the positive side of things, and forget about the failures. It may also be the case that the picture the politicians had of the Sustainable City Kristiansand basically was very positive, even though the results were meager.
- Neither the politicians and nor the administration want to be associated with failure under any circumstances. That may influence the electorate and also question the competence of the politicians running the city affairs.
- The politicians and the administration do have a common interest in always being successful. The same goes for the Department of the Environment. This may have influenced the questioning, the answers and the presentation of the answers?
- Lastly, representative democracy has a strong preference for avoiding conflicts and maintaining consensus positions\(^\text{118}\). A sustainable city development will threaten the existing consensus and may therefore be marginalized, as it became in Kristiansand.

### 4.6.4 Prize for the best environmental city

The Minister of the Environment Borge Brende, honored Kristiansand when he gave the Mayor Bjorg Wallevik, “Prize for the best environmental city” (Byplanprisen) for the year 2002.

“Kristiansand gets the prize for it’s long-term effort of city development in a sustainability perspective. I hope this prize will inspire the cities to put even more emphasis on the environment. Kristiansand is the example of the best practice; I hope other cities can learn from Kristiansand. It is good foresight to improve the environment in the cities.” said the minister and continued “Kristiansand has worked systematically with a long time horizon to develop the city with overall structure, improved public transport and cycling network, attractive city space and green structure, cleaner river and waterfront, and good accessibility for all. Kristiansand has great breadth in its environmental approach, which spans from the cultural heritage to waste recycling and energy. The local authority is sitting in the drivers’ seat for this work and has been active in promoting co-operation with Government, county, industry and the population. Hardly any other city in Norway has such a breadth in the work to develop a good city environment as Kristiansand.”

\(^{118}\) Rydin Yvonne 1995 *Sustainable development and the role of Land Use Planning Area 369-377*
What did the Minister highlight?

1. **Time perspective:** long-term effort of city development in a sustainability perspective.
2. Kristiansand is the example of the best practice.
3. Comprehensive, integrated planning. Kristiansand has worked systematically with a long time horizon:
   - to develop the city with overall structure,
   - improved public transport and cycling network,
   - attractive city space and green structure,
   - cleaner river and waterfront,
   - good accessibility for all.

Management and Governance: The local authority is sitting in the drivers’ seat for this work: has been active in promoting co-operation with Government, county, industry and the population. Broad approach: Kristiansand has great breadth in its environmental approach, which spans from the cultural heritage to waste recycling and energy. Hardly any other city in Norway has such a breadth in the work to develop a good city environment as Kristiansand. Put in another words, one may look to Kristiansand to learn about:

- **Sustainable city development**
- **Integrated planning**
- **Good governance**
- **Practical approach**

Media, some politicians and many people were somewhat surprised of this prize. The Sustainable City did not improve public transport services, instead it disregarded the unique public transport success the county had created with the consequence that public transport patronage fell during the project. The cycling network was not improved or extended contrary to what the Minister said. One may wonder where the information for the speech came from?

**A gap between words and reality?**

The gap between the Sustainable City propaganda and people’s daily experiences was topped when the city got the City Planning Prize from the Minister of Environment. The Sustainable City became a concept of something different than what was experienced in Kristiansand, a proof of wrong policies, and a “hypocrite” in the eyes of many. Kristiansand had launched the biggest road-building scheme ever in the nineties, financed by road tolls. The motorway takes the car directly to the city centre through an underground grade separated junction. The traffic capacity established may provide for free car usage for several decades. Neither the parking policy nor the statutory parking requirements for new buildings were changed. Hardly a sustainable development, many will say. An evaluation of the effectiveness in achieving the stated objectives of the transport part of the SC project, found on the contrary that the objectives of shifting people from cars to PT were not reached. In fact the SC project did hardly affect person’s choice of mode in a positive way, rather all indicators show that car use and car dependency increased and PT patronage fell.

**The Sustainable City is less environment friendly.**

Good wishes and 100 million NOK was used – but the car usage has not decreased in the five Sustainable Cities: Tromsø, Bergen, Fredrikstad, Kristiansand and Gamle Oslo.

"It is of no use to promote public transport when the roads in the cities are expanded and improved," says project leader Kjell Spigseth.

Plan 1/2000
4.7 Assessment of the major events in the nineties

The two major events in the nineties were the designation as Sustainable City (SC) from 1993 to 2000, a period of seven years, and the E18 project transforming the old two-lane road into a four-lane urban motorway financed mainly by a toll road ring around the city centre.

These two events the E18 and the Sustainable City, are analyzed using the model in the figure\textsuperscript{119}, starting with structure, then process, resources and measures.

![The plan and implementation system](image)

*Figure 4-18 Model for analysis*

The E18 and the Sustainable City projects are systematically compared below\textsuperscript{120}.

The E18 case can be called a “Stakeholder” project, meaning that combinations of stakeholders both public and private were central in the process. The SC case can from one angle be called a “Government” project, meaning that it was implementing national policy at the local level, using the hierarchical formal authority system for decision-making. From another angle the benevolent Government used information to persuade the municipality to become more sustainable. It was never a question of management by force, but under both perspectives the Sustainable City idea and project was implemented in the city without regard for the local context and citizens.

*Goals*

The E18 had one simple aim, to build a new highway. A set of objectives underpin this aim; some of them very difficult to achieve, in particular the toll financing and decision on the alignment and road design. The stakeholders agreed upon the aims of the E18 project, which was important in later decision process. After the City Council made the final decision on the

\textsuperscript{119} LOKTRA report 3 Mer effektive institusjoner og bedre planlegging.

\textsuperscript{120} ANNEX I to chapter 4 show a one page comparison.
Toll Road Package and highway alignment, the process transferred to “product planning”. The aims of the SC project were as ambiguous as the concept sustainable development itself. The targets set by the MoE were to develop a SC-model, to create jobs and to improve children’s environment. The SC should also shift people from cars to PT. The SC project did not manage to focus on selected objectives, but proceeded with ambiguous targets. A more focused process with clearly identified targets might have led to more tangible results, especially with regards to the aim of influencing people’s choice of mode of transport i.e. a move from car use to public transport.

**Structure**

The formal structure following the planning act was used as the instrument to achieve the two aims: Decisions in the City Council on *Reguleringsplan* E18, and Toll road finance package. The E18 project had two main actors, the Highway Agency and Kristiansand municipality. The HA is organized in a vertical structure under the Ministry of Transport while the municipality has a City Council with elected representatives on top. The cooperation and partnership created in the E18 case made it possible to overcome the barriers inherent in the structure. The SC on the other hand did not manage to create such partnerships. A Top down approach initiated by MoE with national secretariat and six supporting groups, with local steering and project groups (note that the SC project did not use the permanent committees in the local authority) was the way the project was organized. The aim of increasing public transport use was abandoned due to two reasons:

- Animosity between municipality and county,
- The possibility of a negative effect on ability to raise funds for building roads

The SC created its own steering group and project group instead of using the formal structure, this probably hampered the progress and ultimately the effectiveness of the project.

**Process**

The E18 project started with a closed process with selected stakeholders until consensus were reached, thereafter the statutory process was used. It was first a learning and confidence building process among selected key actors. The SC process was very much a Top Down process, unable to create any broad confidence in the project. SC used professional information people to disseminate information and create awareness about the project, it’s meetings and conferences. The process and information strategy took place outside the established planning processes in the municipality, making the SC project exclusive and alienating some planners as well as many members of the public.

**Resources**

Both projects had ample of resources for the planning process. Resources for the E18 planning were available in Highway Agency and Kristiansand municipality administration. If the E18 project had been successful, then the toll system would generate significant income (100 million NOK every year for a decade paid by road users) for building infrastructure in the region. Ample resources for planning (seminars and meetings in places unusual for most public planners) were available for the Sustainable City project too, but the SC project was not embedded in daily processes nor structure. SC can be read as “predict and prevent” project, the car growth that was predicted should be prevented by shift to public transport. Such a shift would represent a huge challenge to the city as a “growth machine” and the interests behind growth. The SC project would yearly require substantial public money to make public transport an attractive alternative to the car. Public transport would have to be

121 The “car system” represent substantial economic interests in Kristiansand, from the newspaper who has considerable income from advertising to the real estate business and the planning and building of car sale premises in the Sørlandspark.
subsidized from taxpayers by money allocated through the county. Thus one of the projects had clear direct benefits for the local community, while the other would require the same community to commit to additional expenditure for years to obtain long-term benefits.

**Measures**
The E18 project is an excellent example of successful coordination of interests and creating consensus about a common goal. The main measures used were cooperation and learning. Consensus was built among key stakeholders through a learning process and cooperation across levels, layers and sectors. The result was an unwritten “contract” between the stakeholders built on trust, agreeing on the goals and “tying” each member in for the duration of the project. The aims of the SC project should be achieved through holistic planning, and integrate local authority, the state and private interests across sectors and tasks (note the county is not mentioned!). The priority tasks were among several others public transport and BW, plus integrated land use and transport planning. The SC project attempted to change both the course of action and the rules of the game through “good examples” and the “right” moral attitude.

**Results**
The E18 project is an example of achieving the goal set within the time frame and funds available. The SC project did not achieve the goals set: “The MoE has evaluated what the sustainable cities among them Kristiansand, have done and not done to prepare for future environmentally friendly transport solutions. Stripped of professional and ministerial language the conclusion was: Nothing, which has any effect on the traffic development.”

**Comments**
The Toll road system has an important economic growth effect locally (jobs from the collection of tolls and building the road; and reduced travel times generate growth) plus the land use opportunities opening up because of the projects (both at junctions and further away due to reduced travel times). The successful E18 story started in 1992 when new actors came on stage. Before that the E18 project had been unsuccessful for years. Incentives were aligned and the result positive for all: zero congestion gives faster travel, direct jobs for a few, increased income for firms, increased taxes due to higher incomes, etc.

The Sustainable City has left two important results in Kristiansand. Firstly, Kristiansand got the MoE prize for champion city planning. This gives the city important symbolic value, which has a positive marketing effect and supports city branding. Secondly the BusMetro was established and embedded with politicians and administrators. The lack of progress in mode shift from cars to public transport, show that it is necessary to implement an integrated policy with both push and pull factors, across all levels to achieve such a shift. The measures to achieve the SC goals would be negative for many politicians, planners and the public. Shift from car to public transport will necessarily mean that many will have to change mode at a cost, and short-term benefits must be forsaken. At the turn of the millennium then, there are two paths, the successful ‘The Road Building Path’ and the unsuccessful ‘The Planning Path’. How did these two paths fare the first few years into the new millennium? This is the question we will answer next.

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122 VA Chief transport executive K Abildsnes, interview Fædrelandsvennen 18th February 1999
4.8 After the millennium, still on an unsustainable path?

The Road Building Path was still very strong in Kristiansand into the new millennium. E18 is finished from the city centre and some five kilometers towards the east. There a major new road works starts, 50 km of E18 is being built and road tolls pay for the investment. Plans for the continuation of the trunk road the E39 towards the west and the toll road package for financing E39 passed through the decision system (see below).

The Planning Path was blurred, uncertainties seemed great and it was difficult to predict future development. The Sustainable City left several ideas like the BusMetro, the ATP project and more emphasis on sustainable development in the Kommuneplan 2005. “Go to Kristiansand and learn,” said the Minister of Environment when he gave Kristiansand the prize as city planning champion. The discourse on sustainability and the story line sustainable transport development was strengthened through the Sustainable City project and of course further strengthened by the general debate on climate change. This does not mean that this story line had obtained a hegemony role, far from it. The “car world” occupied with better, bigger and safer cars, petrol prices, congestion, and lack of money for road building, etc. was still by far the strongest influence in the common discourse. It was taken for granted in Kristiansand that the car is here stay. The most important LU&T events and issues the first few years of the new millennium, which will be treated in turn below, have been:

- Campaign for “Gratis buss”
- BusMetro
- ATP project
- Kommuneplan 2005
- E39

Bridge or Tunnel
Toll Road Package with new geography/localization and formal structure
Innsigelse (Objection)

- Planning practice and parking policy (P-house underneath Market Square)

4.8.1 Campaign for ”Gratis Buss”

4.8.1.1 Zero fare or “Gratis buss”

Fædrelandsvennen started a very successful campaign promoting “Gratis Buss” (zero fare bus) before the coming elections to the Parliament (Storting) in August 2001. Many local politicians jumped on the bandwagon and proclaimed they wanted “Gratis Buss”. The story continues through autumn and winter with politicians playing lip service and passing the responsibility buck about. In May 2002 the campaign was closed, no one had agreed to shoulder the costs. The timeline for the first “Gratis Buss” campaign was:

- September 2001: County Council Executive supports ”Gratis Buss” in Kristiansand
- September 2001: The mayor Wallevik gets support from four MPs on a national pilot project ”Gratis Buss”

123 A public private partnership (in Norway called OPS) finance, build and maintain the road on a 25 years contract.
October 2001: Gratis Buss will cost 100-150 million NOK, while present subsidy is 36 million.

November 2001: The Conservative Party did not put Gratis Buss in the budget (Labour Party offered NOK 300 000)

December 2001: The Government will support the cities, and public transport

February 2001: VAFK; VA Kollektivtrafikk and Bussen Trafikkselskap say no: Free bus makes no sense!

April 2002: The Minister of Transport T Skogsholm, V, in the Parliament:

"Everybody want "Gratis buss", and it will be difficult to defend that we support Kristiansand and not the others. We can’t discriminate.” She also wanted the municipalities to commit themselves to allocate more of their own funds to public transport before the Government would increase such funding.

May 2002: City Council Executive rejects the Labour proposal

Hasselt

Fædrelandsvennen was very much inspired by the city of Hasselt in Belgium, when they started the campaign for “Gratis Buss”. Hasselt is about the same size as Kristiansand as shown in the table.

<table>
<thead>
<tr>
<th>Hasselt 2001</th>
<th>Kristiansand 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>68 000 inhabitants</td>
<td>75 000 inhabitants</td>
</tr>
<tr>
<td>(200 000 within region)</td>
<td>(110 000 within region)</td>
</tr>
</tbody>
</table>

The Hasselt model is an example of integrated transport planning in a city where public transport and BW is a city responsibility. In Hasselt a 4-lane road was redesigned to a 2-lane road, the former road space was transformed into a green belt with BW path. The city reduced the number of parking spaces and raised the parking fee! The cost of “Free Public Transport” was fairly low due to the very low level of public transport users (one third of Kristiansand).

The local discussion in Kristiansand focused singularly on the public transport fare element of the Hasselt initiative when in reality it was a well integrated transport policy where restrictions on car use were implemented together with improvements for vulnerable road users and free public transport services. Parking in the city centre was reduced and the four-lane ring road was reduced to a two-lane road. It was a carrot and stick policy measure, which was very successful.

4.8.1.2 The “Gratis Buss” campaign process

The prime minister candidate Jens Stoltenberg was: turned on by the idea of “Gratis Buss”. “Interesting thought” he says. A few days later on August 15th Fædrelandsvennen presents a full page headed Broad Political Excitement for “Gratis Buss” with pictures and

124 St meld nr 23 (2001-2002) Bedre miljø i byer og tettsteder
125 presenting St meld nr 26 (2001-2002) Bedre kollektivtransport
126 Fædrelandsvennen 11 August 2001
127 Fædrelandsvennen, 110801
comments from political parties. “If we can be a demonstration city for this, it is unbelievably exciting. I am not at all against “Gratis Buss”, on the contrary. I have earlier expressed that the municipality is not receiving the money for public transport, and therefore it is not our responsibility. But if we can get money from the state and become a demonstration city, I support it fully.” says the mayor Bjørg Wallevik. Together with the leader of Agderrådet Jan Helland-Olsen she is going to push the case right to the top nationally. There was political consensus about “Gratis Buss” in Kristiansand (Frp excepted).

Note that the mayor says:

1. That the PT is not the responsibility of the city
2. She will go to the “top” (Central Government) and ask for money for public transport, without an offer of a local contribution
3. That the County mayor, who is responsible for PT, is not engaged with (Agderrådet is a “club” to ease cooperation between the two Agder counties and produce common goals)

On September first the County Council Executive supports the idea, and four MPs support the idea of a Government demonstration project. After the September election things are back to normal. During the budget discussion in the Parliament, the Labour party put in a tiny 300 000 NOK (estimated cost 100-150 million) while the Conservatives opted not to make a contribution. In December the Government proclaims a new and active policy to support PT. Then on February 1st those responsible for PT: Vest-Agder County; Vest-Agder Kollektivtrafikk and Bussen Trafikkselskap say no: Free bus makes no sense!

In April the Government White Paper on public transport was presented by the Minister of Transport, T Skogsholm, V, and she comments on the initiative in Kristiansand: “Everybody wants “Gratis Buss” and it will be difficult to defend that we only support Kristiansand and no one else.” She adds that the cities must commit money in their budgets at local level before they will get state grants.

**LAST STOP FOR "GRATIS BUSS"** one could read in Fædrelandsvennen 16 May 2002. The City Council killed all hopes for “Gratis Buss” yesterday. Ap put in a last effort to keep the election promise, but the majority Høyre, Kristelig Folkepart and Venstre crushed the dream. "The election promise was a bluff from Høyre, Kristelig Folkeparti og Venstre. They have led the voters behind the light.” exclaims a disappointed and upset Mette Gundersen, Ap. ”We have met the wall. We realize that we are not getting any way with the Government on this issue. It would only be a symbolic proposition.” says Tore Austad, H (the Government consisted of: Høyre, Kristelig Folkeparti and Venstre).

**4.8.1.3  Epilogue, “Gratis Buss” is dead, but won’t stay down.**

The newspaper however, does not let the issue die. Ever so often some form of “Gratis Buss” crops up in commentaries and articles, although modified to be half price or substantially reduced public transport fares. At the 2007 election the mayor candidate for the labor party relaunched “Gratis Buss”, but this time around it didn’t catch much attention.

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128 St. meld. nr. 26 (2001-2002) *Bedre kollektivtransport*
‘Fædrelandsvennen’ has kept the discussion on public transport fares alive over many years. The problem is that local politicians only participate in stunts and no political party assumes responsibility; i.e. ‘Our policy on public transport fares is “Gratis Buss”. The way public transport is organized and financed makes it easy for politicians to avoid taking responsibility and making a stand on the subject’. There are many research reports on the importance of the different elements like price, comfort, reliability, frequency and travel time, seating availability, etc with regards to transport choices. Common in these reports are that price is not enough to shift people from cars to buses. The few experiments also show that “Gratis buss” attract mainly cyclists and walkers, and only few drivers.

4.8.2 BusMetro in Kristiansand.

Curitiba in Brazil (population 2 mill) gave during the Sustainable City project birth to the BusMetro idea for Kristiansand. The MoT launched a new grant in spring 2000. The BusMetro started on August 18th 2003 and was officially opened by the Minister of Transport in September. It became an instant success with headlines like 18% growth.

The BusMetro is a 8 km linear bus route through the city centre with high frequency, real time info and high quality bus stops, etc. The intention is to develop the land around the major stops as high-density mixed-use interchanges. The objective of course is to develop the BusMetro as an alternative to the car. It remains to be seen to what extent the BusMetro will attain such goals. New route structure has been established with a lot better frequency (doubling on some routes) paid for by Government “reward money”. The four parties should participate with the following amounts:

<table>
<thead>
<tr>
<th>Investor</th>
<th>Million NOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Transport</td>
<td>2.25</td>
</tr>
<tr>
<td>Kristiansand municipality</td>
<td>1.25</td>
</tr>
<tr>
<td>Vest-Agder County</td>
<td>1.30</td>
</tr>
<tr>
<td>Highway Agency</td>
<td>1.20</td>
</tr>
<tr>
<td>Sum</td>
<td>6.00</td>
</tr>
</tbody>
</table>

In fact the costs of the project became 11.46 million NOK. In addition 41 million NOK was invested in infrastructure, new stops, etc. The “real-time” system alone cost 10 million. The “great success” of the BusMetro and the rapid growth mostly refer to the initial months of the project in 2003. The data on the “before” situation was fairly unreliable and probably inflated the growth figures.

The table below show that the BusMetro has had substantially higher growth than the Kristiansand region and far higher than for the county (fylke).

129 Research on this issue, see Kråkenes and Oland
130 The idea goes back to the report Areal og buss, en byvisjon 1991. ”Hensikten er å utvikle arealbruk som er mindre transportgenererende” s. 7
131 MoT spring 2000 ”Støtteordningen for forsøksvirksomhet i KT”
BusMetroen show rapid growth first two years

Figure 4-19 Kristiansand, BusMetro passenger growth 2003 – 2005
Notice that the y-axis use comma, hence 1,02 mean 1.02 in US-English language.

The differences are less from 2004 to 2005 than for the year before. This may be caused by the initial positive effects at the start of the project has been leveling out; indicating that further growth will only be generated by further improvements in the services. Public transport in the Kristiansand region has since 1997 varied around 8,5 million trips per year. In 2005 the number of passengers was only 2% higher than in 1997. The BusMetro may have changed this path and possibly started an upward trend?

There is very little indication that the BussMetro has attracted substantial numbers of former car users. The car traffic on the trunk road E18 Varoddbrua increased with 3% per year in the period 2000 – 2005.

From an evaluation\textsuperscript{132} of the BusMetro it seems clear that most of the public transport users have the bus as sole mode: "It is still such that 70% of bus users did not have car as an alternative, and a further 25% were in households where someone else used the car. This means that the vast majority of the bus users, used the bus because the alternative was lacking. Among the relatively few who could use the bus but didn’t, it was the different positive sides with public transport and the negative sides of car use like parking difficulties, costs and queues, that were mentioned.

4.8.2.1 Assessment of the BusMetro success

The BusMetro has had a very good start, the foundation for basic infrastructure is in place (dilemmas are also there, it takes 10 min extra to travel by UiA, which is a choice of route where some passengers gain and some lose), but the improvements must continue to keep up with the competition from the cars. In the list of tasks below it is especially important to prioritize those that reduce the door-to-door travel time for the bus passengers.

- Bus priority (lanes, signals etc)
- Frequency, buses every 10 minutes.
- Ticket price.
- Comfort on the bus.
- High quality stops.
- Real time information has to be available at all stops not only on the city centre terminals.

The traffic growth confirms that increased frequency generates more traffic, and together with a more efficient route structure and the effect of marketing a ”new” product, the very successful start of the BusMetro can be explained. The goals for 2008 are 20% increase in traffic on the BusMetro and 10% for PT generally in the city. These aims will be hard to meet unless more money is put into PT services.

4.8.2.2 Conclusion on BusMetro

The BusMetro has been very successful in improving the image of public transport in Kristiansand, and the basic infrastructure for a modern public transport system has been established in the city centre. The BusMetro process is also an excellent example of how institutional barriers can be overcome and how goals can be achieved.

The cooperation of the partners (The Highway Agency, the bus company Bussen, Vest-Agder County, Kristiansand city) who produced the BusMetro system is arguably the project’s greatest success. There are many examples also in Kristiansand that projects requiring input from many organizations fail. Without the Ministry of Transport grant it could not have been realized, but that should not hide the fact that the local actors in Kristiansand managed to integrate public transport services and investments within the transport and land use planning and policy making. The BusMetro has been integrated in land use structure plan for Kristiansand. What remains to be seen is to what extent the administration and politicians will follow up the ideas and aims of the BusMetro project in the coming land use planning. This successful cooperation was continued in the ATP project from 2004, see below. The major question, however, how to shift people from cars to buses, is not answered.

The BusMetro has not managed to attract many persons who formerly used the car, the major traffic growth on the buses has probably been new traffic generated by the improved bus services. More than 3.2 million passengers used the BusMetro in 2007, which is about 250 000 more passengers than in 2004 and up 2% from 2006. The numbers in the following table show a growth on the BusMetro lines on 1% the second full year of service, 5% the third year and 2% the forth year. To reach the goal of 20% increase in the number of passengers
between 2004 and 2008, another 250 000 passengers is needed in addition to the present numbers.\textsuperscript{133}

<table>
<thead>
<tr>
<th>Line</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1/01</td>
<td>703 910</td>
<td>742 443</td>
<td>812 324</td>
<td>880 998</td>
<td>908 502</td>
</tr>
<tr>
<td>M2/04</td>
<td>1 260 359</td>
<td>1 282 479</td>
<td>1 348 287</td>
<td>1 279 341</td>
<td>1 201 205</td>
</tr>
<tr>
<td>M3-M4/07</td>
<td>1 032 832</td>
<td>1 016 252</td>
<td>1 035 237</td>
<td>1 083 961</td>
<td>1 051 054</td>
</tr>
<tr>
<td>BusMetro total</td>
<td>2 997 101</td>
<td>3 041 174</td>
<td>3 195 848</td>
<td>3 244 300</td>
<td>3 160 791</td>
</tr>
</tbody>
</table>

| Growth per year | 1.01 | 1.05 | 1.02 | 0.97 |

Source: Vest-Agder Kollektivtrafikk, Inge Os.

Further increase in patronage depends on an improvement of the relative attributes of public transport compared with the competing modes, which are walking and cycling on short distances and the car for all distances. The price of travel is important, but not enough to attract people from cars. However, people in general find the price of using the bus too high, this is especially the case for families traveling together, as a stream of letters over years to the media show. The BusMetro must probably offer fares at about half the present level before people in general will consider it as a viable alternative (This is in line with the campaign for “Gratis Buss” the newspaper Fædrelandsvennen has run since 2001). Model calculations show that the “optimal public transport fare” in Kristiansand should be 38% lower (TØI 1998).

There is little reason to believe that the BusMetro will accomplish a major shift in mode choice without an integrated land use and transport policy (bus priority, congestion charging, parking costs, etc.) in which restrictive measures on car use are adopted in addition to high frequency and substantially lower fares. The present policies with substantial increase in road capacity (E18 and E39) will generate more and faster car traffic and people will travel further, making mode shift increasingly difficult. Thus the BusMetro is very good for all those presently traveling by public transport along its line (more than three million passengers per year), but will probably have little effect on modal split.

What should be done?

There is no doubt that the car offers superior travel qualities to the bus. Public transport is not an option for the vast majority of trips. Most public transport users don’t have the alternative to use the car. How then can a policy to shift people from cars to the BusMetro in Kristiansand – be achieved – given that the aim is still there? A gradual implementation of a strategy could be to start with selective, substantially reduced fares i.e. student-card costing 200 NOK per month; combined with improved services. This will probably be necessary to make buses attract passengers and change the present growth in car use. This will cost substantial amounts of money (“Gratis Buss” has been estimated to cost some 130 million NOK per year). In addition the image of public transport as a product in the market place must be lifted many steps to be able to compete with the car. Thirdly the door-to-door travel time for public transport users must be continually improved through bus priority schemes both on congested roads within the city and on the main access roads E18 and E39. It is probably also necessary to use parking measures such as higher prices, no long time parking,
removal of parking places at workplaces, and so on to achieve the City Council’s goals. Road pricing is legally\textsuperscript{134} not an option in Kristiansand until the toll system is abandoned about 2025. The City Council rejected in 1999 road pricing as an alternative in Kristiansand, and even if some politicians talk of “Stockholm Congestion Charging”\textsuperscript{135} the major political parties’ program offer no such option.

4.8.3 The ATP project

The Government wanted to test alternative models of how land use and transport should be organized at the local level. An application from the public authorities responsible for the transport system in the Kristiansand region to become a pilot for administrative reform was sent to MoT late 2002. Excerpts from the application follow below\textsuperscript{136}. The overall aim of the four-year land use and transport planning project (Areal og Transport Prosjekt - ATP) was better integration of land use and transport policies across municipality and county borders.

The cooperation agreement about land use and transport planning in the Kristiansand region has the following partners: Birkenes kommune, Songdalen kommune, Søgne kommune, Lillesand kommune, Vennesla kommune, Kristiansand kommune, Vest-Agder fylkeskommune, Aust-Agder fylkeskommune. The ATP committee has 17 members with voting rights, plus 1 observer from the Highway Agency regional office, with no voting rights

4.8.4 ATP vision, goals and objectives

Here follows a translation of the vision, goals and objectives from the “Final application to Ministry of Transport” to obtain the ATP-project:

\textbf{Vision}

Coordinated local management of the complete land use and transport policy in the region. Freedom to dispose all transport resources in the region according to the overall local priority, regardless of source of finance and type of road.

\textbf{Main aim}

To meet the region’s transport challenges related to among others the environment and accessibility in a more comprehensive and effective way.

\textbf{Sub goals}

1. To improve the coordinated land use and transport policy in the region.
2. To improve public resource utilization across the levels of authorities.
3. To increase opportunities for local prioritizing.
4. To increase the number of people choosing environmentally friendly transport modes.
5. To improve transport services across borders between municipalities and counties for the benefit of the regions inhabitants.
6. Develop the Kristiansand region as a transport node in both national and international contexts.

\textsuperscript{134} Vegtrafikklovens §7a Vegprising was not yet effected by January 2008. Tolls and congestion charging cannot be combined on same area.

\textsuperscript{135} Stockholm had a test on congestion charging for eight months in 2006, the traffic was reduced with about 25%. The project restarted in 2007 on a permanent basis.

\textsuperscript{136} Translated from document “Final application to Ministry of Transport” draft version dated 1.10.02.
Objectives
The document is hereafter divided into themes with main challenges and objectives outlined under each. Only the objectives are cited here:

- Reduce traffic growth and support the use of environmentally friendly transport modes by a better-coordinated land use and transport policy.
- Attain a more comprehensive and effective use of resources across the levels of authorities, to improve responses to the challenges of environmental sustainability and improve accessibility. Also to correct bias in priorities caused by regulation of finance or organization.
- Improve the competitive position of public transport in the area relative to cars.
- Improve accessibility for all user groups.
- Increase environmentally friendly transport by coordinated strategy and instruments based on the greatest potential according to mode, and utilization of the interplay between modes.
- Increase resources available for public transport services by raising support from new partners and by making supply of public transport more effective. Develop the services through the provision of infrastructure and improvements in accessibility and thereby contribute to a reduction in further demand for resources to cover running costs, contribute to growth in passengers and thereby increased traffic revenue.
- The last objective was quantified
  - Reduce traffic growth in relation to population growth during the period
  - At least 25% increase in the number of ordinary bus-passengers (outside school transports), to increase the mode split for non-motorized travel from 12 to 15%
  - At least 40% increase in the number of bike journeys

4.8.4.1 Assessment of the ATP strategies
The ATP project will develop the strategy on the following themes:

- Coordinated land use and transport policy
- BusMetro project
- Land use plan for the Kristiansand region
- Improved competitive situation between car and bus
- Access for all groups of users
- Integrated strategy for increased use of environmentally friendly transport
- Develop the public transport in the region
- Coordinated strategies for other environment actions

A discussion follows in the Application on how realistic these objectives were. The objectives are realistic the Application claims, if “the effects are considered for a longer time period than the 4 year demonstration project”. It is therefore impossible for this project to fail. It is a guaranteed success, if not during the project period, then sometimes in the future. The ATP also looks like a copy of the Sustainable City project. All the actors have a common strong interest in success, and therefore of course it will become a success. There is no stated interest in exploring the benefits from the project, nor learning from possible mistakes. The language used in the application is close to the rhetorical language in Government white papers, which
can be advantageous. The distinction between the roles of politicians and planners is blurred, which raises serious questions regarding accountability.

**Land use plan for the Kristiansand region (consensus or conflict?)**

Kristiansand promised a lot and set the aims high in the ATP application, but probably so high that they seem like wishful thinking. An example is the following objective where increased revenue is envisaged: *Making the public transport supply more effective and develop the services through the provision of infrastructure and improvements in accessibility to contribute to a reduction in extra demand for resources to running costs / contribute to growth in passengers and thereby increased traffic revenue.* The provision of infrastructure and better accessibility shall achieve two things. Firstly reduce the need for subsidies and secondly contribute to increased revenue, may seem like wishful thinking without realistic knowledge about public transport?

The last objective *Coordinated strategies for other environment actions* will with the present political attitudes be hard to fulfill, and even if it is met it will scarcely have any effect in relation to the climate challenge. This is because the shift from cars to public transport must be very large before it has more than a marginal change in the CO₂ emissions from transport in Kristiansand.

### 4.8.4.2 Evaluation of the ATP project

A consultancy did a "halfway" evaluation of the ATP project. The evaluation method used was a questionnaire to all participants and in-depth interviews with key individuals. The consultants stated that there are many positive outputs from the ATP project so far: Regional thinking and coordination is more evident. There is more flexibility. Increased resources (reward-grant). Improved focus. More dialog. Better coordination. Better efficiency. "Most of the participants believe that they will achieve the objectives to increase environmentally friendly transport and reduce the growth in car traffic in the region."

The negative sides:

1. Democratic deficit
2. Wrong combination of measures
3. Too much administration, meetings and bureaucracy
4. Unclear responsibilities and roles
5. Skewed representation in the ATP committee
6. Conflict about organizing bus services
7. Unclear framework regarding organization, money and timescale
8. Some were critical to MoT and the project
9. Miscellaneous

The evaluation presents on the positive side the participants’ answers like better coordination, better effectiveness, etc. Most of these are relative issues depending upon their view of the situation before project start and not assessments of project outputs. If there was a lack of or no coordination, effectiveness, focus, regional thinking, etc. before, any element of these

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issues present after will be an improvement. Thus the project suits the MoT’s need to produce political arguments, rather than finding the pro’s and con’s with the organization model tested. The consultant does not necessarily think that the majority of the interviewees are right in their belief regarding the achievement of the goal on reduced car traffic. “We believe that the combination of measures must be more comprehensive and also include more restrictive instruments for car use, if one wants to reduce the growth in car traffic in the region.” This “common knowledge” has either not been understood or more likely deliberately been set aside for political reasons. Thus one can hardly expect substantial results from the ATP project. The list of negative barriers supports this expectation.

One of the key instruments to make people travel more by bus is to increase frequency and reduce travel time with buses. The ATP committee has only advisory capacity on bus economy. “We (the County) could not risk increasing extra costs of running the public transport services, that meant that we had to cut back services when the project was finished.” The political and administrative vested interest to keep the status quo is strong, as the MoT must (?) know. How then, can one explain that the MoT introduces such projects as the ATP project without measures to circumvent such interests? It seems that there is no analysis of the background for the Ministry’s wish to start this and the other demonstration projects.

From my interviews it became clear that the politicians also had other motives for the ATP project, to position Kristiansand for the expected reform of counties and municipalities. The ATP territory could well become the new Kristiansand municipality either the end result will become a two-tier reform or a three-tier reform.

An unexpected consequence came when the ATP committee was used by the HA to discuss the E39 and the new toll road agreement. This changed the E39 process quite a lot (see ch. 4.13).

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139 Interview Transport planning director Leif Storsve
4.8.5 Practice: public transport, parking and personnel problems.

4.8.5.1 Parking, Public Transport and “Sjøboder”.

Parking policy is usually seen by planners as a supplementary measure to reduce car traffic. Already in the Sentrumplan 1978 there was a discussion on the statutory parking requirement for new buildings. The figure shows that the total number of places in Kvadraturen would increase to nearly 5,000 places in 1995 following the statutory requirement, despite the identified target within the plan to reduce the number of parking spaces in the streets from 2200 to 1100. Thirty years later this discussion is repeated in Kristiansand. The planners advocate reduced parking in the centre while the political majority has the opposite view.

*Figure 4-21 Parking in Kvadraturen, the effect of the requirements according to §69.*

Parking policy is also a very sensitive subject. The municipal politicians “exploded” when Abildsnes\(^{140}\) proposed to increase the road toll collection time and use the municipal parking income to strengthen public transport with the purpose to reduce car traffic. Several politicians opposed his proposal strongly: “The Chief transport planning executive’s solution is to kick the ball to Kristiansand, when the county has too little money to solve the statutory county tasks. It is rude! To use income from parking on public transport is completely wrong! I agree with the conservative party (Høyre) that we have to use that income on our own statutory tasks.” says Kittelsen, the labour party group leader, to the paper the next day.

A week later Abildsnes answers the municipal politicians: “The MoE has evaluated what the sustainable cities among them Kristiansand, have done and not done to prepare for future environmentally friendly transport solutions. Stripped of professional and ministerial language the conclusion was: Nothing, which has any effect on the traffic development. In Byutredningen\(^{141}\) in which the city took part, we even want to increase public transport with 50% the next ten years. We have calculated that this will require 30 million NOK yearly in

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\(^{140}\) Chief transport planning executive VAFK, interviewed by Fædrelandsvennen 18th February 1999

\(^{141}\) Byutredningen was the city transport plan produced for the NTP process
increased public transport subsidy to the bus companies that will transport 4 million more passengers than today. If the politicians are not willing to discuss how this money can be provided there is no point in setting targets of improved public transport.” Alv Holmlid SV stated “Everybody speaks warmly about improved PT services, but at the same time they deliberately go against all measures which could lead to that goal. Vest-Agder County does more for public transport than most counties, it is up to Kristiansand now.”

This was at the time when the public started to see that the SC project would not deliver. The condescending attitude many city politicians had to the County was suddenly spelt out in the media. Underneath the discussion lies the experience of the very successful public transport project 1990-1994, which the politicians didn’t want to prolong, both because improved public transport costs money and because grants for road building might be threatened (see ch 4.6.3).

Let us jump six years to 2005 and the city’s problems with more than 800 “sjøboder” (originally a small hut on the shore for boats and fishing gear, but turned into expensive seaside chalets) in a legal controversy. In itself a case not related to parking policy, but H and KrF carried the “Sjøbod” motion in the City Council, 32 for 21 against, with the help of Frp. Interestingly the majority was gained by linking the decision to a deal on dropping proposed restrictions on curbside parking, clearly completely unrelated to the issue voted over. The parking restrictions had been proposed and adopted by the ATP committee to be sanctioned by the city. The deal shows that the majority in the City Council did not want to put further restrictions on car use, and also a lenient attitude in the “Sjøbod” case.

The reactions came promptly:
- “This is beneath the dignity of the City Council. H, KrF and Frp hide the way they run politics, both for the opposition and the voters.” Said Mette Gundersen, Ap
- The County Mayor Thore Westermoen claims that Kristiansand challenges important parts of the big cooperation on land use and transport plan (ATP): “Here the reduction in car traffic and effort on public transport are part of the objectives. We will have great challenges in cooperation with the politics that suddenly now appear. To mix the inter-municipal cooperation of bus promotion, parking and environmental politics in the city centre together with the “Sjøbod” case seems strange and unwise.”
- The environment director Øystein Holvik stated that the City Council adopted a policy that is directly opposed to the aims in the ATP-cooperation the very same City Council adopted earlier.
- Torbjørn Urfjell, SV, thought that the situation was grave: “The BusMetro and strong effort on public transport is in danger. We receive “reward money” for the PT effort on condition of growth in bus passengers and reduction in car traffic. Now we are walking in the opposite direction. Much of what we have built and Kristiansand receives praise for, can be torn down in a short time.”

“Cars Before Buses” was the headline Fædrelandsvennen used to sum up the City Council decision. The compromise decision on “Sjøbod” will lead to profound changes in the

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142 Fædrelandsvennen 250299
143 Mette Gundersen, group leader Ap, Fædrelandsvennen 22.09.2005
144 Fædrelandsvennen 24.09.2005
145 Fædrelandsvennen 24.09.2005
transport strategy and policy in Kristiansand. The consequences of these changes are pinpointed in the following Before and After comparison:

**Without restrictions on car traffic**

*Before*, arguments on restrictive measures to curb car traffic.

*Now*, it is decided that restrictions on cars shall not be implemented (H & Frp has had this line all the time, but supported the intention of in time to do something.)

**Road projects first priority**

- *Before*, arguments to give priority to PT and vulnerable road users.
- *Now*, it is decided that important and necessary road projects must go before effort on vulnerable road users and PT.

**Unlimited parking supply**

- *Before*, arguments to stop using “minimum” parking requirements for the number of parking spaces demanded for new buildings and introduce “maximum”.
- *Now*, it is decided that “minimum” requirements shall continue to be the rule. Free car usage is thus still the rule in the “Sustainable City” Kristiansand.

**More cars into the City Centre**

- *Before*, arguments that the city environmental capacity should steer parking policy and that the number of long-time parking spaces and kerb spaces should be reduced in Kvadraturen and along the BusMetro lines.
- *Now*, it is decided to provide for both kerb parking and long-time parking.

4.8.5.2 The Plan and Building office had management problems

The planning office leadership was completely renewed in 2004. Through several years an increasing frustration had spread in political circles. Several well-published cases of unauthorized development permits, mistakes and lack of development control was the basis for this frustration. More than 300 “Sjøbod” cases had to be looked into to find out how to make these “legal”. The editor commented thus[^146]: “A picture is revealed of the Plan and Building office as a place for anarchy, taking the law into ones own hands, lack of judgment and let it slide policy.” About a month later the three leaders of the Plan and Building office were replaced. The technical director finished his term in 2006, completely replacing the management of the Plan and Building administration.

The lack of trust in the Plan and Building office which had grown over several years must have had serious implications, but the politicians responsible for organizing, resources and manning the office never came out to explain or defend the planners. Reduced legitimacy must have been one impact, another was that the “Sjøbod” case led to long-time consequences for the parking policy and it probably also had implications in the E39 case (see below). It would have been far more difficult for the E39 project leader to campaign in the press if the Plan and Building office had been operating with normal legitimacy.

Kommuneplanen (arealdelen) is the comprehensive plan for the municipality territory and should be used to control and guide development (see figure ch 2). A Plan and Building office without legitimacy has limited chances to function properly. Is it possible that the effects of the malfunctioning planning office were negative for the public interests in general, lowered the public interests in developments and benefited the private interests?

[^146]: Fædrelandsvennen 11th September 2004
4.8.5.3 Market Square P-House

When the conflict between the City and the HA about Tall Bridge or Tunnel was at its most intense; parking and reduced car traffic reached the headlines again (see ch 4.13). The City wanted to get state “reward money” to improve public transport with the sole purpose of reducing car traffic. If successful there would be no need to build more roads to prevent future congestion, since car traffic would be reduced. There would be no need or demand for 1,000 new parking spaces in a multi-storey car park under the city square, according to this logic. Some thought otherwise, because just before Christmas 2004 one could read on the front page:

1,000 Parking-places under the Market Square

The Chamber of Commerce sped up plans to build 1,000 parking-places underneath the Market Square. The Parking-house will be finished in 2011. The timing of this presentation was carefully selected to coincide with the Christmas shopping time, when everybody experiences traffic chaos and congestion. More importantly the presentation also came just before the last City Council meeting prior to the Christmas recess, the Council passed a motion proposed by H to clarify the consequences of parking below the Market Square. It was now up the administration to follow up this motion and how they would do it. Below we will discuss the possible implications of this decision.

The lead story in Fædrelandsvennen 21.01.2005 was about the city centre, Kvadraturen. “If the city wants to be trustworthy in environmental issues, one can’t on one side work to reduce traffic in the city centre, and on the other side facilitate the opposite. It is a paradox to invest millions in the BusMetro to make people choose the bus instead of the car, and at the same time launch a “gigantic parking house”. The city is in addition expanding the road network for free car use, and applying to the MoT for “reward money” to reduce car traffic!” This is the first voice saying this with some strength in public. Most rational arguments would claim that to aim to reduce car traffic whilst at the same time aiming to increase car traffic is absurd, but not so in Kristiansand. The politicians had no problem doing just that, the leader of the development committee Lund, H, claimed that there was no contradiction between the City Climate plan and 1000 extra parking places: ”No contradiction in that. We have to do something with “matpakkekjørerne” (people driving sole to work). They are the problem. That people come to the city to shop, must never be seen as a problem”.

The day after Fædrelandsvennen put the charge in the mini-leader: Make up your mind! It will generate even more traffic. Shouldn’t the elected councilors find out what they want with the city soon?

However, it is possible to succeed politically with a paradoxical policy. Two years later an advert in the press notified that a public private partnership would start detailed planning and developing a funding package for the Market Square P-House. This was possibly the start

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147 Fædrelandsvennen 19.12.2006
148 The troika Hans Otto Lund, leader of the city development committee, leader of the Chamber Fred Bjerke and Sigurd Tvedt, Kvadraturforeningen present old plans in new wrapping. The consultants Rambøl Unico shall use expertise from Kristiansand, Trondheim and Copenhagen.
149 Fævvennen 19.12.06
150 Fædrelandsvennen 20.05.2007
of a new regime coalition establishing pre-emptive power to succeed in realizing the 1000 parking places?

4.8.6 Strategic land use planning (Kommuneplan 2005)

I have used the term strategic land use planning for the process of producing the strategic municipal plan (kommuneplan). The latest one produced in Kristiansand is Kommuneplan 2005. Strategy and strategic plan entered public planning in Norway in the eighties with the New Public Management ideology. Strategy is often used as an outline of the necessary steps to reach a vision or aim, based on certain premises. To attain the aim of environmentally sustainable transport in Kristiansand, nearly all plans produced since 1990 have set restrictions on car use as a premise. The plans also concentrate on visions and aims with hardly any discussion on how to get there. Time and again history shows that this premise is not acceptable to the majority in the City Council, but new plans are produced with the same premises. Instead it could be a focal point in a strategy on how to come to terms with the challenge that car use without restrictions poses for sustainable development in Kristiansand and especially for Kvadraturen. However, Kommuneplan 2005 follows the traditional pattern by emphasizing the vision and aims, whilst paying less attention to how to get there. Most indicators of the development in Kristiansand show that the trend is on an unsustainable path, contrary to the visions, aims and goals adopted in plan after plan, nonetheless it does not consider the important question:\[151\]: How to prevent that we end up where we don’t want to be?

The process before the decision on Kommuneplan 2005 was very broad and innovative. The planner in charge organized cooperation with the commercial sector and put a lot of emphasis on public participation in the process by engaging politicians and people from all walks of life, for example in many meetings. “We had 60-70 ‘culture-workers’ in meeting” said the planner\[152\]. “The former Kommuneplan was much more sector orientated”. The planning process showed that Kristiansand should put more emphasis on the following:

1. Role in the regional development
2. Growth and value added
3. Living conditions and quality of life
4. Sustainable development

The planner’s intentions were to make Kommuneplan 2005 a more strategic document that would be an instrument to guide/steer development. All the “correct” land use and transport goals are in the plan, but the conflict between the sustainable development goals and car growth, investment in transport infrastructure and sprawl is not addressed. The territorial part of the plan (Arealdelen) from the former plan (Kommuneplan 2000) was kept with minor changes. “Land use was not a great issue, since the reserves are large.”\[153\] In fact the land use plan has only undergone very small changes in the three last plans.

Sustainable development is one the main goals of the plan. “We will hand over the city to the next generation in a better ecological, economic and social condition than when we started,” is one statement. One of the objectives is to create “Sustainable city structure and Sustainable development.”

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\[151\] Confer the book by Ottar Brox ”Dit vi ikke vil”
\[152\] Intervju med Grethe Sjøholt 12. november 2004
\[153\] Intervju med Grethe Sjøholt 12. november 2004
transport system”. Among the instruments to reach this objective is “Strengthen Comprehensive Planning” (Helhetlig planlegging styrkes). This is the very same wording as was used in 1994 (Sustainable City program) without much effect.

Possibly the most important vision/aim in the plan is “Kristiansand as an engine to develop a major city (Storby)”\(^{154}\). This is in line with the ideology of cities competing in the global market. The Cultiva foundation’s big effort on the theme “culture as business” was followed up in the plan. Another aspect of this vision is city branding, city promotion and city marketing, which have grown a lot in ten years.

Kristiansand has questioned the need for such a plan as the Kommuneplan. Agderforskning state in a report\(^{155}\) that only few politicians say that they use the plan. Among the leaders responsible for important sectors in the plan one find some who say they use it a lot and the same is also the case among those who took part in producing the plan. The territorial part of the plan (Arealdelen) has little detail and with large reserves of building land, it is probably of little use to guide future location of activity. In addition to land allocated for building there are huge areas within the municipality borders set aside as green areas (LNF-områder). These areas can be changed into land for building by a decision in the City Council and judging from the interviews many looked at these as reserve areas for building.

The land development program for housing and commercial sites has been the key instrument to steer development in Kristiansand. The latest program states that the municipality role has changed from being an active actor within the property and development market to a role of facilitator.\(^{156}\) This change of role is in line with the new liberal ideology and has led to “market rule”. Still the aim in the Kommuneplan 2005 is to facilitate for a varied supply of housing/building sites to obtain a “buyers market”. The population growth in 2005 was 851 persons, an increase about 25% higher than expected in the programs. The program outlines the problems causing the gap between the number of houses being built and the increase in house prices on one side and the aims in the municipality plans on the other:

- a) Integrated planning is challenging,
- b) Provide the necessary social and technical infrastructure (schools, roads, water, etc.)
- c) Private ownership of land, and lastly
- d) The role of the municipality as facilitator hardly has any effect on the implementation of the program.

It seems to be the case that the population growth continues to increase far more than the estimate in Kommuneplan 2005. The demand for housing in Kristiansand will then outstrip supply and cause prices to rise fast the next years (location and type of housing will decide the price increase for different type of dwellings). Another effect of the too low supply of housing in Kristiansand is that commuting will increase, contrary to the sustainable development aims in the Kommuneplan 2005.

\(^{154}\) Incidentally very similar to the Aalborg strategy, see ch 5.

\(^{156}\) Forslag til Utbyggingsprogram 2007-2010. Del av Rådmannens Handlingsprogram (Dok. 4)
The Development Program has ensured that “there is a substantial supply of commercial building sites available in Kristiansand”\(^\text{157}\). However, the ownership and management of the municipality land for commercial development has been transferred to a limited company KNAS\(^\text{158}\) and thereby further reduced the role of the municipality’s land use and transport planning according to the planning act. KNAS has contrary to the Development Program declared that there is a lack of available commercial building sites. In 2008 the “substantial supply” from 2005 has been turned into “screaming lack of suitable sites” and the solution is to use the green areas.\(^\text{159}\) This apparent change in the assessment of building land reserves may have several causes like change of chairman, strong growth and increasing demand for land for businesses, and probably as will be discussed below a new proactive municipality in development (ch. 4.15.2).

### 4.8.7 E39 plan and the new Toll Road collection

A major conflict about road planning broke out in spring 2004. The Highway Agency presented the new plan alternatives for E39 and a new package for Toll Road collection to finance the trunk road. The conflict was about aesthetics and environment, and the grass roots rallied against the proposed Tall Bridge alternative.

#### 4.8.7.1 Bridge or tunnel?

The project price (2004) for the total road length E39 Gartnerløkka-Søgne was estimated at 300 million euro for the recommended Tall bridge alternative. The Tall Bridge was estimated at 190 million euro and Tunnel at 230 million euro. The difference between Bridge and Tunnel was 40 million euro. (E39 Gartnerløkka-Søgne 2.5 billion NOK, høybro 1540 mill, lavbro 1620 mill, tunnel 1865 mill.)

The HA sent the proposal for E39 and the next Toll Road Package to the municipality in the spring 2004. Kristiansand City Council has the authority to decide the plan for E39. The toll road agreement has to be decided by the Parliament, but only after a City Council decision asking for tolls to be raised in the municipality. Both road plans and tolls are difficult political issues, but the HA was fairly confident that both would pass through since the ATP committee had been informed all along. The leader of the labour party pronounced early on that the Tall Bridge was chosen because of the lower costs, something he would later regret. The bridge proposal meant putting a new bridge beside an old, which for years had been an aesthetic eyesore for people in Kristiansand. Sigbjørn Sødal\(^\text{160}\), professor at UiA, wrote a report and several articles in the media picking the HA documentation to pieces. More than any it was he who caused the majority for the Tall Bridge to change for Tunnel, but he had good helpers. In a short time the grass roots had organized themselves and formed the Action FOR Tunnel. From May 2004 onwards one could not open a newspaper without the question

\(^{157}\) Utbyggingsprogram 2007-2010, page 32.
\(^{158}\) KNAS – Kristiansand Næringsselskap AS.
\(^{159}\) KNAS board chairman, Bjarne Ugland (former deputy mayor) to Fædrelandsvennen 25.02.08
\(^{160}\) S Sødal did a very competent job showing that the HA traffic analysis was faulty, and hence that the recommendations very made on a poor basis. He is also the nephew of the then deputy mayor H Sødal, KrF, who had fought the HA and lost twice before in 1975 and 1995 about the same trunk road (interview Harald Sødal). In 1975 tall bridge won with 39 against 38, and in 1995 “The KrF alternative cost us an extra year” according to an interview with A Setsaa, HA director.
Tall Bridge or Tunnel being discussed, here follow some selected cuts from Fædrelandsvennen, the major local newspaper:

**This is the future low bridge.** Manipulated photos showing the low bridge alternative (rejected earlier) together with an interview with the HA project leader S Berg-Thomassen: “The advantages of the tunnel melts away, and the arguments for using 300 million extra are now so much poorer.” Two months later another manipulated photo: “This is how the future could become” was followed by an interview with Berg-Thomassen who claimed that the tunnel and bridge alternatives were equally good with regards to traffic. This statement is wrong according to the HA report in which a consultant states: “There is no doubt that the tunnel alternative has advantages for traffic.” Instead of being the objective planner the project leader clearly was now fighting to win regardless of whether he had to be flexible with the truth.

The bridge – tunnel controversy split the city and the technical director called in impartial expertise. On November 6th one could read that professor Kåre Petter Hagen, professor Arvid Strand and professor Tore Knudsen were engaged to evaluate the comments from the public hearing. “We as experts shall judge this without bindings, but understand that the HA has broad experience behind their judgments” say SINTEF researcher Tore Knudsen. Life goes on and the debate in the press continues with strength.

The headline “Laughing at the HA Tall Bridge Plan” was accompanied with a picture of Dag Vige and Harald Sødal. They were not insignificant nobodies, both group leaders in the City Council (V & KrF) and had for years been prominent in the debate about the environment. Nationally Bondevik’s second Cabinet ruled, and both V and KrF had places in it, which of course is very important when the case would reach the Parliament (Stortinget).

In January 2005 the case becomes very tense because most cards will be shown in a few days. On January 7th Fædrelandsvennen informs that the HA rejects Tunnel and calls for Innsigelse. “The HA notifies Innsigelse to the Tunnel alternative because of large extra social costs.” The politicians are in uproar. Both the timing of the Innsigelse, the day before the expert group report would be public and the reason given “large additional social costs” is peculiar. The extra costs are only about 10% of the whole project, calculated from drawings with a fairly wide range of uncertainty.

It also seems that the HA wishes to draw attention away from the devastating report from the experts. **Piercing critic of the Highway Agency** is the headline. *Deficient. Unbalanced. Worthy of criticisms. Flawed* are words used in the expert report. This is the decisive document that opens up for the technical director to go against the HA proposal and advice the City Council to choose the tunnel. But still the different political parties are split, especially the Labour party where the leader was loyal to the agreement in the ATP.

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161 Fædrelandsvennen 04.09.2004
162 Fædrelandsvennen 03.11.2004
163 B Martens, RAMBØLL Dated 05. May 2004
164 Fædrelandsvennen 06.11.2004
165 Fædrelandsvennen 12.11.2004
166 Innsigelse or Objection means that the City Council can no longer make the final decision in the case, it has to be decided by the MoE.
167 Fædrelandsvennen, 080107.
committee. An article on January 13th “Åsså drider vi i Vesterveien”\(^{168}\) by Terje Næss, a prominent Labour councilor, opposes the party leader and to a large extent legitimates the tunnel alternative within the party (the leader later changed his position\(^{169}\)).

On 18\(^{th}\) January the paper shows on the front page a picture of the action group celebrating the tunnel. A preliminary count shows that there is a majority for tunnel in the City Council. On the same day the editorial in the paper comments the expert group report. “A devastating expert judgment. The HA has in the best case produced a very poor document – in the worst case – manipulated both the basis for the calculations and comparison.” This is an extremely serious accusation against the HA and the project leader, which in most cases would lead to reactions. Except for a short answer\(^ {170}\) where the HA claimed that they had done good work, the accusations were not repudiated. The project leader who had actively used the paper nearly every day, was suddenly quiet. Instead the HA delivers the *Innsigelse* and starts an unnecessary (see below) prolonging of the decision process for a year and a half, with substantial costs to the society.

The *Innsigelse* process then goes on and there are no news until the change of Government in the autumn. The outgoing Minister of Environment Knut Arild Hareide (KrF) says a resounding Yes to the Tunnel\(^ {171}\). “*Here the environment issues weigh so heavy that my choice would be clear. This is a very important case for the whole city. With the road in the tunnel, one gets the opportunity to develop a completely new and lively area.*” A very strong statement from the departing minister, showing that the *Innsigelse* from the HA both was unnecessary and a waste of public money. Mayor Skisland commented the Minister’s statement: “*We have such a strong opinion behind us that we won’t accept defeat in this case. In the worst case we are willing to take a new round on the complete toll road package. Because we cannot accept to use a huge amount of toll money on a solution we don’t want.*” This signal that the City Council would reject the ”bompengepakke“ if the bridge alternative was chosen, was never understood by the HA. That is the joker in this power game, giving the local democracy the power to prevent toll financing and thus push the new E39 far into the future.

But the HA did not accept defeat. In the following months the Minister of Transport Naversete, Sp, several times supported the HA with statements in the press\(^ {172}\), while the Minister of Environment Bjørnøy, SV, avoided to comment. Even if the case from an environmental point of view seemed clear, the HA was fighting for its recommendation and the MoT supported the HA (and the ATP project they financed).

Twice the case was in the Parliament during question time. This is an opportunity for the politicians to put pressure on the Government, which used such a long time to come to a decision, and to show that the Tunnel was the only acceptable solution. (*Svar på spørsmål nr. 928 om bro eller tunnel på E39 i Kristiansand, and Svar på spørsmål nr. 367 om E39 i*

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168 A paraphrase on the title of a loved local song.
169 Interview with Bjarne Ugland: “I came to the understanding that the HA proposition was wrong.”
170 Fædrelandsvennen 18.01.2005. HA answers the expert criticism without discussing the different points, only reiterate that they have done a good job. Signed Arne Birkeland and Stig Berg-Thomassen.
171 Fædrelandsvennen 12.10.2005
172 Sp, which is a small party in the city, had the mayor in neighbouring Sogndalen municipality, who fought against the tunnel. He actively “pressed” his Minister, Sp.
Kristiansand) The Minister of Transport supported to the very end the Highway Agency choice of the cheapest solution that disregarded aesthetics. It was a stand against the local community and against a better environment. At that time it was fairly certain that the majority in the City Council could not accept a local development plan (reguleringsplan) for the Tall Bridge and as a consequence the Toll-package would fall to pieces. The Highway Agency would not manage to solve the trunk road problem and congestion would keep growing. The Government had then only one solution: to adopt the plan itself, a legal opportunity hardly ever used. The power structure in the road sector is so strong that the HA could go against the City Council decision, but also against the environment profile the “Red-Green” Government liked to show. That happened in a case where according to the news: The Highway Agency has in the best case produced a very poor document – in the worst case – manipulated both the basis for the calculations and comparison.

About INNSIGELSE
The current guidelines the summer 2005 was from 1988, but proposed new guidelines were looked into by Vegdirektoratet. The day before the devastating report from the expert group was published, the Highway Agency announces that it will formally object (submit an Innsigelse) to the tunnel alternative because “of the additional social costs associated with the tunnel alternative”. This raises several questions:

Timing
It may look like that HA tries to kill/reduce the effect of the mayor’s change of standpoint and the expert group report. It can also be seen as pressure on the officials in the municipality when they are about to write the proposition to the politicians, and indeed on the city council. The warning of an objection could and should have been sent many months earlier. According to the HA own guidelines Innsigelse shall be submitted as early as possible and the reason for the objection shall be given. Instead of January 6th 2005 the HA should have done that already in April 2004 if it had followed the statutes.

Formal criteria
Formal objections to a plan must be substantiated. 20% higher costs of the tunnel alternative compared to the lowest are based on calculations from plan drawings and standard costs for tunnels, bridges, etc. It is a comparison of a short section of the complete plan. If the costs for the two alternatives are calculated for the whole plan (kommunedelplanen) then the cost difference is about 10%. The uncertainty of such cost estimates is probably greater than 20%. The basis for the objection “additional social costs” refers to additional costs not included in the cost benefit analysis. But many external benefits not quantified are positive for the tunnel alternative: less noise, less visual intrusion, less dust and particles, controlled emissions and most of all release of valuable land for development. Probably most important for the public was the aesthetic side, where the Tunnel is far superior. The magnitude of these external benefits can be discussed, but all of them supported the tunnel alternative. Arbitration. Fylkesmannen who has a statutory position to arbitrate when Innsigelse has been given, recommended to the MoE that the objection was rejected. An interesting legal question is if she could have rejected the objection on formal grounds because it is plainly wrong regarding “social costs” since the calculated costs are mainly construction costs. Innsigelse can be

173 Fædrelandsvennen 18.01.2005
174 Vegdirektoratet NA_Rundskriv nr. 88/29 Punkt 5 Grunnlag for innsigelser overfor kommunen (gamle men fortsatt gjeldende retningslinjer ifg Tord Thorshov 17.06.05)
175 The objection should possibly also be rejected on the ground that the HA interferes with political allocation and is politically lobbying for another allocation of public money than the elected politicians have decided?
promoted when the land use is not compatible to the National Guidelines for coordinated land use and transport planning (RPR SAT rundskriv T-2/2003). In this case the Tunnel is opening up for city development and land use according to the principles in the Guidelines, while the Tall Bridge alternative was a “rural motorway” pushed through a city centre. The objection should according to good planning principles have been against the Bridge not the Tunnel.

Power rule.

One may on different grounds raise the question if the HA Innsigelse adhered to the legal framework or if it violated it. However there is no way to try the legality of the objection itself or the process followed by the objector. It is a closed process where established power relations and traditions have weight. The project leader needs only to use the trust of his superiors to make an objection. In this case the objection was presented in the newspaper as a warning and the HA was then committed to follow up the warning. It would be very difficult for the project leader’s superiors to prevent the objection being sent following the warning. This then also opens for the HA to use Innsigelse to pursue the agency’s own vested interests or as it seem in the E39 case a personal vendetta from the project leader.

4.8.7.2 Toll levies from 2008 and onwards

The MoE rejected the Innsigelse in May 2006 and the Tunnel was chosen. The decision on the new level of levies in the Toll Ring in Kristiansand came a year later.

<table>
<thead>
<tr>
<th>Toll increase from 2008</th>
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<tbody>
<tr>
<td>The politicians in the City Council have decided that the maximum cost to pass the tolls should be 6000 NOK per year. Single passing will cost 20 NOK and season ticket 10 NOK. In 2006 the yearly pass cost 1500 NOK.</td>
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<tr>
<td>Compulsory</td>
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<td>The toll resistance was massive. A petition on Internet collected several thousand names and a go-slow action created troubles in traffic. But the politicians have repeatedly said that they feel compelled to accept an increase in toll charges. The majority has expressed that there are no alternatives to finance the roads. The Government finances 15 - 20 percent of costs, the rest must be financed locally by toll charging.</td>
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<tr>
<td>Fear of chaos</td>
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<td>Per Sigurd Sørensen, Mayor, has earlier said that he felt powerless in the case. – We are trapped in this system if we want more road building in Kristiansand. The alternative is to say NO, but then we will not get a new road and we manage the city into traffic chaos, said Sørensen when the toll road debate took place.</td>
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</tbody>
</table>

The Toll Road package would be funded by approximately 15% Government grant and 85% user payment. The increasing uses of toll financing break with the principle of having a national road system as a “common good” free for all to use and paid for by tax money. Toll funding is by definition and statutes money collected for building particular roads. The legislation has been opened up for different prices at different times and to use the funds also on public transport infrastructure, bike lanes and safety projects.

Recently there has been a renewed debate on Rush hour pricing. As it is, the congestion charging act prevents rush hour pricing in areas with toll funding. A combined funding and

\[\text{176}\] The first model for the later packages was the Bergen package, which was originally divided in three: 1/3 Government grant, 1/3 ordinary Trunk road programme and 1/3 user payment.
congestion-charging package therefore needs new legislation to be possible. The planning and funding system is gradually growing more and more complicated and the accountability of the actors therefore decreases.

The decision-making authority of both toll funding and congestion charging should be devolved to the local level to prevent this decline in accountability. That will make it possible to create a balanced and integrated transport system in which all modes are included, but only if the elected local councilors decide so.

### 4.8.8 Important factors deciding project outcome?

How important are the different factors as explanation for goals achievement and lack of such? To answer this question I have assessed the different projects against different explanations as contributing to the projects’ success or failure. The assessments were graded in High, Medium and Low. In reality it is not possible to divide up a process into individual factors, because they are ingrained with each other, so that the matrix and grading must be used with care.

<table>
<thead>
<tr>
<th>Events and plan processes</th>
<th>Fragmentation levels / sector</th>
<th>Inconsistent national goals</th>
<th>Municipal self-rule</th>
<th>Growth goal land use</th>
<th>Growth goal transport</th>
<th>Double talk / Hypocrisy</th>
</tr>
</thead>
<tbody>
<tr>
<td>E18</td>
<td>HIGH</td>
<td>LOW</td>
<td>MEDIUM</td>
<td>LOW</td>
<td>HIGH</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>Sustainable City</td>
<td>LOW</td>
<td>HIGH</td>
<td>LOW</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>“Gratis buss”</td>
<td>LOW</td>
<td>HIGH</td>
<td>MEDIUM</td>
<td>LOW</td>
<td>MEDIUM</td>
<td>HIGH</td>
</tr>
<tr>
<td>BusMetro</td>
<td>LOW</td>
<td>HIGH</td>
<td>LOW</td>
<td>LOW</td>
<td>MEDIUM</td>
<td>HIGH</td>
</tr>
<tr>
<td>E39</td>
<td>HIGH</td>
<td>LOW</td>
<td>MEDIUM</td>
<td>LOW</td>
<td>HIGH</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>ATP</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>LOW</td>
<td>LOW</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>Kommuneplan05</td>
<td>LOW</td>
<td>LOW</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>Practice</td>
<td>MEDIUM</td>
<td>MEDIUM</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>LOW</td>
</tr>
<tr>
<td>Score</td>
<td>3 HIGH</td>
<td>4 HIGH</td>
<td>2 HIGH</td>
<td>2 HIGH</td>
<td>5 HIGH</td>
<td>3 HIGH</td>
</tr>
</tbody>
</table>

Table 4-21 Matrix grading the importance of different indicators

Fragmentation on several levels and between sectors had high importance in the successes of the two road building cases because the process was steered around barriers to be promoted as pure sector projects. Double talk or rhetoric was not prevalent in the process because the car growth goal was taken for granted. The Sustainable City, “Gratis Buss” and BusMetro projects were all hampered by the inconsistent national goals. That opened up for the different actors to use double talk and play on the ambiguous goals with the result that some interests lost and other interests won.

The ATP project has inherent weaknesses caused by the fragmentation, the inconsistent goals and municipal self-rule, which probably will make it very difficult for the project to reach its goals. The most important learning from the exercise is that behind the successful projects there were skilful actors that used the framework to maximize advantages and avoid hindrances. A different framework aimed at supporting overriding goals should therefore anticipate how the different actors would play and take precautions and use incentives to achieve the set goals.
4.9 Analysis and discussion

In this section the land use and transport development in Kristiansand is discussed to answer the research question of what has promoted and what has hindered a shift towards a more sustainable trajectory. I start with the models used for the analysis and discussion, then turning to highlight the important forces and mechanisms that caused the results to become what they became. The picture coming out is local politicians and planners in each separate case maximizing their ends within the fragmented national framework or the fragmented institutions that existed. With the new liberalism and the market turn away from planning, it seems that the city has adapted to change more readily than the state fraught with inertia. Two decades after the Brundtland report, Kristiansand is more car dependent and more unsustainable, contrary to all the nice goals and intentions expressed.

4.9.1 The good intentions

Looking back at the LU&T policy and development in Kristiansand the last ten – twenty years it is striking, given the extent of the good intentions, that so few of the aims and goals have been achieved. The list of plans and decisions adopting goals aiming at a sustainable future is long:

- TP10 Kristiansand
- Miljøvernplanen
- The Sustainable City program
- Kommuneplanen 2000
- Miljøhandlingsplanen
- Klimaplanen
- BusMetro plan
- ATP program
- Kommuneplanen 2005

This path of plans and projects aiming at sustainable development, which has a long history in the city, is called The Planning Path. The report Our Common Future (Brundtland report 1987) reinvigorated this path and the concept of sustainable development crept into the policy documents. Indeed Kristiansand became “Sustainable City” in 1993, only six years after the report was published. Twenty years later concepts and the storylines containing words like “sustainable – development – environment – transport - land use” have become embedded in the municipal strategy plan (Kommuneplan 2005). But, nice aims are one thing, reality is another.

Kristiansand - the Climate Villain was a headline a few years after the city received the prize as best in Norway in City Planning. The emissions from transport were high and increasing in Kristiansand, which was called “the most car dependent urban area in Norway”178. The path leading to this increasingly car dependent area I have called The Road Building Path. These two paths, which have been followed over two decades, have changed

177 Fædrelandsvennen 08.03.2006
position relative to each other. In the seventies *The Planning Path* ruled, the *plan-led* system designed the land use and transport network as an integrated plan. The last decade *The Road Building Path* has taken over and the *car-led* planning system is leading the development on an unsustainable trajectory. In the following we will discuss some of the causes behind this.

### 4.9.2 Introduction to the discussion

The case history is presented as two paths or trajectories with changing players, opportunities and constraints. The paths have a history, which still impacts on the course of events through tacit knowledge carried forward and therefore it is likely that the future (post case history) also will be influenced by former experiences. Some of that tacit knowledge was revealed through observation and interviews, but much stayed hidden. The changes over time were analyzed by using North’s definitions about institutions (the rules of the game) and organizations (the players), SEE CH. 2.2.3\(^7\). This interaction between institutions and agency is seen as a game, which Giddens called the duality of structure and agency or structuration. This play between actors and the institutional structure was for each of the individual cases analyzed using the framework outlined below.

*Frame for analysis, the question – How was the interaction between structure and agency?*

The events on the path and the mechanisms working together to produce the events are analyzed through asking the question: How did the institutional structure interact with agency to produce each particular event. Or in the words of North: How did the players (individuals and organizations) and the rules of the game (the institutions) interact with what result?

The conceptual model for the analysis of the interaction on the local level has three realms or dimensions: *sector, politics* and *territory* as outlined in ch. 2.2.7.

*Horizontal and vertical connection*

The land use and transport planning and policy impacts on the public in their daily life in the local area, or what can be called the *horizontal* or spatial level. The reciprocal horizontal interaction between the three dimensions is an important part of the model. The agencies on the local level have different vertical connections between the municipal level and the regional and central level, some of these are close, hierarchical and permanent (planner employed in the Highway Agency), others loose and changing (e.g. the City Mayor to Minister of Transport). The vertical interaction is mainly taking place through the *sector* in the Government hierarchy, as between local planners and the Ministry of Environment. There are also some vertical interactions between the local party politicians with central level representatives of the same party or when local politicians lobby the central politicians on a special issue.

*Overlapping roles*

Some of the political decision makers enter into many different roles. They may be spokesman for the city, or the city council, for their political party, but also they may take part in land use and transport planning working groups side by side by professional planners discussing planning details. What I am getting at is that the former more distinct roles and separations between elected and employed, between politicians and bureaucrats have become

\(^7\) Douglass North, 1990.
less distinct and blurred. These “blurred” roles are further complicated by their private connections, which in a small city like Kristiansand may be of great importance to understand what’s going on.

Let me take an example: politician P who is a building constructor, is married to a local journalist, he is member of the city development committee and sits in the working group for roadplan X, were the consultant and the public planner both belong to the same club as P and all three go hunting together. P’s family ties, his property and business interests, his professional association partners, etc. of course all influence on P’s forming of standpoint in particular cases and is not a problem. What may be a problem is if the consultant is selected because of his friendship with P and because he has the “right” attitudes.

Lack of transparency, hidden interests, etc. may influence the public debate and political decisions to a larger extent than prescribed by democratic theory. It is possible that this type of networks and ties plays a more important role in a small city than in a larger city with several competing such networks. Very few persons have over a long time period been very influential in the land use and transport planning and outcome in Kristiansand, which is important when one tries to understand what has happened.

Power and powerlessness – Why did actors behave as they did?
The how questions above explain how the event came about, but not the forces or power behind causing the event. To assess power relationships and who gains and who loses from that particular outcome, the following question about power180 and powerlessness was asked of the Kristiansand case: What interests benefited from the produced results and by the failed attempts?

The reciprocal interactions between these three dimensions are important in the power play. Those who within the national framework set the political agenda at the local level have the most important strategic position. It is not possible to attain this position without a direct and indirect interaction with a resourceful local business life (Lyngstad 1997). Stone introduced the concept “ruling coalition: the informal arrangements by which public bodies and private interests function together to make and carry out governing decisions”. (Stone 1989:179)

This definition has three elements:
- Mechanism that make the actors interact
- Capacity to implement decisions
- Actors that are able to implement plans and projects

Stone remarks: "It need no more than a set of individuals who are accustomed to cooperating, who are confident that they can rely on one another, and who believe that it is proper to maintain these relationships.” (Stone 89:180) In the E18 case such a group was formed and the plan process was designed with the aim of securing a majority in the city council. A process to obtain “pre-emptive power” which is a term that points to: “power as a capacity to occupy, hold, and make use of strategic position” (Stone 1988:83, after Lyngstad 1997:31) The stakeholder planning as I have called the E18 case, resembles the ruling coalition in Stone’s terminology.

180 Power is here defined as the ability to produce intended results and prevent unwanted outcomes.
4.9.3 The road building path.

The E18 project is the success story of the nineties regarding goal achievements. The path continued with the E39 process, which ended as intended, but with some hindrances during the process. Congestion and car queues create general discontent, strong business dissatisfaction, and a feeling of being let down by central authorities among the local politicians. The media keep the discontent alive, preach the ubiquitous car’s excellence and remind of the underlying threat of more congestion that might be damaging for business growth. The way the E18 process was designed in order to secure achievement of goals demonstrates a deep understanding of power.

The E18 case started by the Highway Agency Director explored among key stakeholders the questions “what are your problems and what can I do for you?” The queues on the E18 and the lack of government funding overshadowed all other problems. It was a complicated problem, a 2 by 2 problem involving many local and central decision takers (see the E18 case above).

The next step was that the director set up a learning process involving the main central and local decision takers and stakeholders. Through this process the most important local politicians were taken through a group process that strongly tied the group together about aims and necessary decisions. The local task was to get the majority in the city council to both accept the E18 alignment and design and that tolls were necessary to finance E18. Road tolls are very sensitive issues that easily can create a vocal public opposition. Only a few years before the three major parties had lost 18 councilors in the municipal election, which was akin to a local political massacre. If another toll opposition arose in the E18 case, the proposed solution to the 2 by 2 problem would fall. The politicians therefore had to sell the E18 package to the public, a task requiring skilful political leadership. Thus the interaction between Politics and Territory in the model became the key to solve the E18 problem, as indicated.

The outcome from the E18 process was a new road financed by the toll collection. The road represents in the short time an increase in welfare for most people in Kristiansand due to shorter travel times that increase the space/time opportunities. In the long time the road might be filled with cars and the situation turn back to square one. The politicians benefited from satisfied voters and positive feedback from business. The planners got professional reputation for being clever. The business community benefited from reduced congestion and shorter travel times, and generally a better business climate. Some businesses have also direct income from delivering work, goods and services to the road-building project. The losers are the few without access to a car and future generations who will bear the consequences of increased CO2 and sprawl.

What was the incentive structure?
The planners were successful at their work if E18 was built, hence the incentives were strong to get the project accepted and financed. The opposite (not building the road) would be professionally unsatisfactory. The politicians had strong pressure on their shoulders to deliver a solution to the decade old problem of not being able to prevent the growing queues. The
pressure from business was also strong and therefore many politicians would try hard to get the E18 built. A failure to do so would mainly hurt their vanity, unless the unlikely case occurred that the voters turned against them. Business in general benefits from better roads for freight transport, for travel during work and travel to and from work. Lastly, the benefits for the automobile sector – all the businesses who would earn from increased car traffic from the car sales, the filling stations, etc. to the media who would get more car adverts – may not be directly important for each one, but in sum large benefits from road building would accrue. The power in the E18 case rests with all those who benefit from the new road. The Highway Agency had a lot to gain and to lose if a failure occurred and the politicians in power likewise. The public had the power to stop the project, but not power to realize it.

Could the end result have been different?
The E18 case was not a clear run, but succeeded because the planning process was carefully designed to avoid barriers. The major barrier was the increase in public burden put on car owners, which was against the principles of the majority in the city council. There was also wide resentment among the public to pay tolls for a road the state should finance, not the local road users. Unless an “environment-tunnel” had been designed for the E18 through an area with many buildings close to the road, the council could have rejected the plan. The E18 planning could therefore easily have been a failure.

The later E39 process could have been stopped because of the new structure created by the ATP project and the lack of understanding of the real power relations. The political compromise in the ATP committee on E39 fell because the chosen alternative was environmentally poor and that the city council had decisive power over the toll ring decision. In the end the result of the E39 case became a democratic solution, but it also resulted in strengthening the “car society”. The fragmented institutions governed the handling of the planning and decision-making process. The incentives were guiding the actors’ actions and negotiations leading to agreements/compromises, but it also opened for both the setting of hindrances for a project and the possibilities of stopping it. Lastly, part of the E18 legacy is also that the Highway Agency has got increased status and position in the local transport planning.

The ATP project enlarged the scope and the number of decision makers (many “heavy” political decision makers) and both Vest-Agder County and the Highway agency got a completely different position than in the former bilateral relationship with the municipality. The role of the Highway Agency, the politicians and the planners were changed. Prestige is important in such groups as the ATP, all partners must get something to avoid creating a loser. Hence the allocation of the “cake” was different from before the ATP. The Vest-Agder County and the small municipalities were strengthened at the cost of the majority of people who live in Kristiansand municipality. The appointed members of the committee were not answerable to anyone and not directly accountable. The ATP project contributed to increased fragmentation and therefore a more complex system, with less transparency and less democracy as a result.

Barriers.
The E18/E39 processes were a game about getting investment money from the road program through decisions in the Parliament. This game became a success story because key players knew the game, were able to create a forceful coalition and designed a planning process that
avoided the major obstacles to reach the goal. The first barrier for the E18 process was that, even if the expected result “new road capacity” was in high general demand, the history showed futile attempts of financing the road. The environment wave after the Brundtland report was not helpful, but a serious hindrance that could obstruct the project. Another obstacle was high demand for money from the Government for hospitals, schools, etc. The history showed that Kristiansand/Vest-Agder had few supporters in Oslo that would increase the chance of obtaining Government funding. The last barrier was that a majority in the local election had rejected financing new roads by a toll ring only few years before.

The E39 planning process was the continuation of the E18 process, but the former key players were gone and a new organization had been established (the ATP). These changes changed both the power relations and procedures, most of all bringing many new players into the game on a new arena. The participants’ access to the decision situations was important for the outcome. The HA was very active in the media, and had direct access to politicians and planners both locally and in Oslo by the central Highway Agency. The formal structure giving actors uneven access to the decision process represented a formidable barrier to the environmentally best local alternative.

4.9.4 The planning path.

The Sustainable City was at the outset not a widely felt planning problem in Kristiansand. It became a planning process because the Ministry of Environment accepted an application from the city to become a sustainable city. Thus it was an idea and project created in the vertical dimension of the Sector in the model. An idea carried forward on the euphoria of success from the environment project having gone on for four years. This was a few years after the report Our common future, Brundtland was the prime minister in Norway and the environment wave was high. The Sustainable City project started with set goals and objectives without much thought for the impact it might have in the local context and what the public wanted.

The Sustainable City process was a process trying to make people change behavior through information and propaganda, with hardly any room for communication. The public and media became alienated to the project. The outcome became only an output of reports and with the words of the city council executive: “The most important result was that greater insight and willingness was obtained”. If in the case that the Sustainable City had succeeded to achieve the goals, the outcome would be negative for many people. Increased travel time and costs caused by the shift to public transport, would have a strong impact on people’s daily life. The benefits would be marginally less CO₂ emissions and an unclear improvement of public transport. It is also a paradox that if 10-20 percent of the car users shifted to other modes, congestion on the main roads in Kristiansand would disappear. The time savings for the remaining car users would hence be great!

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181 The MoE minister Hareide and the Mayor Skisland both represent KrF, the following MoE minister Bjørnøy from SV, was weak and without strong local partners, the MoT minister Navarsete and Mayor Grindland in Songdalen both belong to Sp, representing a rural road building ideology.

182 MIK (miljøvern i kommunene) was a project in hundred municipalities to make environment issues a central municipal task and obligation, and a great success in Kristiansand under the local leader Holvik.
What was the incentive structure?
Planners and Ministry of Environment employees did what they considered was professionally and morally the right thing to do, namely to use land use and transport planning to contribute to save the planet. The vertical communication within the sector was therefore very good. However, on the central level conflicts arose because the sustainable development idea and specifically to reduce the use of cars and shift to public transport, threatened the core self-image and long traditions in the Ministry of Transport and the road sector. On the local level the same type of conflicts was present. Firstly, the politicians had to be aware of the public opinion about the car. Restrictions on the use of the car, which many people had used a lot of their income to buy, could easily mean loss of voters. Secondly, to improve public transport without extra money from central authorities entailed to cut down on other public services like schools, old folks homes, etc. There was also animosity against the Sustainable City project from the technical administration in the municipality, who formerly had been in charge of such projects. The Sustainable City project spread the sustainable development “gospel” to the public, apparently expecting that they would change behavior because it was morally right. Even if the public agreed and wanted to shift to public transport the disincentive of an inadequate bus service made such a shift in practice very time consuming for many. On top of it an improved public transport system seemed far away.

Could the end result have been different?
With such a negative incentive structure it is not likely the Sustainable City could have succeeded in achieving its goals. The result could probably have been better by another planning process. This was especially so concerning public transport. The county had launched the most successful public transport demonstration project in Norway, which was not prolonged even if it fitted well with the aims of the Sustainable City project. With a different handling of the public transport issue another result could probably have been obtained. The same is the case for cycling since the city had a proud legacy for building cycle paths. The third issue is the municipality’s own car use, where demonstration projects could have tested alternative fuels and the mode shift policy. As it turned out in the end it didn’t even produce small incremental results that later could be used for further development of the Sustainable City. The only lasting result was the city planning price and the idea of the BusMetro, which might have come without the Sustainable City project since the Curitiba model had been imported to Norway years before.

Barriers.
The main barrier for the Sustainable City project was the lack of connection to peoples’ local transport and daily life, the struggle to get their time budgets together at a reasonable price. Broad cooperation and public participation is necessary to create a Sustainable City, hence Bottom-up processes are required. The Sustainable City project was an example of elite thinking and a Top-down exercise. It was at outset doomed to fail because the Ministry of Environment did not manage to include active participation and cooperation from the Ministry of Transport and its’ agency the Highway Agency. Another barrier on the central level was the lack of real political backing of the project. The enormous interests of the oil industry in Norway and the “automobility system” were not confronted, and as long as the Sustainable City project did not challenge these interests it could go on. It tried to implement ambiguous aims at the local level with strong symbolic but little real political backing, and few forceful measures and instruments. On the local level the main barrier for the Sustainable
City project was that it represented a threat that could damage the implementation of the E18 project. Also the long-standing conflicts and opposite interests between the County and Municipality represented barriers to the project. Lastly, the local public needs, attitudes and problems were not taken serious in the Sustainable City project.

**Tentative conclusions on the two paths**

Looking back on the case history, the dynamic and contingent change in land use and transport planning opportunities and challenges is possibly most striking. The words of Agnes Heller fit this impression: *The modern world is continually changing, it’s a conglomerate of different lifestyles, systems and subsystems.*\(^{183}\) The future seems more uncertain and less predictable than twenty years ago, making public land use and transport planning more of a game than an instrument for governing future development. The common impression from the two paths when looking back over the last years was that the actors played on the institutional structure and the attached incentive system. Only winners were apparently produced in the short term (E18 was built and the SC got a prize), the losers in the long term might be future generations and the climate.

The planning practice was not comprehensive, integrated and holistic, but incremental and ad-hoc. The Norwegian planning legislation is based on the rational or synoptic planning model although modified by the mixed-scanning model.\(^{184}\) The land use and transport planning processes and decision-making should ideally not deviate far from this model. However, the plan- and decision-making processes looked into in Kristiansand appear incrementalistic of nature and resemble more the Garbage Can model since more or less contingent combinations of problems, local solutions and actors often were decisive for the results.\(^{185}\)

Another important observation is that issues may suddenly appear seemingly from nowhere. “Gratis buss” was a hot issue during the election campaign in 2001, after three-four years of oblivion, the issue resurfaced in 2005, but this time it became a lame duck. Similarly the parking issue suddenly appeared out of the blue in a completely unrelated case about building cottages on the seashore, and resulted in lasting implications for the future parking policy. These are both examples of tacit knowledge and skills among the political actors participating in a continuing political process.

The analysis of the decision-making, output and consequences of the cases discussed above seeks to assess the path dependence and connections to other issues both before and after the formal planning process. There are for example indications that the election in 1987 in which the three big parties lost 18 councilors had lasting effects on the policies of these parties. Whether it had any effect on the actual outcome of the policies is debatable, but that the election defeat had repercussions for more than ten years is clear. The assessments of these cases delve with two difficult questions. *How and at what time period after the plan should the plan be evaluated for goal achievement?* The second question is *How to measure a plan’s*

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\(^{184}\) Amitai Etzioni in his Mixed-Scanning model (in Faludi 1973) argued for a holistic overview to be taken and then that the important problems should get priority and leave the minor problems to be solved ad-hoc. Rolf Jensen in his article ”Fjern- og Nær-analyse” (Jensen 1986) follows this conceptual model, an article that has had great influence on planning in Norway.

\(^{185}\) The garbage can model developed by March and Olsen, may be viewed as a stream of problems, solutions, participants and choices, cf. chapter 2.3.3.2.
results when the development without the plan is unknown? Using the timeline and setting the individual cases in a historic perspective we have identified two paths. The path dependence shows that there is no final answer to the first question. Politicians (and planners) are human beings representing interests, and they are continually trying to achieve as much as possible for these interests, which means that the outcomes of planning decisions are modified and changed over time. Evaluation of goal achievement must bear this in mind and make as true as possible an evaluation at that particular time it is done. The second question was answered by the counterfactual discussion in each individual case. A general conclusion can be that the storyline “The car has come to stay” has a hegemonic position, meaning that it is self-evident to cater for the car and base future plans on it. Another way to put it is to use the Dutch concept planning doctrine, which is used about a phenomenon when assumptions are accepted or considered implicitly given (people have cars, hence all flats must have parking). The car has accordingly become an important instrument in local development and the quest for growth.

The Kristiansand experience is a lack of monitoring and learning
The Sustainable City project reports do not show where and why it went wrong. It is therefore unclear what lessons to be drawn because of this lack of learning. Machiavelli was one of the first who wrote about history; ”where instructive mistakes get an equal place as instructive examples” (Eriksen, 2006:197). If it had been recognized that several mistakes were made, among them how to achieve the goal of shifting people from cars to buses, both the BusMetro and the ATP project could have got a better start. But it seems that there are strong barriers to recognizing and learning from mistakes in the system. The lack of an unbiased monitoring and evaluation system underpins this conclusion.

The BusMetro was a project where ”price was not one of the instruments” and where bus-priority was not actively used. Without such important measures what can be achieved is limited. Vest-Agder County had the knowledge necessary to create a successful BusMetro project also in terms of attracting passengers from cars. But such an experiment would demand new money or different priority of the existing funds for public transport services. Because both of these options were unrealistic, a BusMetro project with an Achilles-heel was launched. However, the basic physical public transport infrastructure has been substantially improved and it is still possible to improve the BusMetro further. In my opinion the BusMetro in Kristiansand could have been vastly better if the Ministry of Transport had learnt from the Sustainable City project and used the knowledge from public transport research.

Another lack of learning is shown by the ATP project, which seeks to find common land use and transport solutions across municipality and county borders by consensus. From my interviews it is clear that leading Kristiansand politicians see it as the first step in an eventual enlarging of the municipality territory. It is clearly a project, which is part of the larger ongoing discussions on reorganizing local government in Norway. Many claim that land use and transport decisions should be taken at the functional regional level delimited by the travel to work area (TWA).

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186 Van der Valk & Faludi (1994)
187 Interview County Transport Director Leif Storsve
188 With 5% growth per year for the BusMetro the public transport share in 2015 will only be 7% up from 5% presuming that car use increase with 3% per year as at present.
189 In Norway called ABS regioner or Arbeid Bo- og Service regioner
powers (the planning act), the financing of public transport services and the authority for roads (except national trunk roads) were placed at a level above the municipality. “That is unthinkable!” was the answer from a prominent politician when asked if the ATP project should get such powers. It seems that the expected local government reform will face substantial opposition and change little of the present power structure.

The consensus model in the ATP avoids a superior power. But the conflicting interests are still there. Where to locate new development? What part of the territory comes first and last? How to prioritize between the centre and the periphery? The questions are many and unsolved in the ATP project. Vest-Agder County did not let the public transport money into the ATP project, because “we couldn’t risk that they started public transport services that didn’t have a long term viability. We would be left with a poor image and the bill.” Another problematic area came up in the E39 case. The deputy mayor got a lot of negative comments in the papers because he had together with the neighboring municipalities agreed that the E39 Tall Bridge should be chosen. The reason for this was an agreement in the ATP committee for spreading the toll funds more widely. In Kristiansand people could not accept that the neighboring municipalities were pressing for the environmentally worst solution for the city. Thus the ATP project seems full of internal conflicts, which it is in a weak position to handle. One aim is to reduce travel distances by increasing the density in built up areas, which would mean reduced expansion in some municipalities and concentration of building in Kristiansand. Another major land use and transport issue is where jobs will be located in the future, which is decided by the owners of companies. Often the municipalities compete to attract new jobs and offer attractive sites. The future outcome from the ATP project, which is not constructed to handle conflicts, will probably show that such very difficult but necessary decisions, were put aside, and only the consensus issues were dealt with.

Monitoring is lacking.

We showed in chapter 4.3 that modal split data is very dependent upon what has been measured or calculated, and that “strategic misrepresentation” may occur. There are also examples of deliberate use of skewed information to obtain advantages, as did happen in the E39 case: ‘A devastating expert judgment. The Highway Agency has in the best case produced a very poor document – in the worst case – manipulated both the basis for the calculations and comparison.’ (see ch. 4.13 ) There is clearly a need to have an institution outside land use and transport planning organizations that could supply reliable data on planning issues like commuting, Origin-Destination data, modal split and so on. Statistics Norway does provide some of these data already and could be such an institution. Another way to solve the problem of “strategic misrepresentation”, bias, inaccuracy or deliberate lying to favor the “right” solution could be “to change the rules of the power play that governs forecasting and project development”.

What is the legacy of the two paths?

It is very difficult to separate these two paths from the external forces of internationalization and globalization that have had direct effect on Kristiansand through the rapid growth in businesses competing globally. Neoliberal ideas affect the public policy through the New Public Management ideas put into practice. The local political elite both acts and reacts on

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190 Interview County Transport Director Leif Storsve
191 Fædrelandsvennen, 080105, the editorial comment the expert group report.
these complex forces. In development cases the municipality has taken a more autonomous role that reduces the state’s local influence. Of the three main factors in the model: land use, transport and development control (see ch 2.x), land use planning has become market-led and private interests have grown stronger. Sustainable development is not in vogue and the discussion on mode shift is resting or dead. Transport planning and implementation has become finance-led and development control has become a passive instrument to get statutory formalities correct.

The comprehensive planning in the municipality (Kommuneplan) is the public strategic spatial planning instrument. The strategic plans have been “rolled forward” after five years, which shorten the real time horizon of the plans since the politicians know that they regularly can change the land use in the plans if necessary. The ATP project has lifted the focus to cover a far larger territory, however the inherent weakness with different borders and fragmented institutions will probably make the project another without much impact in the real world. Fragmentation of institutions increases the democratic deficit, which was further widened by the local politicians in their land use development practice.

4.9.5 Power relations

The evidence on the ground
The “Realpolitik” can be read as evidence on the ground. The “sand and mortar” used to build houses, industry, offices, chalets and transport infrastructure are transforming the physical structure of the Kristiansand region. It is a change facilitated and promoted by the car as the major (sole) means of motorized transport.

The amount of money having gone and are going into road capacity, parking, housing, industry and business offices, etc. is huge. This has as we have outlined above led to increased car use and changing travel patterns, and trends point towards a challenging future for Kristiansand. So far there is little reason to believe that the City Council’s visions and aims of an environmentally friendly transport system are anything but symbolic statements. There are hardly any signs of public policy being used to strive for a more environmentally sustainable future for Kristiansand. Land use and transport planning has to an increasing degree supported a market led development based on car transport as the main mode of transport for both persons and freight. This is caused by a deliberate policy of dismantling the public sector and transferring tasks to the market, both in Kristiansand City Council and nationally. The expected increase in future wealth will probably together with the present land use and transport planning policy lead to increased demand for car travel (and plane for long trips). Kristiansand urban region will continue to gradually expand into Agderbyen, and make people more and more dependent upon the car.

The changes one can observe in land use and transport practice are not only emerging through institutional changes, but also via basic changes in practice, and a move towards non-statutory initiatives. This is a shift from an administrative regulatory practice (public planning) to a more “negotiative” one (market rule). In Kristiansand cooperative agreements and coalitions are found, such as Agderrådet and Jernbane Forum Sør both formally established by the

counties. Other organizations are more ad hoc as the E18-coalition, and again others as Stamveg Aksjonen are cooperation between business and politicians, partly supported/financed by public agencies. Project organizations vary from the major consortium that has a planning, building and maintenance contract on E18 worth several billion NOK, to small projects. One such project-organization is the committee that plans and builds the new concert hall, Kilden. That is a project costing well over one billion NOK financed by public money and without public insight to proceedings and decisions.

This plethora of organizations is characterized by unclear accountability, appointed decision makers and lack of transparency. The participants are often appointed by business associations and (former) politicians appointed by elected politicians. Such organizations have grown rapidly in numbers and complicate the public government and management system. That makes it difficult especially for the public to get an overview and insight, and the fragmentation reduces accountability. Since members are appointed or self recruited, they are not accountable to any one. Elected politicians have to meet the voters every four years and account for their decisions, and in private companies board members are accountable to owners. In quangos and similar organizations there is not accountability, only trust between appointed and appointee. Information can be presented in the form most suitable and timed to reap most advantage. The democratic rights are lowered and it opens for undemocratic lobbyism, corporative solutions and in the end the possibility and opportunity for corruption.

The power play
The Gimlemoen army camp in Kristiansand was proposed closed in the early nineteen nineties. The Defense College was to move to Oslo. Strong local opposition ensued: research to prove them wrong on a social cost basis, mobilization politically and generally plus network-discussions. The network activity demanded that someone took the lead to focus on strategies a) how to keep the present activity, b) how to maximize the local benefits of a closure.

Some fifteen years later the story of Gimlemoen was thus presented in an article by key local players. “When Kristiansand lost Defence College (Krigsskolene), everybody agreed that Gimlemoen had to be the new campus for HiA. Again with the Minister of Education Gudmund Hernes (Ap), deputy minister Randi Øverland (Ap from Kristiansand) and Member of Parliament Aud Blattmann (Ap from Kristiansand) as important actors in Oslo”. The former editor of Fædrelandsvennen soon reputed the article for re-writing history, and among other things stressed that the Defense Minister had pressed the city to take over the camp.

The statement “everybody agreed” is probably a judgment made in hindsight following a few consultations among the ruling elite. After an investment of 700 million NOK in the university campus; and the status of full university being reached, the statement became “true”. However, from land use and transport perspective another location would have been preferential. If the Campus had continued to be localized in the Centre, less car use could entail, writes Petter Næss in a book. Different land uses and localizations in Kristiansand are

194 The leader should have authority, trust, broad network and knowledge about government (the processes between the ministries, who sit in what positions, who may and can influence outcome, etc.)
195 Fædrelandsvennen, 241107, by Bjørg Wallevik, Jan Oddvar Skisland and Harald Furre
196 everybody should here read a handful of people that could carry the local opinion and resist alternative views on localisation.
197 Fædrelandsvennen, 261107, Finn Holmer-Hoven
compared in a sustainable development and energy perspective: “*It is likely that more students will travel with car to Gimlemoen than to the city centre.*”\(^{198}\) But when the case arose, there was not any room for assessing such alternatives, as the synoptic planning model requires. The risk of losing a potentially high compensation for the defense closure and gain an inward investment was present. At the national level there where two opposing interests: The Minister of Defense pressed hard to get rid of the army camp at a highest possible price and the Minister of Education did not want to invest in a campus in Kristiansand at all. In Kristiansand the old hospital had been turned into a city centre campus with a site for expansion reserved across the river, after years with difficult planning. Kristiansand was therefore not willing just to buy the Gimlemoen army camp, it wanted much more and succeeded. The Minister of Education was convinced (forced?) to take over the camp and turn it into the future university campus at a cost to the State of 700 million NOK plus, and without the municipality having to buy the land from the Defense Minister, a good deal for the municipality. In this bargaining process there was no room for alternative proposals, which easily could have jeopardized the local strategy. The land use and transport planning goals of a sustainable future had to give way for the growth goals.

A similar game was the aborted attempts to continue the great public transport success in Kristiansand in the early nineties “Kristiansand package I”. It was unique among all the projects in Norway, leading to a thirty per cent increase in patronage. If Vest-Agder continued with projects that made public transport better and more competitive, the result could be achieving the aims of reduced car traffic growth. However, that could imply that the prognosis for the future car traffic growth had to be lowered. The cost-benefit ratio for the E18 project would be lower and the E18 project would be far more difficult to promote in Oslo. There was a strong risk that someone in the Highway Agency in Oslo could look at the E18 plans and push it far down on the list of priority. After many years of fighting for investment money from the State to the E18, the ruling elite in Kristiansand could not risk any outside interference with the E18 project. Even if the Sustainable City had reduction of car traffic, shift to public transport and an increase in the public transport modal share as some of its main objectives, the successful public transport project had to be less successful.

“Kristiansand package II” which was the successor never came to much and after a few years the number of public transport users had fallen back to the 1990 level.

**Political power in practice**

The parties H and KrF have been ruling Kristiansand municipality for the last 30 years, depending from time to time on other parties. They are in their rhetoric as positive to the environment as any other party, but when there are propositions to put restrictions on car use, they vote against, as this decision\(^ {199}\) shows: “Kristiansand municipality will actively contribute to a development of positive measures that reduce people’s transport needs. *Road pricing, restrictive measures with the help of the toll ring, plus parking restrictions are not relevant measures to reduce personal car traffic in Kristiansand.*”

In the “Sjøbod” case the two parties made a deal with Frp on transport and parking policy, which means that “Kristiansand - the Climate Villain” will continue on an environmentally, unsustainable trajectory. The decision on parking requirement for new buildings goes straight into the core of the development control framework, which guides daily practice. It will have

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\(^{199}\) City Council decision March 17th 1999
strong implications lasting a long time and making a future shift in policy far less effective. It is a policy aiming at a more unsustainable transport development in Kristiansand.

“Gratis Buss” got very strong support from all political parties before the 2001 elections, except from Frp. But after the election was over, the interest disappeared and the proposition was finally buried in the City Council in May. "We have met the wall. We realize that we are not getting any way with the Government on this issue. It would only be a symbolic proposition," said Tore Austad, H. But the voters that listened to the politicians a few months earlier heard that they would fight for “Gratis Buss”. The politicians knew very well during election time that it was a proposal costing a lot of money, and that no party was willing to support only one city with national-government money. Some will call this symbolic politics and others will say that the voters were cheated. The political majority did neither in the Sustainable City case nor for the BusMetro want to use municipal money for public transport services. They knew that public transport was heavily dependent on public funds to provide the existing services. They also knew that the same parties in position nationally (as they were up to 2005) did not want to use more funds on public transport. In fact they knew that without extra municipal funding it was impossible to improve public transport services in the city, but still they talked warmly about shifting people from cars to buses. Some will call these double standards. The E18 case shows that the chance of securing money for road building was of outmost importance and nothing was to interfere with that option.

Major projects
In order to understand major projects the interesting parts are: the pre-planning stage, the agenda setting stage, the design of the project path including when it should be informal and closed, and when formal and open. Major projects are never "planned". By that I mean that the major projects seldom or never are discussed in the strategic land use and transport planning processes (kommuneplan). The reasons are:

- Learning process on strategy and tactics to get projects through (with NPM and quangos being formed, it is likely that a process of learning has taken place during the last 10-15 years
- Something unexpected happens, and good leadership can turn the event into a positive event (closure of Gimlemoen Army Camp and the creation of the University Campus for HiA is a good example)

Plans can support outcome, and will then be used in the negotiations as in the Gimlemoen case. If a plan had prevented the new land use, it would have been a non-issue in the negotiations between the State who wanted to leave with low costs and the Municipality who wanted maximum compensation for the loss of jobs, income, etc.

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200 The Frp code was a favourite topic in 2006, possibly it is so simple that Frp contrary to other political parties, say which things they are against?
Governance and public private partnerships
By making a public-private partnership agreement, an inter-municipal company or a similar construction one can avoid the usual democratic rules for the public rights to insight in documents, etc. These constructions are common where “a ruling coalition” wants to implement projects, (see Lyngstad 2004) and it looks like several projects in Kristiansand can be placed in such a category. (e.g. Tangen, Concert Hall Kilden, Football Arena, Swimmingpool.) The coming(?) Market Square P-House may fall into this category. It is common that public private partnerships withdraw from public insight. Democratic control is supposed to be taken care of by the very few politicians involved.

Market Square P-House close to implementation?
The Chamber of Commerce proposed as we have seen above to build 1000 parking-places underneath the Market Square. There are about 8500 parking spaces in Kvadraturen, about 40% of which under public control. At present the public parking garages have only 50% capacity utilization. Demand for another 1000 places will therefore be low and the parking garage must probably be subsidized from the general parking revenue for some years. But the location will have advantages for some shops compared to others. The main shopping street in the centre Markens is about one km long. It starts at the “castle” and ends where it meets the sea. It was the first pedestrian street in Norway established 1972 and has no competitors as “the street” in Kristiansand. It is the property and shop owners in Markens who put pressure on the politicians to build more parking close to the street.201 The emerging strategy (Mintzberg 1994) that seem to govern the Market Square P-House process, may have grown naturally, but looks like being very candid both regarding timing and instruments (reguleringsplan). Two years after the proposal of building 1000 parking places under the Market Square came, an advert202 in the press notifies that a public private partnership will start detailed planning and developing a funding package for the Market Square P-House. The choice of reguleringsplan as the planning instrument and the public private partnership has several important consequences:

- One prevents that the Market Square P-House is evaluated in the strategic plan process (kommuneplan), hence it will not be discussed if public transport alternatively could cater for the transport demand as the National Guidelines require203.
- One avoids discussing in public if there is a need for an extra 1000 parking places in Kvadraturen.
- The public private partnership and the funding package can be used to prevent public insight into the planning.
- The Market Square P-House project will probably be presented as a complete package where the municipality in a formal contract is tied up economically for many years. The City Council will be given the choice: Take it or leave it!

201 There is already a 5-6 storey P-house in one end of the street at “the Castle” and another 100 meters away in Henrik Wergelands gate. A third is 100 meters away in Skippergata and a fourth 50 meters away in Lillemarkens. A fifth parking garage is 50 meters away in Gyldehulves gate. Parko is 120 meters away in Dronningens gate, plus ample on street parking in most of the nine streets crossing the Markens street. There are in addition several parking garages (some 400 places?) along Markens not open to the public.
202 Fædrelandsvennen 20.05.2007 Annonce: Igangsetting av reguleringsarbeid med sikte på Reguleringsplan for Rådhushusvarteret og Øvre Torv. Pluss Parkeringsanlegg under Øvre Torv og forhandlinger om utbyggingstale.
203 Rikspolitisk retningslinjer for samordnet Areal og Transport Planlegging.
A “Ruling coalition” and “pre-emptive power”
My hypothesis is that there has been a learning process the last 10-15 years in Kristiansand, where a small group of politicians and administrators have learnt how to get controversial projects through the democratic system as winners. A “ruling coalition” - a set of individuals who are accustomed to cooperating, who are confident that they can rely on one another, and who believe that it is proper to maintain these relationships – get together to realize a certain project. One may say according to Stone (1989) that a strategy emerges in which:

The planning system is used by a “ruling coalition” to win, to get controversial projects through, which otherwise might had lost in a comprehensive planning process.

It is legitimate for political parties and interest groups to fight for their projects. But it raises questions about how planning law and practice function in relation to the representative democracy. It is firstly questions about accountability and legitimacy that are being raised. What is worrying is the fact that the integrated planning on the macro level is sidestepped. By going straight for a reguleringsplan as is the case for Market Square P-House, one can turn a controversial project into “closed door politics” and outside the scrutiny from the press and public. Serious questions on democracy can be raised concerning accountability, transparency and insight into such processes. The lack of transparency and accountability opens up the possibility and opportunity for undemocratic pressure, lobbyism and also for corruption. It opens up for using the information and agenda setting privilege to present the case in the most favorable light (spin) and to avoid mentioning risk and negative consequences. Also a systematic work to build support in secrecy for a project can be undertaken. Selective information and “leakages” to the press is often part of the information and marketing strategy for projects. It may happen that building plots are transferred or sold at bargain prices to support the realization of the project, before the project has been known and influencing the market value of the land. The local plan (reguleringsplan) can also be used strategically to support the project.

4.9.6 Klosterman tested on Kristiansand

The experience from several national projects like the City Environment Campaign and transport planning in the big cities (TP10) had shown the MoE that a change from “sector” planning towards the ideal of integrated land use and transport planning was necessary to shift the course towards sustainability. The Sustainable City project was a result of that experience. The E18 planning was initiated by the Highway Agency director and used as a tool to achieve the physical goal of more road capacity by gathering the support of key stakeholders and prevent opposition. The analysis of Kristiansand shows several paradoxes:

- Gap between goals and results
- The “right” goals and doing the “right” things led nowhere
- The car mode was the winner
- From TP10 to Sustainable City – a remarkable lack of learning

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204 C P Snow, 1962. Vitenskap og statsstyre. Cappelens upopulære skrifter. See also The two cultures by the same author.
206 Interview with Kjell Spigseth, project leader Sustainable Cities.
Looking at these paradoxes we ask how the E18 and Sustainable City cases fit with Klosterman’s four main arguments for planning:

- **Promote the collective interests of society.**
- **Counteract externalities.**
- **Contribute to better information about long-term consequences.**
- **Contribute to fair distribution of goods.**

**Promote the collective interests of society.**
The trunk road E18 is essential for the well functioning of such a car dependent country as Norway, hence it serves the capitalist system and does not challenge the present economic distribution. The E18 problem was that as a *public good*, it had no priority for funding. It was the geographical area/region that fell out of the funding program. This became more felt over time as car traffic grew and smaller and smaller funds became available from the national government. However, the E18 solution was user financing by tolls, and therefore it became a market driven solution and “*quasi*” *common good*. In the short-term the E18 will improve accessibility for the car-owning majority and worsen the situation for those with little or no access to the car.

The Sustainable City was an attempt to change present policy to benefit future generations. The Sustainable City goals are *collective goals* aiming at creating a better and healthier environment, and this fits thus exactly with the need for planning Klosterman identified. However, the climate challenge had little real political support through the nineties in Kristiansand, nor in the Norwegian Parliament, other than as symbolic goals.

**Counteract externalities caused by market failure**
The market cannot deal with social costs and benefits not reflected in market prices or revenues. The externalities of car use (accidents, emissions, sprawl, etc) make it a prime target for land use and transport planning according to Klosterman. Planners should address the shortcomings of the political system by fully representing the public interest. E18 is a public good, which had no priority for funding until mid nineties. It was the quasi-market solution – toll ring around Kristiansand Centre – that released the new building. However, the externalities were not addressed and the consequences of the E18 planning and implementation are more accidents, more emissions and so on. These externalities will increase in the years to come. The social costs carried by the sufferers of accidents, emissions, noise, etc from the road and traffic is not compensated. The planners did not voice the interests of the sufferers, they only pushed the implementation of the new road scheme. Why then have comprehensive or holistic public planning when the planners are not fully representing the public interest?

The Sustainable City directly addressed the externalities of car use (accidents, emissions, sprawl, etc) and aimed at shifting persons from cars to public transport. This also matches the argument for planning. Some local planners worked hard to make the Sustainable City a success, but never addressed the shortcomings of the political system. At the national level MoE still carried on with the Sustainable City project even after it became clear that the MoT would not support the project strongly. On the local level the old animosity from the

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207 I am not including project planning to build a road, etc. here.
municipality (both politicians and planners) towards the county seriously damaged the opportunity to continue the great success with increased public transport use. Within Kristiansand municipality the internal grievances between the environment section and the technical department probably reduced the effectiveness of the Sustainable City project.

Contribute to better information about long-term consequences. Klosterman argues that information of the long-term effects of location decisions is needed to make adequately informed decisions. Planners possess unique professional expertise and instrumental rationality. In the E18 case, which went through a thorough environmental assessment (EIA), the long-term issues were virtually non-existent. Even if the Highway Agency by statute should evaluate if public transport alternatively could solve the planning problem "the need to build more road capacity", this was not done. The E18 case is an example on how the planning system can be used to produce an intended result, but not an example on how information on the long-term effects of the project “enlightened” the decision makers or the public (possibly the concentration on the near future suited the politicians best?). Only the information that supported the E18 development was presented. There was no information about the effects of the new road capacity on traffic generation, the increase in the travel to work area and sprawl. Neither was the negative effects the new road would have on other modes public transport, cycling and walking informed about, nor the increase it would cause in local and global emissions. The Sustainable City project was again very much concerned with long-term issues as the slogan “think globally, act locally” underlines.

Contribute to fair distribution of goods. It is very likely that the distribution of costs and benefits from the E18 project is socially skewed as it is in most cities (more traffic injuries, more NOx related illnesses, etc. in the low income areas than in high income areas). The E18 project increases car use and adds to the long-term problems with oil resource depletion, climate change and so on. This inter-generational redistribution is an example of the present car users in Kristiansand reap the benefits and ignore the global consequences. The Sustainable City on the other side focused within transportation on a modal shift towards bike, walk and public transport, and by that a redistribution of social costs and benefits. The Sustainable City project was an attempt to redistribute and change present policy to benefit future generations, and as such it provided a major challenge to the present partly car driven economic system.

Summing up Klosterman and Kristiansand. Compared with the four Klosterman arguments, the E18 case shows a complex picture not readily fitting in with the arguments. Even if the planning framework and institutions in Norway to a high degree supports and follows his arguments, they did not function as intended with the E18 case in Kristiansand. Instead of providing a healthy and pleasant environment, the planning system facilitated and supported individual car use, which (marginally) threaten the global climate. Instead of reducing, diminishing and compensating the externalities of car use, the E18 planning has increased these. Instead of a planning that informed about the long-term consequences and proposed mitigating measures and alternatives, the long-term effects were played down and largely ignored. Instead of planning finding solutions, by which costs and benefits were distributed in a socially acceptable manner, the E18 planning only catered for what has been called “the automobility society” (Urry 2002). In short the E18 planning shows that even with the best intentions and a
“correct” planning system, the output from this planning caused the gap between environmentally sustainable transport and our unsustainable practice to increase.

The Sustainable City on the other hand fitted well with Klosterman’s arguments for planning, but it became a process with little impact. When interviewees were confronted with the lack of results and poor performance of the Sustainable City project the answers were firstly denial: the Sustainable City was a success, look at what we have achieved (clean river, sandy city beach, the Nupen park). OK, there are still some problems with public transport, but that is a county not a city responsibility. In the long-term the Sustainable City is necessary, but meanwhile we have to solve the congestion problem. The MoE embarked on the Sustainable City project without any baseline to evaluate the project against, neither did the MoE demand Before studies to be done in the five Sustainable City cities. One may wonder why the Ministry did not want to produce as much knowledge about the Sustainable City project as possible? My answer is that the politicians (and planners) are freer without too much knowledge and can then paint a nicer picture than was actually the case. There are of course also planners at all levels that may find that little actual knowledge of a project may be an advantage.

This lack of knowledge opens for biased and skewed information, which may be used to support projects like the Sustainable City and present it in a favorable light. The aid from communication advisers may further create a glorified picture of a case. The arguments for planning do not see planning as a struggle between different groups where the gain of one group is the loss of another. The power to make the E18 project a success was present, but not the power to make the Sustainable City achieve even some partial goals. The Government could have made the Sustainable City achieve better than it did. Why the Government did not support the Sustainable City stronger, we will explore further.

The ‘market versus government’ debate in planning has juxtaposed these as to opposing forces, but the reality is not so clear cut and more messy. Instead of describing a theoretical ideal as Klosterman did, another more fruitful approach could be to look at planning and development in a transaction cost perspective. I don’t believe that it is possible to turn the ideological shift towards market rule, hence for land use and transport planning it is important to safeguard what only planning can do. Integrated land use and transport planning may be necessary to make the turn towards environmentally sustainable transport development. Buitelaar for example claims that transaction costs economics is a more pragmatic approach that can be used to compare realistic alternative institutional arrangements.<sup>208</sup>

4.9.7 Planning as an instrument in capitalistic production

Scott and Roweis<sup>209</sup> see planning as an instrument to increase capitalistic production. What seemingly was motivated in social and human objectives or reasons, was really motivated from the interests of increased and more effective production of goods and services. City planning was introduced when the negative effects of production (inner city squalor in the middle and late eighteen hundred) became so great that they threatened to undermine

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production. They also show by examples that planning has had limited effects and often create consequences that lead to more planning. The recent upsurge in city planning looking at cities as “engines in development” may be such an example.

In an evaluation of transport planning in the ten biggest cities in Norway (TP10), the Scott and Roweis arguments were contrasted: “TP10 does not distinguish from the characteristics Scott and Roweis give planning in general. It is still the same actors in TP10, who has not been able to produce plans with different values than earlier transport planning. If we put in environment where Scott and Roweis focus on underprivileged classes, then the same can be said about the TP10 process. TP10 can be judged as a maneuver where “noble” goals and a somewhat greater concern for the environment are used to maintain the road sector’s traditional production system.”

This is similar to the Kristiansand case, which shows how the "noble” goals of the Sustainable City with a strong focus on improving the environment and to facilitate change away from a car dependent city development, was used to maintain the road sector’s traditional production system. In addition it strengthened the role of the road sector in the municipal planning and thus shifted power from the elected representatives at the local level to employed road planners at the regional/state level. The land use and transport development generated from the implementation of these plans embed the car as the main mode and further increase the car dependency in the Kristiansand region for the next decades. As Scott and Roweis pointed out the demand for more planning is created. Politicians interested in positions and planners interested in seeing physical results as new roads, flock to car transport production system and the present (car) planning ideology. To change the course of development, it is necessary to change the complete social system, according to Scott and Roweis. In the light of Kristiansand’s attempt to change the course towards environmentally sustainable transport one may ask if sustainable development at all is possible.

4.9.8 The plan law, national framework and the Ministry’s role

The Ministry of Environment (MoE) administer the Norwegian Planning and Building Act (pbl) and should see to that the law is applied according to the law maker’s wishes. The Parliament has repeatedly stated “the pbl and the municipal strategic planning (Kommuneplan, with its two parts: social and land use) must actively be used to secure a sustainable development”. To find out what happen in practice the Auditor General has evaluated the present planning practice and assessed: To what extent is the municipal planning system used so that the aim of sustainable development can be achieved? The report shows that municipalities in general are not producing and reviewing the Kommuneplan so that a comprehensive and long-term land use is secured. The social part of Kommuneplan is not used as an instrument in land use planning. It is also a challenge for many municipalities.

210 “The Big Cities as engines in development” is the new slogan in 2003 (St.meld nr. 46 (2002-2003) Storbymeldingen).
211 Synnøve Lyssand Larsen and Per Gunnar Røe, Fra idealmodell til virkelighet. NIBR.
to see the social and economic planning in the context of land use planning. The evaluation also shows that private interests and ad hoc plans increasingly dominate the municipal land use planning.\textsuperscript{214}

The land use development in cities does not contribute to sustainable development, because prudent land use has to a limited extent been promoted so that the aims can be achieved, and pollution and climate gas emissions have increased. On municipal land use planning the evaluation states:

- Many municipalities do not produce comprehensive land use plans and also produce local land use plans contradicting national aims.
- Plans are decided and dispensations are given in conflict with the municipal comprehensive plan.
- Illegal building continues.
- MoE has the overall responsibility for making the municipalities able to fulfil their tasks. The municipalities have a large need for knowledge.
- National framework must be clarified and simpler guidelines used for regional and local administration.
- \textit{Insigelse} (objection) to plans and the appeal of decisions should be used more.

The audit points to serious shortcomings in the Ministry’s and the Government’s management of the planning act, which fits well with the results from Kristiansand: the land use and transport policy is faulty on coordination and integration at all levels, there is a lack of monitoring and hence knowledge, the national effort on sustainable land use planning and allocation has been weak, and short term unsustainable development has priority.

Another study of open space in the four big cities in Norway shows that the steering of land use planning on the municipality level serves the developers’ interests. The common interests are not adequately taken care of by the municipalities and the \textit{Guidelines for children’s rights} are violated. The study\textsuperscript{215} of open space in 27 new housing projects in Trondheim, Bergen, Stavanger and Kristiansand show that only three were “good”. The main faults were bad/non-existing connections with the surrounding city, dark and too small playgrounds, and poor design and placing of the open space areas. The evaluators concludes with a normative advice: “\textit{The municipality being in charge should if it wants to reach the goals of good housing and good housing estates, set in actions to safeguard good open space in cities.}”

This is another example of the market turn in cities, happening because of the elected building committees are putting private interests in front of common interests. The building boom\textsuperscript{216} in Norwegian cities the recent years has according to the study created “dorm-cities within the city” with poor connections and open spaces with poor “sun and light conditions”. It is like reading about the big cities in the 1880s. The municipality role as watchdog of development and using development control to safeguard good open space in cities has been set aside to the role of facilitating development.

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\textsuperscript{214} 72\% private local plans (\textit{reguleringsplaner})


\textsuperscript{216} The upsurge in the building small flats in the city centres of all the biggest cities in Norway Kristiansand included, has partly been driven by creative financing (subprime loans) and pushing the true costs to the young buyers into the future.
Conclusion

Both these national studies fit well with the findings of this case study of Kristiansand. The lack of an effective national policy on sustainable development and hence institutions not designed to achieve sustainable development, has opened up for the cities to pursue a growth policy. With liberal/right local authority majority as Kristiansand has had for decades, then the development control instrument will hardly ever be used to prevent a project. Even to put an “extra cost” on a private development to secure “good open space” is as the above study reveals, not done.

There is also learning from the development control practice. One is the way Kristiansand uses “diminutive” local plans for a building site (reguleringsplan Kasernen) within the adopted local plan (Murbyplanen), another is the use of Innsigelse (objection). In both these issues there seems to be a self-reinforcing or positive feedback process in the political system. The use of “diminutive” local plans has been effective in getting controversial development projects through, and when the municipality gets away with such a practice without objections from other authorities this practice is reinforced. Innsigelse is an instrument to be used to safeguard national or common interests as expressed in national guidelines, in the local planning. The local practice of this instrument is also a learning process on how to use it according to the objectives pursued. If the instrument is used in a haphazard way over the years, the self-reinforcing effects will be that the instrument will continue to be used haphazardly when the national framework allows this to happen. The Auditor proposes that Innsigelse to plans and the appeal of decisions should be used more, an advice that follows the synoptic perspective, not reflecting of the causes why the innsigelse is used in a haphazard way.

These two learning processes point at both the lack of a consistent national framework and the need for subsidiarity. The municipality pursues a growth policy that is contrary to the municipality’s own aims for sustainable development and indeed the national aims of sustainable development. Furthermore it is against the spirit of the planning act and against the national guidelines. Why is there not a more consistent national framework and why is it not applied consistently? Which interests prevent that? Are our dependence on the car to perform our daily chores, and the oil industry and our dependency on the oil exports perhaps the strongest hindrances to an effective sustainable development policy?

One perspective on local democracy, local politics and politicians sees local politicians as rational actors within a framework of institutions created by the national state. How would such a politician act if he asks himself: How to maximize benefits for my city in a fragmented world? Firstly the problem of providing surplus of housing and the complaints from business that the municipality hamper developments, lead to a more flexible use of development control. With a liberal/right majority the municipality tends to use land use planning to secure ample supply of building land. Transport infrastructure – roads – is seen as a utility not as an instrument to balance land use. Pieces are then falling together: the Sustainable City fails because of very few local benefits at least in the short-term, while the E18 toll road wins because of great local benefits. Public transport is a “county responsibility” and the county can hence be used as a scapegoat, which fits in with history. Agreement on visions and goals can be strategic because disagreement will be political incorrect and damaging to the politician’s career. The performance of actors will be differentiated according to agendas and space and time. Structure defines frames, but players do act differently with different results.
The society should not (cannot) rely on clever politicians managing to beat the system, therefore the system must change, i.e. institutions and structure must change. How to change institutions and structure? I point to the principle of subsidiarity and a national framework with incentives to make the actors work to obtain the national goals. That will be a tremendous improvement in accountability and transparency, but won’t solve all land use and transport issues in a democracy because the voters may elect/choose to stay unsustainable, and still the power interests will try to influence processes within the framework and influence local solutions.

4.9.9 The lost opportunities

The opportunities are “lost” in the meaning that alternatives ought to have been discussed when the plans for the area was decided, especially the formal detailed local plan (reguleringsplan). As mentioned above the Kommuneplan has changed from being instrumental to more and more descriptive of the future, and accordingly the instrumental side has vanished. The local plan (reguleringsplan) was formerly the instrument that decided the design of a development. This instrument has been further sharpened so that the City Council can decide when a development can be implemented over time and set requirements for implementation. However, on the other side the City Council practice has over the years been influenced by the ideas of deregulation and privatizing. Some years back the municipality made most local plans (reguleringsplan) itself. That has changed to most such plans being made by private firms these days. The incremental or ad hoc decision-making the City Council practices, make planning lose credibility and predictability. One could expect that sustainable development as an issue would be mentioned in the local plans, but one can hardly find traces of that. Some would say that it is a lost opportunity not to reduce the amount of land for development by transferring it to land not for development (LNF område). Judging from my interviews such a transformation would be thought “unthinkable” or “absurd” and is accordingly not included as a “lost opportunity”. More difficult is the tradition of using the planning legislation to support a “bit for bit” planning. In order to get a project decided contrary to the existing comprehensive plan, a new plan (reguleringsplan) is made for one particular site. “Murbyplanen” covers the area destroyed by the fire in 1892 and was intended to protect the city that rose after the fire. The plan was worked out with extensive consultations and aimed to protect this valuable heritage. Recently a developer wanted to develop a property (Kasernen) contrary to the plan. The municipality creatively facilitated that, not by changing the plan, but by making a new plan for that particular property. A peculiar way to plan one may say, it is contrary to the planning act that wants to see things in a context, the very *raison d’être* for planning. Still the Council adopted the “diminutive” plan.

How far this disintegration of the former land use and transport planning and decision system has come can be discussed. In an editorial the present City Council attitudes and decision-making practice on local plans (reguleringsplan) was thus described: “*The elected councilors have several times earlier shown that existing local plan statutory requirements (reguleringsplanbestemmelser) are not in any way are holy when the will to do something else is strong enough. The last example came a week ago. When the majority decided to expand Kasernen, the existing statutory requirements were of no hindrance.*”217 The pattern emerging from investigating land use and transport planning in Kristiansand is that both planning

217 Fædrelandsvennen, editorial 01 02 08.
practice and the instruments *Kommuneplan* and *Reguleringsplan* have been continually changing and adapting to outside forces. Kristiansand has lost the leading edge on housing, on walking and on cycling, on shoreline preservation, and on integrated land use and transport planning. The gap between the goals and the policy outcome on the ground has become large and is increasing, to mention a few examples: traffic accidents, building of cottages along the coastline, the CO\(_2\) emissions and climate challenge, local emissions from cars (NO\(_x\), particles, etc.), traffic noise and the role of public transport.

All these represent long standing and remaining planning challenges. By looking back on the causes for these failures we pose the question if the opportunities for another policy were there at the time and if another trajectory could have been created in Kristiansand? In the following list of cases, instruments for car reduction should (according to the sustainability goals adopted) have been discussed, but they were not:

- **Car free Gimlemoen University campus**
- **Car free city developments, Kvadraturen, Tangen, Odderøya**
- **Car free Concert Hall**
- **Sustainable municipal travel**
  - Work trips and trips during the day
  - Politicians and employees lead the way
  - Parking at public buildings
- **Bike Walking policy, a question of priority**
- **Public Transport policy, it costs**
- **Mobility management, car sharing and alternative fuels**

It was possible for the planners in all these cases to suggest different ways to solve the tasks, but such alternative ideas were never proposed (again a practice far from the normative synoptic model for planning).

**Car free Gimlemoen University campus?**
An example of an alternative design for the Gimlemoen Campus could have been a Car Free Campus. It was taken for granted that the new University campus should have cars as the main mode for students and teachers. It was therefore designed with about 700 parking spaces. Land value only for these places amount to 35 million NOK in the present market. Once they are established, it is far more difficult to remove them only because the Municipality and University are aiming for some sustainable goals. If on the other hand the “Sustainable City” Kristiansand had made clear before the architectural competition that the aim was a Car Free Campus, it would have been realized as such. But no such signals came, even through this was a very hot issue in the professional discussions at that time. Imagine how proud our descendents might be if “Kristiansand made UiA at Gimlemoen a Car Free Campus already in 2000”.

**Car free city developments: Kvadraturen, Tangen, Odderøya?**
Kristiansand City Centre is undergoing very rapid growth, both within the existing 54 blocks and adjacent brown-fields and regeneration areas. This development could have been steered in detail by using the planning law instruments *local plan statutory requirements* (reguleringsplanbestemmelser). In addition the municipality owned directly or indirectly (through the public port) the land for much of these developments. However the City Council
did not want to use such traditional instruments and set a framework for the coming developments. Instead it transferred ownership to limited companies and let different public private partnerships develop the areas, which removed the developments from public insight and the politicians from being directly responsible. The City Council could take a laid-back position and claim that it was in charge.²¹⁸

**Car free Concert Hall**

Another example where it still (early 2008) is not too late to change course towards more environmentally friendly transport, is the Concert Hall Kilden, which is being planned. Three different (concert) halls with seating for about 2000 persons will be built. The audience together with performers and the necessary staff will be the maximum number of persons using the building at the same time. It will have 400 parking places at a cost of 50-60 million NOK to cater for this demand. The location of Kilden is close to Kvadraturen and can thus be served without parking spaces for the public, as most other such buildings in cities do. The planning authorities/politicians could have limited the number of parking places to the number needed for it to function, as the parking guidelines have no provision for such special buildings, but the City Council sustainable development aims were not influencing the decision to approve the building plan. The threatening Climate Change causing the aims set, seem to bear no influence on the planners and decision makers in practice.²¹⁹

**Sustainable municipal travel?**

Sustainable municipal travel is here used in the meaning that the politicians and the employees behave according to the principles of sustainable travel in their municipal role. When the politicians set aims and make rules for the public without going in front as good examples, it can hardly be expected that the public follow these rules voluntarily. Most policy successes have used both the whip and the carrot. An example in Kristiansand is the parking office that markets itself as environmentally friendly and “We are here for you” meaning that it eases the traffic. When the parking company SUV with two people then drive around in Kvadraturen on a Sunday morning, the image the company tries to build is tarred. One could for example expect that elected politicians who set the aims follow these in their political practice, and shift from the car to public transport and walking and cycling. The Sustainable City Kristiansand could have demanded that all employees walk and cycle for short trips and provided electric cars for all long trips during work. Ideas like these are ridiculed or met with silence because they affect individual lifestyles and economy, but if politicians want to be trusted by the public, they should either lower the goals they set or show as leaders that they live as they preach.

**Bike and Walking policy, a question of priority**

The experiences in Kristiansand from the seventies show that a bike and walking network could be developed within the existing budgets. The costs of developing a balanced transport system in Kristiansand could therefore continuously have been covered within the total yearly budgets over the years. In the eighties investment in the bike and walking network was gradually reduced. The main cause of this was the lack of money for investment in roads or under-investment in relation to the demand. Together with unclear responsibilities of who should cover the costs for cycle paths along different types of roads and also different

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²¹⁸ The questions of accountability and increasing distrust in politicians seem to be of little concern.
²¹⁹ A similar discussion has been going on in Copenhagen about parking at the Opera. Ironically the opponents of parking at the Copenhagen Opera, use the Opera in Oslo as a good example of very limited parking!
budgets, the cycling effort stopped. The opportunities were there to continue cooperation between the different authorities and finance the city bike and walking network as part of a comprehensive package, but the sector politicians did not prioritize that.

*Public Transport policy, it costs*

Public transport has for years had a prominent place in the political rhetoric, but not in practical politics. Even if the municipality was adamant not to use money on public transport the room for alternative solutions was not explored or utilized, in particular with regards to the case for using transport planning (parking and access for the different modes) to support land use planning instead of only providing for the car.

*Mobility management, car sharing and alternative fuels*

Although the municipality has had some limited demonstration projects on alternative fuels, car sharing (kameratkjøring) and cycling, these efforts have never been part of a broad policy. The potential of an integrated land use and transport policy developed in cooperation with the public and business community has not been tested out.

**Summing up the discussion on “the lost opportunities”**.

What I have called “lost opportunities” are ideas discussed in the planning literature for years and being tested out several places. The puzzling thing is that even if delegates have been abroad and seen successful schemes, such schemes are not proposed in Kristiansand. This is in stark contrast to the legacy of planning in the city with updated planners like Erik Lorange and Yngvar Johnsen trying out new ideas. What has happened to the planners’ innovative and entrepreneurial skills? The new opera in Oslo has opened without parking, while in Kristiansand it is not even proposed by the planners that the concert hall Kilden should be built without parking for the public, which they should be obliged to propose according to the Kommuneplan. Nor do the political parties flagging sustainable development discuss such a proposal. All the cases discussed under the heading lost opportunities would in a “normal” planning process have been alternatives, but not in Kristiansand? Why? One explanation is that politicians wanting the market to rule have sidelined the planners and planning by dividing both tasks and personnel (e.g. KNAS see ch. 4.8.6). Planners then are kept busy with statutory control of plan and building permits.

**4.9.10 Future challenges and tasks?**

*The Road Building Path* continues with the objective to solve the RV456, which has serious congestion problems and is the main road for one third of the city population. The city is vulnerable if something happens to this road, the time loss and costs will be high and far-reaching. The road is therefore high priority in the city, county and the ATP committee. However, the RV456 can hardly be said to be in a national interest, so why should central authorities finance it?

On all the key land use and transport indicators the gap has increased between the goals and the results on the ground. The politicians soon abolished the densification process started in the Sustainable City project, because the general effect of the policy was that the house prices increased and made it more difficult for young people to enter the market. Even the famous BusMetro has not managed to attract people from cars to any noticeable extent. Non-
motorized transport plays a less important role than ten years ago and the future for public transport, cycling and walking seem to be declining role. The city’s expansion outwards continues and the same is the case for commuting.

The land use change and the building in Kvadraturen is unprecedented. The population has increased by 19% to nearly 6000 in twelve years and will increase further when the many hundred flats planned come on the market. However, with the increase in square meters of floor space there is an “automatic” increase in the number of parking spaces. Several thousand new parking places are planned/proposed (Kilden 400, Torvet 1000, Tangen 1500, NSB-tomta 1500, Odderøya 1000 and from regeneration 1500?). This increase in the number of parking spaces from the present about 8500 places will of course increase the car traffic to and from the city centre, but there are no adopted plans showing how the city centre will cope with this increase. Kvadraturen has only three access points, of which public transport uses two. In these two junctions with heavy traffic there will be an increasing need to prioritize public transport, otherwise the public transport system will either collapse or the running-cos will skyrocket. The third point on transport in Kvadraturen is that the present national roads (Vestre Strandgate and Dronningens gate) probably will be downgraded to county roads. Hence, the municipality and possibly the county will be sole responsible to finance the solution of the increased traffic demand in Kvadraturen. The consequences of the present shortsighted market liberalist land use and transport policy will gradually show up as congestion and hit all citizens. The property owners and developers reap the huge profits and the politicians responsible are not accountable.

Lack of knowledge seems to be an advantage judged by the case history. It then becomes possible to present preferred alternatives, achievements and proposals in a very favorable light (inflated increase in cycling and bus patronage, BusMetro success, ATP success). “Strategic misrepresentation” as in the applications for reward money has advantages towards ministries where “Lip service pays” (Strand and Moen, 2000).

Summing up:

- More complex governance structures increases the democratic deficit.
- More Public Private Partnerships where the role of public planners becomes a provider for “getting projects funded and built”.
- Land use and transport planning is becoming more market led and governed by the money available for projects, causing the planning act rules and the planning code of conduct to be more flexibly adapted.
- More accountability is necessary judged from basic democratic principles, but the power to change lies within higher authorities.

In Norway it seems to take some years before the long awaited radical reform of the public sector will come. Hence, focus should be put on achieving minor changes as for example to shift the responsibility for public transport service and infrastructure to the Highway Agency.

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220 Høringsnotat: Forvaltningsreformen - forslag til nye oppgaver til det folkevalgte regionale nivået.
221 The opportunity to put a levy on new buildings in Kvadraturen to pay such external costs will be increasingly difficult, because of the precedence the present policies are setting.
The responsibility for funding and building the BikeWalk net in cities should also together with public transport be transferred to the Highway Agency.222

The challenge for land use and transport planning in Kristiansand and in Norway is to change the rules of the power play that governs planning and project development. It is not enough to change organizations and national guidance. The institutional structure and the incentive system must be changed with a focus on accountability, transparency and good governance.

4.10 Main conclusions from Kristiansand.
In this section the main conclusions from the case study of Kristiansand are summed up. It starts with some of the salient facts and trends. Then the main conclusions are collected under three themes before I draw what I think are the important lessons from Kristiansand. The results from the Kristiansand study are presented under the following headings:

• Still on an unsustainable trend
• Land use and transport planning is undergoing great changes
• The fragmentation of land use and transport instruments creates barriers
• Knowledge, competence and capacity.
• Lessons from land use and transport planning in Kristiansand.

4.10.1 Still on an unsustainable trend – the facts and trends

The indicators on land use and transport development are all negative in the sense that Kristiansand is becoming continually less sustainable. Chapter 4.3 gives an overview of the facts and trends for Kristiansand urban area, here are a few of the main indicators:

• Public transport continues to increase, but the number of public transport users was still in 2005 lower than in 1995.223
• The CO₂ emissions from road traffic was 145 000 tons in 2006, more than ever before224. The increase from 1991 was 27.3% and far above the national goal.
• The main road network (national roads) increased by 13 km and municipal roads by 21 km between 2000 and 2006, while the bike-walking network was constant at 89 km, which shows that this net had very low priority.225
• The land consumption increased by 1.32 km² or 4 % between 2005 and 2007 mainly due to an upsurge in new buildings of all kinds.
• The amount of transport measured as vehicle kilometer traveled increased by 12% to 420 million VKT in four years (3% per year).
• The car traffic on the trunk road E18 Varoddbrua increased by more than three percent per year the last decade.

222 The Highway Agency should of course also change name, for example to National Environmentally Sustainable Transport Authority.
223 Ordinary paying passengers, school children excluded.
224 http://www.ssb.no/emner/01/04/10/klimagass/
225 EV og RV has increased with 13 km to 122 km from 2000 to 2006, KV increased with 21 km to 373, while FV (82km) and GS have been constant (89km).
Has this been an intended development? Is it a result of the land use and transport policy that has been practiced? Or is it so that the overarching aim is growth/employment, and that this development is the answer of the Realpolitik? The gap between the policy aims and policy results has increased during the last ten-fifteen years. It questions whether the aims for land use and transport policy shall be taken seriously as the instrument steering a plan-led system, or if the aims are only adopted for symbolic reasons. How can this development be explained? What has promoted and what has hindered this development?

4.10.2 Land use and transport planning is sidelined?

Three forces are said to be changing the context of spatial planning in Europe (Healey et al 1997b). These forces have also impacted on land use and transport planning in Kristiansand. Internationalization has been changing the production relations making the city become much more ingrained in the global economy. Secondly, the combination of fiscal stress in the public sector and the leverage of new liberalism have led to new relationships between public and private sectors in land and property development. Lastly, the environment movement and a whole range of other lobby groups have forced stronger political attention on local spatial issues. In responding to these forces, the land use and transport planning has changed a lot the last decades and the change continues. The new public management ideology has had strong influence on how the politicians in Kristianssand have adapted and how they have changed land use and planning practice through use of plans, planning briefs, resources for and organization of planning. The environment movement rose rapidly after 1987, but it seemingly petered out around the millennium. Instead the road lobby took over the attention and even the bishop marched towards the Parliament demanding more money for roads. This section summarizes how the land use and transport planning in Kristiansand has responded to these forces.

The tradition in Norway is that all powers lie in the centralized state (enhetsstaten) with the municipalities as local implementer of the state’s policy. However, in Norway there has been a strong local counter force against the centralized power in Oslo (and before 1814 Copenhagen) expressed in the legislation as an act from 1837 (Formannskapsloven) giving powers to the municipality. These two forces are still alive and are expressed in how Kristiansand has been adapting to the new liberalism and the new public management ideals. There are two major dimensions in the municipal role:

a) The service provider and producer, which is a continual fight to keep standards since demand for services outstrip service supply (eldrebølgen), and hence give limited freedom for political decision-making.

b) The view of the city as an engine for development, which is no longer blueprint planning, but strategic maneuvering in which the politicians take and form the role as agents for development. Incentives become important for action and so do the politicians’ views on reality and effects of the global competition.

The first dimension sees the municipality as an implementer of national policy, and casts the politician into the role as service provider, which is strongly limited by legislation and national budgets and many politicians see this role as administering “cuts”. The other dimension sees the city as an engine in development, which fits within the autonomous role of

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226 The present discussion on local government reform in Norway is an example.
the municipality. Land use and transport planning and development are central in this dimension, which attracts the “power-broker” and the “doer-type” of politicians. Local politicians are integrated in national political parties framing their stand on local issues. The majority of the politicians interviewed were concerned with future employment/business growth, how to strengthen the city in the global competition, etc. The aim of the politicians judging from the interviews was: what is the best I can do for the municipality within my framework? They had the future Knowledge society as an important perspective, and many pointed to the leverage the two funds Cultiva and Kompetansefondet would give the municipality.

Following this argument land use and transport planning has become an important instrument in development to facilitate growth. The task of the land use and transport planning is to provide an ample supply of land for both business and housing development, and to improve the road transport infrastructure and to keep it without congestion. In addition to the general task of modernizing and make the city attractive, the policy takes three directions:

a) To acquire Government money and favors.

b) To improve utilization of municipality’s own resources through land ownership, building and regulation of land use.

c) To attract inward investment in the form of new business and public locations, the latter often in combination with closure of defense organizations.

In the complex strategic game to support growth, obtain inward investment and develop the city, in which the city (politicians) participates and competes, the traditional tasks of land use and transport planning seem to be more and more sidelined.

4.10.3 The fragmentation of land use and transport planning creates barriers

Globalization forces rapid changes both at the national and local levels, which open up for politicians and planners to adapt to new realities and react, but the legislation lags behind the fast changes. National funds for transport are limited and the competition (e.g. between schools, old folks homes, public transport subsidy, financing of infrastructure especially transport) force changes at the local level. Several of the issues discussed above were related to acquiring government money and favors: E18, E39, the Sustainable City, the ATP project and the BusMetro. They were at the same time also issues that would improve the daily life for the citizens and they could be used in city marketing like this slogan: “Settle in the Sustainable City Kristiansand”. Having been Sustainable City is a valuable fact that will last for years, no matter what the assessment of that project. These complex relationships require horizontal coordination at the national and at the local level, and reciprocal vertical interaction between the levels to be effective. The democratic deficit is increasing with increasing fragmentation, but of little concern for local politicians that act within the rules the national government has laid down.

Inconsistent national policies and lack of coordination.
At the national level there is a need for greater collaboration between ministries, and between ministries and agencies. Many barriers are arising from inconsistent policies on CO₂ abatement, public transport, road safety and accessibility. Ambiguous messages from the state
are sent out, for example about the treatment of CO₂ emissions. The industry emissions in Kristiansand are large, used as an explanation of the label CO₂ villain put on the city. Why then reduce car use? Or why struggle to reduce car emissions when airplanes are exempted, as one informer asked: “I travel twice a year on holidays with plane for long distances, and in business 30-40 times yearly to the capital, plus other places. Why should I reduce how much I drive my car locally? It does not make any sense!” There are several examples of uncoordinated use of measures as the treatment of CO₂ emissions from cars and planes, and these means are not used to their full potential. The national statutory guidelines for coordinated land use and transport from 1993 were adopted without effective measures to follow the effect and are much less sharp than proposed. The delivery of integrated land use and transport planning will without high-level coordination rest on cities. Failures have been identified on the lack of implementation of environmentally sustainable transport goals, which were caused by the successes of the road projects. Another set of failures of transport policy were the attempts of mode shift and environmentally sustainable transport. Such failures are likely to be repeated without coordinated state instruments and more vertical guidance. CO₂ abatement takes place in Norway by a levy on fuel, the source of the car emissions, but the effects of the policy on the amount of travel is not apparent and hardly noticeable as different from the fiscal levy put on the same fuel.

Regional and local levels
On regional and local levels a similar coordination is needed between transport and land use. Moreover the transport impacts of policies on health, education and social inclusion, and the potential contributions of transport to those policies, need to be fully integrated into the overall strategy. The spatial and transport planning need to be coordinated, which remains a remote objective for Kristiansand. Politicians, land use and transport planners have different aims, skills and knowledge, and even when policy and institutional structure are designed to promote interaction the lack of transparency leads to bias. Furthermore the task of integration has become more complex due to rapid changes, which may be used by active stakeholders to their own advantage.

Land use and transport planning has tried to intervene with market forces even as the European Council of Ministers of Transport states that “Transport technology and transport costs have always been the key determinants of urban location and form” (ECMT, 2006). With the growth ideology and market-led planning policy practiced in Kristiansand the later years, the former land use and transport policy has gradually been abandoned.

The explanation of the lack of integration and coordination, and the different policies pursued on national and local levels can be sought in what Brunsson calls the organization of hypocrisy: talk, decisions and action are the glue of society that can build compromise and consensus, but also be used for “log-rolling”, and strategic timing of information and actions (Brunsson 1989). Institutional barriers can be overcome or changed, but often these barriers have strong vested interests behind them and/or they are used to achieve other policy goals. Let me state an example of how barriers can also be used to support another policy (see ch. 4.8). The Minister of Transport declined to support “Gratis Buss” because she couldn’t discriminate between cities. This was the time when the government in a white paper

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227 Loktra 2000 page 73, Høyer 2002 page 194
recognized that public transport in cities needed special support. Later the same Ministry went on to introduce rewards to cities that wanted to support public transport, a system built on discrimination between the cities. The non-discrimination policy was an excuse used to “kill” the “Gratis Buss” proposal, not the real reason for rejecting it.

4.10.4 Knowledge, competence and capacity.

Planners should (must?) strive to be participatory and democratic, increase rationality and be open and communicative, but are they unable to do so because power rule? The research program LOKTRA made the following two statements on the planners’ role and competence:

“It must be the task of administrators and planners to make clear the relationship between goals and means, not conceal the political choices that must be done.”

“For society to reach its ambitious aims for integrated land use and transport policy it is necessary to raise the professional competence considerably, both with regard to quality of the work, and the quantity of the skilled tasks required.”

In Kristiansand we found an increasingly blurred distinction between planners and politicians. The municipality employs a limited number of planners, which are spread on several offices/organizations within the municipality. There is broad cooperation with the planners in the County and Highway Agency on the local level. Planners, administrators and politicians may use the organization to achieve the politically decided aims, the aims of each office and possible also the organization’s self-interest. Some planners were promoting certain goals with few openings for alternative ways forward. Looking at the past the planners in Kristiansand have had life-long tenure. Very few planners have therefore had influence on planning. Some politicians and some planners have had far greater ability to implement their policy goals than others. With a more and more blurred distinction between planners and politicians, it might be a danger as LOKTRA warned that political choices are concealed.

Another side of the politicians taking a more active part in planning is that the need for skilled professional competence seems to be disregarded.

The dark side of planning is forecasting or the description of future problems and the wanted result. The planners are in charge of painting the picture of the future. It might be that the planners are biased in their selection of future problems and the description of these problems (for example that the road system will “collapse” due to future congestion). Some even talk of lying planners because: “Accurate forecasts are often not an effective means for getting projects funded and built. Indeed accurate forecasts may be counterproductive, whereas biased forecasts may be effective in competing for funds and securing the go-ahead for construction” (Wachs 1984, cited from Flyvbjerg 2008229) The question then becomes how to design checks and balances that would give planners and politicians the incentive to stop producing biased advice. My assessment of the planning practice in Kristiansand is that the former separated roles of planners and politicians are now overlapping. This role conflation is forcing the planners to present plan proposals, achievements and aims in a flattering light, another reason for bias may be that planners get personally involved in achieving a certain alternative. With the market turn, land use and transport planning as public planning in

228 LOKTRA report 3, (2000) page 94 and page 14
general, has become more strategic and short term, which has made it more difficult for public planners to be objective and follow the norms of the profession\textsuperscript{230}.

Newman and Kenworthy\textsuperscript{231} see the problem of land use and transport planning as a lack of a strong planning institution and advocates public participation: “The key problem seems to be the lack of a politically powerful and well-coordinated city planning system which could approve and implement the building of such transit infrastructure. The participation of the public is essential, particularly when the city becomes stuck in an inappropriate Western paradigm, as it has in cities like Bangkok.”

Others like Pennington\textsuperscript{232} argue that the private market should be used more extensively to enhance planning: “The high information and monitoring costs that face electorates in all democracies and the resulting ‘rational ignorance’ of voters are likely to result in the capture of administrative systems by special interests and producer lobbies. Where voters have little direct control over day-to-day performance of politicians and bureaucrats and where the costs of organizing large, diffuse constituencies of consumers are higher than those facing producer lobbies, the ‘outputs’ of the political process are unlikely to accord with the public interest.” He points out that planning has not been able to achieve the goals set and claims that green belts (as commuting) are the example of planning deficiencies: “push development far out with high associated transport costs, private time costs and increased environmental pressures through emissions, land take, etc. These deficiencies are the same revealed in Kristiansand with outward sprawl and increasing car based commuting. There are also signs that special interests and producer lobbies are working closely with politicians and planners in land use and transport development. These trends of conflating the roles of politicians and planners often associated with a lack of transparency, represent a serious threat to local democracy.

Klosterman (1985) argues that the use of public planning should be assessed by an evaluation of the effectiveness of planning compared to alternative ways to reach societal aims. The comparison of the two planning paths in Kristiansand reveals that the long-term collective interests have lost to the short-term demand for individual car transport in the city. The planning system did not manage to confront the major long-term challenges of climate change and sustainable development. Rather than challenging the unsustainable course planning was used to promote such a course, and planning was at the same time used to present the picture of Kristiansand as a successful sustainable city. Public planning was instrumental in producing the car system, but did not manage to implement the goals of improving the environment or social inclusion. By pointing out serious democratic deficiencies in existing practice, I am not saying that an alternative model is better, only that the system should and must be improved if we want a more sustainable development.

\textsuperscript{230} “A planner must strive to provide full, clear and accurate information on planning issues to citizens and governmental decision-makers” Code of Ethics and Professional Conduct, American Institute of Certified Planners.


4.11 Lessons from land use and transport planning in Kristiansand.

Would the land use and transport history in Kristiansand have been different under other structures and other actions? The fragmented institutional structure or “the rules of the game” that force certain solutions and discard others, are seen as the main cause of the trajectory that was formed. To what extent did structure frame decisions, and what were the degrees of freedom for actors to make alternative decisions? How did planners’ and politicians’ actions, reactions and pro-actions influence the course of events? What had happened if the institutions had been different, and/or the actors had behaved differently? To learn from the past and draw lessons for the future I have reflected over these questions in order to answer: *How should the institutions be changed to facilitate another path of events?*

The reflections done to answer the above question are presented under the following headings:
- Integrated land use and transport planning – the principle of subsidiarity.
- The public transport authority.
- Clinging to power.
- Incentives and innovations.
- From Government to Governance processes.

**Integrated land use and transport planning – the principle of subsidiarity.**

One unitary power over land use and transport has been the conceptual model in planning since Howard’s book[^233] on garden cities was published a hundred years ago. It is also fitting in with the principle of subsidiarity – a principle of placing decisions on the lowest competent level – that also has been adopted by the European Union. If Kristiansand had had complete powers over land use and transport planning (infrastructure development for all modes[^234]), financing of infrastructure (tolls, congestion charges) and public transport services, then the past would probably been different, but how is unknown. What one might obtain by having one authority sole responsible for the land use and transport development of the city are several things. The city council would firstly be responsible and accountable for all land use and transport decisions. It would not be possible for politicians to vote for solutions they are against in principle and in their political programs, subsequently avoiding to take responsibility for the contrary decisions. Greater accountability of councilors enhances democracy, an important result in itself. Secondly, the land use development had to be considered together with the transport development in planning and decision-making. The present unprecedented land use development in the city centre, which probably will create major traffic problems and threaten the vulnerable built heritage in Kristiansand, would probably not have been possible with a more accountable city council. Third, it should be expected that the aims of a balanced transport system where all modes are integrated, would have more effect. That would probably lead to more walk and bike paths, and better public transport services. What effect this proposition would have on parking policy is uncertain, since it would not include the control of parking on private property. The inertia in devolving

[^234]: Highway Agency would still own the trunk roads and submit plans for development of the trunk road to the municipality for approval as any other developer, but without mixing design and financing as of now.
powers from the state to the lower levels in Norway can be explained with all the vested interests in maintaining status quo, which was recently confirmed by the decision of scrapping the regional reform and continue with the present counties in Norway.\textsuperscript{235}

\textit{The lesson is that integrated land use and transport planning is not possible without changing the institutions and the way land use and transport planning and financing is organized. Environmentally sustainable transport development requires broad public support at the local level. The principle of subsidiarity should therefore guide the institutional change.}

The public transport authority.
Through the years many research reports and indeed government white papers have pointed out the dysfunctional organization of the public transport authority in Norway. Some researchers even claim that it fits very well with those powers that want to increase car usage and at the same time not be taken to account for that development\textsuperscript{236}. One solution could be to transfer the public transport authority from the county to the city. The present organizing with the county as responsible authority for public transport has, as described above, been cynically used in the political rhetoric to present the Kristiansand politicians as being positive to public transport, and blame the county as incompetent. Public transport is seen as one of the services the state has decentralized to the county and hence not a municipal task. Kristiansand as any other municipality is skeptical to take over responsibility for public transport in the municipality because it fears that not enough money to keep the service level, will follow from the Government. The city council would in case then have to administer and prioritize cuts in public transport services as it is doing for schools, etc. It is therefore likely that the dysfunctional organization will last for years.

To transfer the public transport authority to the Highway Agency could be an alternative way of obtaining the goal of integrating public transport with car transport. That would force the Highway Agency to discuss alternative transport solutions especially if public transport could reduce the car traffic demand sufficiently to postpone road building, as the statutory national guidelines requires. The already weakened county would lose a task and money with such an organization, and it may therefore not be a realistic suggestion. Public transport in Kristiansand will probably continue to be organized as present, and the cooperation between the stakeholders will decide the outcome. As long as there is no political willingness at any level to subsidize public transport substantially more than today, then the decline will continue.

\textit{The lesson is that the present way of organizing and financing the road infrastructure and public transport service favors car transport to the detriment of the walking, cycling and public transport modes. It is not likely that the present organization can substantially improve public transport without changing some of the parameters governing the competition between the car and public transport modes. Public transport could be improved by substantially increased funding, which must be “earmarked”. Another way to improve public transport is to change the organization of the road infrastructure system or of public transport or both, but that is not enough}

\textsuperscript{235}Minister of local authorities, M. Meltveit Kleppa, announcement, February 2008.

without increased subsidies (bus priority in traffic is taken as granted). For public transport to compete with the car in the medium sized cities it is necessary directly to prioritize the funds between these modes.

Clinging to power
The elected politicians are clinging to the power. Both the unitary land use and transport authority and the alternative organization of public transport discussed above, revolve around the devolution of powers. The pressure on government finance has forced the introduction of efficiency programs and cuts in public transport services. The road investment program in the national transport plan proposal has been put at zero since all the funds are going into maintenance. However, this does not include the toll-financed projects. The result of this national transport policy is that the amount of money the Highway Agency receives continues to increase, while the public transport grant indirectly decided by the county, probably will be reduced. In Kristiansand the road system will continue to expand due to the toll financing the next twenty years or so, while the public transport services will continue to be financed by the users and the public subsidies channeled through the county. Public transport may get some of the income from tolls in the future, but hardly more than a small amount of the tolls. The probable effect on travel times and travel costs for car and public transport in Kristiansand will be a continuing and increasing advantage to the car.

It is the Government and the Parliament that have the opportunity and power to change the organization and the funding systems in transport. Even if there has been wide professional agreement in transport research circles for several decades that improvements are needed, nothing has been changed. The vested interests in the present system and status quo are very strong. The political system with MPs elected on a county basis, has made the rural and peripheral representatives very strong in relation to the urban spokesmen regarding the (road) transport policy and a neglect of urban transport has been a consequence: “A cynical attitude to major transport problems led to very poor solutions in the big cities.” This tradition of prioritizing the road investments to the rural areas and intercity transport is still very strong in Norway. Transport policy is a very sensitive political issue that can decide elections, if the policy is read as a concern for the petrol price and road investment. This can explain why Norway continues with such a dysfunctional transport system organization. With the major institutions within transport fixed, innovation is needed to facilitate changes.

The lesson is that the “automobile policy” is very sensitive to the mood of the voters. Hence, governments are not risking to alter the established balance of power, because it might stir “things”. The fragmented institutional structure benefits politicians on all levels by making them unaccountable. The strategy to move towards the aim to reduce car traffic and shift to public transport should therefore be a) developed incrementally, b) developed in cooperation with the public and businesses, and c) specifically pointed to a certain area or type of journey since full-scale implementation of the aim is unlikely.

237 Public transport subsidies in Norway was reduced with more than one billion NOK through the efficiency program. (Strand & Moen, 2000:168)
238 Forslag til NTP 2010-2019.
Incentives and innovations.
There have been many experiments and innovations in Kristiansand over the years as the Sustainable City, the public transport demonstration projects, BusMetro and the ATP project. The barriers to continue successes and the reasons for failures are interesting lessons. In general the locally initiated projects were more inventive and successful than the national projects like the Sustainable City and the ongoing ATP project.

The successes are a combination of local consensus, influential partners at the national level and agreement with national policy agendas. Both the E18 and E39 cases started with bottom up processes in close cooperation with the central Highway Agency and were made to fit the national policy agenda not allowing new road projects unless the majority of finance came from local tolls. Both cases avoided the discourse on environmentally sustainable transport and the goal of mode shift from cars to public transport. The incentives were huge in these two cases. The roads open up land use opportunities and are by politicians thought to have an important economic growth effect locally. Incentives were aligned and positive for all, zero congestion gives faster travel, direct jobs for a few, increased income for firms, increased taxes due to higher incomes, etc.

The Sustainable City and the ATP project were not designed to solve local problems, but designed to win a national project in competition with other cities. The measures to achieve the Sustainable City goals will be negative for many politicians, planners and the public. Shift from car to public transport will necessarily mean that many will have to change mode with negative cost, and benefits must be forsaken. The established power relations and growth interests together with “The car has come to stay” ideology undermined the Sustainable City, and they will probably make the ATP project, which is further limited by municipality borders, fruitless. The lessons I draw from these projects are that more could be obtained of results if broader participation of stakeholders had been achieved and the aims more realistic taking into account the local planning context and traditions. The Sustainable City project discarded the unique public transport demonstration project instead of integrating that into the project, which could have been done by the planners. The project design in both projects started from scratch, hardly showing any knowledge of the former experiences. Is it possible that MoE, which some claim has gradually been losing political support, saw these projects as an opportunity and the best way to keep the sustainable development discussion alive?

The ATP project aims, among other objectives, “to reduce traffic growth and support the use of environmentally friendly transport modes by a better-coordinated land use and transport policy.” This extremely ambitious objective entails less car use and more public transport by coordinating land use and transport policy. Translated that means that activities are to be located closer to each other to shorten the distance between them, which again mean that the distance between job and home and shops must be shorter than today. In principle that entails a concentration of jobs and homes and shops to Kristiansand, and using the land use planning as an instrument to prevent new locations in the six other municipalities except for local jobs and homes. Unrealistic aims many will say. Instead the ATP project should within the present constraints aim at creating innovative ways of using the land use and transport

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240 This is a controversial question, most transport economists disagree, see for example Engebretsen, Ø.; Lian, O. & Strand. S. (1998): Samferdsel og robuste bo- og arbeidsmarkedsregioner. TØI arbeidsdokument TR/0802/1998. Oslo: Transportøkonomisk institutt

241 I don’t see merger of the municipalities into one large city municipality as probable for many years.
planning instruments to achieve public goals in a free housing market, across county and municipality borders.

The lessons from these two top-down projects are that far more could be obtained by more careful project design and an incentive scheme. The incentive scheme should have made the projects more trustworthy and worthwhile for other stakeholders than local politicians to take part. Very few people are reducing their car use on moral grounds, but their attitudes are central to achieve modal shifts. The first prerequisite for such a shift is that an acceptable alternative exists and secondly that the sacrifice and costs of not using the car bears a reasonable relation to what has been gained. Lastly, no one likes to be cheated. The consequences of the proposed/introduced measures must be seen as fair by the public, both regarding the allocation of costs and benefits, and also the spatial impact. With an incentive scheme and broader participation the Sustainable City project might have started mode shift demonstration projects. I believe that car reduction and mode shift strategies can only be implemented after broad public participation in Kristiansand because such strategies are very context dependent.²⁴²

By incentives I mean resources that increase the probability of success so much that stakeholders contribute a bit extra to achieve the goals. That was not the case in the Sustainable City project, when the Government only offered “peanuts” (see ch 4.5.2). But imagine if the Government had offered money to continue the public transport success, the project might then perhaps have achieved its goals? It is likely that by identifying the obvious barriers for goal achievement an incentive scheme could have been designed to overcome these barriers. The government has ample tools to create push and pull effects in projects, and indeed experience in Kristiansand from such successful projects.²⁴³

The lesson is that to implement national goals on the local level, it is necessary for the government to provide incentives that make it interesting and viable for politicians and people not only to take part in the project, but work hard towards implementing its goals (as they did in the road projects). The benefits for the city must be substantially greater than the disbenefits, since the local politicians’ risk lose their “seat”. The incentives should also be designed to create innovative solutions in each particular context.

From Government to Governance processes.

There is a strong shift from Government to Governance processes caused by the growth in the number of informal cooperative agreements and coalitions formed the later years. Let us take as an example the “Gratis buss” proposal and ask if another result might have been produced? If as in the E18 case a learning process had been started with both central and local participants getting to know each other and the problem, there might have been created consensus about both the importance of such a project and an agreement to test out “Gratis buss” in Kristiansand over a three-year period? Such “stakeholder planning” could possibly have released enough funds for a limited “Gratis buss” project to be realized, which could give valuable experience to the authorities on all three levels. The main incentive to get the

²⁴² Broad participation in land use and transport planning is much more likely if people get to decide issues by referendums or elections. The London congestion charging came as a direct election promise, and the Stockholm experiment was forced on the city after an election and a new government coalition.

²⁴³ MIK was such a successful project introducing environmental policies in the local authority organization.
reluctant municipal politicians to support a test of “Gratis buss” would be sufficient. Government money to run the test and also to pay for the cost of closing it if not successful. The later “Reward-project” has the same aims and instruments that could have been used in a test of “Gratis buss”, which indicates that this proposal was possible in 2001 if the Minister had wanted so.

The lesson is that land use and transport planning might become a “stranded whale” if it is not adapting to the new market liberalist world. The task is to find how land use and transport planning can be used to harness and bend the forces towards more sustainable development.

Summing up.

In several of the successes and failures there seem to have been very small things that could have been changed and altered the projects paths and results. More knowledge based and broader competence in project design with a focus on innovation and incentives could be fruitful.

Stakeholder involvement is essential to develop broad policies when wide public changes in behavior are required. An obvious start for such an experiment could be UiA. How far in modal change is it possible to come by a process between students, staff, administration and other stakeholders? To get support and agreement about a policy change it is necessary to develop the strategy in increments and take small steps. Another experiment to be pursued could be car share clubs and business travel plans. Such experiments raise questions of trustworthiness of policies and confidence in the leaders propagating the policy if they are not actively taking part. It is especially important that leaders are true role models for sustainable transport policies and not placed as hypocrites.

There seem to be no way back, the shift towards more Governance is likely to continue. The complexity will increase and by that the power relations, which open for further unsustainable development.

The overall lesson is that there is an urgent need to make the governance processes more transparent and the politicians accountable. There is also a need to clarify both the role of land use and transport planning and of planners in such processes.

Epilogue Kristiansand case
Complex global economies induce rapid changes at the local city level, changes that are acted and reacted upon with varying means and intensity. Complex games results, with new and old actors in different coalitions taking part under open and disclosed agendas, aims and expectations. The main result from the study of Kristiansand is that the state has built fragmented institutions that are not able to deliver an integrated land use and transport development in urban areas. Contrary to the goals of environmentally sustainable transport development the national policy has been and is a policy of building an increasingly car dependent society. In Kristiansand the politicians and planners have reacted on the fragmented institutions with skill and developed a more and more car dependent land use and transport system that serve the majority of the population very well, but make the development of the urban area increasingly unsustainable.
## Annex I – Kristiansand case

**Short list for standard comparison of the case cities – Kristiansand**

<table>
<thead>
<tr>
<th><strong>Kristiansand</strong></th>
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<tbody>
<tr>
<td><strong>Background</strong></td>
</tr>
<tr>
<td>After several years with slow growth, the population has grown 1% per year last decade. Appointed by MoE to SUSTAINABLE CITY 1993/2000. Toll Roads finance major Highways E18 &amp; E39. ATP project aims at make LU&amp;T planning and financing more integrated. Bursting of confidence 2005! Note: BusMetro direct descendent of Sust city and TP10.</td>
</tr>
<tr>
<td><strong>Special LU&amp;T</strong></td>
</tr>
<tr>
<td>SC goals fail. PT and BW post less than when project started, contrary to goals E18 road infrastructure built – select information/effectiveness. E39 plan and finance by Tolls, final decision locally 16.02.05. Contested, MoE decide tunnel alt. 2006. Contradiction between car culture and SC. Festival planning mask reality? Car commuting and sprawl increases. Job creation seen as the major task.</td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
</tr>
<tr>
<td>LU planning has secured great reserves of building land within municipality (&gt;30 years). Big or little influence of LU on transport development. Commuting and regional LU are changing rapidly. Weak/fragmented steering of investment in infrastructure. New jobs needed, hence always surplus supply of land for building.</td>
</tr>
<tr>
<td><strong>LU&amp;T Policy</strong></td>
</tr>
<tr>
<td>Long term security for ample land reserves to facility growth in jobs/population. Within this policy framework marginal shift of emphasis in policy over time (restrictive/not restrictive). Ample supply of land for housing building to secure affordable housing has been and is a keystone in Krs policy for several decades. Land allocation for the road system a technical issue like other utilities (water, sewage, electricity, etc). The main highway structure fixed since the mid-fifties with only marginal changes since. LU and investment in highway capacity have not been coordinated. Sørlandsparken – shopping: to expand or prevent enlargement? Major expansion planned 2006. Tension between policy and planning (centre hierarchy, densification, environment, sea shore).</td>
</tr>
<tr>
<td><strong>Transport Financing.</strong></td>
</tr>
<tr>
<td>How to get money for roads? Road infrastructure. National government final say (Stortinget). NTP planning instrument for all modes, but road investment programme most important. Partial funding of stretch of road, essential for each stretch to get into programme. Toll road financing became a necessity in the nineties. E18 &amp; E39 preemptive, consensus planning by regime coalition. “The car embedded society” Task: local-county support and agreement crucial. Highway Agency priority &gt; SD support &gt; Parliament Committee decision. E18 success, E39 success (partial highway agency success, tunnel instead of bridge) The price to pay for the road investment agreement with toll financing, was BusMetro. BusMetro was not an aim in itself, but a consequence of the agreement and “carrot” funding. PT services are financed by the county, and as such of little concern to the city. Walk/Bike infrastructure paid for by road owner, not integrated in policy.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
</tr>
<tr>
<td>Facts on the ground: Climate Villain. Commuting &amp; Car dependence increasing. Decoupling of planning as process (aims and symbol production) and planning as product (functional roadnetwork). Always good supply of land for houses and businesses, attractive city centre, green city, coastline, and good on culture. Legacy: Proud legacy. New focus globalization, ICT, KKKK-society. Implementation failure highways in the 1980s, success in the 1990s. Findings: Krs municipality good at using and creating opportunities 1) production of symbols (miljøby, kulturby, solcelleby, oljeboringsby, Norges riviera, solkysten) 2) production on the ground (roads, fiskebrygga, city beach) Weakness: Coastline buildings contrary to aims. Car dependence increase contrary to aims. Decisions set cars in front of environment: (Torvet P-hus, kulturhus) accessibility &amp; to avoid congestion has top priority, the functional. Questions: who wins, who lose? FIN INFRA: toll road ring system, vast sums of money collected, will by contract last 20 years more.</td>
</tr>
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## Annex II – Kristiansand case

<table>
<thead>
<tr>
<th><strong>E18 project</strong></th>
<th><strong>Sustainable City (SC) project</strong></th>
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<tbody>
<tr>
<td><strong>Characterized by</strong></td>
<td>The E18 case can be called a “Stakeholder” project, meaning that a combination of stakeholders both public and private participated in the process.</td>
</tr>
<tr>
<td><strong>Goals</strong></td>
<td>The E18 had one simple goal, to build a new highway. Underneath this goal was a set of objectives, some of them very difficult to achieve as the toll financing and decision on road alignment and design.</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>The formal structure following the pbl was used as the instrument to achieve the two aims: Decisions in the City Council on Reguleringsplan E18 and Toll road finance package.</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>Learning and confidence building process among selected key actors.</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td>Resources for planning were available in Highway Agency and Kristiansand municipality administration. If the project was successful, then the toll system could generate 100 million NOK every year for a decade.</td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td>The main measures used were cooperation and learning. Consensus was built among key stakeholders through a learning process and cooperation across levels, layers and sectors. The result was an unwritten “contract” among the stakeholders built on trust, agreeing on the goals and “binding” each participant.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>The Toll road system has an important economic growth effect locally (jobs from the collection of tolls and building the road; and reduced travel times generate growth) plus the land use opportunities opening up because of the projects (both at junctions and further away due to reduced travel times). This successful E18 story started in 1992 when new actors came on stage. Before that the E18 project had been unsuccessful for years. Incentives are aligned and positive for all, zero congestion gives faster travel, direct jobs for a few, increased income for firms, increased taxes due to higher incomes, etc.</td>
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5 Aalborg

The City of Aalborg intends to work hard to obtain an environmentally sustainable transport future as this declaration shows: “We recognize the interdependence of transport, health and environment and are committed to strongly promoting sustainable mobility choices.”

Aalborg is famous in planning circles, not least because of the 1994 Aalborg Charter, which demand that the cities that join, pledge to work for sustainable development in cities. Around 1800 cities worldwide have signed the Charter. Ten years after the Charter The Aalborg Commitments were born. But the Aalborg fame goes back longer, it was a model city in the NORKOLT study, it was one of the first implementing the SCAF principles in existing areas. Already in 1979 it got a prize for the Traffic project. In this study I only look at land use and transport planning and policy, which means that much of the impressive work Aalborg has done on the broader sustainable development issues like inner city regeneration, energy or utilities is not included.

The study of Aalborg is firstly a description of the land use and transport situation and the events over time leading up to this situation. Secondly it is an analysis of these events and the mechanisms that has contributed to change over time. After the analysis follows a discussion of the role of land use and transport planning and policy in the process of change and to what extent it has contributed to a more environmentally sustainable transport system. A reduction in car use and a shift to more environmentally friendly modes is seen as a necessity in the sustainable development debate, and indeed Aalborg has strongly committed itself to such a policy through its Charter, plans and programs, and indeed the Commitments. The aims and goals are one side, the other is how the actual development and change is going. This study attempts to answer if Aalborg is on a sustainable path.

5.1 Introduction to Aalborg

Aalborg is the economic, cultural and educational centre of North Jutland. Aalborg with a population of 162 000 inhabitants (2005) is the fourth largest city in Denmark. A further 65 000 people in neighboring areas form part of the daily activities in Aalborg – working, shopping and so on.

244 City of Aalborg, Technical Department, 2004. Sustainable mobility. Citation from page 18.
245 Stadsbygnad Chalmers Arbetsgruppen för Trafiksäkerhet, 1967, influenced heavily the traffic safety work in the Nordic countries
246 Flyvbjerg, 1991
247 See for example ”Sustainable utility supply in Aalborg” 2004, which sums up some of this work.
248 Aalborg was merged with other municipalities from 2007 and population increased to 195 000 in 2008.
Aalborg can be characterized as two urban areas north and south of the Limfjord connected by a bridge and a tunnel. The city is geographically located where the distance over the Limfjord is shortest, and as a result the infrastructure for crossing the Limfjord has been placed here. Therefore the city has always been the "key" to the northern part of Jutland and the connections onwards to Norway and Sweden.

The following map shows the settlements Aalborg on the south side and Nørresundby on the north side of the crossing in 1948. Today they are both part of Aalborg municipality.

The Travel to Work Area is expanding around Aalborg making more and more people dependent upon the car as the means to access jobs. The County Mayor saw the education and re-education of the population and access to jobs as the major challenges when we are turning into the "knowledge society" in the coming years. This concern of the regional development is shared by the city, as this statement shows:

The continuous growth in regional and interregional relations therefore has an immediate impact on Aalborg, and it faces the risk of becoming a future bottleneck, with adverse effects

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249 Interview county mayor Orla Hav

250 City of Aalborg, Technical Department, 2004. Sustainable mobility. What has happened in Aalborg during the last 10 years?
on the opportunities of economic development in the region and negative environmental impacts as likely consequences. The annual growth in regional car traffic currently stands at about 3%.

Figure 5-2 Map showing the location of Aalborg
Source: Google maps

The present situation.
Slow growth has been the case through the last decades, which make politicians focus on central government for help to the “periphery”. Population growth in Aalborg has been low compared to the Copenhagen area. In the period 1993-2001 there was a net out migration from Aalborg municipality, even with a growth in jobs and the status as a University City. The main migration flow goes to Copenhagen, but there were also a lot of families with children moving to neighboring municipalities. The North Jutland and Aalborg area has been eligible for grants from EU over long period.

Aalborg has laid out substantial areas for expansion and invested in infrastructure for housing and employment in the outskirts of the city. Car traffic has been increasing with three per cent per year, and also the trip length has increasing. The pattern of travel shows an increasing complex criss-cross pattern over a vast area. The 3rd Limfjord connection has been decided as part of a “predict and provide” ideology, but its not yet financed. The plan decision implies that also cross connecting roads must be built. The decision already impacts on land use demand, especially around intersections attractive for localization of new businesses. Substantial work has been done with the City Centre, the Waterfront and City Syd. Public
transport routes are redesigned and offer a good basic service and fare levels. Cycling as everywhere in Denmark is still popular and together with walking important travel modes. There are attempts of mobility management (car sharing, pedestrian zones, calming), but overall Aalborg has an adaptive not instrumental land use and transport policy.

The third Limfjord crossing will be a major highway investment through the city along the Egholm line to the tune of DKK 3.5 billion. The alignment for the line was fixed in 2003, but pending a new environmental assessment after an appeal to Naturklagenaevnet. Toll road financing was not discussed during the 3rd Limfjord connection process, but the financing of the highway will become an issue in the future.

Denmark got new regions and new municipalities from 2007 and a lot of functions were shifted around. The road network was divided into two owners: State 20% and Municipalities 80%. The responsibility for the public transport was transferred to municipalities.

Aalborg city both wants to build a new western bypass to the tune of 3.5 billion DKK and keep its position as a front runner towards sustainable development as manifested by the Aalborg Charter, which 1800 cities have joined. To plan a high class, high capacity highway system in the city seem for politicians not be in conflict with the adopted local goals of “reducing car traffic” in the Traffic & Environment Action Plan\textsuperscript{251}. Building new traffic generating roads are also contrary to the City’s Plan and Sustainability Strategy where it is stated: A sustainable city development is also characterized by transport reduction, especially reduction in car transport\textsuperscript{252}

This case study of land use and transport planning in Aalborg asks the questions: How has the gap between aims and output developed? Why is the gap there? Has the city managed to break the trend towards greater car dependence? If and how has the city managed to overcome the trend towards widening gap? How and to what extent has the land use and transport planning and policy managed to control development and steer towards the environmentally sustainable goals?

\textsuperscript{251} Traffic and Environment Action Plan 1994, later reviewed 1999, 2005
\textsuperscript{252} Aalborg Kommune. Plan & Bæredygtighed. Redegørelse. 2003 p37
5.1.1 Aalborg time line through history

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>City land use &amp; traffic plan</td>
</tr>
<tr>
<td>1956</td>
<td>Pedestrian street proposed</td>
</tr>
<tr>
<td>1959</td>
<td>Traffic plan city centre</td>
</tr>
<tr>
<td>1962</td>
<td>Pedestrian street established, first in Denmark</td>
</tr>
<tr>
<td>1963</td>
<td>Review Traffic plan city centre</td>
</tr>
<tr>
<td>1970</td>
<td>13 municipalities become Aalborg municipality</td>
</tr>
<tr>
<td>1971</td>
<td>Traffic study</td>
</tr>
<tr>
<td>1971</td>
<td>2nd Limfjord crossing opened (Tunnel)</td>
</tr>
<tr>
<td>1972-73</td>
<td>General plan LU&amp;T</td>
</tr>
<tr>
<td>1973-79</td>
<td>City Centre redevelopment planning</td>
</tr>
<tr>
<td>1976</td>
<td>Parking plan</td>
</tr>
<tr>
<td>1974</td>
<td>Aalborg University College opened</td>
</tr>
<tr>
<td>1974</td>
<td>3rd Limfjord – Lindholm line proposed by the technical administration</td>
</tr>
<tr>
<td>1974-78</td>
<td>NORKOLT</td>
</tr>
<tr>
<td>1977</td>
<td>Aalborg project starts</td>
</tr>
<tr>
<td>1979</td>
<td>A series of plan documents published</td>
</tr>
<tr>
<td>1979</td>
<td>Town Planning assoc prize: Aalborg project</td>
</tr>
<tr>
<td>1980</td>
<td>City council ratify Aalborg project 25-1</td>
</tr>
<tr>
<td>1981-85</td>
<td>Conflicts implementation of the Aalborg project</td>
</tr>
<tr>
<td>1984-87</td>
<td>New leaders</td>
</tr>
<tr>
<td>1989</td>
<td>Parking regulations and charging introduced</td>
</tr>
<tr>
<td>1987-91</td>
<td>Ecology, Clean City, Green City, etc.</td>
</tr>
<tr>
<td>1990</td>
<td>EU/EFTA Prize The Tidiest City in Europe</td>
</tr>
<tr>
<td>1994</td>
<td>Traffic &amp; Environment Action Plan</td>
</tr>
<tr>
<td>1994</td>
<td>Aalborg Charter</td>
</tr>
<tr>
<td>1995</td>
<td>EU: European Planning Prize</td>
</tr>
<tr>
<td>1999</td>
<td>Aalborg LU&amp;T plan review</td>
</tr>
<tr>
<td>1999</td>
<td>Traffic &amp; Environment Action Plan</td>
</tr>
<tr>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>EIA 3rd Limfjord planning starts</td>
</tr>
<tr>
<td>2003</td>
<td>GOV: Plan and Sustainability Strategy</td>
</tr>
<tr>
<td>2003</td>
<td>New Public Transport Plan</td>
</tr>
<tr>
<td>2003</td>
<td>3rd Limfjord decided by both City and County</td>
</tr>
<tr>
<td>2004</td>
<td>Aalborg Commitments</td>
</tr>
<tr>
<td>2005</td>
<td>Traffic &amp; Environment Action Plan</td>
</tr>
<tr>
<td>2005</td>
<td>LU&amp;T plan for Aalborg (Kommuneplan)</td>
</tr>
<tr>
<td>2007</td>
<td>“New” municipalities and regions</td>
</tr>
</tbody>
</table>

Planning was one of the key instruments to create the new world after the Second World War and a “positive” concept until the new liberalism started to spread by the end of the seventies. This can be read in the Timeline for Aalborg. The sixties and seventies were filled with planning studies and well documented. Where one study finished, another took over. The city centre in Aalborg “Bykærnen” was more or less under continual “planning” all these years from the early seventies through the nineteen nineties. The Aalborg project\textsuperscript{253} started in late

\textsuperscript{253} Bent Flyvbjerg has eminently described this period in \textit{Rationality and Power, 1998}
In 1977, the plan proposals were ready in 1979, the implementation however became fragmented in the eighties.

The influence of the environment movement stemming from Rachel Carson’s book *The Silent Spring* to the UN Stockholm Environment conference in 1972 can be seen in the Nordic NORDKOLT project. Aalborg was one of eight model cities in that project. The Buchanan report *Traffic in Towns* strongly influenced the traffic planning in the sixties and seventies (perhaps far longer?), which can be read directly from the plans produced. The Gothenburg model of dividing the centre into “rooms” with no through traffic and access from the outside was proposed in the Aalborg project. Public participation in planning was another strong movement in the seventies, not least in Denmark. This mix of ideologies and forces, which looked so potent in the nineteen seventies seems to evaporate in the eighties, as the Aalborg project did. But the planners are still there going about doing their jobs. When *Our Common Future*\(^{254}\) was published many land use planners got a “new life”, certainly in the Nordic countries. Sustainable development led to major projects at all levels of government. In Aalborg with such a great planning tradition the later prized *Traffic & Environment Action Plan* was published in 1994, and the conference that led to the *Aalborg Charter* was held. Aalborg city, politicians and planners were suddenly famous in planning circles, a long list of participation in EU projects followed and in 2004 the *Aalborg Commitments* were signed. Planning for sustainable development and mobility in Aalborg had reached the top\(^ {255}\). But underneath the vision and goals of sustainable mobility was a car driven development that led to increasing CO\(_2\) emissions, depletion of non-renewable fossil resources, less bio-diversity, and problems with traffic noise and accidents.

This contrast between the quest for sustainable development on the one side and planning and facilitating for the car is clearly coming out of the Aalborg *Timeline*. In the following chapters I will look into these two conflicting paths, but first an overview of statistics and data about the transport situation in Aalborg.

### 5.2 History and situation

#### 5.2.1 Population

Aalborg had in 2005 about 160 000 inhabitants, which is 3% of the population in Denmark. The growth in population over 30 years was only 6%. About 120 000 lived in the continuous urban area, 35 000 in villages and 8000 in rural areas within the municipality.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aalborg municipality</td>
<td>154 500</td>
<td>155 019</td>
<td>159 980</td>
<td>161 161</td>
<td>163 568</td>
<td>195 145</td>
</tr>
</tbody>
</table>

*Table 5-1 Population development in Aalborg 1976-2008, notice enlargement 2007*

The geographical distribution of the population north and south of the Limfjord is shown in the next table.

\(^{254}\) The Brundtland report was published 1987.

\(^{255}\) See the document: *Sustainable mobility. What has happened in Aalborg during the last 10 years?* City of Aalborg 2004.
<table>
<thead>
<tr>
<th>Geographical distribution 2003</th>
<th>Numbers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>North of Limfjord</td>
<td>37 635</td>
<td>23</td>
</tr>
<tr>
<td>South of Limfjord</td>
<td>124 886</td>
<td>77</td>
</tr>
<tr>
<td>Total</td>
<td>162 521</td>
<td>100</td>
</tr>
</tbody>
</table>

*Table 5-2 Population distribution north and south of the Limfjord*

The growth prospects according to Denmark’s Statistics are shown in the next table. Only one per cent growth in population is expected for this period.

<table>
<thead>
<tr>
<th>Prognosis DS</th>
<th>2004</th>
<th>2010</th>
<th>Change 2004-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aalborg</td>
<td>163 231</td>
<td>164 945</td>
<td>1 %</td>
</tr>
</tbody>
</table>

*Table 5-3 Expected growth in population to 2010*

### 5.2.2 Transport trends and Mode Split in Aalborg

#### 5.2.2.1 Traffic a long time ago

On Vesterbro, one of the main streets in Aalborg, we have some traffic data\(^{256}\) from a long time ago. The car traffic growth from 1925 to 1928 was about 25% per year, while the number of horses went down. In 1939 a viaduct was built across the railway and then the number of horses had fallen to less than one hundred, an era was going towards its end. This was the bike heyday with 72% of the traffic volume being bikes. However, the number of cars had increased threefold in the 11 years from 1928, the dawn of the car-era was there.

<table>
<thead>
<tr>
<th>Vesterbro, daily number of vehicles</th>
<th>Railcrossing 1925</th>
<th>Railcrossing 1928</th>
<th>Viaduct south 1939</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars</td>
<td>1 015</td>
<td>1 810</td>
<td>5 684</td>
</tr>
<tr>
<td>Freight vehicles</td>
<td>383</td>
<td>699</td>
<td>1 632</td>
</tr>
<tr>
<td>Horse carriages</td>
<td>485</td>
<td>433</td>
<td>95</td>
</tr>
<tr>
<td>Bicycles</td>
<td>-</td>
<td>-</td>
<td>19 321</td>
</tr>
</tbody>
</table>

*Table 5-4 Traffic data for Vesterbro 1925, 1928 and 1939*

#### 5.2.2.2 NORDKOLT

The NORDKOLT project was grounded in an agreement between the five Nordic countries in 1972. The project should do an “inventory and evaluation of possible future public transport systems fitting the Nordic type of urban areas and which consider the demands from the traffic development, the environment and traffic safety”\(^{257}\). The background for the project was the “difficulties – especially in the larger areas – to expand the traffic system mainly for car travel” which had shifted the focus to the need to improve public transport. The aim of the project was to “give a picture of the future development possibilities for all kinds of person transport in medium sized Nordic cities” and the time horizon was the year 2000. The project did 13 separate case studies, two of these in Denmark where Aalborg was one. Three future situations were envisaged, T1-increased car traffic, T2-constant car traffic, and T3-substantially reduced car traffic. The T1 situation will give far more people than T3 a high

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\(^{256}\) Allan Christensen og Henrik Nielsen, 1977. *Vesterbo Gadegegennembrudet*. AUC

level of mobility. This standard however, will be "bought by more accidents, more noise and emissions, poorer public transport for those without access to a car, plus greater consumption of energy and economic resources." "More car traffic will demand huge investments in road network and parking facilities. But reduced car traffic will set strong demands to political steering, planning and organization." Thirty years later one may say that the NORDKOLT project showed good foresight.

The NORDKOLT project made a mode share estimate for Aalborg in 1975 and two forecasts for the year 2000, shown in the next table. In 1975 the non-motorized travel was 55% and car 38%. The public transport alternative for 2000 had a non-motorized share of 58% and the car alternative 38%. It is interesting to see that the forecast for the Car alternative made 25 years earlier is not far off the real figures for the year 2000. The public transport alternative that was made to illustrate a more environmentally friendly path forward (produced a few years after the UN Environment Conference in Stockholm 1972) was in hindsight completely unrealistic.

<table>
<thead>
<tr>
<th></th>
<th>1975</th>
<th>2000 PT alt</th>
<th>2000 Car alt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>38</td>
<td>15</td>
<td>55</td>
</tr>
<tr>
<td>PT</td>
<td>8</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>Walk</td>
<td>25</td>
<td>26</td>
<td>16</td>
</tr>
<tr>
<td>Cycle</td>
<td>30</td>
<td>32</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 5-5 NORDKOLT mode split 1975 and two alternatives for 2000

### 5.2.2.3 Mode share data from Aalborg

There are several calculations and presentations of the mode split or mode share in Aalborg done at different times for different purposes. It has been difficult to compare the different mode split (MS) presentations because of differences in definitions and methods used to calculate the share for each mode. It varies for example if the data come from a cordon count around the city centre or from telephone interviews. The aim in this report is to find out if the trend in Aalborg is towards a greater car share and thus more unsustainable transport, or towards increased use of public transport, bikes and walking and reduction in car use. An overview of the MS presentations are shown in the next table:

<table>
<thead>
<tr>
<th></th>
<th>1975</th>
<th>1993-95</th>
<th>2003 cycle plan</th>
<th>1999-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>38</td>
<td>58</td>
<td>64</td>
<td>58</td>
</tr>
<tr>
<td>PT</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Walk</td>
<td>25</td>
<td>14</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Cycle</td>
<td>30</td>
<td>17</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 5-6 MS data for Aalborg (number of trips)

The source of the different MS presentations are:

- 1975: NORDKOLT
- 1993-95: DTF
- 1999-03: DTF

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258 NORDKOLT page 7.
259 Walk and Cycle share allocated by author
Travel surveys done by DTF\textsuperscript{260} are shown in the next table and figure. The definition of short trips and use of “cut-off” for very short trips was changed from mid nineties till the next survey 1999-2003. This has made it look like that the people in Aalborg doubled their walking, while all other modes were reduced. The probable correct answer is that the walk mode was underestimated in the mid nineties. Another point is that the reduction in car use is contrary to the general increase in income and car ownership in the period.

<table>
<thead>
<tr>
<th>Aalborg Municipality</th>
<th>Public transport</th>
<th>Private vehicles/MC</th>
<th>Cycling</th>
<th>Walking</th>
<th>Other</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-1995</td>
<td>9</td>
<td>63</td>
<td>19</td>
<td>9</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1999-2003</td>
<td>8</td>
<td>57</td>
<td>16</td>
<td>18</td>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

*Table 5-7 Mode share in Aalborg 1994 and 2001 (number of trips)*

The EU project Transplus show mode share for Aalborg Municipality and Aalborg city centre (not explicitly defined) for the year 2000 as shown in the table:

<table>
<thead>
<tr>
<th>Year 2000</th>
<th>Public transport</th>
<th>Private vehicles/MC</th>
<th>Cycling</th>
<th>Walking</th>
<th>Other</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aalborg Centre</td>
<td>12</td>
<td>52</td>
<td>21</td>
<td>14</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Aalborg municipality</td>
<td>10</td>
<td>64</td>
<td>15</td>
<td>10</td>
<td>1</td>
<td>100</td>
</tr>
</tbody>
</table>

*Table 5-8 MS from Transplus 2000*

Comparing the DTF and Transplus data for the municipality it is the walk mode which differs most with 18% against 10% and then the car share with 57% against 64%. These are differences outside normal statistical variations. In the next figure the author has adjusted the Aalborg mode share data to make the 1994 and 2001 surveys comparable.

The figure above does probably not give the “true” description of the trends. If we compare the change for each mode with other data, as public transport data and car ownership data as those shown below, I will contend that the car use probably increased between 1994 and 2001 in Aalborg and that the walk mode probably decreased. Public transport and cycle trends are

\textsuperscript{260} Methodology is outlined on DTF home page www.dtf.dk
probably right. The change in employment patterns and the increase in the number of commuters support such arguments.

5.2.2.4 Car ownership

The number of zero car households went down by 3%, while the growth in the number of households with 1 car is 14% and in households with 2 or more cars is 18%, showing that Aalborg is catching up with the international trends in car ownership. Still the car ownership in Aalborg and in Denmark is low compared with other western cities.

![Aalborg car ownership 1995 & 2004](image)

Figure 5.4 Car ownership development in Aalborg

<table>
<thead>
<tr>
<th>Year</th>
<th>No of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>No of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>1 604 053</td>
</tr>
<tr>
<td>1995</td>
<td>1 679 007</td>
</tr>
<tr>
<td>2000</td>
<td>1 854 060</td>
</tr>
<tr>
<td>2005</td>
<td>1 915 821</td>
</tr>
<tr>
<td>2007</td>
<td>2 020 129</td>
</tr>
</tbody>
</table>

Table 5.9 The number of cars in Denmark

The growth in the number of cars is higher for Denmark than the municipality of Aalborg, reflecting the fact that the economy grows faster in some areas like the Copenhagen area than in the peripheral region of North Jutland, where Aalborg is situated.

- **Passenger cars per 1000 inhabitants in North Jutland** 2007 = 323
- **Passenger cars per 1000 inhabitants in Aalborg** 2007 = 284

The number of passenger cars per thousand inhabitants is generally low in Denmark compared to other countries, part of that is due to the relatively high number of small vans in Denmark (approx half a million “varebiler”). Another reason for the low number of cars per head is the cycling tradition, topography and an urban culture.

5.2.2.5 Traffic accidents

The number of persons injured and killed in road traffic accidents in Aalborg was reduced by 13% between 1995 and 2003, but less than the reduction for Denmark, which was 16%.  

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Aalborg has set as an aim: *To reduce the number of fatalities and severe traffic injuries by 40% in 2007 compared to 1987.*

### 5.2.3 Public Transport in Aalborg

#### 5.2.3.1 Public bus transport

The Nordjylland Trafikselskab (NT) is the management company owned by the North Jutland Region and the municipalities within the region. Aalborg Omnibus Selskab was taken over by the city in 1976. Aalborg has to pay for the public transport within the municipality while the region pays for the border crossing routes. Thus the municipality must decide what share of the budget shall be spent on public transport, on hospitals and so on. All the bus companies are privately owned, and run services after licitations. This is *New Public Management* sat in system. The bus companies are paid according to a fixed hourly price, with some small bonus elements. The income goes to region/municipalities and is divided according to the same model as expenses (driving-plan hours). The board of directors of Nordjylland Trafikselskab was in 2005 headed by County Mayor (amtsborgermester) Orla Hav. In the board there are 11 members, 6 from the County and 5 from the municipalities.

In 2003-2004 there was a major change in route structure, stops and terminals for PT in Aalborg. Bus-priority has been introduced at 50 junctions where the “bus-pc” checks the arrival time, and asks for extension of green or new green, if delayed. The info system shall give travel info both to *read* and *listen to*. At 32 stops in 13 places a monitor show “expected” bus arrival. On train/bus terminals there are “real time” information about bus and train arrivals.

*Passengers*

NT lost close to 2 million passengers between 2002 and 2005 on the buses in Aalborg municipality, the number of passengers dropped from 17.2 mill passengers in 2002 to 15.2 mill in 2005, a reduction of 12%. From 1997 to 2005 there has been a negative development every year, except for the two years 2000 and 2004.

The public transport system in Aalborg underwent a major structural change in 2003/04. The effect of that change will be seen in the coming years. The general trend over many years is a decrease in traffic and politically more important an increase in deficit. The next table shows patronage on buses for the years 2002-2005. In these years the total number of bus passengers in Aalborg decreased by 2 million from 17 to 15 million per year. This decrease was as planned mainly on local buses. Aalborg City buses had a marked increase from 2004 to 2005, which may be caused by the new system starting to work.

<table>
<thead>
<tr>
<th>Passengers in 1000s</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>DK sum</td>
<td>21146</td>
<td>19180</td>
<td>17688</td>
<td>84%</td>
</tr>
<tr>
<td>NJ sum</td>
<td>2328</td>
<td>2156</td>
<td>2076</td>
<td>89%</td>
</tr>
<tr>
<td>Aalborg sum</td>
<td>778</td>
<td>752</td>
<td>678</td>
<td>87%</td>
</tr>
</tbody>
</table>
Looking at the North Jutland Region the number of bus passengers decreased by 12% from 32.7 to 29.2 million passengers over these three years (the numbers for Aalborg included). This has of course serious consequences for the public transport economy.

**Public transport economy: Nordjylland Trafikselskab**

Public transport in Aalborg has had a fairly constant yearly income from passenger tickets around 90 million DKK, out of a total for NT of 230-240 million DKK. The yearly deficit on the other hand has grown the last years. In 1993 the deficit was 138 million DKK, which increased by 70% to 235 million DKK in 2005. From 2004 to 2005 the increase was 11%. The public transport structure and services have undergone major changes the last years with new terminals and route structure, but this does not explain the long downward trend in public transport patronage.

<table>
<thead>
<tr>
<th>Million DKK</th>
<th>1993</th>
<th>2001</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenses</td>
<td>365</td>
<td>410</td>
<td>460</td>
<td>476</td>
</tr>
<tr>
<td>Income</td>
<td>225</td>
<td>265</td>
<td>293</td>
<td>290</td>
</tr>
<tr>
<td>Transfer to DSB</td>
<td>-</td>
<td>32</td>
<td>45</td>
<td>49</td>
</tr>
<tr>
<td>Net income</td>
<td>227</td>
<td>231</td>
<td>249</td>
<td>241</td>
</tr>
<tr>
<td>Deficit</td>
<td>138</td>
<td>179</td>
<td>211</td>
<td>235</td>
</tr>
<tr>
<td>Financing deficit:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>-</td>
<td>33</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Aalborg municipality &amp; NJ county</td>
<td>137</td>
<td>149</td>
<td>200</td>
<td>226</td>
</tr>
<tr>
<td>Total subsidies</td>
<td>137</td>
<td>182</td>
<td>213</td>
<td>240</td>
</tr>
</tbody>
</table>

Table 5-12 Nordjylland Trafikselskab, economic development 1993-2005

Table 5-12 and figure 5-5 show how the public transport problem in Aalborg City and Region is developing. The income has stagnated or falls while costs are escalating, and the results negative.
There is little doubt that the public transport in Aalborg increasingly has become a problem with a negative result below minus 50 million DKK. Still improving public transport is the single most acceptable measure for reducing traffic congestion, several surveys report. It is necessary to both reduce the fares and improve the product (travel time, frequency, comfort, etc) if public transport shall be able to compete with the car. These are measures that both reduce income and increase the costs, which again require larger subsidies. Pull measures such as these are by the public consistently considered to be more effective for tackling transport problems than push measures.\footnote{Dominic Stead, WTPP Vol. 12, No. 2, 2006, P 46} The measures that push car drivers away from the cars and towards PT are higher costs (tolls, congestion charges) and restrictions on parking and access. Such measures are politically very controversial. The problem is not new, it goes a long way back as the following figure shows. What has become more problematic is the size of the gap between revenue and expenses (the expenses for the public transport office is the payment to the different providers of the bus services).
5.2.3.2  Local rail transport

In 2000 it was decided to establish a local train service in the Aalborg area. The line has 6 stations, of which 4 are located in urban and suburban areas. Lindholm Station opened in December 2002 and the other stations opened in December 2003. Passenger traffic on the local trains are shown below, notice that in the numbers for Aalborg main station are included regional and long distance passengers. The total number of passengers on the local line was about 2000 passengers per day.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lindholm</td>
<td>573</td>
<td>562</td>
<td>0.98</td>
</tr>
<tr>
<td>AalborgVestby</td>
<td>371</td>
<td>569</td>
<td>1.53</td>
</tr>
<tr>
<td>Aalborg</td>
<td>5747</td>
<td>7548</td>
<td>1.31</td>
</tr>
<tr>
<td>Skalborg</td>
<td>164</td>
<td>113</td>
<td>0.69</td>
</tr>
<tr>
<td>Svenstrup</td>
<td>556</td>
<td>393</td>
<td>0.71</td>
</tr>
<tr>
<td>Støvring</td>
<td>526</td>
<td>403</td>
<td>0.77</td>
</tr>
<tr>
<td>Total</td>
<td>7937</td>
<td>9588</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Table 5-13 Traffic on local trains in Aalborg

The train frequency is half an hour, the equivalent of 20 trains parting each day, which means that Skalborg stop has on average 3 entering and 3 departing the train. It is costly and difficult to start local rail services on an old track in an urban area, where the population to a large extent has moved away from the track. Even with new stations it means that the walking distance to the stations easily becomes larger than 500-600 meters.

5.2.4  Commuting distances are increasing in Denmark

Statistics Denmark\(^{262}\) has analyzed the national travel survey and concludes that more people have longer distance to work. Even if the analysis is for Denmark the same trend in commuting seems to be the case for Aalborg (see fx Nielsen and Hovgesen 2004, 2005). In the ten years between 1994 and 2003 the average distance between home and work has increased by 15\%, from 14 km in 1994 to 16 km in 2003. Close to 40\% of workforce participants have less than 6 km to work. A gradual change is happening where fewer have less than 12 km to work, while more and more workers have over 25 km, but still only 6.4\% travel longer than 49 km to work, up from 4.8\% in 2003, as shown in the table below.

<table>
<thead>
<tr>
<th>Distance</th>
<th>1994-1997</th>
<th>1998-2001</th>
<th>2002-03</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>40.4 %</td>
<td>40.9 %</td>
<td>38.9 %</td>
</tr>
<tr>
<td>6-11</td>
<td>21.4 %</td>
<td>20.0 %</td>
<td>19.4 %</td>
</tr>
<tr>
<td>12-24</td>
<td>20.1 %</td>
<td>19.7 %</td>
<td>20.8 %</td>
</tr>
<tr>
<td>25-49</td>
<td>13.2 %</td>
<td>13.7 %</td>
<td>14.5 %</td>
</tr>
<tr>
<td>50-74</td>
<td>3.1 %</td>
<td>3.2 %</td>
<td>3.9 %</td>
</tr>
<tr>
<td>75-99</td>
<td>0.8 %</td>
<td>1.1 %</td>
<td>1.1 %</td>
</tr>
<tr>
<td>100-149</td>
<td>0.6 %</td>
<td>0.8 %</td>
<td>0.8 %</td>
</tr>
<tr>
<td>150-</td>
<td>0.3 %</td>
<td>0.6 %</td>
<td>0.6 %</td>
</tr>
</tbody>
</table>

Table 5-14 The distribution of employed after the distance between home and work

\(^{262}\) www.dst.dk accessed October 2004
Even if the average distance increases the amount of transport has stagnated. That is partly caused by the fact that people with long journeys to work more often stay at home one or two days per week. Only every third person with more than 150 km journey commutes daily and every forth person only goes to work one day per week. Two thirds of the persons with travel distance between 100 and 150 km commute to work every day, while 87% of persons with journeys to work between 12 and 24 km commute daily.

5.2.5 Large potential to shift short trips to green modes?

Statistics Denmark has revealed a large potential to shift short car trips to green modes. Of all trips below 300 meters, 13% is with the car, 70% walking and 17% is on the bike. For trips around 1.5 km the walk, bike and car mode is about equal. The share of car drivers increases with trip distance, while walk and cycle decrease. Cycling reaches its peak at about 1.5 km, at distances of 5-6 km 15% use the bike and 10% for trips 7-8km. Hardly anyone walk when the trip length is above 6 km. The potential to shift from cars to green modes is therefore great, but the amount of transport will be reduced by only a few percent. 65% of all trips are less than 8 km, but they represent only 15% of the amount of transport. A shift from car driving to bike for all journeys less than 8 km will affect 13% of the amount of transport. The CO$_2$ reduction of such a shift is limited, but it will also reduce congestion and increase health. It is also likely that the trip length will be affected since some people will choose to go to activities closer to home with the bike mode. These data from the national statistics is also a good indication for Aalborg and what effect a more successful strategy towards sustainability could obtain.

5.3 The Aalborg land use and transport events

Aalborg has had some of the top planners for a very long time, which has led to some of the most modern and radical plans produced in Denmark. In this chapter the most important events that have influenced land use and transport planning and policy are outlined.

5.3.1 Growth is necessary

Aalborg is the regional capital of North Jutland in Denmark and situated on the north and south banks of the Limfjord. The city has a long history dating back one thousand years and is Denmark’s forth-biggest city with 162 000 inhabitants (2005), an increase of only a few thousands in thirty years. The city has to some extent slowed the migration from the peripheral North Jutland, but there is still net migration to the capital Copenhagen.

Aalborg was/is a typical industrial city with agricultural industries like slaughterhouses, flower mills, dairy industries, and is the home of the famous Aalborg aquavit. Along the Limfjord lies Aalborg port, the main hub for Greenland connections, and a huge cement plant delivering worldwide. Earlier several shipbuilders and other industries were jotted along the shores, but most are now closed down. This leaves Aalborg with huge Brownfield areas close to the city centre suitable for new development. This transformation has started and one of the first buildings on the north shore has been offices for the technical administration in Aalborg municipality.
The plans for the layout and physical city structure have been designed for far greater growth than happened, and the allocation of land for expansion of the University, for housing and new employment estates still provide ample reserves for development. Aalborg University Centre was founded in 1974, and has now grown to a university with about 15,000 students. It has been important for the creation of new jobs in the knowledge sector, and to compensate for the loss in the industrial sector. The campus was established at the outskirts of the city, partly to secure land for expansion and partly to use the university as an “engine” to promote growth in the high tech field. Today this area is still a major development area and important in the city’s development strategy.

The major challenges for Aalborg are according to the County and City Mayors to create jobs, educate the people to make the population more competitive and build the necessary infrastructure to give them access to the future employment market. The city pursues a growth strategy to attract inward investment and thus meet the threats for Aalborg and the Region coming from globalization and the strong growth in Copenhagen. Politicians both in the City and the County/Region want more investment transferred from Copenhagen to Aalborg. The same goes for other means and instruments as government offices, army camps, etc. they demand shift from the centre to the periphery.

5.3.2 The 3rd Limfjord crossing in a growth strategy

In the light of a growth strategy the 3rd Limfjord crossing can be seen as the most rational task, but a task not without problems. Firstly, there must in Aalborg City Council be agreement on one alignment, which there was in September 2003. Secondly the choice of highway standard must be “motorway” to fix the financial responsibility on the State. Thirdly it should “fit” with both the local and central sustainable plans and strategies.

Aalborg is situated at the most narrow part of the Limfjord. Here are remnants of settlements since the birth of Christ. All this time the crossing of the fiord has been the great question, and it still is. Already at the opening of the second crossing in 1971, some asked: “Where will the third Limfjord crossing be?” A few years later the third crossing was placed in the land use plans to the west of the city along the Lindholm alignment (Nordkolt 1978:16). The Lindholm-line was reserved in the structure plan for Aalborg. But the alignment was not “fixed” for good. In 1989 the city council raised the question anew, and consultants were brought in. The planning process went on through the nineties. Eventually, in 2001 the County Mayor wanted the case settled and a VVM study was started. This was performed as cooperation between the Nordjylland Amt (county), Aalborg City and the national Highway Agency (Vejdirektoratet). In September 2003 on consecutive dates, both the City Council and the Amt Council, decided on the Egholm-line west of Aalborg. The decision in 2003 was not final due to complaints (see later), and still the Lindholm-line is

263 Interview with Orla Hav, 2004
264 Interview with Henning Jensen, 2007
266 Interview with Svend Tøfting
267 Vurdering af Vesentlige Virkninger for Miljøet – equivalent of EIA
reserved in the structure plan (this reservation is expected to be lifted in accordance with the new Regional Plan).

Through 30 years or more the Limfjord crossing has been up for questioning, why? Firstly, it is a question of investment costs, can we afford it and who will pay? Secondly, it is a question of car mobility in cities. The first environment wave in the seventies wanted to reduce car usage and shift to other modes like public transport, cycling and walking. As already mentioned, NORDKOLT, which was a huge Nordic demonstration project aiming at increased public transport, had Aalborg as one of its 8 demonstration cities. In Aalborg there were made new traffic plans for the city centre, Bent Flyvbjerg’s famous thesis *Rationality and Power* tells the story of the implementation of these plans. Thirdly, the need for a third crossing of the Limfjord is interwoven with the second issue of mobility and car travel in cities. The predicted traffic growth indicates a need for more road capacity. But, why build that capacity in Aalborg city, famous for “The Aalborg Charter” and with strong goals of reducing car travel? Fourthly, the growth in car traffic is clearly at odds with national obligations of reducing the CO$_2$ emissions. While the CO$_2$ emissions from most other sources like industry, are on the decline, the emissions from transport keep increasing.

### 5.3.3 The land use and transport planning path

The four issues in land use and transport planning in Aalborg were:

1. Investment costs
2. Mobility in cities
3. Transport Demand Management
4. Environment and cars

Over the years it seems like these four questions or a mix of them, raise to the forefront of the discussion while at other times lie dormant. To follow the path of changes in land use and transport we have looked at the land use and transport planning, the plans adopted and plans up for revisions, and mirrored these plans with the economic, demographic and land use and transport changes, especially the changes in commuting across the municipality borders in the region. This has been supplemented with interviews of key politicians, bureaucrats, journalists and “opponents”. National policy guidance and indeed the rules for financing road investment and both revenue and investment in public transport have a strong influence on the choices made and the factual changes in a city. Therefore we have looked at both actors and networking in the land use and transport planning circles in the city.

Some of the most important events, which are looked at in detail in the following, are:

- Land use and transport planning in the seventies, the Aalborg Project
- The Aalborg Charter
- European projects and cooperation
- Prizes
- A Denmark in balance. What shall be done?
- Vision of sustainable mobility
- The Aalborg Commitments

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268 8 interviews performed autumn 2004 and 3 interviews winter 2007.
The 3rd Limfjord crossing
Structure plans, Kommuneplan
Road investment plan for the Aalborg area

5.3.4 LU&T planning in the seventies, the Aalborg project

In 1975 the planners changed their mind about the Dag Hammarskjöld Street and the City Council decided that the street-plan should be withdrawn. This was a major setback for the planning office with a long-standing reputation of being among the best in Denmark, although some of the planners had changed their mind. The Nordkolt project was then ongoing, radical and modern planning at its best. The planners who wanted to re-establish their reputation, had access to the newest research and knowledge when the Aalborg project started in late 1977 (Flyvbjerg 1991:57). The Aalborg project proposals were indeed very good seen from an environmentally friendly transport perspective. It was based on: “a political wish to prioritize the urban environment, vulnerable users, public transport, and down-prioritize car traffic – especially work journeys (with car) – to the extent there is conflict with other modes.”

The planners on this basis then produced “a mode hierarchy” to be used in planning with the most important issues and those to be given priority on top:

1. Environment
2. Pedestrians
3. Cyclists
4. Disabled drivers
5. Business traffic
6. Car driving shoppers
7. Car driving visitors to offices
8. Parking at homes
9. Work journeys

The Aalborg project met very strong opposition from many, the Aalborg Chamber of Commerce one of the strongest. The Chamber proposed this alternative “mode hierarchy”:

1. Pedestrians
2. Cars
3. Vulnerable road users
4. Public transport

The implementation process of the Aalborg project became fragmented. In hindsight it is clear that use and control of the car was the major conflict line, and the Aalborg Chamber of Commerce’s alternative “mode hierarchy” won.

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269 Flyvbjerg 1991:88
270 Norwich City introduced a similar mode hierarchy in the Local Plan 2002, twenty years later.
5.3.5 The Aalborg Charter

The Charter of European Cities & Towns Towards Sustainability was approved by the participants at the European Conference on Sustainable Cities & Towns in Aalborg on 27 May 1994. The Charter consists of three parts:\n
• Part I: Consensus Declaration: European Cities & Towns Towards Sustainability
• Part II: The European Sustainable Cities & Towns Campaign
• Part III: Engaging in Local Agenda 21 Processes: Local Action Plans Towards Sustainability

Reading the Charter one gets biblical connotations, which of course become stronger with the Commitments. As with the Bible one wonders of the difference between what a city ought to do and what the city actually is doing. Another salient point is that the global ecology will not give redemption. The wording and contents of the 14 clauses are broad and encompassing the social, economic and environmental aspects of the sustainable development concept. With 1800 cities having signed the declaration, surely they must be on a more sustainable path?

The forces pulling in an unsustainable direction are strong and changes are opposed by many. An example from the text show that the Charter recognizes that the governmental system is a strong barrier to sustainable development, as clause I.13 tells: As democratically elected representatives of our local communities we are ready to take responsibility for the task of re-organizing our cities and towns for sustainability. The extent to which cities and towns are able to rise to this challenge depends upon their being given rights to local self-governance, according to the principle of subsidiarity. It is essential that sufficient powers are left at the local level and that local authorities are given a solid financial base. The cities are ready to take the task, but they must be given self-governance according to the principle of subsidiarity and sufficient powers and financial base. Why does this not happen? The organizing of the national state is man made and continually changing, why not in a more sustainable direction? What are the motives for preventing cities getting self-government?

5.3.6 European projects and cooperation

Aalborg has also a long-time history of participation in EU projects and has been very active in promoting international cooperation the last ten-fifteen years or so. The Aalborg Charter 1994 and “Ten years after” conference in 2004 are two examples. Aalborg has summed up the results from these projects in the report: Sustainable mobility. What has happened in Aalborg during the last 10 years? Growth in traffic, which has been 3% per year in the beginning of the new millennium, was the major challenge in several of these projects and the aims and objectives were drawn up accordingly:

**Jupiter**  Encouragement of more environmentally-friendly transport methods
**QUO VADIS** Best use of variable message signs to improve the traffic flow on a road network for crossing the Limfjord
**Jupiter-2**  Best available technology in favor of cleaner technology
               Priority for soft transport

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271 The full texts of the Aalborg Charter follow as an annex to chapter 5.
ALTEReco  Strict environmental standards for transport and fuel technology
   Strict environmental measures for air quality standards
Viking   Traffic information, advanced telematics to improve efficiency in traffic operations
Vivaldi  Priority for public transport
   Car sharing and the telematics in public transport

The activities under these projects were many as the following list shows. Some of the activities were very successful and a few not successful according to the report.

- Variable message sign presenting delay information
- Parking guidance system
- Bicycle lanes
- Electric vehicles
- Car traffic restraint
- Environmentally friendly urban transport
- Sustainable City Logistics Solutions
- Effective goods transport in Aalborg City.
- Road and Traffic Monitoring
- Information Networks
- Traffic Management Tools and Services
- Interoperable Road User Fee Collection
- Implement a new public transport plan
- Create a new centre for public transport at the new terminal
- Implement real-time passenger information in buses at central interchange facilities
- Implement bus priority at 20 traffic light regulated intersections
- Integrate a new local train service into the public transport system consisting of 6 stations, of which 4 are located in the Aalborg area
- Introduce car sharing in the municipality
- Introduce a Travel Information Centre

Looking at the car traffic growth, the long-term decline in public transport and the growth in commuting one may ask what effect these projects have had? Would the increase in car usage have been worse without the projects? Have they resulted in more sustainable mobility in Aalborg and to what extent? As yet the output from these projects seems only marginal, but a good start for alternative thinking on city transport.

Another side of these projects is that they introduce “old fashion” traffic schemes as new inventions. The Ministry of Transport in Great Britain published for example a series of Bus Demonstration Projects to inform the traffic planners on How to do it. That was thirty years ago, so it seems hardly a novelty when such projects are introduced in Aalborg. On the other hand these projects do show that there has not been a climate to introduce these schemes in Aalborg earlier, either because of a lack of political interest or they were alternatives the planners never proposed. The slow introduction of schemes for public transport may also be due to the car ideology being embedded to such a great extent that alternative modes hardly existed in the public minds?
5.3.6.1 Transplus conclusions

The Transplus project which Aalborg participated in was not mentioned in the above report, but here are the results as presented on the project website:

1. Integrating land use and transport planning, but also organizational structure of town planning and engineering. Poor monitoring. Better models needed.
2. Door to door not prerogative for cars, but better accessibility for all modes. Creating attractive alternatives needed.
3. Participation is increasingly important. Needed to gather full policy integration.
4. Transferability of good practice into transnational networking activities.
5. Transferability of good practice still too episodic. Plus, more advice on accession countries will be necessary.

Figure 5-7 Aalborg waterfront, Havnegaden ca. 2000
Source: Knud Tranholm, presentation workshop UIS-AAU 14.12.06

5.3.7 Prizes

Some of the prizes awarded to Aalborg are commented on in the following. It is interesting that both awarder and receiver often have multiple intentions and uses of the prize.

1979 Danish Town Planning Association prize to the Aalborg project
The official grounds for awarding the prize are that the Aalborg project is planning at its best, but as Flyvbjerg writes: Together with the professional considerations, however, the
association, as most other “players” in the Aalborg project, also has strategic and tactical considerations: they wish to help commit the city government to the project. The strategic use of awards and prizes are well known from other studies.

The Municipal Architect reflected on current issues and the role of the planner in the late eighties: “Earlier I was in the lead of a big ecological project, which received good critique. However, if I had continued talking about ecology, then I would not have been director today. The politicians would not have listened to me – we adjust and shift our values and attitudes towards what we can talk about, towards where we can have a dialogue.”

In 1990 Aalborg was awarded the prize as The Tidiest City in Europe from EU and EFTA. Such prizes can be used internally in the administration as the Municipality Engineer said: “There was this movement, Clean City, Green City, and in 1990 Aalborg was given the title The Tidiest City in Europe. It was partly the reason why traffic and environment questions grew. Besides people wanted a greener city. That was in the late 1980s, and it was combined into one concept. So, when we got the prize in November 1990 we asked ‘what can be developed further within this perspective?’ Then it was natural to look into road traffic. However, I cannot show a paper that says that the Clean City, Green City strategy is being extended with this (transport policy making and planning from an environment perspective). I do not think we have written that anywhere.”

In 1995, the year after publishing the first Traffic and Environment Action Plan and the signing of the Aalborg Charter, EU gave the city the European Planning Prize for the city’s new approach to planning (Flyvbjerg 1998:244).

In 2004 Aalborg together with Gothenburg and La Rochelle received the CIVITAS Award for New Mobility Culture Leadership. Aalborg got the award for aiming to increase the modal share of its public transport through the improvement of its image. “The city has shown clear leadership in the extension of the public transport network, the use of Intelligent Transport System and the complementary car sharing schemes.” Said Helen Holland the CIVITAS representative: “Public private partnerships, citizens involvement and better design of the urban transport system carry the strong political support of the city’s authority. This integrated approach leads the way to a new mobility culture.”

5.3.8 A Denmark in balance. What shall be done?

Et Danmark i balance. Hvad skal gjøres? This is the title of the Ministry of Environment’s overview of the sustainability situation 2003 with advice what was needed to be done. As in most government’s green and white papers the wording is ambiguous. The sustainability strategy drawn for Denmark was without any commitments what so ever, and the word sustainable was hardly used in the document. If that word was removed, the document would

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273 The motives for giving Kristiansand the city the 2002 City planning prize in Norway is discussed in ch 4.
276 Miljøministeriet Landsplanredegørelse 2003 Et Danmark i balance. Hvad skal gjøres?
become a general government white paper, which could have been produced in 1983 or in 2007.

The Sustainable development strategy from 2003 did however put the emphasis on land use and transport planning as the instrument to co-ordinate across levels, and dialog should be the instrument to give the municipalities the right ideas. It remains to be seen how effective planning and dialog will be to reach the Governments regional goals of “securing good and equal living conditions, no matter where in the country one lives.”

Aalborg City followed up the national document in two reports: Plan and Sustainability Review and Plan and Sustainability Strategy. As in the national report the perspective is on the global competition and how Denmark/Aalborg can meet the future challenges. “Videnssamfundet” or the “Knowledge Society” is the key word, which leads to education, job creation, intelligence industries, etc. Land use and transport challenges are a) increased mobility and commuting, b) the increased traffic in the city and how the 3rd Limfjord connection shall be fitted into the city landscape (not to build the road is not an alternative), c) development around local train stops, d) both better accessibility for cars and better conditions for cyclists and pedestrians. These challenges are presented as if there are no contradictions or competition between them and the strategy follows up this “consensus feel” by presenting uncontroversial issues (the strategy document is nicely illustrated supporting the idyllic future for Aalborg). The strategic initiatives for land use and transport are:

- New structure plan for the municipality.
- Road investment plan for the Aalborg area.
- Architectural policy to be made.
- Plan for open public spaces.
- CO2-reduction plan to be made.

The Government clearly does not want to be on the forefront for Sustainable Development and the city of Aalborg has to toe the line. However, the Aalborg Charter obliges and the two documents produced are nice and comprehensive. But are they a sustainability strategy or just a development strategy? Without confronting the major challenges of climate change and car use in Aalborg, I will guess that these two documents will soon be forgotten. Building new traffic generating roads like the 3rd Limfjord connection are contrary to the City’s Plan and Sustainability Strategy where it is stated: A sustainable city development is also characterized by transport reduction, especially reduction in car transport.

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Aalborg structure plan.

Figure 5-8 Vision of the future Aalborg, copy: Plan and Sustainability Assessment 2003
5.3.9 Vision of sustainable mobility

Aalborg City Council has adopted the following vision for development within sustainable mobility in Aalborg:

- Aalborg shall be a sustainable municipality based on environmental, social and economic sustainability.
- The city’s inhabitants shall actively participate in efforts to achieve sustainable development.
- The City of Aalborg shall lead the way, provide the driving force and set the agenda.
- Accessibility for the disabled and the walking-impaired shall be improved, and public transport shall also encompass social consideration.
- Public transport shall be an attractive alternative to the car.
- In the city centre, the flow of traffic shall be on the city’s and citizen’s terms.
- A well-developed infrastructure shall ensure a high level of accessibility and mobility.

5.3.10 The Aalborg Commitments

To mark the 10-year anniversary of the Aalborg Charter and continue the quest for sustainable development another conference was held in Aalborg. Before that conference a booklet summing up the experiences with the Charter was published: Sustainable mobility. What has happened in Aalborg during the last 10 years? The Aalborg Commitments became the result of the follow up conference as this example of a commitment show:

"We recognise the interdependence of transport, health and environment and are committed to strongly promoting sustainable mobility choices."

The conclusion of this conference was that: “European cities and towns working towards sustainability. Now ten years later, we are moving on from Charter to Commitments”. The Commitments are a signed declaration where the signatories commit their city actively to pursue a sustainable city development. Here is how Aalborg City describes how the commitments will influence the work: “Like many local governments throughout Europe, we in Aalborg are ambitious to maintain and actively pursue positive development towards sustainability, thus enhancing the quality of life and the environment. In the coming decade, the Aalborg Commitments will underpin all our efforts for sustainable urban development. In order to carry out our responsibilities to the Aalborg Commitments we strive to develop better mobility with a reduction in traffic. We will therefore strive to:

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280 Aalborg City, Sustainable Mobility, 2004:15
281 City of Aalborg, Technical Department, 2004. Sustainable mobility. What has happened in Aalborg during the last 10 years?
• reduce the necessity for private motorized transport.
• increase the share of journeys made by public transport, on foot and by bicycle.
• promote attractive alternatives to the use of private motor vehicles.
• develop an integrated and sustainable urban mobility plan.
• reduce the impact of transport on the environment and public health.

5.3.11 The 3rd Limfjord crossing – the planning process

Both Aalborg City Council and Nordjylland County Council decided that the 3rd Limfjord crossing should be built as a motorway and to be located west of Aalborg, the “Egholm line”. The Lindholm alignment also on the west side of the city centre was thus dropped, but it still was reserved in the land use plan. The type of road decided also decides who will pay for it. By deciding on a motorway the amt has put the responsibility for building the road on the Government. But then the Government will have to prioritize the Limfjord crossing against other projects. A national cost-benefit model is used to calculate the net present value for all these projects, as a supplement for the decisions. It is also probable that the Government will look at the traffic forecasts and evaluate the possibility of increasing the capacity of the Limfjord tunnel. Such an evaluation may show that congestion problems around 2020 may be pushed out in time with minor investments on both sides of the tunnel (this was not evaluated when the traffic forecast was made in the early nineties). It is not unlikely that the national Highway Agency (Vejdirektoratet) may put the Limfjord crossing low on the list of future investment projects for these reasons. Furthermore, the location of the crossing may be looked at in a different perspective in Copenhagen than in the Nordjylland Amt. The alternative east of Aalborg is far cheaper than the preferred alternative in the west. Together with minor investment in the present system this may add up to locating a new tunnel close to the existing east of Aalborg and pushing the time for when the investment is needed to relieve congestion, several years out in time.

However, financing of the Limfjord crossing is not calculations, but politics. By deciding on the west of Aalborg alternative, the arguments, interests and weight of the municipalities in the western part were supported by all the municipalities in the county. A unanimous part of the country has decided that they need a motorway crossing over the Limfjord west of Aalborg. This is a strong message to the Government and Parliament. With the “Big H-agreement” in mind, already there are speculations if the so called Jutland motorway mafia “den Jydske motorvej mafia” may secure a new agreement when the Femer Belt crossing between Denmark and Germany comes to the Folketing.

When and where the third Limfjord crossing will be built remains to be seen, but in the mean time all land use decisions and building permits, must be adopted to the decided Egholm line west of Aalborg. As long the Egholm line is not final, then both the Egholm and Lindholm line will be kept secure in the land use planning. The new road has already for years influenced land value through the positioning of developers, especially plots with good access close to junctions are sought for. Aalborg municipality has also already as seen above decided

282 The VVM has to be redone according to the decision in Naturklagenævnet in 2006.
283 Big H was an agreement in Parliament that Jutland should be compensated with new roads if they supported the Great Belt investment.
284 Jyllandsposten, September 2004
a road program, which strongly will influence land use and land values on the western parts of the city (see ch. 5.3.14).

5.3.11.1 Enhedslisten appealed the 3rd Limfjord decision to Naturklagenævnet

Enhedslisten, a left-wing political association in Aalborg, had in their appeal against the 3rd Limfjord connection a list of alternative tasks to solve the future congestion problems:

- Establishing a local rail connection from Hobro to Hjørring.
- Bike hire
- Express buses
- Taxi with zone based fares
- City logistics (also use of the rail network for distribution at night time)
- Existing rail bridge widened for bikes and walking
- 40% reduction in Nordjylland Trafikselskaps fares, introduction of a Aalborg-card, gratis bus on Saturdays and outside rush hours
- Parking tickets in Aalborg City Centre raised 100%
- Establishing buslanes along Hobrovej/Vesterbro/Limfjordsbroen/Vesterbrogade/Østergade
- Expanding the cycle network, and establishing free shower facilities for cyclists
- County and municipality start public car sharing arrangements

The County rejects the complaint because the tasks are outside its area of responsibility, even if the objectives for the 3rd Limfjord planning process aim at a broad regional solution. Another reaction from the County to the complaint could have been to look at these tasks as comprehensive transport policy for the development of an environmentally sustainable transport system in Aalborg. That would have been in line with the vision, goals and objectives both the County and City as we have seen above, have adopted. But such a logical and rational thinking would be contrary to the car interests.

The 3rd Limfjord connection close to the city centre on the western side, will influence the development of both land use and transport strongly. It will both generate new traffic and attract traffic from the other two connections. The design of the road and junctions will increase traffic to the city centre both in magnitude and the street volumes. As such the proposal clearly ought to lie both within the interests and responsibilities of the County. But the consequences of such holistic or comprehensive thinking may have caused the 3rd Limfjord connection to be reviewed. Questions like the following could be posed: *What was the traffic demand for the road? How could that demand be supplied with alternative modes? Does the plan for increased capacity fit with the adopted policy aims, for example as expressed in the Aalborg Charter?* It is clear that the County did not want such questions to be raised, because the politicians wanted to build a high-class road network in and through Aalborg. This would benefit the increasing number of car commuters, car users in general and answer to the demands from business. The growth ideology, the “predict and provide” ideology won, while the goals of sustainable lost in this process. Ironically, the 3rd Limfjord connection decision was not ratified by Naturklagenævnet because of an appeal from Danmarks Naturlfredning. The VVM (environmental assessment) has to be redone because of a conflict with *habitatområde nr. 15* and with the Ramsar convention. It was not the traffic issues, but some birds that postponed the ratification the plan pending a new VVM.
5.3.12 Structure plans - Kommuneplan

5.3.12.1 Kommuneplan 1999
The structure plan from 1999 state: “principles that underlie all public plans are conservation of the natural environment, social justice, economize with resources, avoid pollution and preserve biological diversity, together with the principle that the citizens shall participate in the planning of the future.”

Housing
The housing program for Aalborg municipality up to 2010:

<table>
<thead>
<tr>
<th>Location</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner city</td>
<td>2080</td>
</tr>
<tr>
<td>Continuous urban area apart from inner city</td>
<td>2490</td>
</tr>
<tr>
<td>Southern villages and rural</td>
<td>810</td>
</tr>
<tr>
<td>Northern villages and rural</td>
<td>620</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6000</strong></td>
</tr>
</tbody>
</table>

The housing program was 500 houses per year\textsuperscript{285}, one third was to be built in the inner city, while 40% in other parts of the continuous urban area and the rest in the villages and rural areas of Aalborg municipality. In effect about half of the 6000 houses will be placed so far from the city centre that the car will be the mode that by far offers the fastest travel time.

5.3.12.2 Sustainability issues in the Kommuneplan.
Aalborg “shall govern city development so that the 3\textsuperscript{rd} Limfjord connection is postponed as long as possible”. (In the VVM the possible effect of this policy was not mentioned.)

On sustainable traffic development, the plan says:
- The environmental impact from traffic shall be limited
- Traffic safety shall increase
- Landscape and city qualities shall be protected

The City Council states that it “will work to reduce the growth in road traffic and develop the public transport and bicycle traffic.” (notice that it is the growth in traffic they will reduce, not reduce traffic as such) The plan has nice intentions, but few commitments, which seem strange when the City is the father of the Aalborg Charter. There is not much evidence that the Charter or the Traffic and Environment Action Plan have influenced the structure planning or the plan. Instead the difficult issues are avoided by passing the buck from one plan to the other, e.g. “this will be dealt with in the Traffic and Environment Action Plan”. There are also strong limitations on the wording of sentences that commit the City Council, as mentioned above on reduction in the traffic growth. Another serious point with plans that are reviewed every few years, is that the aims and goals are “rolled on” without any reflection on goals achievement. To develop the bike network has for example been a goal repeated in plan after plan. The politicians and indeed the planners, can then focus on the future without questioning the performance of the former plan process and plan. In Aalborg it is very doubtful if the land

\textsuperscript{285} 500 houses per year are few compared to Kristiansand with 75 000 inhabitants who for many years had a program of 600 houses yearly
use and transport planning and plans have had any influence whatsoever to reduce car traffic. It may equally well be argued that the opposite is the case, that car use have increased because of the land use and transport planning the last ten-twenty years. The Aalborg Charter and Commitments may have given the City a valuable international reputation as a promoter of the “Sustainable City”, but the effect for the people in general is very limited, and it is not making any headway on the local level to contribute to the problem of solving the big issues like the climate challenge.

5.3.12.3 New main structure ’05

The revision of Aalborg’s land use and transport structure plan start with a statement on city-political strategy: “The new main structure is built on a consequent city-political strategy, which is concerned about sustainable city development, city development from the inside and out, and city-quality in a wide sense. It is the Plan and Sustainability Strategy from 2003, which now is transferred into the City Structure Plan”.

The city-political strategy has some concrete items, I will mention two here. Firstly, the ’99 structure plan did not contain new areas for city growth. The 2005 plan give goals and principles for city development and time periods for areas to be used for building. Secondly, the housing program is reduced to 480 houses per year, down from 500 in the 1999 structure plan. It is difficult to foretell the wider effect of this city-political strategy, but the changes point towards a more short-term type of strategic planning, which is well-known from business. The SWOT analysis is one the instruments used. One look at Strengths and Weaknesses at present in the organization (municipality area?), and then the Opportunities and Threats in the surroundings in the future. One consequence is that the concept sustainable development is narrowed from economic, social and environmental sustainability to environmental sustainability and thus adapted to Denmark’s national strategy. If the national strategy is non-committing then this will probably over time influence on Aalborg’s Charter and Commitments? If this in practice has any consequence for the people and development in Aalborg, remains to be seen.


The general transport policy in the 1994 Traffic and Environment Action Plan was thus formulated: The transport policy in Aalborg is based on the principles of sustainability. Targets for reductions of the impacts of increased traffic - accidents, visual intrusion, noise nuisance, emissions of pollutants, energy consumption, etc. - were laid down in the 1994 Traffic and Environment Action Plan. This plan adapted the national targets and specified local actions that would help meet these targets.

The Traffic and Environment Action Plan was revised in 1999 and 2005, reiterating Aalborg’s commitment to solving the environmental problems caused by traffic. The targets of the earlier plans still valid are:

- To achieve a sustainable development by balancing the need for mobility against the desire to minimize the environmental impact of traffic
- To reduce energy consumption and emissions in accordance with national targets
- To reduce the number of dwellings affected by traffic noise levels exceeding 65 dB(A) by 1000 before 2010
• To reduce the number of fatalities and severe traffic injuries by 40% in 2007 compared to 1987

The status in Aalborg Municipality’s own words after the Traffic and Environment Action Plan has been working twelve years, are:

• Traffic continues to grow in Aalborg municipality. The car share of total transport work (vkm or pkm) increases at the expense of public transport.
• Energy consumption and CO₂-emissions increases, caused by the growth in traffic.
• Aalborg municipality keeps under the limits for local air emissions.
• The number of dwellings with noise above limits is expected to grow, caused by the growth in traffic.
• The aims for traffic safety (killed and seriously injured) are reached.
• The aim is to increase the number of public transport passengers, but the effect of the new traffic plan from 2004 has not yet materialized.
• The present parking policy continues.
• The road investment plan from 2004, new theme in relation to the 1999 plan (notice that the municipality does not mention that it is contrary to the 1999 plan, the 1994 plan and the Charter).
• The Waterfront, redevelopment and connections to the centre, new theme in relation to the 1999 plan.
• Future projects, extension of local rail and “Sporbus”.
• Optimization of combined trips, among others by Park&Ride, new theme in relation to the 1999 plan.

On the major problematic issues and challenges in the listing above, the Traffic and Environment Action Plan has not yet provided much. Car use is still increasing about three percent per year and public transport passengers fell from 17 million in 2002 to 15 million per year in 2005. Even if the public transport system was redesigned and improved in 2003, there is a strong and lasting downward trend for public transport, which probably require far stronger support than so far, if it shall be turned. The public transport officer in the municipality was very worried that they were losing more and more youths as customers, because both high school and university students buy a cheap car and thus they travel cheaper and faster than with the bus.

\[286\] Interview Jan Øhlensleger, 2007
5.3.14 Road investment plan for the Aalborg area

In the Environment Impact Assessment (VVM) of the 3\textsuperscript{rd} Limfjord connection it is stated that the road network must be developed to avoid congestion and therefore a road investment plan for the Aalborg area\textsuperscript{287} should be made. This road investment plan was finished already in 2004. The traffic model calculations for the 3\textsuperscript{rd} Limfjord connection were used to produce the road investment plan. The new connection in the west (Egholm line) “must be connected with the necessary access roads, which are safe and prevent unnecessary great delays”. Anticipated future congestion is an important driver in these model calculations.

The road investment program decided on in the plan had a total estimated cost of 415 million DKK. Are these investments in new roads necessary when the politicians time and time again have said that the goal is to reduce car traffic and shift people from cars to public transport, walking and cycling? The rational answer is no, there will not be delays or congestion, because the present road network has more than enough capacity. Why are the politicians still pushing this road plan? Is it because they don’t believe in their own goals? Are they deliberately cheating the public? Do they think that they would like sustainable development, but with such a policy they will lose their jobs? Is it about a fight to keep positions in the short-term, and lack of long-term leadership?

\textsuperscript{287} Vejudbyggingsplan for Aalborgområdet.
5.4 Sustainable transport planning in Aalborg?
This chapter sums up the experiences with land use and transport planning and policy in Aalborg on the basis of an analysis of the situation (ch 5.2) and the major events (ch 5.3). The gap between the vision, aims and goals on the one side and the Realpolitik with highway planning as the major issue on the other side, keep increasing surprisingly enough. Some ideas to why this gap keeps increasing are presented.

5.4.1 Land use, transport infrastructure and growth

The legislation and institutions especially the organization of the road sector, and the organizing of the political system in three tiers, gives many actors strong incentives to cooperate about increased road building.

Land use plans within Aalborg will push 50% of new buildings to the city outskirts and 50% are expected to come on brown fields on both sides of Limfjord close to the city centre. Depending upon density (square metre building area per hectare) and the location of jobs and the workers homes, it is likely that the trend towards longer work journeys will continue.

Commuting across municipal borders, which has been growing strongly, will probably also contribute to increased amount of transport by car. Land use decisions over a 30-40 years time period and slower population growth than forecast and planned for, will make this trend last for many years. On the other hand, Aalborg has building plot reserves, both for housing and employment, and may therefore be better than other cities in attracting new firms to settle.

Aalborg Charter with The Vision of a Green Aalborg is still there, but the ample supply of building land makes the land use instrument ineffective. The 3rd Limfjord crossing decision will on the one hand affect land ownership and attract development along the new alignment, especially close to junctions. On the other hand will the new road open up opportunities for extensive bus priority schemes across Nøresundby-bridge and increased cycling and walking in the city centre. (At present the only difference between the two road alignments apart from local impacts, is that parts of the future road, the Egholm line, will come further west than the former Lindholm line)

The investigation of Aalborg leave these main impressions:

1. Reduction of car use is not an issue actively pursued in Land Use and Transport planning. Even in new brown field areas close to the city center there will be full parking provision as a result of requirements stated in planning regulations adopted by the municipality. Car use shall mainly be reduced by creating competitive alternatives to the car, although it was a stated aim to reduce travel demand with cars.

2. Both politicians and planners are very proud of their sustainability record, the social aspects like participation in projects being important. Positive actions to improve the bicycle net have been done. Improvement to public transport, both bus priority and info system is being implemented.

3. The third Limfjord crossing has passed through the City Council with a near unanimous vote. It passes across Egholm with a nature conflict, and the west of the city with noise, esthetical and barrier problems.
5.4.2 The goals achievement gap

Aalborg has decided that the threat of traffic congestion on the major roads around 2020, makes it necessary to secure land for expansion of the road network to meet this threat. Taking the time needed to plan and build a new road, this seems a very rational and sensible thing to do. Looking at the decision from a sustainable transport perspective, there are two issues. Firstly, the road building plan seems contrary to the aims in Aalborg’s *Traffic and Environment Action Plan* and in the *Aalborg Charter*. Secondly, that it is necessary to reduce traffic growth, and indeed the need for car transport to meet the Kyoto agreement on reduction of CO₂ emissions. How has Aalborg handled the conflict between car traffic growth and the need to reduce emissions and other negative consequences of car usage in the urban area? How has growth been traded off against the environment? To answer these questions I have done a synthesis of the documents in the case, the discourse in the papers and the views from the planning and transport officers, and some key politicians and other informants.

After having performed the interviews and studied plans and documents, it seems that there is no integration not even an attempt of integration between the planning for highway expansion and the aims and planning for a more sustainable city. The structure and institutions are such that there is no incentive to integrate land use planning and transport policy to reach the sustainability objectives. Rather there are strong disincentives for politicians and planners against such integration. It is two separate worlds far apart:

- Highway planning is seen as dealing with Denmark’s global competitive situation and it is therefore a national interest to have modern efficient transport infrastructure, which also is in high demand from the average car user.
- Urban travel and sustainable transport is something cities can deal with in their planning as part of “the symbolic politics cities are obliged to after Rio”.

Interviews support this hypothesis of the two worlds. When asked what connection is there between *Traffic and Environment Action Plan* and the plan for the 3rd Limfjord connection the answer is repeatedly: None! The apparent conflicting goals: car growth and sustainable development, are not difficult to handle for the politicians. Orla Hav the County Mayor, said that “people have sacrificed a lot to attain a car” hence they deserved a decent road network like the 3rd Limfjord crossing, and “road pricing will come in the future”. By this addition about road pricing he may have thought about reducing traffic by congestion charging, or he may have thought on the Norwegian model of financing road building. In both cases the reduction of traffic is not an issue now, it was something belonging to the future.

5.4.3 The role of politicians and planners

The need for road building is here and now many politicians feel from their encounters with the public and the media. They have to act on the current issues. Besides they will be doing a poor job if they are not fighting to get money from the Government. It is highly regarded to attract to the area inward investment, jobs or Government funds.

To secure employment and create jobs is and will be an overriding political task, while to influence land use a minor one. Therefore to use land use and transport planning as an instrument to achieve short distance between activities, say between home and work to reduce
the propensity to use the car, has low political priority. More Government or State rule to ensure that for example the counties and the municipalities follow up sustainable development goals, were rejected by all politicians interviewed. They all pointed at the general trend of more devolution and most important to enhance democracy by giving people a greater say. The principle of subsidiarity, that decisions should be taken at the lowest competent level, which also is EU policy, seem the best way forward. The problem as the Aalborg case show, is that the Government in order to keep power, make the rules such that Minister and the Ministry continue to have the major say. Financing of roads and public transport infrastructure and services have been typical examples.

The 2007 regional reform in Denmark alter both these areas, which will force the municipal politicians to trade off better public transport with better schools. For the 3rd Limfjord connection the picture we have described will be the same, the decision on type of road, alignment, costs and who pays, will be taken in the Folketing as a political decision. Another important distinction between “roads” and land use planning is that the roads sector on all levels is organized as a hierarchy, with e.g. Stadsingeniøren on top in Aalborg. The sector has resources for planning and they are in charge of the road budget, often a fairly substantial budget. The road planners/engineers are merited by the projects they implement and uncongested traffic flow. The land use planner can allocate land use and prevent certain activity on that land use, but are dependent on a range of stakeholders to implement the land use plan. This difference make the “roads sector” the strongest in the implementation phase. The Aalborg project, which failed in the implementation phase, shows clearly how land use planning lost (Flyvbjerg 1991, Vol. II). The effect of road building on development is a controversial issue, but is often looked upon by politicians as:

1. a way to strengthen employment (cfr Vickerman 200x, Flyvbjerg et. al. 2003, and others on the growth effects of transport projects)
2. road investments both secure employment and investment comes into the municipality
3. the aims of sustainable development are still important, although the development in the short term goes the wrong way
4. the road planners have success here and now, while the land use planners struggle with big long-term challenges

5.5 Conclusions and Lessons

In this last chapter I discuss the real development on the ground in Aalborg and compare it with the intentions and the policy pursued. What happened? Why did it happen? How can the course of events be explained? What is to be learned from Aalborg?

5.5.1 The important events on the time line

Underlying all else is a quest for inward investment to boost economic development and regeneration in Aalborg. The politicians can fight for a “fairer” share of public investment, but only facilitate private investment. In practice this has been as the fight to get the University many years ago, and at present the fight to get investment money for the third crossing of the Limfjord. To entice private investment Aalborg can offer the University and research facilities, skilled labor force, an attractive city with broad cultural activities and
building sites with good accessibility. The airport and a good transport network are seen as necessary to attract new businesses. The environment comes as an added attribute.

- The 3rd Limfjord connection was taken as granted from the early seventies.
- The Generalplan 1974 reserved building land for decades.
- The new liberalism and market rule forced the planners to rethink planning, the Traffic and Environment Action Plan, the Charter and sustainable cities campaign were born.
- The interests in the environment rise and fall, while the demand for road capacity keep increasing.

The 3rd Limfjord crossing was put into the planners sketches already in the early seventies and part of the testing of networks in the traffic models, it was taken as granted. At the same time the population forecasts anticipated that “baby boomers” born just after the World War would continue to have many children. Aalborg would reach a population of 200,000 around the year 2000 in the Generalplan forecasts. Building land for housing and business was allocated to cope with this growth. But the population growth became slow, demand for new housing and business sites low, and the demand for land use planners reduced. What did the planners do? They produced more and better quality plans for the city centre regeneration. The environment wave and the public participation wave supported this shift in the planners attention, and in Aalborg the “Bykærne” studies and the NORDKOLT project are examples.

The eighties with the New Liberalism and the New Public Management ideologies left the planners in obscurity, the market forces were to do the job. Until the Brundtland report came and created a revival among Danish land use and transportation planners. The Aalborg planners with the proud planning tradition caught on early the new wave of concern for the global ecology. The Clean City, Green City campaign was held in 1988, which led to the 1990 award from EU and EFTA *The Tidiest City in Europe*. At this time several forces coalesce: together with the creative planners in Aalborg and their planning, the central government produced “green” signals, the preparations for the Rio ’92 meeting started and EU worked on its green urban paper, and not least the general public awakening and awareness about sustainable development was spreading.

There is an interesting “wave/fashion” which rise and fall with time. The environment wave and with it public participation in planning had a crest in the early seventies and fell to a low in the early eighties when the new liberalism and the Reagan/Thatcher era took off. The environment wave crested anew at the Rio Conference in 1992, but the new liberalism stayed on, possible on different layers. Or could it be that the seemingly very strong environmental discourse had been turned into a sector issue and thus made harmless? Anyway the public planners stayed out in their jobs all through these changes in attitudes and fashion. What did they do when the market should allocate land instead of planning and regulation? Tradition and a hundred years of plans and regulations were still there, building permits had to be given and proposals analyzed. Some planners went further as the municipal architect expressed in an interview:

> we adjust and shift our values and attitudes towards what we can talk about, towards where we can have a dialogue.

The planners in Aalborg were indeed clever in translating sustainable development into concepts and plans relevant for the city.

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Innovative and creative planners make plans that are relevant for their superiors, and they are able to use the general mood internally in the administration as the Municipality Engineer said: “people wanted a greener city. That was in the late-1980s, and it was combined into one concept. So, when we got the prize as the Tidiest City in November 1990 we said ‘what can be developed further within this perspective?’ Then it was natural to look into road traffic. However, I cannot show a paper that says that the Clean City, Green City strategy is being extended with this (transport policy making and planning from an environment perspective). I do not think we have written that anywhere.” This public concern for traffic and a greener city the planners translated into The Traffic and Environment Action Plan, which again led to the Aalborg Conference and the Aalborg Charter in 1994. The city planners felt and took the responsibility for a comprehensive and integrated land use and transport plan for Aalborg, without being told. The road planners in the County worried at the same time about future congestion because the capacity reserve on the Limfjord crossings would be “eaten up” by the fast traffic growth on the motorways. They therefore analyzed future traffic demand ending up with the need for a 3rd Limfjord crossing. These two groups were well acquainted and participated in each others work, although the results were going in different directions.

The difficult question I have tried to answer is if the Traffic and Environment Action Plan, the Charter and the later the Commitments mainly exist in a discursive and symbolic world with little or no influence over land use and transport development in Aalborg? There is an increasing gap between the aims and intentions on the one side and the indicators of how Aalborg changes on the other side. Most indicators like car traffic growth, noise, CO2-emissions, sprawl and commuting show that Aalborg is becoming more and more unsustainable and contribute to the depletion of fossil resources, reduction of bio-diversity and climate change through CO2-emissions. The motorway system has influenced both home and job location for people in Aalborg and North Jutland. My belief is that this will continue and hence make the region more and more car dependent. It seems that the underlying driving forces that make the car indispensable have reached a level, which will be hard to break. By this I mean that when more and more persons commuting to work use more than 45 minutes with the car covering 50-60 km or more one way, then there are no substitute for the car.

Policies aiming at shift of mode and reducing car use should to start with, be applied at a limited area, e.g. like work trips to the city centre. Even at such a limited area, there are no great success stories in Aalborg or anywhere. It was not possible to create such a gradual introduction of an environmentally sustainable transport policy in Aalborg from 1994 and onwards, as the Traffic and Environment Action Plan envisaged. The City Council adopted the aims and has managed the implementation of the plan. Instead of a forceful implementation of the plan, it was left aside and reviewed every 4-5 years, rolling the sustainable aims and goals forward. The same City Council was much more potent and effective with plans and processes that supported developing the road network and reducing car travel times. When sometime in the future (?) the 3rd Limfjord crossing has been built and the 2004 Road building program implemented, Aalborg will get a high class motorway system offering good capacity and high level of service at least for the next twenty years with

290 Nielsen and Hovgesen 2004
291 The possible exception is the congestion charging schemes in London and Stockholm.
the present 3% yearly traffic growth. It is difficult to imagine that a political party will promote restrictions on car use when such a network is established. Then only two options remain. The City Council can make public transport, cycling and walking so attractive that people shift voluntary (carrots like tax deduction when cycling to work, etc. is probably necessary). There are probably a lot of innovative soft measures that can be used to make the alternatives to the car extremely attractive, but they will cost! (To stem the rise in obesity in the population, or to reduce CO$_2$-emissions may be motive enough for such policies) The second option is that “a climate of desperation” is created (Vigar, 2002). If people and indeed the politicians in charge feel that the threat of climate change has become unavoidable, so close and so strong (a feeling of desperation) that individual and collective actions are necessary, then change may come.  

It remains a puzzle and a paradox. Aalborg seems to have everything going for it: geography, wealth, traditions, culture, competence, good planners and eminent plans adopted by the politicians. But still, the City – in 2007 – pursues policies contrary to its aims that in the long-term might contribute to devastating global changes.

5.5.2 Lesson one

In Aalborg slow growth or lack of growth has been a major political concern for years. Aalborg University was created for this very reason. North Jutland has also been dedicated as Objective 2 Area for EU support to peripheral regions with slow growth. The city of Aalborg envisaged thirty years ago a population growth towards 200 000 inhabitants, but is still in 2005 only 165 000. One side effect of this slow population growth is that the municipality has substantial areas allocated for development, and these areas can be used to attract firms. There has also been invested in the technical infrastructure to facilitate building straight away when the need arise.

Increased car dependence caused by the spreading of housing and workplaces has increasingly put a focus on road capacity and future traffic problems, the crossing of the Limfjord being one of these concerns.

What is being implemented – has been implemented the last years?

Huge road projects are what stand out as the major planning process in Aalborg the last 15 years. The 3rd Limfjord connection has been under discussion/planning for many years. That discussion was finalized in September 2003 when both the City Council and the County Council adopted the western alternative.

The decision on the 3rd Limfjord connection is securing future road capacity to avoid congestion, but it can also be looked at along the centre-periphery dimension. There are widespread political concerns on Jutland about the concentration of investment and activity in the Copenhagen/Øresund region and a continual political fight to attract inward investment to Jutland. In such a perspective the 3rd Limfjord connection will function as a project that can be used as a trade off for political support in the Parliament for new projects in the

293 As I write this a couple of months before Al Gore gets the Nobel Peace Prize, I can’t see that any of these two options are near in time.
Copenhagen region. (The precedence is the big H compromise in the Parliament, which secured Jutland completion of the motorways north to south on Jutland as a compensation for the Great Belt Bridge.)

There is not evidence that the Traffic and Environment Action Plan has achieved to attain the environmentally sustainable transport goals of reduced car travel and shift to Public Transport and Bike and Walking. Rather the opposite is happening on Jutland with rapid development along the E45 motorway and increased car travel over long distances. The focus on growth and the political task of getting inward investment to the city and region, together with the political game around the centre-periphery dimension are the explanations of what has been implemented in Aalborg.

What has not been implemented?
The aims and plans for environmentally sustainable transport have not been implemented, except from some marginal projects. Land use contraction is difficult because of the General Plan has allocated large development areas to the south east, which will increase travel distances when developed. Also the effect of neighboring municipalities offering cheap and high quality housing, pull in the same direction. Aalborg municipality owned much of the waterfront and could control development, but the land has been sold and control lost.

Parking policy in Aalborg is less strict than advocated in the plans, and the improvement of Public Transport and Bike and Walking has only been marginal. There has not been implemented any effective means that can facilitate shift away from the car and reduce car travel.

Counterfactual thinking could imagine that Aalborg from the early eighties concentrated all development to brownfields along the waterfront and other places. The city would then have become denser with more people living and working in the centre and thus facilitating reduced car use. On the other hand both people and businesses might instead of localizing along the waterfront have chosen to move out of the city and nothing would then be gained.

Conformance between aims and results in Aalborg?
In a goal – achievement perspective it is clear that the city of Aalborg, the mother of The Aalborg Charter, has adopted strong aims pointing at a more environmentally sustainable transport development and indeed sustainable development in general. The Traffic and Environment Action Plan has not been an effective instrument in Aalborg in a conformance view.

The performance of land use and transport planning in Aalborg.
The performance of planning depends of the definition of planning. If the planning only is to coordinate activities in space and time to adapt to and support market driven change, then the land use and transport planning in Aalborg has performed well.

On the other hand, if land use and transport planning also has an instrumental function in the city, e.g. to prevent sprawl and reduce emissions from car travel, then the Aalborg performance is less positive.

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294 This is well documented by Nielsen and Hovgesen, 2004.
The most positive performance in an instrumental view of land use and transport planning is the Aalborg Charter and the EU projects with sustainability aims. This is because I believe that if the city of Aalborg set itself high aims and reinforce these aims time and time again, sooner or later they may be instrumental in change. The other side of this argument is that the aims are ambiguous and relative, and as such can be pushed forward in the planning as symbols without ever being implemented.

**Politics matter**

Politics may be seen as a long stream of decisions. Some of the decisions are tiny (a straightforward attic conversion), some are big (building a new culture centre), some are budget decisions with intricate consequences and some are plan/strategy decisions with both short- and long-term often unclear effects. *The Traffic & Environment Plan* was adopted first in 1994. Since then the second version came in 1999 and the third version has been presented for the politicians and adopted 2005. “Do we have the right goals? Is the strategy in line with national guidelines? Are we going in the right direction?” are examples of the type of questions politicians may ask when confronted with a new plan proposal. If not in line with the strategy, then they may think it doesn’t matter since the strategy will be adjusted in five years time. Politicians may, therefore see the decision by the City Council in September 2003 on the 3rd Limfjord crossing, as a simple shift in reservation of land for a western bypass (from the Lindholm line, which had been reserved earlier, to the Egholm line). Then it is business as usual. In such a light the global questions of CO2 emissions and the effects the 3rd Limfjord crossing will have on traffic growth, may seem irrelevant.

Politics may also be seen as having two sides. One is the ideology production for the voters and media, which is concerned about winning support, confidence and elections. The other side is the committee work where the elected representatives work closely with the officials to find good solutions. What sort of incentives is it in the committee work? For the MP? The County Councilor? The City Councilor or the planner? All these three groups have strong incentives to give something back to their voters/party/wards/constituencies. Building alliances, networking and compromises are common on all three levels. Looking at the 3rd Limfjord crossing in such a light it is easy to see that at the city level some areas carry most of the negative consequences, while others benefit. This makes it a difficult case for city councilors. The county councilors will similarly look at what districts benefits and loses, and the western alignment was the obvious compromise. Common for the politicians on all the three levels is the thought that more money the state will invest in the Aalborg district, the “better” is the job the politicians have done. Allocation of jobs, investments and other benefits to Nordjylland is a major task on which politicians are judged. “We want compensation from Copenhagen!” was the way one politician put it.

**THE LESSON:** The framework that guides and delimits the politicians’ and planners’ actions had an important role in Aalborg. A new national framework that gives the cities extensive self-rule over land use and transport planning and financing appears to be necessary if sustainable development is to have a chance. Such a new framework should also include incentive schemes that make the politicians and planners pursue environmentally sustainable transport development, instead of roads for cars.
5.5.3 Lesson two

*Traditions, and the impact of New Public Management?*

Aalborg is the capital in the one of the most peripheral regions of Denmark, although distances to the Copenhagen area are relatively short. But, Denmark has a tradition of a strong central Government, which makes politicians at the city and county level focus on how benefits from the Government can be obtained. One such means is to excel in planning, which Aalborg has done. Through this Aalborg can get in good grips with the ministries and obtain demonstration projects etc. This is very much the similar to the way Kristiansand has behaved over the years.

The 3rd Limfjord decision can also be seen as part of the new governance structures developing. North Jutland County was the driving force in getting a final decision taken. It did that by creating a wide cooperation between many municipalities, the Highway Agency, freight associations, trade cambers, etc. which can be seen as a new governance structure on North Jutland.

*How can the EST development or lack of development be explained?*

Institutions and structure promote the car and hinder the EST development in Aalborg. Politicians and policy also matters. Present institutions and incentives are not adequate, hence new institutions/subsidiarity needs to be created.

The framework must be changed so that the barriers to EST are diminished/removed. It is not likely that the politicians in Aalborg can push for car reductions, unless the Government creates strong incentives for reduced car travel and shift to other modes. It is also unlikely that it is possible to curb car use in Aalborg without the far more congested capital set a good example.

Congestion Charging is discussed for the Copenhagen area. It will if introduced in Copenhagen be an example that might be seen as relevant for Aalborg, or it might not be relevant. The scale difference between Aalborg and Copenhagen is so large, that I can’t see that congestion charging will be applicable in Aalborg in the foreseeable future unless strong external forces as the climate challenge will be pushing such change. It is more likely that the Norwegian model of toll rings will be used in Aalborg to finance road investments.

*THE LESSON:* Aalborg is on strong path to realizing a road network in the city, which facilitates free car use. As it is now the national policies prevent car reduction policies from working. If car use in cities is to be curbed, then national policies supporting such reduction in car use must be in place, together with measures that support the soft modes.

5.5.4 Lesson three

The land use planning has basically been an instrument to always have a surplus of land to attract businesses to locate in Aalborg. The master plan of 1947 covered the whole area of the municipality. The plan was very influenced by American and British ideas with a major ring-road network and good accessibility to the centre and all other areas. Creating a good
The building of the major road network meant demolishing a lot of buildings, some with historic interest, and destroying the character of the central area. However the long-range plan for the municipality area produced in the early seventies, expected the population and the demand for land to grow far faster than what happened. Thirty years later there is ample building land available in the outskirts of the city and in addition has the structural change within industry provided huge Brownfield areas along the waterfront on both sides of the Limfjord. In this study I have only looked at land use and transport planning and policy, which means that much of the impressive work Aalborg has done on the broader sustainable development issues like inner city regeneration, energy or utilities is not included.

The eighties saw the breakthrough of the ideas of Reagan and Thatcher, planning was “out” and “in” was a turn towards market solutions and away from planning, also in Denmark. In Aalborg no comprehensive land use and transport plan was produced until the middle of the nineties. The Brundtland report in 1987 came as a relief and ideological foundation for many traditional planners. Both at the central government level and the regional and city level an upsurge in planning documents came around 1990, which in Aalborg resulted in the Aalborg Charter of 1994. Aalborg has also got a lot of praise for Traffic and Environment Action Plan 1994. The plan calls for higher density and mixed use to facilitate shorter journeys and shift of mode to public transport, bike and walking. However, the location of the majority of the new housing and new employment in Aalborg happens in the outskirts and therefore the distance between housing and employment increases. The increasing commuting across the municipality border further aggravates this. Aalborg is increasingly becoming the centre in a vast and expanding commuting or “travel to work” area, where the car is the only mode that offers acceptable travel times. Parallel to the environment focus in the city planning department in the early nineties, the county technical staff responsible for the state road network started again to look at traffic growth on the major roads and especially the threat of future capacity problems crossing the Limfjord. The 3rd Limfjord Crossing was already fixed in the land use plan as the Lindholm line, but a re-examination of the plans led to the Egholm line was decided in September 2003. Car traffic increases that much that serious congestion threatens in ten/fifteen year’s time and an investment of 400 million Euros is deemed necessary. The 3rd Limfjord Crossing will further drive dispersal of homes and jobs resulting in increased vehicle kilometer traveled (VKT). Car dependency grows and so will greenhouse gas emissions.

The gap between the goals and objectives adopted by the city council and the negative consequences of the increased car use continue to widen. The city’s positive environmental policy on waste, refuse etc. can not counter weigh these negative effects. To understand the policy choices in Aalborg one must look at the relationship between the region, the city and the national authorities. The 3rd Limfjord Crossing will/may/must be financed by the Government and is prominent in any parliamentary bargaining about a fixed link across Femer Belt to Germany. The highway is also the solution to free market location and choice of employment opportunities in North Jutland and carry wide regional political backing. Goals of sustainable transport development seem to have mainly two reasons: One is the coordination of goals hierarchical and vertical across the national level, countries and

See for example "Sustainable utility supply in Aalborg" 2004, which sums up some of this work.
municipalities, the other being the conditions to participate in new environment projects and obtain extra funding for projects in a municipality, starved for income.

In short Aalborg has adopted all the right goals of sustainable development, and indeed promoted these to more than 1800 other cities. It has also land use and transport plans outlining the path and means to be used to reach these goals. The sustainable development discourse and the strategic capacity to deal with long-term sustainability issues in Aalborg was studied by Carsten Hansen\textsuperscript{296} who concluded “the capacity grew in the nineties, but seem to fade towards 2000”. During implementation it seems that some goals carry more weight than others, some instruments are well functioning, but others are not. The “governing regime” and structural forces supports market driven solutions, while the sustainable solutions that require action to prevent increasing car use and car driven dispersion hardly have any effective instruments at hand.

The strong planning tradition in Aalborg has certainly put the city in the forefront of sustainable development planning. There is one path of high quality and up to date planning that goes back to the early fifties. This path led to participation in a range of EU projects, the Aalborg Charter 1994 and the Commitments in 2004 being the highlight so far. The planning ideology underpinning this path has been the rational/synoptic model, first described by Banfield. In the new millennium more weight have been put on the symbolic part of the city image, on a branding and marketing effort. The effect of this is probably more weight on the positive image and less on how to control the policy-making process towards the city aims and vision.

\textbf{Branding Aalborg}

\textit{Branding Aalborg står sammen med NORDJYSKE Medier bag sitet aalborg.dk.}


Aalborg.dk er et værktøj til at fortælle alle de gode historier om Aalborg og til at få folk til at opleve Aalborg. Vi håber, at sitet vil inspirere dig til at benytte nogle af byens mange tilbud.

\textit{Figure 5-10 Branding Aalborg aim at making the Aalborg star shine stronger and clearer}

But there has also been another path that concerns the car development and how to provide capacity for the expected traffic growth and associated congestion problems. This path which was based on the “predict and provide” ideology has been concerned with the 3\textsuperscript{rd} Limfjord crossing and the inner city car traffic and parking problem. The decision\textsuperscript{297} fixing the position of the third crossing in 2003, may be seen as important decision along this path.

\textsuperscript{296} Carsten J. Hansen, 2001. \textit{Local transport Policy and Planning}. Aalborg University

\textsuperscript{297} The VVM has to be redone according to the decision in Naturklagenævnet in 2006.
THE LESSON: The principle of subsidiarity implemented would give the City of Aalborg the chance to develop environmentally sustainable transport, but only if the majority voted for such a course. It would clarify the path from vision to aims to objectives and implementation. The trade off between different policies would take place in the open at the city level. Devolution of powers to the city level will not guarantee sustainable city development, but the opportunity will be there to be taken.
## Aalborg case – Annex I

### Short list for standard comparison of the case cities – Aalborg

<table>
<thead>
<tr>
<th>Aalborg</th>
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<tbody>
<tr>
<td><strong>Background</strong></td>
<td>The Aalborg Charter 1994, pledging more sustainable city development, has reached far out, 1800 cities have joined. Population growth very slow, and far behind earlier expectations. Strong centre-periphery issues. E45 &amp; E39 finished from the German border to northern ports.</td>
</tr>
<tr>
<td><strong>Special LU&amp;T</strong></td>
<td>LU&amp;T, the correct goals, but no instruments to promote/push LU. E45 &amp; 3rd Limfjord wins. Allocation to the <em>Traffic and Environment Action Plan</em> skewed, car culture the winner. Job creation seen as the major task.</td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
<td>Reserve of land for building will last decades. Both close to the city centre redevelopment on both sides along the Limfjord, and in the outskirts where large growth areas are planned. Considerable investment in utilities for these areas, are “sunk costs” (put in ground). Large need for new jobs.</td>
</tr>
<tr>
<td><strong>LU&amp;T Policy</strong></td>
<td>LU&amp;T policy has aimed at establishing Aalborg as the growth pole and prospering regional centre in north Jutland. Building land reserves for at least twenty years exist and city can receive the location of a major company “over night”. Ample areas along the waterfront being released due to decline in industries. 3rd Limfjord corridor being fixed in 2003 after decades of discussion, controversial and contested. City Syd. Have had consequences for the shop structure in the region, by attracting shoppers from a large area. Development of City Nord not relevant because of this reason. Also shopping in the city centre versus peripheral shopping discussed. Transport corridors and junctions have influenced LU more than the opposite way. 3rd Limfjord is already said to influence land-prices.</td>
</tr>
<tr>
<td><strong>Transport Financing.</strong></td>
<td>3rd Limfjord decision gives the county opportunity to fight for Government investment money as part of the national highway network system (can be contested by the state). Important decision to get financing as compensation for investment in Copenhagen area. The big H (store H ) compromise about the Great Belt connection, which led to building the motorways E45 and E39, might be a model for securing compensation of a Femer Belt decision? Very skilful political maneuver by the County mayor, while the Aalborg mayor opted out of the process.</td>
</tr>
<tr>
<td><strong>Comment</strong></td>
<td>Shift of planning focus from instrumental steering to goals and visions (EU projects, info system PT measures that is not a challenge to the car) the eighties planning’s transformation decade? Failure of planning: 3rd Lim in 1980s and 1990s, success 2003! LU structure from seventies still abundant land reserves. In addition have the waterfront land become available from 1980s due to close down of industry, without the city being able to plan/act on this straight away. To keep Centre attractive in competition with City Syd and other motorway hub developments a challenge. Findings: LU&amp;T challenges or problems small. The Centre-Periphery dimension important, how to acquire a “fair share” from GOV to NJ/Aalborg, jobs, support grants, EU funding, investments, research, students? Who wins, lose? What could have been done differently? More housing and jobs in centre to prevent commuting. To return this will take decades. 3rd Lim will generate new traffic? Nørresundby bridge with priority to PT and B&amp;W? MS priority list that disappeared? Financing Infrastructure: allocation from Government. Why plan? Statutory. Traffic and Environment Action Plan driven by planners, so the EU projects. Democratic accountability: Medium, but fragmented. From 2007 new regions and enlarged Aalborg municipality may influence accountability, how remains to be seen.</td>
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6 Norwich

6.1 Introduction

This introductory subchapter sets the Norwich Case Study. The study is focusing on Land Use and Transport planning and policy as an instrument to reach the goal of sustainable urban transport as part of sustainable urban development. The chapter contains a short history and description of Norwich and the approach to the case study. It also contains a comment on the Buchanan Report: TRAFFIC IN TOWNS, which had profound influence on the transportation planning thinking in Britain, as indeed in Norwich which was one of the report’s model cities.

6.1.1 Context

The city of Norwich was the second city to London for hundreds of years up to the 1700s. It was the geographical location close to the sea with a large hinterland that supported trade and the growth of Norwich. This legacy has left Norwich with hundreds of listed buildings of which Norwich Cathedral and the Castle are the most impressive.

Norfolk has more than 830 000 inhabitants while the population in Norwich is still below 130 000, which is only slightly more than in the 1930s. The population in Norwich urban area has around 230 000 inhabitants when the suburbs are included, representing roughly a third of
the county population. The population in the Norwich Travel to Work Area (TWA) has about 370,000 people.

In 1974 Norfolk County Council became both the Land Use & Transport and the Highway authority for Norfolk County including the city of Norwich. From that year Norwich was no longer a borough with wide powers, it became a local authority District, one of 6 Districts in Norfolk County. An agreement with Norwich set up a Joint Highway committee, but with the decisive vote for Norfolk. Some of the present day strengths and weaknesses are described in the box:

`Norwich has the largest surviving medieval core of any city in Britain… The views of Ely Cathedral across the Fens evoke one of the strongest images of the East of England.`
`The transport network is strongly radial. Although there is some provision for orbital road movement, the orbital rail network is poor. The links to London remain very important… Much of both the road and rail network is heavily congested and while there is a significant infrastructure deficit, there is a need to encourage travel by means other than the private car and reduce the need to travel.`
`The region is commonly assumed to be affluent because it lacks major conurbations or post-industrial areas experiencing intense deprivation or poverty. It is in parts subject to growth pressures particularly around London and Cambridge, with implications for affordable housing, infrastructure and social cohesion. Yet other parts, particularly Norfolk and Suffolk, face problems associated with remote, peripheral areas that have limited employment opportunities, low wages and lack access to services.`

Source: Sustainable Futures East of England Strategy October 2005

6.1.2 Traffic in the historic city

The famous Buchanan Report *Traffic in Towns* from 1963 used the city as a model in the chapter *The Historic City Norwich*. The planning principles laid down in the report, are still relevant. Below follows some highlights on Norwich 40 years ago.

The situation
When Colin Buchanan chose the historic city of Norwich to be studied in *Traffic in Towns*, the population was about 160,000 inhabitants in the urban area. From 30,000 to 35,000 were employed in the old city area out of 88,000 employed in Norwich labour exchange area. Already in the early 1960s traffic flow and congestion were a problem: 43,000 vehicles entered the old city at a Friday and 49,000 at a Saturday. In two hours in the morning 6687 vehicles entered and 2933 left, 3500 vehicles were parked both on and off streets at the same day, an increase of 38% in two years. It was estimated that 5000 vehicles parked in 1963.

"Congestion is sufficient to induce traffic to filter through whichever streets promise the shortest journey-time. Consequently the whole street network within the old city is at times used to its maximum traffic capacity." (Buchanan 1963:116)

The potentially high standard of environment was lowered by the effect of the vehicular traffic: The city "---is severed by heavy cross-flows of traffic." The environmental conditions deteriorate as the number of vehicles increases, this is reflected in the increase in road...
causalities, which rose from 502 in 1957 to 644 in 1962. “—with the present level of parking, every accessible piece of ground is taken up by cars. This takes place regardless of local amenity. Places of great interest and beauty such as the precincts of the old Cathedral and the Castle, Tombland and the St. Andrew’s Plain are packed with cars to the grave detriment to their appearance.” Industrial traffic chokes the local streets. The shortage of space is acute: “---the environmental capacity of much of the old city is already grossly exceeded.”

(Buchanan 1963:118) The report gave this general recommendation for city planning, still valid today: “The main principle and the basis for planning is abundantly clear – if the environment is sacrosanct, and if no major reconstruction can be undertaken, then accessibility must be limited.”

The future will be challenging
A threefold increase in car traffic by 2010 was forecast, to an estimated 76 000 entering the old city daily. Of these 18 000 would be commuter’s cars, 22 000 shopper’s cars, 200 buses and 36 000 cars to industry and business. Peak hour flow was predicted to be 19 000 vehicles per hour, of which 75% would be commuter’s cars. Parking demand would be 18 000 long-term spaces for commuters and 5000 spaces for shoppers.

A problem of environmental management
Buchanan listed the following steps to establish an environmental area:
1. Numbers, types and speeds of vehicles to be kept down to a level compatible to environmental standards.
2. Circulation of essential traffic to be contrived.
3. Streets and areas converted to pedestrian use only.
4. All through movements prevented.
5. Internal movements reorganized.

Additional measures would be needed:
1. Control to be exercised over change of land use with the object of reducing traffic generation. Certain parts to be retained for residential use, partly to restrain traffic, but also to maintain certain essential qualities of the old historic city. May not be in conflict with the function of central shopping. In fact it could well be to its advantage.
2. Parking policy to be firmly directed towards the environmental objectives.
3. Public service vehicles might be given preference. Buses should be smaller, quieter, slower-moving.
4. The question of speed should be considered, 30 mph might be too great. Public opinion might not be prepared, but this is an example of the severity of discipline, which is likely to be required in the future. (Buchanan 1963:119)

The recommendations the Buchanan report outlined forty years ago, both policy and measures are still highly relevant. It was deemed necessary with a restraint policy and Norwich needed measures to be able to cope with the car. It also warned that the public opinion might not be prepared of the severity of discipline necessary, a point highly actual to day when congestion charging is put on the agenda.
6.1.3 Which questions have I tried to answer in the Norwich case study?

The use of the private car in urban areas has had both positive impacts and serious negative impacts. The major question in the sustainable transport development debate is how to govern car mobility in our cities in a way that reduces negative impacts and increases the positive impacts both for the present and the future population. The challenge this case study focuses on is how the Land Use and Transport (LU&T) planning system can be used as an instrument to govern mobility in medium sized cities.

The questions asked are therefore:

- What are the major changes in LU&T policy in recent years?
- How has LU&T planning and policy influenced the development and events in the city over the last 10-20 years up to the present?
- How has this policy affected the spatial and traffic changes?
- What has promoted and what has hindered the use of the LU&T measure?

In most western cities of less than half a million inhabitants the car is the major transport mode and increasingly so over the last decades. On a global scale the increase of car traffic in cities seems to be repeating this pattern and it is further accelerated by the strong growth in the urban population worldwide. The problems of car use in cities are outlined in chapter 2.1.3. As the European Environment Agency states the gap between the goals of a more environmentally sustainable transport (EST) and the harsh realities keep increasing (EEA 2006). The methodology to explore these questions is based on a timeline of events that has been important in the LU&T development and change in the city. Each event is analyzed to find the forces behind the event. I have started with the present and worked backwards in the material, then forward and backwards again, as new data was discovered. The main data sources have been LU&T plans (documents and maps), the decisions made and the debate in the newspapers at that time. This material has been supplemented with 8-10 interviews and talks with key persons (politicians, planners, journalist and people in grass root groups). Some of the events did probably happen by chance, technological change and global economic forces drove some and some were local, decided and implemented by public actors. If decisions were taken according to the LU&T planning legislation how was the conformance between goals and results; and how did they perform in guiding later development and change?

The case study of Norwich aims at answering the following four research problems:

1. Explain the main factors resulting in LU&T change in Norwich.
2. Explore how LU&T change was resisted, opposed, promoted.
3. Examine the role of institutional relations in explaining processes of LU&T change and inertia.
4. To use the above analysis to look for the feasibility of challenging existing patterns of mobility.

6.1.4 A Time Line

From the Master Plans in the sixties through the “anti planning Thatcher years” to the Blair period, Land Use and Transport planning has seen great changes in England. A major shift from Technocratic to Sociocratic planning ideal has happened, but also the need to improve
urban governance and steering systems for long term management has emerged. It is in this complex and changing environment I have highlighted some of the plans and processes important for Norwich. The path dependence is important for many plans and decisions. The Time Line shows some of the important events in Norwich on the right hand side and on the left side events at the national level.

<table>
<thead>
<tr>
<th>LU&amp;T Lines through Time in Norwich 1900/1945 – 2007</th>
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A New Deal for Transport

Transport 2010. The 10 Year Plan
Planning Policy Guidance Note 3: Housing
RPG6: Regional Planning Guidance for East Anglia to 2016.
Commission for Integrated Transport. European best practice in delivering integrated transport
Planning Policy Guidance Note 13: Transport
Regional Sustainable Development Framework for the East of England
East of England 2010

2000 | NATS Local Transport Plan 2001/02-2005/06 |
2000 | Restart on the planning of the Northern Distributor Road - NDR |
2001 | First Annual Progress Report LTP 2001 |
2002 | City of Norwich Replacement Local Plan Draft |
2002 | Second Annual Progress Report LTP 2001 |
2003 | Norwich Area Transportation Strategy (NATS) Review NDR launched |
2003 | Third Annual Progress Report LTP 2001 |
2004 | Fourth Annual Progress Report LTP 2001 |
2004 | St. Andrews Parking, Chapelfield development |
2005 | New Bus station opened |
2005 | Provisional Local Transport Plan 2006-2011 |
2005 | Consultation LTP 2006-2011 |
2007 | Norwich apply for unitary, against county wish |

298 Aalborg opened the first pedestrian street in 1961 and Markens gate in Kristiansand was pedestrianised 1971 as one of the first in Norway, ideas travel fast.
The Blair Government’s first White Paper on transport: *A New Deal for Transport: Better for Everyone* represents a significant shift in Government policy and was in research circles named “the new realism”. From 2000 onwards “the new realism” in transport policy was put into action. The main vehicle for this policy on the local level was *Local Transport Plans (LTP)* to which we will come back later.

6.2 History and situation

6.2.1 Population

The box below gives some of the key data on population and employment for Norwich in 2006. Norwich District (municipality) has 122 000 inhabitants, the urban area (NATS) about 230 000 and the Travel to Work Area (TWA) 367 000. Note that number of people per square km is fairly high compared to the three other cities I compare (Kristiansand built up area has for example a density of 1952 persons per square km compared to the Norwich figure of 3179).

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299 Norfolk web/population show 129 000 inhabitants, probably due to different definitions in the statistics.
Norwich District (the municipality) has hardly had any change in population for many
decades, it has been constant around 120 000 people. This trend may have changed the last
few years where Norwich shows strong population growth due to in-migration. The
surrounding area has however, experienced a strong growth in population for many years,
especially in Broadland District. Norwich city or urban area has therefore a population of
about 230-240 000 people, a population that is divided on three districts.

6.2.1.1 European Sustainable City 1999
European Sustainable City Award was already in 1999 given to Norwich City Council as one
of four local authorities in Europe. An application had been sent to the European Sustainable
Towns and Cities Campaign, which was built on three integrated pillars of Community power,
Norwich 21, Corporate planning. The sustainable city award was given because of the
process and work with a distinctive Local Agenda 21. There were over 100 entries from 28
countries, including 10 from UK.

6.2.2 Traffic development

6.2.2.1 UK 2006 National Travel Survey
Some data from the 2006 national travel survey in UK are noted below to have a backdrop to
compare the data for Norwich. The national data shown are average data for the whole
population.
- Distance traveled per person per year was 11 500 km.
- Average trip length 11.1 km, a yearly increase of 0.7%.
- Average number of trips per day was 2.85, a yearly reduction of 0.4%.
The proportion of the population without access to a car was 25%, down from 30% ten years ago. One third of the households in England have two or more cars as the next table shows, a number which keeps increasing.

<table>
<thead>
<tr>
<th></th>
<th>No car</th>
<th>One car</th>
<th>Two or more cars</th>
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<tbody>
<tr>
<td>1996</td>
<td>28%</td>
<td>44%</td>
<td>28%</td>
</tr>
<tr>
<td>2006</td>
<td>25%</td>
<td>44%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Table 6-1 UK households with and without cars

Of the total distance traveled more than 80% was with the car as next table shows. Car occupancy was 1.58 and 25% of all car trips were shorter than 3.2 km. The number of Bike and Walk trips fell each by 15% the last decade, while the Bike trip distance fell by 12%, the Walk trip distance was constant. Bus trips in London increased by 23% since 1996 mainly due to the congestion charging. Outside London the number of trips with bus fell 8%.

<table>
<thead>
<tr>
<th>2006</th>
<th>Miles per person</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>201</td>
<td>3%</td>
</tr>
<tr>
<td>Bike</td>
<td>39</td>
<td>1%</td>
</tr>
<tr>
<td>Car</td>
<td>5693</td>
<td>84%</td>
</tr>
<tr>
<td>MC</td>
<td>34</td>
<td>0%</td>
</tr>
<tr>
<td>Bus</td>
<td>359</td>
<td>5%</td>
</tr>
<tr>
<td>Rail</td>
<td>466</td>
<td>7%</td>
</tr>
<tr>
<td>Total</td>
<td>6792</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 6-2 UK Person travel, miles per person per mode 2006

The number of commuting trips per person fell by 8%, but the average trip length rose by 6% and the time needed for these trips by 15%.

The number of trips fell 4% 1996 – 2006, caused by a fall in shopping trips, commuting and people visiting friends in private houses. A decoupling of GDP and person travel in UK may perhaps cause this interesting fact? If so, it represents a much wanted trend brake.

6.2.2.2 Congestion grows slowly

There is a general feeling in Norwich according to the interviews that congestion is getting worse. The letters to the Eastern Daily Press also supports this: “the vast number of the letters to the paper are concerned about traffic and congestion”300.

The traffic levels crossing the ring roads since 1989 shows increases on the outer ring road, and decreases on the inner ring road301. The journey time surveys, which were carried out in 1989 and 2002, show that the average speed has remained unchanged at 30km/h (19mph) over this period. However, the journey times for orbital or cross-city routes have increased and the peak hour journey times have increased several places. The pattern emerging is a road network where the core has reached full capacity and with the increase in development outside the core, the traffic flows are increasingly spreading outwards and gradually more and more of the network reach capacity flows at peak hours.

300 Interview with Shaun Lowestoft, Eastern Daily Press
6.2.3 Commuting in Norfolk

Compared with the 1991 Census all the Norfolk Districts have become less self-contained as commuting to work across District boundaries has increased. The following table from the 2001 Census shows the number of persons commuting across the District boundaries to work. When the districts become less self-contained, it means that more and more workers have to travel out of the district where they live to find work. This is the general trend in areas with “a growth engine”. From the table Norwich stand out as growth engine in Norfolk. 53 752 persons traveled into Norwich for work every day in 2001, and at the same time 14 789 persons traveled out of Norwich for work in other districts. Norwich was the only district with net in commuting, all the other districts “lost” people during daytime.

The number of residents finding work in her/his own district is falling, which means that the vehicle kilometers traveled for commuting to work increases. Between 1991 and 2001 this increase was up to 8%. The vehicle kilometer traveled with a car is directly proportional to the CO₂ emissions from that car.

<table>
<thead>
<tr>
<th>District</th>
<th>Resident population</th>
<th>Workplace population</th>
<th>Daytime population</th>
<th>In-commuting</th>
<th>Out-commuting</th>
<th>Net commuting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Yarmouth</td>
<td>64 808</td>
<td>36 192</td>
<td>63 416</td>
<td>7 465</td>
<td>8 857</td>
<td>-1 392</td>
</tr>
<tr>
<td>King’s Lynn WN</td>
<td>97 398</td>
<td>56 356</td>
<td>93 557</td>
<td>14 789</td>
<td>12 255</td>
<td>2 534</td>
</tr>
<tr>
<td>North Norfolk</td>
<td>70 438</td>
<td>37 452</td>
<td>66 479</td>
<td>7 135</td>
<td>11 094</td>
<td>-3 959</td>
</tr>
<tr>
<td>Breckland</td>
<td>86 783</td>
<td>45 299</td>
<td>76 470</td>
<td>9 537</td>
<td>19 850</td>
<td>-10 313</td>
</tr>
<tr>
<td>Broadland</td>
<td>86 322</td>
<td>39 230</td>
<td>67 588</td>
<td>14 789</td>
<td>33 523</td>
<td>-18 734</td>
</tr>
<tr>
<td>Norwich</td>
<td>89 832</td>
<td>92 558</td>
<td>128 784</td>
<td>53 752</td>
<td>14 789</td>
<td>38 952</td>
</tr>
<tr>
<td>South Norfolk</td>
<td>79 883</td>
<td>39 898</td>
<td>67 155</td>
<td>13 885</td>
<td>26 613</td>
<td>-12 728</td>
</tr>
<tr>
<td></td>
<td>575 464</td>
<td>346 985</td>
<td>563 449</td>
<td>114 977</td>
<td>126 992</td>
<td>-12 015</td>
</tr>
</tbody>
</table>

Looking at Norfolk we see that in-commuting to the districts in Norfolk County was 115 000 daily, which make up 230 000 trips. Similarly out-commuting to the districts in Norfolk County was 125 000 daily, which make up 250 000 trips. The total commuting in Norfolk was 480 000 trips daily. It is estimated that if the trend from 1991 to 2001 has continued, then it was close to 500 000 trips in 2005, which will further increase with 25 000-40 000 trips until 2010. If we imagine that the length of the average trip is 12 km and 250 working days, then 1.44 billion personkilometer is produced every year. If 90% of these trips are done in cars with occupation on average 1.2 persons, then the vehicle km traveled for commuters in Norfolk is yearly: 1080 million VKT. This is a huge number of vehicle kilometers traveled every year and we know it is on the increase. In an environmentally sustainable transport perspective commuting represents an enormous challenge for Norfolk and Norwich.

6.2.4 Mode split in Norwich

As a follow up of the Buchanan report, a major transportation study was done in the late sixties. This became the basis for the structure reports produced in the mid seventies. The next set of data on modal split in the Norwich area is the national census in 1991. This was followed up in the next census from 2001.
The new Local Transport Plan system that was introduced in 2000, required the local authority to monitor progress on key indicators, one of these was modal split. In the Norwich area a consultant who used telephone interviews as method did this. The number of interviews was just above one thousand. The figures from the telephone interviews are therefore not directly comparable with the more reliable census data. An overview of the modal split data for the work journeys is shown in the following table.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>35</td>
<td>71</td>
<td>72</td>
<td>61</td>
<td>62</td>
</tr>
<tr>
<td>Public Transport</td>
<td>23</td>
<td>9</td>
<td>12</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Walking</td>
<td>19</td>
<td>13</td>
<td>10</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Cycling</td>
<td>17</td>
<td>7</td>
<td>6</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>MC</td>
<td>6</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Work at home</td>
<td>-</td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 6-4 Proportion of journeys to work by employees in the Norwich Area

The sources for the data in the table are:
- 1991 Census data
- 2001 Census data, modified by author
- 2000/01 NATS mode share, LTP monitoring data
- 2003/04 NATS mode share, LTP monitoring data

The table shows that the well-known general trends of increasing car use and reduction in soft modes has also been the case in Norwich up to the new millennium. The two last columns are data from the local transport plan (LTP) monitoring. The method used and the geographical area covered makes straight comparison with earlier data skewed.

The long-term path in Norwich seems to be in line with the general picture in UK with increasing car use and more and more severe congestion. The car mode has about 70 per cent of all travel, while the other three modes are about 10 per cent or lower as shown in the following figure of work journeys 1967, 1991 and 2001.

![Figure 6-3 MS journey to work, NATS 1967, census data 1991 and 2001](image-url)
In the next figure the development for each mode and all trips are shown. The difference between the census data and the local monitoring data collected after 2000 is striking. The decline in car use and the strong growth in bike use from 1991 to 2000/2003 is probably caused by the way the data was collected and does not fit readily with data from other sources. More data is needed to verify if there is a shift in the long-term trend, for example nearly doubling in the number of cyclists from 1991 to 2003, or the difference is caused by the methods used. There might also be that data is presented selectively to serve particular goals.

![Figure 6-4 The long-term development per mode in Norwich](image)

The next figure shows data from the monitoring of the LTP progress in Norwich. Car use has increased, public transport use is constant and cycling increases. The shift shown in these data is from walking to other modes. One explanation of this phenomenon can be that the average journey distance increases (which it does according to national travel surveys), which will exclude the walk mode for some of the trips because of the distance length. These trips are then either lost, or transferred to public transport, cars or bikes. It will be interesting to see from the coming surveys, if this is actual trend in Norwich or just variation within the margins of error in the survey.

![Figure 6-5 MS Norwich LTP – monitor data](image)
6.2.5 Government and Governance in England.

In this section the rapid and dynamic change over the last ten years in Government and Governance in England is described. During the work with the Norwich Case Study I have had to rework my understanding several times because the changes in institutions and organizations have been very great over the last years and was still ongoing. And the changes seem not to stop!

6.2.5.1 Blair’s transport policy “The New Realism”.

New Public Management as part of the new liberalism ideology can be defined as: reform of public sector based on deregulation, privatization, cost reductions and better efficiency in the 1980s, emphasis on indirect management in the nineties and the dismantling of the public sector from then on. New Public Management has since put weight on partnerships and contracts or agreements between partners as the means of managing public sector involvement in development. Partnerships, both vertical and horizontal, seem to flourish. The public authorities no longer have “the power” but rely more and more on partnerships with many other stakeholders. It seems that what Patsy Healey termed “The communicative turn” has arrived (Healey 1997).

Congestion, poor public transport, a concern for climate shift together with “no” money for transport infrastructure formed the debate in Britain in the early nineties. Goodwin et al published Transport: The New Realism in 1991 advocating the need to decouple growth in transport work from GDP growth (Goodwin 1991). These ideas were later followed up in the SACTRA report 1994. The Royal Commission on Environmental Pollution published the following year the report Transport and the Environment, a very thorough and broad study recommending substantial changes in transport policy. The report concludes in chapter nine that Land Use and Transport planning is an important tool: A) because of the very long term effects (several decades), hence an integrated land use and transport planning is needed. B) because of the dynamic short-term effects caused by the new developments at junctions and along corridors. “We firmly believe that taking proper account of the interactions between land use and transport is crucial if essential access is to be available within the framework of an environmentally sustainable transport system”. (1995:159)

Under the influence of New Public Management ideas a new set of procedures for LU&T planning was established. Vigar gives the following definition of the New Realism (Vigar 2002:67):

- Improvement in the scale and quality of Public Transport provision
- Traffic calming
- Enhanced provision for cyclists and pedestrians
- Advanced traffic management, including route guidance, to maximize the efficiency of the existing network
- Road pricing with hypothecation of revenue, to realign charging to the point of use, and provide capital for implementing the other elements

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302 Knutsen and Boge (2004)
• A greater emphasis on relationships with land use planning system as a means of tackling transport demand through focusing attention on the spatial relationships of population, economic activity and services
• Little or no overall increase in road network capacity with much more limited road construction, e.g. to link residential and industrial areas, to bypass towns and villages or to contribute to regeneration objectives, and with a careful eye on whether such construction would be likely to lead to significant more traffic

The Blair Government’s 1998 White Paper *A New Deal for Transport: Better for Everyone* followed up many of the recommendations from these reports and brought a significant shift in Government policy in Britain. This document was the next ten years followed up with a lot of White Papers, Planning Policy Guidelines and legislation. Some of the most important land use and transport policy papers from Blair’s Government were:


A selection of some of the documents and new organization from this period, which seriously put environment on the national agenda, are commented shortly below.

The White Paper *A New Deal for Transport: Better for Everyone* (DETR 1998) did set a completely new course for the transport policy. This was followed by *Transport 2010. The Ten Year Plan* (DETR 2000), *The Road Traffic Reduction Act* and *The Transport Act 2000*. The Government also produced an updated PPG303 13 Transport and guidance on *Regional Transport Strategies* and *Local Transport Plans*. New partnerships were set up as the Commission for Integrated Transport, the Motorists’ Forum and the Road Haulage Forum. Partnership is a key in Blair’s policy “The New Realism”, but the partnership with the inhabitants of Norwich city is seriously lacking. Norfolk County Council may do what is thought to be best for Norfolk County, but that might not be in accordance with the interests of the different population groups in the urban area of Norwich. I will return to this later.

The overall vision was to “safeguard the environment and to develop an integrated policy to tackle the problems of congestion and pollution” according to Hull, who points out two major strands to this policy: Firstly, major investment by central government to tackle the under-investment in both strategic road and rail services which is vital to the country’s economic prosperity. Secondly, local authority action to reduce car dependency through combination of car restraint, improvements in the alternatives to the car such as integrated public transport systems and soft policies as better land use planning (Hull 2003). The ambiguity or contradiction between investment in the infrastructure on the one hand, and the reduction of car use may cause problems for local authorities in their planning. It certainly goes to the heart of the sustainable transport debate, and is prominent in the Norwich case study.

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303 Planning Policy Guidelines are used to inform on Government policies in detail.
The Road Traffic Reduction Act put reduced car traffic on the agenda: The Road Traffic Reduction Act obliges each local traffic authority to produce a report containing an assessment of existing levels of local road traffic and a forecast of expected growth in those levels. It should also contain targets for reducing the level of local road traffic in their area or its rate of growth. (DETR, 2000, pp 74) This act was one of the first targeting traffic reduction strategies. It also demanded that local authorities should produce knowledge about local traffic, which is long overdue since factual data about traffic is not as a rule collected and monitored. But the act does not specifically demand the collection of data on public transport, walking and cycling. There is also an obvious tension between local targets set in discussion and partnership with local stakeholders, and the national aims in Planning Policy Guidances, etc.  

The Transport Act 2000 was primarily an investment program, but gave the local authority powers to use the LTP to introduce road-user charging and workplace levy schemes, it also opened up to use the revenues on transport related projects.

Local Transport Plans (LTP) were introduced in 2000 as the key planning tool to adapt and implement the national goals at the local level. The LTP, covering a period of five years, puts emphasis on local collaboration, and it must be sent to the Government for approval. An important part of the LTP was that it was the vehicle to be used for bidding to attain Government funding. Major schemes over £ 5 million had to be justified both in the LTP and separately with own environment reports etc. The LTP system should be monitored and reported yearly on achievements in annual reports. The annual review of the LTP progress, the bidding process and meetings with Government officials are very important in developing and changing the LTP from year to year. In the “selling” of schemes - presentation, salesmanship and wrapping - do make a difference, so can key persons do. I will come back to this point later.

The Commission for Integrated Transport (CfIT) was set up as an independent organization to review, monitor and advice on Government policy. In a report the Commission asks: Integrating Transport Delivery – Is it Working Across Government Departments? The answer it gives puts Integrated Transport within an overall growth framework: “Whilst other objectives will remain important to the overall objectives of any future strategic transport authority, congestion management and access to jobs and services should be the overriding objectives around which the structure of any future organization should be primarily based.” This statement clearly puts traffic flow and access to jobs and services as the top of the goals hierarchy, which is in line with other reports like the Eddington and Stern reports. Congestion management should include all strategic highways, traffic and transport powers associated with:

- Managing and maintaining the road network and keeping traffic moving (including traffic management, traffic signals and parking responsibilities)
- Managing demand and reducing the need for travel (including roadspace prioritization and highway development control and land use planning powers)

The National Transport Plan, Norway, a similar conflict is solved by the Government setting low growth rates, independent of local variations (P196 Forslag til NTP 2006-2015, Mai 2003. jfr St. meld. Nr. 24 (2003-2004)).

CfIT November 2006

The Eddington and Stern reports both deals with economic growth, transport and sustainability.
• Achieving behavioral change towards sustainable travel modes (including bus, heavy and light rail, cycling & walking development, school and workplace travel planning etc)
• Planning, prioritizing and delivering major transport infrastructure (including both road and public transport projects)
• The emerging approach to road pricing through Transport Innovation Fund (TIF). This inevitably requires a more unified approach in order to develop coherent citywide demand management and sustainable transport investment package.

6.2.5.2 The regional level.
The Government started a major reshuffle of local authority borders, functions and roles in the new millennium. By creating new regions, which were thought to have elected assemblies, powers, were to be devolved from Central Government. However, the people in the North East Region rejected in a referendum in 2004 to set up an elected assembly, and the future for elected assemblies in the regions is not clear. The government was keen for regions to play a wider and more democratic role in governance. Current regional government for the East of England, like other regions, involves Regional Assemblies, Government Offices for the Regions (Government Office for the East of England – GOEE – in Norfolk's case) and Regional Development Agencies (RDAs).

The English regions are large areas, for the most part, made up of several counties. Norfolk was part of the East Anglia region, which also included Suffolk and Cambridgeshire. In April 2001 East Anglia merged with 3 formerly southeastern counties (Hertfordshire, Essex and Bedfordshire) to form the East of England Region The East of England Regional Assembly (EERA) is a voluntary regional chamber comprised of two thirds councilors from local authorities in the region and one-third from non-local authority representatives from other interest groups. Its purpose is to promote the economic, social and environmental well being of the Region in accordance with the needs of sustainable development in the interests of all those who live and work in the Region through a partnership of elected representatives and representatives of other regional interests. The East of England Development Agency (EEDA) is the RDA for the East of England.

Under the new Planning Act the County Council is required to provide the region with strategic planning policy advice on all regional and sub-regional policy matters with relation to the county, e.g. Norfolk. Where will Norwich city end up in this system? It remains to be seen if it will have its own voice or continue to be spoken for by the County?

6.2.5.3 East England Region
The East England Region is one of the largest of the English regions at just over 19 000 square kilometers. It extends from the fringes of London in the south to the North Norfolk coast. Nearly 5½ million people live in the region and it incorporates six counties: Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk. The unitary local authorities of Luton, Peterborough, Southend and Thurrock are also within the region. Note that Norwich is not a unitary local authority, but a District (see discussion ch. 6.3.7).

There are 107 members of the East of England Regional Assembly in 2004/5 consisting of 75 relevant authority members and 32 Community Stakeholder members. Each year, the 54 local
authorities within the East of England nominate one councilor to the Regional Assembly. Political parties are then invited to nominate councilors from any part of the region to ensure that the membership of the Regional Assembly reflects the political balance of the region. Finally, stakeholder organizations are invited to nominate representatives to provide a minimum of 30% of the overall membership of the Assembly.

**East England Region**


One of the most important tasks for the region is the allocation of new housing to be built within the region, after the Government has allocated a specific number to the region. Draft Regional Planning Guidance (RPG14) recommends 72,000 houses in Norfolk by 2021. The Norwich area “gets” 33,000 of these new houses. Another task is to coordinate the national transport infrastructure planning within and through the region. Earlier the county was responsible both for LU&T planning, but now the regions are responsible for the Land Use Structure planning while the detailed transport planning is still at county level if not with an unitary. The Regions are also responsible for transport strategy. Regional Development Agencies and Regional Chambers have been appointed in each region to deal with economic
strategy and development priorities. Regional Transport Strategies (RTS) are being developed and shall provide:

- Regional priorities for transport investment and management across all modes consistent with other regional objectives
- Strategic guidance on the role and future development of railways, airports, ports and inland waterways in the region, for both passenger and freight, consistent with national policy
- Guidance on measures to increase transport choice, including the better integration of rail and bus services
- Public transport accessibility criteria for major developments
- Regional strategic guidance and co-ordination where necessary on other matters such as car parking standards and road-user charging

One may raise the question of legitimacy of such organizations as an appointed not elected Regional Assembly, but already the Assembly has taken a stand for the region and opposed the Government. A Draft East of England Plan has been made, and the Assembly made the following decision in February 2005:

“The East of England Regional Assembly deplores the Government’s grossly inadequate funding of the transport infrastructure costs associated with the additional 478 000 houses planned for this region between 2001-2021. Bearing in mind that the Assembly’s acceptance of this massive growth was conditional upon adequate government provision of the necessary infrastructure; and mindful of Lord Rooker’s repeated written assurances that growth will not be imposed without the associated infrastructure. This Assembly wishes to make clear that it now regards its endorsement of the draft East of England Plan as suspended, pending a re-examination of the Government’s willingness to support its own aspirations adequately in financial terms.”

The Regional Assembly uses quite strong language, it deplores the Government’s grossly inadequate funding of the transport infrastructure costs associated with the additional 478 000 houses planned for this region between 2001-2021. Such a language is perhaps only possible because the Assembly consists of a large number of stakeholders with loyalty to the region and not a political party? It also represents a more and more complex and fragmented pattern of governance, with new actors, arenas and networks.

In any case it goes straight to the core issues in the region. On the one side is the car driven change in the transport geography of southeast England, which has led to massive congestion and a huge demand for road building. On the other side are the increasing deterioration of the environment, especially the climate, and the gap to the sustainability goals, which keep expanding. In the Norwich area about 30 000 new houses shall be built in the period 2001-2021, and of course also the associated jobs and infrastructure should/ought to be provided. In an urban area with heavy congestion and long travel times an additional 30 000 houses will lead to increasing problems. The Norfolk LTP answers to the Government demands for more sustainable transport, but the Government is not providing effective measures to support such a policy. Neither does the Government put up a minimum funding to develop the transport infrastructure to meet the growth in population and traffic.
During the last years local government has been changed, new roles were created and tasks shifted. Regions were introduced at the level below the national Government. The Regions are posed to be an important instrument in implementing Government policy. Norwich belongs to the East of England Region, which has both a government office (GOEE) and a Regional Assembly. The local officials are well aware of the importance to keep good relations to the regions and central Government, as Vigar found: “Generally speaking local actors paid civil servants at national and regional levels considerable attention, partly because finance was dependent on the “selling” of schemes and packages to civil servants and ministers.” (Vigar 2002:146) Possibly will this reform strengthen the power of Government officials and reduce the influence of local politics. It is certain that the “rules of the game” has changed in UK and it is difficult to see who will be the winners and losers, but looking at the history it may seem that Norwich will continue to be forgotten.

6.2.5.4 Developing Norwich's Economic Strategy and Action Plan

The Government expects areas to develop local strategic partnerships. In Norwich the first Economic Strategy was launched in 1987. Since then, 'Shaping the Future', (the Economic Strategy for Norfolk) and the Regional Economic Strategy have been developed. The Norwich Economic Strategy fulfils two roles, it is:

- a key element of the Norwich Partnership (the Local Strategic Partnership)
- an area building block for 'Shaping the Future' (the Local Economic Partnership)

Key stages in the development of Norwich’s Economic Strategy and Action Plan were:

- production of a Norwich Economic and Labour Market Assessment by Norwich City Council, to create an up-to-date labour market information source, to underpin the development of the new strategy
- the Norwich Economy Round Table was formed. At first it debated the state of the Norwich economy and formulated a consultation process
- extensive written consultation process with approximately 5000 Norwich businesses and other stakeholders. This was supplemented by a consultation program of four receptions hosted by the Lord Mayor for the Business Community (involving approximately 500 business people), four Business Forums and consultations with special interest groups and individual business leaders

The economic strategy developed in partnership with the business community shows that the shift from Government to Governance has gone far in ten years. One can also see the change from formerly when employed “planners” were promoting the strategy and plans, to the active involvement of a larger group of stakeholders – a Quango (quasi autonomous non governmental organization) is formed, both in producing the strategy and not at least implementing it.

These developments do not represent a sustainable transport future for Norwich. The City may be changing attitude towards cars in the city, but Norfolk County is still clinging to the “predict the need for roads” and then “provide the roads” paradigm. Colin Buchanan said this forty years ago: “— if the environment is sacrosanct, and if no major reconstruction can be undertaken, then (car) accessibility must be limited.” The environment in the 1960s was a local environment, today also the global environment has to be included, and then reduced use of the car becomes a central task. The main means to curb car accessibility beside economic
measures like petrol price, etc, is to localize activities with good public transport access and to limit parking.

Norwich has chosen to cater for good car accessibility/parking in the city centre as well as at several P&R sites around the city. The reason for this is to uphold the Top Ten position of UK retail cities. This way of thinking which strengthens the car as the most efficient (sole) mode of transport, is part of the car growth paradigm or the “predict and provide” philosophy, which is contrary to what the "The New Realism” propagates. The path Norwich follows is not sustainable (cars and resources, oil, emissions, sprawl) in the long run, but maybe it is the only path politically possible? The other side of the coin is that the Norfolk and Norwich area may have become so car dependent that without the car, social exclusion threatens as this statement indicates: As the Regional Economic Strategy makes clear, ‘a vibrant regional economy needs excellent strategic and local transport infrastructure’. The Regional Social Strategy identifies access to transport as a major barrier in terms of escaping poverty and social exclusion through work, and this in turn has direct links to health. Citing a research study, it asserts that ‘both individuals and employers increasingly feel that unless someone owns a car, they will not get and keep a job, and that public transport is irrelevant and not designed for those who are working’. (EEDA Integrated Regional Strategy, 2005) The solution to this problem in a sustainability perspective is to improve public transport (network, frequency, fares) to make it available, affordable for all, and useful i.e. covering all the major destinations. It is not a long-term solution to make car transport cheaper and affordable to deprived groups.

The consequences of these changes in tasks, authorities and powers are probably many. Firstly, complex processes are going on at different levels and times. Consensus was sought for in the Land Use and Transport planning processes, but may be “window dressing” and the time period used for talk may lead to missed opportunities. Who gains? Who Loses? There are signs that Norfolk politicians and administrators have learnt to use the LTP process as a vehicle to obtain certain goals, i.e. the Northern Distributor Road. The environmentally sustainability transport goals seem to be used to promote road building as the main solution. An open and transparent planning process would ideally search for alternative solutions instead of promoting only one solution, which the organizational setup, seems to produce.

6.2.5.5 Norwich Area Economic Study

Norwich Area Economic Study from 1987 listed seven major developments to revitalize the city over the following 12 years:

1. A47 Southern Bypass
2. District General Hospital
3. Castle Mall Shopping Development
4. Office construction for Norwich Union with redevelopment of the Bus Station
5. Development of Norwich Riverside for housing, offices, shopping and a pool
6. Completion (possibly) of the Inner Ring Road between Queens Rd and Riverside Rd
7. Development of Lotus Cars with an increase of 800 in workforce (outside city border)

By 2005 all are realized except for the completion of the IRR, which was stopped in 1993. All of these items have major LU&T consequences depending upon the planning policy and

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307 Peter Townroe 1987 cited in Meeres 1998
planning decisions. The common feature is the car orientated planning concept they build upon. Car accessibility and ample parking is a key feature in all. Even the Bus Station Development with its futuristic design, has the required number of parking places, although the principles in PPG 13 advise the opposite.

6.2.5.6 Norwich’s Economic Strategy

The focus on solutions for the car continues in the new millennium. The strategic Actions, Targets and Output/Outcome listed under the heading: Develop sustainable transport infrastructure (including parking) are shown in the following table.

<table>
<thead>
<tr>
<th>Action</th>
<th>Target</th>
<th>Output/outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase parking provision through construction of Chapelfield car park</td>
<td>Chapelfield car park opened Sept 2005 with 1000+ spaces – 50 000 sq meter prime retail space</td>
<td>Successfully completed</td>
</tr>
<tr>
<td>Increase parking provision through completion of St Andrew’s car park</td>
<td>St Andrew’s car park opened in July 2005 with 1000 spaces</td>
<td>Successfully completed</td>
</tr>
<tr>
<td>Improve sustainable transport and access to employment by providing a new orbital bus service to link residential areas with peripheral employment centres</td>
<td>Service in place 2005</td>
<td>Successfully completed</td>
</tr>
<tr>
<td>Reduce road traffic and support local businesses</td>
<td>At least 3 large businesses review their freight logistics</td>
<td>Not yet achieved</td>
</tr>
</tbody>
</table>

There were five tasks in the strategy, three of them successfully completed. Two parking houses were opened in 2005, each with 1000 plus spaces. The third was a new orbital bus service to link residential areas with peripheral employment centers, which started late 2005. The EU project SMILE started in 2006 trials with alternative motor vehicle fuels. The only action not yet achieved was “reduce road traffic”. It seems that the pattern repeats itself. Reduction of car traffic is there as an aim and action, but not achieved. On the other side 2000 extra parking spaces were built in the centre of Norwich and presented under the heading Develop sustainable transport infrastructure. These two parking houses will generate an extra 16 000-20 000 car trips daily, but still presented under the sustainable transport slogan.

6.2.6 The situation, as seen by a senior politician

I have included a lot from the interview with Adrian Gunson, conservative, leader of Transport committee, Norfolk County Council, because it illustrates many of the complex problems within politics and public administration in Norfolk and Norwich and also how different the perspectives are at different levels, not only in England, but also in Denmark and Norway. There are problems that seem “impossible” to solve in our democracies, also called “wicked”.

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309 See Rittel and Webber “Dilemmas in General Planning Theory”. Let me take one example from Norway. A public commission (NOU Eie og bruk av privatbil) advised in the seventies that it should cost less to own a car and more to use the car. Absolutely everybody of all political shades agreed, but after 30 years the system is unchanged!
Jobs, housing and transport are the most important issues.

I think the major land use and transport challenges for Norfolk arise in the first sentence from the growth in the population in the county. The government policy for 2021 is that we should have 73,000 more houses in Norfolk. It puts a big strain on communications, and its at least a problem of employment because in Norfolk, we need job led growth, because the natural growth in Norfolk is not job led, its retirement led. So one of our main issues revolves around the location of housing, the provision of transport, and the attraction of jobs for the people who come to Norfolk.

**Congestion and road capacity is important.**

One of the subsidiary issues is that there is congestion in the Norwich area, partly because of the fact that the growth of population is to the North of Norwich, all the suburbs are for the North, pretty well, and particularly the lack of a Northern bypass, is one of the main subsidiary problems. The roads aren’t good enough on the edge of Norwich, they’re rural roads, and the road through the centre is congested. So its communications allied to this increasing population, because we got congestion with the population we got already, we have more houses, we’ll get more congestion, unless we get infrastructure around the Northern distributor.

**Only the car fits the criss-cross travel demand.**

So people have to travel to the towns to work, that’s the point I’m getting at. So there’s more communication, better roads are needed, in order to get to the town to do your work. People don’t just work in the nearest town. What I’m getting at is the jobs, people will have to travel to the jobs, and have to use the car.

**To steer people’s home locations is difficult.**

We are trying to encourage the growth in market towns, because with that sort of size the county can provide, can make sure they got a high school, for the children, at least one primary school, they’ll have a library, a fire station, they’ll always have doctors, surgery, and a bank, so you can get those facilities into that sort of town, therefore, if you got those facilities, you expand. It’s easier to get people to build houses than to get people to build factories.

**Both commuting and home-working are increasing.**

We do have a number of people now who work on their own from their houses using internet, and computer, you know, or they work two or three days a week from their house, they travel to London three days a week or something, we have that. We have people commuting to Cambridge.

**Local employment is needed.**

The danger of Norfolk being a dormitory for people: People coming and living here but working elsewhere. Quite many people work in London. What we would like is more locally generated employment. Businesses is getting bigger and bigger, and bigger businesses tend to, to want to have a presence in the capital city, London, you see. A lot of our businesses, have actually been taking over, they actually got a lot of jobs here now, but there’s, there’s not a head office anymore, point is, what’s left in Norwich is a small subsidiary now.

**Accessibility is the problem, not land for businesses.**

First of all, the availability of land and access, we’ve got a Business park and we’ve got a Science park next to the university. Now that Science park, we’re trying to get a better road access, because it’s not far from the southern bypass. So the land is available, we do our best at the county to get the accesses, it does depend on business being attracted to Norfolk, the land might be available, we fight hard to get good communications, to London. And again we tend to suffer, you see.

**Transport infrastructure must be improved.**

We press for railways, good railways, and the A47, the road to Kings Lynn you see, which is not dualed, its I think that about a quarter is dualed. Well that means you see, that it can make us uncompetitive in Norfolk. This government is against roads, that mean that they ration money for roads. And we lose out on roads, we’ve always lost out on roads, because of our remoteness. We don’t want motorways in Norfolk, we don’t want Norfolk to be like, say Essex, or Middlesex. All we want is to have job opportunities and reasonable communications, respecting the heritage and countryside of Norfolk, because we want people to still come here and want to visit, for tourists and for nature and everything.

**Funding of transport infrastructure is uncertain and unpredictable.**

There’s a lot of uncertainty in the bidding system. I mean, its, we battle, and we argue, and we fight and all the rest, and we get the members of parliament to support us, but has a long history of Norfolk being defeated, worse than Suffolk, worse than Suffolk, our next door county, worse than Cambridge on the other side.

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310 This policy was actively pursued in the nineties, without big success according to interview with planner Allison McErlane
It's very difficult to get much change, every road improvement we've had, we've had to fight for it, even A47 bypass.

The local transport plan, this year, there's one element of it, called integrated transport, where previously we had 13 million a year, this year we've got nine and a half million. Now that integrated transport pays for parking ride, the bus parking ride, it pays for road safety schemes, for new footways, pavements, for the thirty mile an hour speed limit, new thirty mile an hour speed limit, congestion crossings, pelicans, zebra crossings. We came out as the best, the fourth best county on planning and transportation in England, the fourth best, and yet we got no reward for it.

Lack of integrated and joined up policies.

There is not a integrated approach and you see, you could get an integrated approach if the local authorities had more power, because then the responsibility would be in one place, and if they could raise what money they wanted, they'd have to operate within the law of course, but what is happening is that the government feeds the counties as a branch of government, as an agency. Which means we have the worst of all worlds, because if you're an agency and you're run totally by government, government must pay total responsibility for what you do and what money they give you. But we're in this sort of halfway house where we, where we get responsibility but government decides what we do.

This description of the important land use and transport issues and challenges made by a senior politician in Norfolk, are very similar to the description coming from senior politicians in Aalborg and Kristiansand. It seems that the three cities are facing similar type of challenges regarding jobs, housing and transport, albeit to different degrees. They also experience the same type of frustration of unpredictable funding for roads and deficient public transport services. The car is taken for granted by the politicians in charge in the three cities and car reduction strategies are hence not top priority. How do politicians and planners deal with these often conflicting challenges and unpredictable opportunities? That question crops up several times throughout this research and is commented on in all the four cases.

6.3 Land use and transportation planning

6.3.1 The Norwich Inner Ring Road: a brief history 1945-1994

The Norwich Plan made just after the Second World War introduced an outer and an inner ring road around the historic core of Norwich. Also Traffic in Towns showed the Inner Ring Road (IRR) and a huge diamond motorway junction at the Thorpe railway station. In 1967 a major traffic survey was done: the Norwich Area Transport Strategy (NATS). This first NATS study is documented in the 1974 and 1975 plans. In essence they keep the road network structure with the two ring roads and prioritize on what road links to provide new capacity to cope with the strong traffic growth. For years the missing link on the inner ring road (IRR) phase 3, was high on the priority list. However, the funds needed to implement the plan came far slower than anticipated. When IRR then was put forward for planning decision in the middle of the eighties, the plan met an aggressive grass root movement.

6.3.1.1 Norwich Road Action Group – NRAG

NRAG was decisive in stopping the IRR. One of the key persons in NRAG was Denise Carlo, here is how she describes the start of the action group: “The writing was on the wall for the third phase of the Norwich Inner Relief Road back in 1988. Norfolk County Council, defensive and bunker-minded, had failed to see the signs: public disillusionment over urban road-building and government alarm over global warming. Community groups and
individuals joined forces at the inaugural meeting of the NRAG in 1988. We believed that the road could be defeated and we succeeded."

After meeting a cold shoulder from the Norfolk County, NRAG switched target: “We concentrated our efforts on the next tier of local government – Norwich City Council. If the City could be persuaded to oppose the road they would act as a lever on the County. For four years, we cajoled City officers and councilors, identifying the road’s supporters, our anti-road allies and the wavers.” In the end the City Planning Committee turned around and opposed the published route. After that support also came from English Heritage, the Royal Fine Art Commission, the Broads Authority and the Chamber of Commerce who went against the IRR proposal. The IRR went to a Public Inquiry where it lost. In the Public Inquiry Report the inspector described the IRR as “temporary and costly answer” and summing up he concluded that traffic restraint appears “inevitable and desirable”. The Minister subsequently upheld the Inspector’s conclusions.

6.3.1.2 Case study of the Inner Ring Road in Norwich, a plan abolished in 1993.

In a study of the IRR Greenaway and Graham questions the claim that in the nineties “a new view has emerged that new roads serve to generate extra traffic, cause unacceptable environmental damage and greatly contribute to pollution and global warming.” This claim of a paradigm shift at the national level, does not fit with the complexity of decision making at the local level, is the thesis they state in the case study of the IRR (Greenaway et al, 2000).

The “rules of the game” or the “structure” may put local politicians in a fix: “City politicians and planners were desperate to attract transport investment of any kind to Norwich which had been cold shouldered for so long by the Conservative-dominated county; even if the Inner Ring Road was not ideal it was linked to other NATS2 investments.” (Greenaway 2000:828) The leadership can be very important in complex planning cases, the then County Surveyor denied that he was terribly ambitious who thrived on building roads, and would railroad his way through, but saying “that you very often can’t get to the stage of completion without being fairly strong minded.” (Greenaway2000:825) A parallel to this may be found nearly twenty years later in the way the Northern Distributor Road (NDR) in a very short time has become embedded in the LTP 2006-2011, even before the public consultation had been done. Key persons at the county level drive a road building policy that may be looked at as contrary to the Government aims and policy (see ch 6.3.5).

Several of the persons interviewed in 2004, talked of the strained relations between the county and the city, caused by the IRR case. Most were saying that the matter was forgotten, but others thought it might still be of importance in the relationship between Norfolk and Norwich. In the NDR case (see ch 6.3.6) there is no doubt that Adrian Gunson, the committee chair both has a strong will and a keen interest in realizing the NDR project. The initiative to study the NDR came from Norfolk without the usual assessments in the land use plans, about the same time the Green Party (members were active against IRR and the party opposes NDR) won 5 seats in Norwich City Council.
6.3.2 Land Use and Transport plans

In this section follows first a list of the land use and transport plans for Norfolk and Norwich. Thereafter the most important land use plans are discussed, following a discussion of the two local transport plans (LTP).

6.3.2.1 List of Land Use and Transport plans

Land use plans – structure plans
Norfolk County was responsible for the following plans:

- **Norfolk Structure Plan Replacement plan for 1981-1996** was approved 1988.

After 2000, what is a Structure Plan and why have one? The Structure Plan provides the strategic land use, transport and environmental planning policy framework for local planning and development control and the long-term planning guidance to statutory and other agencies in the preparation of their own plans and programs. Following the Reform to the Planning System, the Regional Spatial Strategy (RSS) will replace the Norfolk Structure Plan when the plan is formally adopted. The Norfolk Structure Plan from 1999 has basically been updated and used as input to the Draft Regional Spatial Strategy (RSS) and East of England Plan.

Norwich City was responsible for the following plans:
- City of Norwich. **Norwich Local plan. PLANNING FOR THE 1990s.** Adopted 1995.
- City of Norwich. **Replacement Local Plan for the City of Norwich.** Adopted 2002.

Transport strategy and plans
Norfolk County was responsible for the following plans:
- Norwich Area Transportation Study, October 1975. **A Transportation Strategy for 1990. basis for the IRR.**

**LTP - Local Transport Plan** 2001/02-2005/06
Annual Reports reporting on LTP progress.

**LTP - Local Transport Plan** 2006-2011

6.3.2.2 Norwich Local plan 1995.
The Norwich City Local Plan **PLANNING FOR THE 1990s, which was adopted in December 1995**, is the local authority development plan or physical plan used to guide land use and building permits in Norwich District. The word sustainable is not used in the Overall Aims nor in the Strategic Objectives. However, under the chapter on managing change it is stated: *For this approach to be successful, it needs to be part of a coordinated strategy for*
sustainable development with the adjoining Districts Councils. This is now in place through policy N2 of the approved Norfolk Structure Plan. The local plan states the need for a coordinated strategy, but does not go into the possibility of conflicting aims between for example the three NATS Districts.

I have chosen to highlight two issues in the Local Plan. Firstly how the plan looks at the problems ahead and secondly how the reaction to the IRR public inquiry is shown in the plan. First, some key facts and issues from Chapter 9 Transport: 500 000 vehicle trips are made in Norwich every weekday, 42% increase in traffic flows is projected by 2006, some 40 000 bus trips are made daily, 3 Park and Ride (P&R) sites are operating (in 1995), Bus Gates provide bus priority on two routes into the City, peak hour traffic speeds are only marginally faster than those in central London, over 16 000 cars park in the centre. Second, as Highway Authority, Norfolk County Council is responsible for traffic and transportation issues across the County. While it delegates traffic management functions to the City Council, it maintains powers and makes decisions on major schemes and road investment. The County Council had reviewed its Transportation Strategy for the Norwich Area. However, the decision by the Secretaries of State in 1993 to refuse permission for the construction of the Inner Ring Road Phase 3, a central element of the Norwich Area Transportation Strategy (NATS), meant that a further review of that strategy was required. The major challenge in the 1995 Local plan is the traffic forecast of 42% growth in ten-fifteen years, which will increase congestion, emissions and accidents if not measures are taken. Traditionally this has meant to build more road capacity. Growth was predicted and capacity provided, but this paradigm could no longer be followed in Norwich according to the recent IRR inquiry.

Already in the nineties Park and Ride and Bus Gates are parts of the transport policy, but these measures can’t solve the major challenge: How will the conflict between the rapid increase in traffic and by that demand for capacity on the one side, and the LU&T strategy and policy on the other side be solved? This conflict was not solved in the 1995 Local plan and will also be looked at in the later plans and strategies.

6.3.2.3 Norfolk Structure Plan 1999

The plan provides: the first opportunity to integrate “sustainable development” principles into the structure plan (page 8). However, even if the plan flags sustainability it is not able to choose between a sustainable course and a road-building course. Some policy statements from the Norfolk Structure Plan, 1999 shows this dilemma:

The transport strategy is to improve accessibility in the Norwich Policy Area by:

1. improving facilities for walking, cycling and public transport
2. improving access to support the economic health of the policy Area, and
3. accommodating growth in the number of trips by means other than the car

These aims points to the need to improve facilities for soft modes, but the public transport services are not mentioned. This is because the public transport services are market regulated and only indirectly influenced through agreements between the bus companies and public authorities. The car access is looked at as the basis for economic health or growth. The problem with the growing number of cars and increasing car traffic shall “not be solved”, but instead the growth in the number of trips shall be “accommodated”. Major road projects will not be built it is stated in the 1999 plan: The strategy does not envisage any significant increase in road capacity (P84).
The pedestrian and cyclist policy is positive, but non-committing:

Safe, direct and convenient networks of routes for cyclists and pedestrians will be developed, including:

1. Improvements to pedestrian and cycle priorities at junctions, and other locations that pose particular problems
2. the development of the Hall Road and former railway lines as traffic-free, high quality pedestrian/cyclist routes
3. the development of a network of safe routes to schools, and
4. provision for pedestrian and cycle access and facilities at transport interchanges

The County realizes that public transport is outside their scope: since the deregulation of bus services in 1986, the influence local authorities can exert on enhanced services is limited to on-street bus priorities to reduce bus journey times and improve reliability (page 85). But still the county sets aims and tasks to be done both within and outside their policy means: The efficiency and attractiveness of public transport services will be improved by:

1. bus priority measures on defined bus corridors
2. a replacement bus station for Norwich and the upgrading of public transport interchanges at Castle Meadow, St Stephan’s Street and Thorpe Railway Station/Riverside
3. improvements to public transport information
4. improving the quality of services through bus quality partnerships
5. working with the Rail industry to improve rail services into Norwich
6. securing new rail halts as part of major developments, where appropriate, and
7. the provision of facilities for coaches

The parking policy is quite ambitious:
The parking policy for the Norwich Policy Area will be based on the following elements:

1. no new long-stay parking in the city centre
2. long-stay parking to be catered for by a bus-based park and ride network at the following locations (7 mentioned). Associated bus priority measures will be introduced on the routes to the city centre
3. all publicly available car parking within the city centre to favor short-stay users, residents and people with disabilities
4. controlled parking zones in the area between the city centre and the outer ring road to protect residential amenity and support central area parking policies
5. parking provision at new development in the city centre limited to a) operational use, and b) visitor/customer needs where these replace existing provision
6. parking standards for new development in the Norwich area outside the city centre will be applied to reflect the development’s use, location and accessibility by non-car modes. Where alternatives to the car exist, developers will be required to provide reduced parking levels depending on the level of accessibility by non-car modes. In these circumstances developers will be expected to assist in meeting the remaining travel demand through the support of alternatives, principally through commuted payments, and where appropriate to fund measures to prevent on-street parking

The Norfolk Structure Plan 1999 (which was in force until 2007) sees the car as the main transport mode and the basis for economic growth. Alternative modes will be developed, but there is not any real wish of facilitating a mode shift to more sustainable modes. Sustainable development was introduced in the previous structure plan, but sustainable transport is not a
stated aim in the 1999 plan. The plan does not envisage any significant increase in road capacity, which of course had to be said only a few years after the Government said no to the IRR in the public inquiry! How the county will address the major capacity deficiency in the Norwich road network is not answered. However, only two years later in 2001 the County starts planning a major road project, the North Norwich Distributor Road.

The deregulation and privatization of public transport was an intended Conservative Party policy, and the Conservative County Council leave it to the market forces to improve public transport services. It is up the market’s “invisible hand” to provide more effective and efficient services. The bus priority goals are positive seen from a sustainable transport perspective. The parking policy with the massive effort on Park and Ride is part of a strategy of pulling customers from a vast area in cars into Norwich, hardly sustainable in the long-term with the amount of vehicle kilometers and transport work produced. Also with new developments in the city centre, one may ask if the policy in practice will mean a growth in the number of parking places in the centre?

6.3.3 Replacement Local Plan for the City of Norwich 2002

The City of Norwich adopted the Replacement Local Plan for the City of Norwich in July 2002. It consists of a main report and a separate report with Appendices & Proposals Map Extracts. This plan replaces the Local Plan adopted 1995, and marks an enormous shift in focus compared to the Local Plan. The first chapter is called: Strategic Objectives and Sustainability, and the first sentences are: Sustainable development is at the heart of this Local Plan. This reflect the national strategy, set out in “A better quality of life, a strategy for sustainable development” 1999. It is based on four broad objectives:

- Effective protection of the environment
- Prudent use of natural resources
- Social progress which recognizes the needs of everyone, and
- Maintenance of high and stable levels of economic growth and employment

These principles are followed up throughout the plan, as the following examples show: On page 209: “alternative forms of transport need to be made at least as attractive as car for many journeys. Norwich’s compact form provides considerable scope for this modal shift towards sustainable forms of transport to be possible.” If current trends continue, traffic levels in Norwich will increase by around 30% by 2016.

Structure plan policy T1: Para 11.15: “A key element of the strategy is the adoption of a hierarchy of transport modes in which, as a general principle, greatest priority is given to transport modes with the least environment impact.”

The mode hierarchy is:

1. walking
2. cycling
3. public transport
4. taxis
5. essential motor vehicles
6. non-essential motor vehicles”
Partnerships to reduce travel are to be established with the City Centre, Norwich airport, University of East Anglia. The means used are Business Travel Plans, which include parking policy on the business premises, and Employee Travel plans.

The Local Plan states that: *Car free housing will be permitted in locations of high accessibility, provided that---*. Note, people are not encouraged or allowed to build car free housing generally, but certain conditions have to be met, like parking provision nearby.\(^{311}\)

The Local Plan is exemplary as a document showing how vertical coordination and integration of policies can be done, and also the horizontal integration is thought of. The principle of turning the traditional car planned system on its head in the mode hierarchy is an example for other cities who also could give priority to: “walking, cycling and public transport, then taxies, essential motor vehicles and lastly non-essential motor vehicles.” Aalborg in Denmark had a similar mode hierarchy in their plans in the early eighties, but it disappeared after a short time. It will be interesting to see if Norwich manages to build a lasting transport policy based on this mode hierarchy where the environmentally friendly modes are first priority or will it just become an emblem of Norwich having the right attitudes while Norfolk County continue to rule?

### 6.3.4 Local Transport Plans – LTP

It is statutory for all “local transport authorities” to produce a Local Transport Plan – LTP. Norfolk County Council is the transport authority for Norwich District Council and produces the LTP for the county, which of course then contains the conflict dimension between rural and urban areas.

The LTP process is a result of the thought/knowledge that “road capacity in urban areas could not be increased to meet demand forecasts of the late 1980s” (Goodwin cited in Bulkeley, 2003). The LTP replaced the former Transport Policies and Program system, through which local transport planned and funding was allocated. The features of the LTP system are according to Bulkeley the following:

- Five-year plans: greater certainty of funding
- Partly a bidding document, but also a strategic planning document for a local audience
- Consideration of both capital and revenue spending
- Greater local discretion over allocation of resources
- Inclusive approach, involving operators, greater public and local business participation
- Greater emphasis on targets, performance indicators and monitoring in areas not previously covered by packages
- Emphasis on integrated transport solutions to encourage public transport, cycling and walking

The five-year LTP will be funded according to “the quality of the strategies they contain” (DETR, cited from Bulkeley) and how it meets the other Government criteria set out in national guidance. The focus is thus on how strategies tie objectives and measures together to deliver the targets. Major schemes (those with budgets over £5 million) must demonstrate

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\(^{311}\) This clause is probably an anticipation that people will have cars even in car free housing.
their contribution to the LTP, but is funded separately. Continuing funding over the five-year period is determined by the success of the LTP in delivering on the targets and performance indicators set.

The LTP must be followed up with an annual progress report, hence the development must be monitored. This has created a far more thorough basis for assessing congestion, traffic growth and change, and indeed emissions.

### 6.3.4.1 The Norfolk County: NATS Local Transport Plan 2001-2006

The first LTP, which was submitted to Government in 2000, covered the five-year period from April 2001 to March 2006. This LTP was rated fourth best on implementation\(^{312}\): “It has been rated by government as one of the best in the country and the County Council was subsequently made National Centre of Excellence for Local Transport Delivery.” Centers of Excellence are held up as examples of best practice to help other local authorities improve their performance. Norfolk County Council was one of only 16 authorities invited to apply, but as Gunson stated (ch. 6.2.5): “we came out as the best, the fourth best county on planning and transportation in England, the fourth best, and yet we got no reward for it. We were told last year that if we came out well, we’d get a reward, cash reward. We got nothing.”

£ 170 million funding was obtained for LTP 2001-2006.

The following table shows how the Norfolk LTP covers investment and maintenance for the County. The Norwich Area was allocated £ 3,391 million for investment the first year of the LTP 2001-2006. The conflict between investing in the rural areas and small towns or in the major urban area is of course the basis for this allocation, but there is no right or wrong way to do this, only political goals.

<table>
<thead>
<tr>
<th>Scheme type</th>
<th>Year 2001/02</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Norwich Area</strong></td>
<td>3,391</td>
</tr>
<tr>
<td>King’s Lynn</td>
<td>549</td>
</tr>
<tr>
<td>Great Yarmouth</td>
<td>611</td>
</tr>
<tr>
<td>Broads</td>
<td>463</td>
</tr>
<tr>
<td>Rural</td>
<td>3,067</td>
</tr>
<tr>
<td>Norfolk Coast</td>
<td>381</td>
</tr>
<tr>
<td>Countywide schemes</td>
<td>3,756</td>
</tr>
<tr>
<td><strong>Overall Total excl major</strong></td>
<td><strong>12,218</strong></td>
</tr>
<tr>
<td><strong>Maintenance total</strong></td>
<td>19,247</td>
</tr>
<tr>
<td>Sub Total (Integrated Transport &amp; Maintenance)</td>
<td>31,465</td>
</tr>
<tr>
<td><strong>Major schemes</strong></td>
<td>5,696</td>
</tr>
<tr>
<td>Program TOTAL (Including Majors)</td>
<td>37,161</td>
</tr>
</tbody>
</table>

Table 6-5 LTP 2001/2006 investment and maintenance budget

The economic growth and car friendly policy is another point in the LTP investment scheme. Over the five years LTP the sub-post Park and Ride gets £ 7.8 million out of total for Norwich of £ 18.6 million. More than 40% of the funding in the Norwich part of the LTP budget goes there, which hardly can be said to be a sustainable transport policy.

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\(^{312}\) The GO East gave Norfolk County Council the honour after evaluating The fourth LTP Annual Progress Report 2004, because it: “excelled in the delivery of scheme types and in the progress towards core indicators.”
6.3.4.2 LTP, growth and the NDR

20% of Norfolk businesses considered the “lack of communication links /transport infrastructure” to be the principal barrier to growth. This is of particular concern in relation to these areas of Norfolk identified as eligible for funding to improve economic activity. Both the East of England Development Agency’s Regional Economic Strategy (East of England 2010) and Shaping the Future (Public Private Partnership) includes the following strategic top priorities:

- Preferred Route determined for Northern Distributor Road.
- A growing regional airport in Norwich

6.3.4.3 EIP of East of England Draft Plan Regional Spatial Strategy

The Regional Spatial Strategy (RSS) for the East of England underwent an Examination in Public (EIP). It was very important for Norfolk and Norwich to convince the independent panel that the plans and policies are well prepared, coordinated and integrated in the Regional Spatial Strategy, and that the strategy supports the Government’s policies. The EIP process takes many months, and the representatives for the different counties (and cities) are advocates for their plans. The NDR and the major roads A47 and A11 were therefore prominent items in their presentations to the panel, since they are seen as necessary to accommodate the 33,000 houses allocated to the Norwich area, and necessary to create jobs for the people in general and in the new housing in particular. Economic growth and housing were the arguments pushed.

6.3.4.4 Plans are one thing, the allocation of money another!

The Government Office for the East of England (GOEE) decision on the Local Transport Plan cash allocation for the year 2005/2006 was presented in positive terms: “Norfolk will get good funding for road maintenance and rural bus subsidies”. However, in reality there is less than preceding year for core issues in the LTP, which all hit Norwich heavily:

- integrated transport
- park and ride
- road safety schemes
- minor road improvements
- pedestrian facilities
- cycle routes.

The funds coming to Norfolk for transport projects in 2005/6 were as follows (Norfolk web, accessed February 2007): “£19.6m for road maintenance, slightly lower than last year’s £19.8m. £2.5m for rural bus subsidies, once again the highest allocation in the eastern region and an increase of 3.9 per cent on last year’s grant. However, this does not keep pace with inflation in the transport industry, which the County Council will have to meet. £9.7m for integrated transport to spend on a whole range of projects, from road safety schemes and minor road improvements to park and ride, pedestrian facilities and cycle routes. This is £3.5m (27%) less than last year’s allocation.” The County Council did not receive funding to improve access to the Norfolk and Norwich University Hospital.

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313 The EIP Panel Secretariat announced in 2005 the following: The Secretary of State has decided that an Examination in Public (EIP) should be held to debate and test the draft revisions to the Regional Spatial Strategy (RSS) for the East of England.
via a new link road and improvements to the B1108. However, the government was keen to
discuss other ways to improve access.

6.3.4.5 Monitoring of the LTP progress
One of the strengths of the LTP system is the monitoring of progress towards objectives and
targets, and the annual reporting.
NATS First Annual Progress Report on the Local Transport Plan 2001/02-2005/06.
NATS Second Annual Progress Report on the Local Transport Plan 2001/02-2005/06.
NATS Third Annual Progress Report on the Local Transport Plan 2001/02-2005/06.
NATS Fourth Annual Progress Report on the Local Transport Plan 2001/02-2005/06.

In parallel with the monitoring process, the county started to review the strategy to come up
with a new strategy, the NATS4. This process started in 2003 with outlining problems and
challenges, and consultation:
Norfolk County Council, April 2003. Norwich Area Transportation Strategy Review
(NATS4). Transport Related Problems and Issues.
NATS Consultation on the LTP 2006-2011: Have your say on the future of transport

6.3.4.6 Delegation presses Government for better roads
A high-powered delegation from Norfolk and Suffolk met the Minister for Transport in
London March 2006 to press for better transport links to Norfolk. The group also presented a
transport document - ‘Norfolk on the Move’ - prepared by Norfolk’s economic partnership,
Shaping the Future, and a delegation leaflet.

The delegation followed the decision by the Department for Transport to classify trunk roads
as either regionally or nationally important. All of Norfolk’s trunk roads (A11, A47 and A12)
have been classified as regionally important and will therefore be prioritized for funding by a
regional board in competition with other local and regional schemes. The immediate effect of
the decision was that the committed dualling plans for the A11 and A47 were removed from
the national programme. Widespread pressure from the County Council, MPs, local media and
others prompted a Government rethink and the A11 Attleborough bypass is back in the
programme. However, the delegation told the Minister that it is essential the A11 Thetford to
Fiveways and A47 North Burlingham schemes are also reinstated. Council Leader Alison
King said: "Dualling of the A11 and A47 is vital to the economic future of the county and
there is therefore an urgent need for Government to accept its responsibility for improving
Norfolk’s trunk roads. The delegation shows the widespread commitment to drive the county’s
economic progress and widen job prospects.” Chief Executive Tim Byles said: “In March
2000, ministers announced their long-awaited commitment to dual the whole of the A11 by
2008. The announcement in November 2005 was a huge step back for Norfolk.”

6.3.4.7 Cycling and walking policy
The NATS4, which was adopted 2004 aims to: Provide easy access for people to and within
the city, meeting individual needs and maintaining the economic health of Norwich, by:

- Make sure that journeys are sustainable
- Minimize any adverse impact on people's health and enjoyment of the city or upon the
  historic or natural environment
NATS4 will seek to achieve this by:

- Encourage people to get into the city without using cars by improving facilities for walking, cycling and public transport like Park & Ride
- Encouraging alternative forms of transport when looking at new schemes. The order of priority is walking, cycling, public transport, taxis, essential motor vehicles, non-essential motor vehicles
- Tackling accidents and the environmental impacts of traffic
- Supporting the economic health of the Norwich area

It is claimed that NATS has already met the following targets:

- More people are using public transport
- Fewer people are being hurt or killed in road accidents
- Norwich is consistently ranked in the national top ten shopping centers
- Fewer cars are crossing the inner ring road

In the Norwich area, around 10 per cent of residents cycle to work, compared to a national average of three per cent (the 2001 census showed that 6% cycled to work). The County Council wants to build on these high levels and is committed to providing a good quality network of cycle routes in and around Norwich.

### 6.3.4.8 Local Transport Vision 2021

The Norwich Area Transportation Strategy (NATS) looks forward to 2020s and will form the framework for making future decisions about all aspects of transport in the Norwich area. The vision for 2021 is the following: “Norfolk is a well-connected place in which to live, do business and to visit, and is known as a national leader in making the transport system safer and reducing the transport impacts on climate change.” According to the vision document, this means that “people will have better travel and transport choices around Norfolk, but they will be able to get where they need to in a more sustainable way through a wider choice of travel options.” I have difficulty in seeing how wider choice will lead to more sustainable transport. The 2021 Vision must be far stronger linked with goals and measures for it to be more than empty words. It is not enough to make people change because “they will be provided with information they need to raise their awareness of the choices available”. The only instrument the strategy envisages is policy integration: “Norfolk will grow in a way that is more sustainable and that reduces the need to travel, particularly through the integration of spatial, economic and transport policy”. These naïve statements about the future make me wonder where the competent and professional planners in Norfolk have gone? The tension between economic growth and sustainable development is hidden, the trade off between

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315 The County Council adopted the former NATS strategy in 1999 and the revised strategy in October 2004.
different policies and actions apparently is of no interest. The “spin doctors” looks like having replaced the planners in the collaboration and forming of the Vision 2021.

6.3.4.9 Is the LTP an instrument for road building?
Norfolk County Council states on the homepage that the first Local Transport Plan made good progress towards the targets, especially that the program of park and ride sites has contributed to the reduction in traffic growth in Norwich and reduce congestion. I have shown that on an average day only 2500 cars use the 5000 parking places, hence the contribution to traffic reduction has not yet reached far (ch. 6.3.4.4). Another point the Council is satisfied with is the reduction in accidents.

One difficulty in the first Local Transport Plan was that: “it did not have a clear Top-Down relationship between vision, aims and objectives, through targets to the work programme. Many of the objectives were too aspirational and some were not supported by work programs, so it was perhaps not surprising that we did not achieve these objectives”. This acknowledgement comes from the Norfolk County, shortly after the plan got praise and honor for being such an excellent plan for delivery. The major shortcomings of the first LTP was that it failed to meet targets for local air quality, which in fact got worse. Neither did the plan contribute to national targets of carbon dioxide reductions.

The shortcomings of the first LTP point directly to car use and vehicle kilometer traveled. As we have shown several times the basis for the planning in Norfolk County is a car ideology where the talk of shift to alternative modes becomes a necessary ritual because the EU and the Government has set goals for more environmentally sustainable transport. The second LTP has somewhat changed focus to also become a vehicle to obtain investment money for roads from the Government: “The Norwich sub-regional strategy recognizes the Norwich area as a centre where growth will be focused. It recognizes the importance of providing essential infrastructure including a Northern Distributor Road, and improvements to the A11 and A47 trunk roads, needed to accommodate growth and support the development of the Norwich area as a sustainable community.” (page 6) The NDR project is a traditional “predict and provide” project, which is deemed necessary to support the future growth prospects of Norwich. But to fit into the LTP system and the “new realism” the NDR has to be “dressed in environmentally friendly clothes” and carry wide popular and business support to be able to win through and be implemented. So far the County has done an excellent job to do this, but there can be no doubt that the NDR will generate new traffic, the VKT will increase and the CO$_2$ emissions and the local emissions of NO$_x$, etc. will increase, contrary to the aims, goals and objectives. The second LTP shifts focus and concentrates on selling the road projects to the Government. Both the growth argument and sustainable community concept are used to support the overall Norfolk strategy. This strategy also involves the partnership “Shaping the Future” and active lobbying the Government, and it has become necessary to produce a satisfactory Strategic Environment Assessment on the LTP$^{316}$. The process of negotiation and networking has perhaps taken precedence to the plan and the substantive issues?

$^{316}$ Norfolk web: Environmental report, and Provisional Local Transport Plan
6.3.5 Some important projects

Chapelfield Hill, Castle Mall, Riverside, University of East Anglia (UEA) with the research park and Norwich Airport with the Industrial Estate are some of the key drivers for future growth, and also major traffic generators. Other important projects are Bus Station, Westlegate pedestrianisation proposal and St Andrews Car Park. In addition to several thousand parking places built/required for new development in the centre, a total of 5000 parking places have the last years been established on 6 Park and Ride sites. Sufficient parking space to keep Norwich among Britain’s Top Ten Retail cities has been a cornerstone in the practice parking policy.

6.3.5.1 Chapelfield

Norwich’s latest major new retail development Chapelfield opened September 2005 on the site of a former factory and close to the former Norfolk and Norwich Hospital. With 90 stores including 15 cafés and restaurants, and a 1000 space car park, Chapelfield represents a £350 million investment in the City. The opening of Chapelfield has, it is claimed, created up to 2000 extra jobs in the City, in addition to the 800 temporary jobs created in the construction phase. The development contains over 50 000 m$^2$ of retail and restaurant space, 118 flats and more than 1000 parking spaces.\footnote{Norwich City homepage, accessed October 2005.} A rough estimate would say that the parking spaces alone will generate more than 6000 trips per day and 118 flats roughly 400-500 trips per day. The impact of Chapelfield will probably be greater and more noticeable than predicted.

6.3.5.2 St Andrews Car Park

The £8 million St Andrews car park opened in July 2005, and offers shoppers 1084 parking spaces within walking distance to city centre shops. \textit{Over 60 000 motorists have used the new St Andrews car park in the first 13 weeks since its opening and feedback from customers has been really positive}, it is said on the Norwich City homepage.\footnote{Norwich City homepage, accessed October 2005.}

If each space is used 4 times per day, that is 4000 parked cars per day, which generate one trip to and one trip from the parking. In sum on a busy day St Andrews Car Park, which is located close to the City Hall in the centre of Norwich, will generate around 8000 trips.

6.3.5.3 Westlegate

Westlegate is a short street in the centre, which the Norwich City planners wanted to rebuild as a pedestrian street, but the Norfolk County politicians prevented that. From the consultation leaflet for the project one can read: \textit{Westlegate is part of the main shopping area in Norwich city centre. It has a range of shops and forms an important link between different shopping areas. The environment is poor for pedestrians. The pavements are narrow and some parts of the road pedestrians have to be protected by guardrails.}

Further about the intentions it says: \textit{The Councils want conditions for pedestrians using Westlegate to be greatly improved. The street could also be made much more attractive.}

\footnote{Norwich City homepage, accessed October 2005.}
Improving the street could maximize trade for local shops. Keeping the city centre economy strong and successful is a high priority for Norwich and Norfolk.

The public was asked to say their opinion about three alternatives:
- Pedestrianization
- Part-time Pedestrianization
- Pavement Widening
- Stay as it is

The consultation results showed an overwhelming support for the pedestrian scheme: 72% voted for the Pedestrianization scheme (60% full and 12% part). Nearly all of the stakeholders were for the scheme, except the Norfolk Constabulary who claimed “additional congestion is likely to create significant additional problems.”

Estimated consequences on congestion:
1. additional delay Outer Ring Road plus 1%
2. on parts of IRR during evening peak could be as high as plus 5%

The pedestrian scheme was not adopted. After discussions in the Highway committee in two/three meetings, it was decided in February 2005: Resolved to approve a permanent scheme for Westlegate, open to traffic for 24 hours with widened footpaths and any other safety measures the officers identified necessary. This decision, which can be labeled Norfolk against Norwich, is against the result of the consultation, against the majority of the stakeholders and against the proposal of an experiment. It is for more car traffic and against the city environment. Some City Councilors interviewed during the planning process expressed worry about the coming final decision. They shared the view of the respondent that was “hopeful”, but “afraid that the County would go against”.

6.3.5.4 Parking policy and Park and Ride (P&R)
The very successful P&R system, in the words of the County, had 2571 cars using 5000 parking spaces on an average day. Assuming an average stay of five hours per car, then only a quarter of the places were used (25% utilization). The investment in P&R in Norwich is therefore really mainly catering for peak demand, like a few days before Christmas. But still it is highly awarded and a real success story as one can read in the box.

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319 Member of the Highways Committee and City Councillor Lubcock interviewed a few days before the final decision.
Norwich bus station

“Public transport is terrible compared with other cities both UK and EU. In reality we have two bus stations, one in Surrey Street getting refurbished, and 600-800 meters linear bus-station in Castle Meadow and no contact between the two. It will take a very long time to improve interconnectivity.” This statement was a good description of the state of the public transport system and services in Norwich in 2004. The route pattern was the traditional one with buses going from the city outskirts and the small towns into Norwich and back. There were different companies running their own lines without good connections or an integrated ticketing system. Information about the services was not good.

When Norwich’s £5 million bus station opened for business to the people of Norwich and Norfolk on August 30th 2005 it was an improvement as stated on the web. The new facility has been provided by Norfolk County Council, which claim that it is the country’s most advanced bus station and a dramatic improvement on the old site, which had deteriorated over many years and lacked facilities for the general public.

Norfolk County web side had this background to the new terminal: Four years ago, people in Norwich were asked how to improve public transport as part of a consultation on the City Council’s City Centre Transport Plan. The biggest priority for local people was improving the bus network - as buses often get caught up in general traffic. That priority is well underway to being met, with the new bus station part of the County Council’s £9.5m Government-funded scheme to improve the bus network in and around Norwich. As well as the bus station, the Public Transport Major scheme is also providing a better network of bus

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320 Interview with Bob Gledhill, Green councillor
321 Norfolk County web side, accessed October 2005. Notice how the County is presenting itself as beneficiary.
lanes around the city, a public transport interchange at the railway station, ticket machines and improved passenger information and waiting facilities.

Electronic passenger information screens are also located in each bay, telling passengers the routes and times of the next three buses to leave each respective bay, with some services even showing how many minutes away they are thanks to Real Time ability. This high-tech facility is a major advancement on the original bus station, which opened in 1935 and operated until Norfolk County Council purchased the land in November 2002 for a new facility.

My comment is that the new bus station does little to solve the big problem of buses getting caught in traffic or the interconnectivity between the different routes and companies. The biggest priority for local people in the consultation was improving the bus network so that they could travel faster across the city. The Bus Station does not improve local traffic much, since it mainly serve regional buses. Norwich need effective measures to influence the private bus companies and has a very long way to go before a modern public transport system is in place. Public – private agreements on a voluntary basis is the main instrument used. It remains to be seen how effective this is in Norwich.

6.3.6 The Northern Norwich Distributor Road - NDR

The Draft LTP 2006-2011 was sent for approval early in 2006, but the planning process had already structured the issues and possible alternatives. The NDR had through this process become deeply embedded in the LTP 2006-2011. The NDR was not mentioned in the Norfolk Structure Plan 1999 or in NATS Local Transport Plan 2001/02-2005/06. A major road investment project has during the review process become part of the Norwich sustainable development plans. This happened because the County could play the districts against each
other, most are for the NDR with only a minority against in Norwich. The NDR lies mainly in Broadland District and Norwich it is claimed will only get benefits of less through traffic and the opportunities for closing roads and introducing more bus priority schemes open up. Hence the transport in Norwich becomes more sustainable caused by the NDR. What they didn’t include was the general traffic growth and the traffic generating effects of the NDR, which probably in a few years will cause the congestion problem to be back as it was before the NDR.

Norfolk County Council approved the Northern Norwich Distributor Road (NDR) in September 2005. The basis for this decision was several years of planning. The County Director of Transport and Planning reported that: “This report restates the need for an NDR, which is included as a regional priority in the draft East of England Plan, together with the benefits that it would bring to Norwich, Norfolk and the region. The road remains an essential part of the Norwich Area Transportation Strategy (NATS), which, when implemented, would relieve congestion on the ring roads and radial routes, facilitate improvements to public transport and relieve congestion in the northern suburbs.” This statement makes two interesting points, firstly that the NDR has become a regional priority long before the local planning process has concluded. Secondly the stated reason for the NDR is congestion relief and the possibility of improving public transport. The economic growth arguments that access to Norwich Airport and Industrial Estate and the possibility the NDR opens for further housing development close to the airport, are subdued. This is probably because these arguments may be said to be contrary to Government policy.

6.3.6.1 History of the Norwich Distributor Road

An NDR was first considered in the early 1990’s. Much work was undertaken then on alternative routes, including environmental assessments, and a public consultation was carried out in 1994 as part of a review of the Norfolk Structure Plan. Whilst the majority of respondents supported an NDR, there were strong environmental objections to parts of the routes. Furthermore, national policy also began to change towards a presumption against providing additional highway capacity, and less money was made available for road schemes. The proposals were therefore dropped and the NDR does not feature in the Norfolk Structure Plan (1999).

The need for a road was reconsidered as part of the 2003/4 review of the NATS. Norfolk County claims that: “National policy had moved back towards providing additional highway capacity where required. With this in mind, a brief was issued in December 2001, to assess possible NDR route options.” Notice that the County already in 2001 started planning the NDR, at that time there were few if any indications, that the national policy was “mowing back” towards more road building.

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323 The County has already in 2004 managed to get the NDR into the regional plan as a priority.
324 Interviews and documents are the source for this.
6.3.6.2 The NDR and the Draft Local Transport Plan 2006 – 2011

Long before the consultation with the public had taken place the draft LTP 2006-2011 had the following formulation (page 6): “The Norwich sub-regional strategy recognizes the Norwich area as a centre where growth will be focused. It recognizes the importance of providing essential infrastructure including a Northern Distributor Road, and improvements to the A11 and A47 trunk roads, needed to accommodate growth and support the development of the Norwich area as a sustainable community.” One may ask if the consultation with the public only is done because it is required. There seems to be little room for the opposition to the NDR.

The traffic forecasts independent of the NDR, were given in three alternatives: 0.9% - 1.8% - 2.6% annual growth as shown in the table below.

<table>
<thead>
<tr>
<th>Year</th>
<th>1996-2006</th>
<th>1996-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic growth forecast</td>
<td>Low</td>
<td>Central</td>
</tr>
<tr>
<td>Traffic forecast (% increase)</td>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

*Table 6-6 Traffic forecast for NDR*

The developments that generate significant amounts of traffic are:
• Norwich International Airport
• Norfolk and Norwich University Hospital/Norwich Research Park (generating 14 000 trips per day)
• Out of town developments: Longwater Industrial Estate and Housing estate with 1600 houses close to it generating 10 000 daily trips, located to the western end of NDR.

The Norwich International Airport is central in the growth strategy for Norwich (Shaping the Future) and it “also offers potential for relieving pressure on congested airports in the southeast”, which it recognizes will put pressure on the current access roads. The NDR is therefore required within 10-15 years.

6.3.6.3 Norwich Area Transportation Strategy – Consultation Results 2003

The NATS Consultation was carried out between 6 October and 13 December 2003 on a Preferred Transportation Strategy for the Norwich Area. The consultation comprised

- Leaflets posted to over 130 000 households and businesses in the Norwich area, with a total of 143 019 brochures and questionnaires distributed across the county
- Consultation materials to stakeholders including businesses, interest groups and transport operators
- Public meetings in locations across the Norwich area
- Exhibitions in locations across the Norwich Area

21 073 postal questionnaires were returned, together with over 800 separate written responses. 567 of the postal responses were received from organizations and local councils (town, parish and district). An additional 343 questionnaires were received via the website. The response to the consultation was 16% of questionnaires being returned. In addition, public meetings were generally held. During the consultation, over 350 calls were received on a dedicated helpline number.

In a general summary Norfolk County claims that “the NATS consultation has been a major, successful consultation, and received a good response. The response from the consultation showed that, in general, there was support for the Preferred Strategy. The response from the consultation also showed that there was broad support for a Northern Distributor Road (78% supported the NDR in 2003). However, because of issues raised and some viable alternatives to NDR consultation options, supplementary consultation is necessary. Overall, the consultation results support the Preferred Strategy.”

6.3.6.4 The NDR consultation process 2005.

Have your say on the future of transport in Norfolk was the title on the consultation paper with Questionnaire attached. The consultation closed after eight weeks (16th December 2005). The themes and measures for questions were:

- Getting about
- Reducing congestion
- Improving environment
- Road safety
- Looking after transport infrastructure (how to spend your money)
The public were asked to answer by crossing of statements related to the five themes. Here are two examples of how language and the choices given are helpful in getting the wanted results from the consultation.

Q1. How important is each of the following for helping people to get around?
   Answer Choice Q 1.3: Continue building costly new schemes such as cycle routes, pavements and bus lanes

Q2. How important is each of the following for reducing congestion?
   Answer Choice Q 2.5: New roads (with other improvements)

Notice the wording that normally small cheap schemes are termed costly. Normally extremely costly new roads in urban areas (like the NDR) are presented as the natural and self-evident answer to reduce congestion! This bias towards enhancing the positive sides of a project and to reduce and remove negative sides, are well known from my own planning experience at the micro level to the arguments for the war in Iraq at the macro level. Project promoters are more preoccupied with getting their projects funded and implemented than with making balanced analysis. I will return to this point in the discussion.

6.3.6.5 Growth and the NDR
20% of Norfolk businesses considered the “lack of communication links /transport infrastructure” to be the principal barrier to growth. This is of particular concern in relation to those areas of Norfolk identified as eligible for funding to improve economic activity. Both the East of England Development Agency’s Regional Economic Strategy (East of England 2010) and Shaping the Future (Public Private Partnership) view high quality transport infrastructure as being essential to ensure the future prosperity of Norfolk. Shaping the Future includes the following strategic priorities:
   - Preferred Route determined for Northern Distributor Road.
   - A growing regional airport in Norwich

6.3.6.6 NDR report September 2005
The plan had to go through EIP, Examination in Public, and the County strategy was:
6.1. Planning
6.1.1. The NDR is included in the draft East of England Plan as a scheme with regional priority status.
6.1.2. In the draft list of matters to be debated at the EIP, the NDR does not feature as a separate topic. However, the objections of statutory and non-statutory environmental bodies will ensure the NDR is debated within the Norwich Sub-Region Topic under ‘Key Infrastructure’. A statement in support of the NDR has been prepared and is attached as Appendix 3 of this report.
6.2. Economic Assessment
6.2.1. The further work undertaken since March has confirmed the strong case for the NDR in wider economic terms. Alongside this, the Benefit to Cost Ratio (BCR) of the routes remain very good, within the range 2.7 to 4.2. The BCRs have been produced using standard

325 Flyvbjerg et. al. has in the book Megaprojects and Risk shown and measured how systematically this is done
326 EIP, Examination in Public is an instrument that also should be used in other countries.
methodology and recent government advice suggests this would, by itself, justify the scheme being built.

6.2.5. Also, as reported previously, the recent government advice states that a good BCR can be degraded if the environmental impacts are significant. The impact of the NDR on the Wensum could be judged as such a case and is, therefore, a factor to be considered in choosing a route if government finance is to be sought.

This strategy show how skilful and well prepared the County was before the examination in public of the NDR project. Notice also (6.2.5) that if the environmental impact crossing the Wensum river is too great, then they might opt for not seeking government finance, to avoid head on conflict between Ministries (clever maneuvering I would say).

6.3.6.7 Norwich and Norfolk Transport Action Group

The Norwich and Norfolk Transport Action Group wants to stop the NDR. The group has members with experience from the fight against IRR (see 6.3.1). The Action Group hired a well-known consultant to provide arguments against the Northern Distributor Road\textsuperscript{327}. The conclusions drawn by the consultant were the following:

1. There are good reasons for caution about the scale of housing growth being proposed for the East of England region.
2. The Regional Transport Strategy is based on a highly optimistic view of resources.
3. The functional relationship of NDR to the planned housing developments in north Norwich has not been investigated by Norfolk County Council.
4. The claimed effect of relieving existing radial routes of congestion appears modest, and likely to be swamped by the planned level of housing provision.
5. NDR will generate traffic on local roads accessing it.
6. While the NDR might help people to access the more diffuse pattern of jobs which is an established trend, it is likely itself to exacerbate the problems of employment decentralization.
7. The economic significance of Norwich Airport is for business travel and the NDR is of limited relevance for access to the airport.
8. Demand management is the main strategic tool for ensuring that improved transport provision does not simply trigger longer journey distances.
9. Demand management is an increasingly important strand of Government policy. The implementation of a national road pricing scheme would change patterns of demand in such a way as to make the NDR redundant not long after it can be built.
10. The appraisal of NDR options by Norfolk County Council did not include consideration of demand management, removing both an alternative approach to tackling congestion and a means of funding solutions.
11. Developer funding is a possibility, but depends upon there being an adequate surplus value from development.
12. Private Finance Initiative is potentially an expensive funding route.
13. Government approval of a LTP major scheme bid depends upon the proposal being put forward within the framework of Government policy.

\textsuperscript{327} The company Urban & Regional Policy by Alan Wenban-Smith was commissioned in July 2004 by the Norwich and Norfolk Transport Action Group to provide an overview of the case for inclusion of the Norwich Northern Distributor Route (NDR) in the draft RPG14 then being prepared by the East of England Regional Assembly (EERA)
It is not difficult to find the conclusions in the consultants report well argued, but they need political backing to weigh in the further process. Politicians use “double talk” (Brunsson 1989), one type of talk for action and one for creating support as the following comments show. Demand management is in theory an important instrument, however it is not so politically. It is still unlikely that the Government will force a city to take demand management into use and therefore it will be up to the local community to put forward such proposals. With deep political divisions about this instrument, I will think that it will not be introduced for years in Norwich District and the surrounding Districts.

Developer funding even with only a token amount of funds, will add breadth and strength to the NDR case. Private Finance Initiative is still even with a lot of shortcomings, regarded as one important way to keep public investment down. Last point is that the NDR does not readily fit within the framework of Government policy and hence is unlikely to be funded. With an innovative finance package with many contributors and political backing from Districts, County and Region together with strong business support, the chance of getting final approval for the NDR may be far larger than the consultant imagines.

6.3.6.8 Different views of the NDR
The leader of Norfolk County Council Highways and Transport committee had these views on the NDR:

*Interviewer:* If you, some say that the Northern distributor road is generating new traffic, do you agree with that?
*Respondent:* This is kind of argument performed by the Greens in Norwich. I don’t agree, because the Norwich Northern Distributor Road is to enable us to make conditions in the city and round the Northern suburbs more acceptable for the people who live there. At the moment, cars take shortcuts through the closed streets of Norwich, some of them being blocked up but they still take them. The Northern Distributor road would enable us by creating extra capacity to take traffic off the residential roads in Norwich and then the suburbs. It would also enable us to stop traffic, I mean straight through of Norwich.

It will also enable us to deal with the growth that’s taking place to the north, the housing growth, the shopping growth, the out of town shops, and it will enable us to deal with the extra housing, which the region and government say that we’ve got to have, a lot of which will be around Norwich. One of the reasons that so many new shops around the north of Norwich because it’s so difficult for people to get into Norwich. All the big, big sized ones, furniture and so on, are on the outside of Norwich. And if the shops are there, then people will go to North, won’t they?

*Interviewer:* You don’t see it as a paradox: both building more roads and aiming at shifting people from cars to public transport, walking, and so on?
*Respondent:* No I don’t think that’s a paradox, because the aim of the Northern Distributor is to enable us to put restrictions on roads, which are unsuitable for heavy volume of traffic. The Northern Distributor is to take pressure off urban roads. The Park & Ride is to do exactly the same, take the pressure off urban roads, to allow people to catch buses for the last part of their journey.

The arguments for the Northern Distributor Road can be summed up as in the following points:
1. Safeguard residential roads
2. Stop traffic straight through Norwich
3. To provide necessary access to land use developments

328 My comment: The land use planning and development control has been outside the control of Norwich City Council
4. Take pressure off urban roads
5. High quality transport infrastructure is essential to ensure future prosperity

In 2008 the NDR was sent for Government approval and at the same time the tender process was started, as announced by the Norfolk County on their web page.  

### 6.3.7 Unitary authority

In 1974 local government was reformed into a two tier local system with county councils and district councils (cf. changes in Norwegian and Danish local government at the same time). Norfolk County became responsible for both land use strategy and transport strategy by the Structure planning. While the six districts in the county, of which Norwich City is one (formerly Norwich was a borough), became stakeholders and discussion partners. Thus the national government should create the broad framework and overall policy and the counties should develop the local strategy within this framework.

Norwich Labour Party did not want to extend city borders to become a unitary, in the seventies, because the surrounding suburbs were not labour. “Some “wrong decisions” were taken” is how a present party member describes the issue. Labour had a majority in Norwich for 70 years, placed in the middle of the very conservative Norfolk County. In the nineties new unitary discussions took place, and these may also have been influenced by this history? The Burnham committee on local government reform in the 1990ties led to new unitary administrations many places, but not in Norwich, even if it according to the size could have become a unitary authority. One reason for this continuation in Norwich may be that the Norwich city border does go through densely built up areas and thus the “city” population is divided into several neighboring districts. The traditionally politically conservative county and labour city may also be one cause of this continuation of the two-tier system in Norfolk and Norwich. The tension between the Conservative County and the Labour City was quite old, particularly bad in fifties and sixties. It can be traced at the bureaucratic level as well, for example conflict between the county surveyor and city officials. The conflict is not historically long, but is mainly some folklore tensions between laws, church, landowners and workers. City boundary is important both for the politicians and the citizens. In the fifties the labour party didn’t want the big suburbs outside the city into the city afraid of losing their majority in the city council, nor did the relatively wealthy suburbs want to be part of Norwich City.

Greenaway (op. cit.) commented the splitting of LU&T planning on different levels thus: “Blair wanted to reorganize government and to find place for the minister of agriculture in another ministry (the agriculture ministry was “captured by the agricultural producers”) and the reorganization had the effect that structure planning went to the regions and transport strategy remained at the county level (if not unitary). Hence the opportunity for one authority

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329 In July, we submitted our Major Schemes Business Case (MSBC) to the Department for Transport (DfT). This document sets out the justification for the NDR and will be used by DfT to decide whether the scheme should be formally included in its programme for future funding known as 'Programme Entry'. DfT's decision is likely to be announced early in 2009. (www.norfolk.gov.uk accessed August 2008.)

330 Interview with Brian Morrey Labour councillor Norwich City Council.

331 Interview 140904, John Greenaway, Senior lecturer EAU.
to integrate land use and transport in one comprehensive plan covering an area like a county or a city was lost.” The Norwich chief transport planner was in an interview asked about LU&T planning responsibility being placed at different levels: Structure plan at regional level and transport at local level? “There is a need for sensible LU&T planning, the city has mass enough to handle and integrate key LU&T decisions. The government was met with the wrong tactic when unitary politics was decided. Several similar size cities has unitary rule.”

Through the interviews and with increasing insight into plans, it became clear that the way local government was organized into Norfolk County and Norwich District as one of six districts in the county had great influence on LU&T planning and implementation of policy. Several politicians were interviewed in 2004 – 2005. Not one of the politicians raised at that time the possibility of applying again to become a unitary. But in January 2007 Norwich did send such an application.

6.3.7.1 Norwich bid for unitary January 2007
Norwich City Council reported in January 2007, that it would apply to the Government to become a Unitary. The present problems are outlined in the report One City, One Council and can be summed up in this line:

_Duplication of services, lack of focus on the needs of the City, lack of direct accountability and uncoordinated approaches to key strategic issues_.

Norfolk County reacted fast and opposed the Norwich unitary bid strongly (cited from Norfolk web):

Norfolk and Norwich - a good team that should stay together

Norwich City Council is bidding to become a unitary authority taking over the responsibility of delivering all the services and functions to Norwich people that are currently delivered by the County Council. If it succeeds, it would mean that Norwich would have two different councils planning and delivering the large scale ‘people’ services (social services, child protection, fostering and adoption, schools support etc) that are currently delivered by one. Government has announced that 16 councils bidding for unitary status are to go forward for further consultation. Norwich City Council’s bid based on its current boundaries and a 127 000 population has been shortlisted. We continue to oppose this bid.

Norfolk County Council Leader Shaun Murphy gives his reaction to Norwich’s bid for unitary: “We don’t believe that a case for such radical change in this piecemeal fashion has been made or that it can be justified in terms of cost to the taxpayer or disruption to essential public services. So we are concerned about Norwich’s bid for a number of reasons.”

The following arguments can be stated against unitary:

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332 Norwich chief transport planner Andy Watt, September 2004
333 A Government commission is still looking into this question in 2008.
334 This lack of accountability and uncoordinated approaches in key strategic issues can be said to be the case also in Aalborg and Kristiansand, regarding planning and financing of roads and bus services.
• Economics of scale, the competence needed and the cost of running small authorities.
• Economics of scope, the rational division of the territory into sub areas.
• Tradition, identity and pride, e.g. Norfolk Regiment.
• Local politics, poorer people in the inner city and more wealthy in the suburbs may shift the balance between the parties.
• Scare of redistribution of funds from the suburbs to the city.
• Norwich as a unitary, would make a “hole” in Norfolk, how to organize the remnants? The centre-periphery discussion.

6.4 Analysis and discussions

6.4.1 Norwich land use and transport planning, a summary

Land use planning in Norfolk has focused on supporting and allocating growth. Allocation of building land for housing and employment has been the main task. The population of Norwich urban area has nearly doubled while it stagnated in the city. In Norwich City the main task has been and is economic growth and as part of that to keep the city in the Top Ten retail cities in Britain. The Castle Mall, Riverside and Chapelfield developments are prime examples of this policy. Each of these developments has more than 1000 parking spaces. They are thus major car traffic generators.

The historic city of Norwich with many hundred listed buildings has lost thousands of industrial work places in the centre leaving many Brownfield areas. Redevelopment of these and new developments have been “sympathetic” to the historic centre, both in building scale, form and style. It is a result of skilful planning and conscientious decisions. However, the city is still accepting/demanding ample parking in new and redevelopment projects. St Andrews Car Park with 1086 spaces is the most recent example. The City has not managed to change the parking policy to support a more sustainable transport policy with reduction in the use of the private car. An example is that the present parking policy is not supporting and promoting car-free housing, but “Car free housing will be permitted in locations of high accessibility, provided that…” Why are you not allowed to build car free housing generally? Why is the Council not saying car-free housing is the only type of housing we will permit in the redevelopments in the city centre? One answer is that the politicians fear that the public opinion would be against – “not ripe yet” – so they leave the matter not to stir the voters. Another reason may be pressure from developers and a third “the embeddedness of the car”. There is often a lack of political leadership it seems when sustainability measures inflict on the car system.

The major new housing estates have been established outside Norwich District. This is a typical suburban growth using the old radial road network pointing to the city centre, as the main road infrastructure. With employment moving out of the centre and spreading, e.g. Norfolk and Norwich University Hospital/Norwich Research Park, University of East Anglia, Norwich Airport and Industrial estate, the travel patterns have changed. The old radial road network has not been able to cope properly with the new travel pattern, resulting in widespread congestion. This is further increased by the steady increase in commuting to work over larger and larger areas.
Until the IRR was stopped in 1993, the expansion of the road network had been the prime task for infrastructure provision. From then on a new policy had to be developed. The Park and Ride system became a cornerstone in the strategy and by 2005 six sites with 5000 parking places have been established. Shuttle buses connect the sites with the centre. Still the concept behind the Park and Ride system is car based, it is not representing a shift to other modes. Norwich opened in 1967 the first pedestrianized street in Britain, but the city has not been able to develop the pedestrian system much further. Norfolk County is the Highway Authority and has a major say even in the Joint Highway Agreement with the city. The Westlegate case can illustrate that there are different cultures and perspectives in the City and County. The City councilors are occupied with the place, the historic fabric and the daily life, while the perspective from the County is how the transport system – with the car as the major mode – enhances economic competitiveness of the area. The City wanted Westlegate to be pedestrianized, but lost on a split vote to the majority from the County.

The IRR public inquiry meant that the NATS strategy had to be rethought. The soft modes and public transport in particular had to play a more important role. Public transport was in the eighties deregulated and privatized. The public transport authorities had little influence over public transport services. How could the city improve the conditions for walking and cycling? How could a cycle network be funded? These questions got their answer in the new system of Local Transport Plans from the year 2000 onwards.

The LTP 2001-2006 represents a change in focus in the NATS strategy. Public transport shall get a new information system with “real time information” showing when the bus will arrive and depart. A new bus station gets priority (the Bus Station to £5 million opened in 2005) and bus priority schemes introduced. The plan should also develop the facilities for walking and cycling with a cycle net to be established. Together with the Park and Ride system this was the strategy in LTP 2001-2006. Road building was out. However, the car traffic and with it congestion keep growing except for crossing the IRR into the city centre, where traffic numbers are going down. The forecasts of traffic growth told of an increasing gap between road capacity and demand in the near future.

Already in 2001 the County starts a preliminary study of NDR, contrary to the Structure plan 1999, and the aims of the LTP. Only two years later the NDR is part of the East of England Regional Strategy and embedded in the LTP 2006-2011 proposal! The NDR lies mainly in the Broadland District, but the main benefits the county claims will come to Norwich city because the through traffic can be substantially reduced. The NDR had support from 78% of the answers in a consultation, but there are environmental conflicts especially in the Wensum river valley. In Norwich City opposition exists, primarily from the Green Party, who has promised to fight the NDR. “The Achilles heel of the NDR is its funding” as one informer said. The NDR has both to be included in the LTP and separately apply for funding from the Government. It is well embedded in the provisional LTP 2006-2011, but there might be opposition to the NDR in the city that goes wider than the Green party. The bid for funding of the NDR as a major project has firstly to compete with other regional projects and secondly to convince the Government that it is in accordance with the present policies. Both of these obstacles might be forbidding? What the end result will be won’t be known for another few

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336 Interview with Rupert Reed, Green Councilor Norwich
years, but it certainly is a good example of the conflict between coping with traffic growth by restraint and by building new capacity. It demonstrates the different perspectives between the traditional “predict and provide” thinking and the thinking behind “the New Realism” in English planning. It also demonstrates the different thinking at the county level and the city grass root level.

6.4.2 Technocratic and Sociocratic planning ideals in Norfolk

Faludi and van der Valk (1994) make the distinction between technocracy and sociocracy as two types of planning ideals. In the technocratic ideal the politicians set the goals and the planners find the right means and instruments to achieve the goal. A model often called the synoptic or rational planning model (Banfield). The sociocratic ideal involves everybody and through negotiation between the public and private players the road ahead is found. A model propagated by Healey as Collaboration and Forester as Deliberation. By placing these two concepts as two ends of a line a perspective of how planning has changed in Norwich can be found. The Public Inquiry on the IRR can be seen as the end of the former type of technocratic planning in Norwich. However, the tradition, knowledge and skills of the planners experienced with technocratic planning will still be there for years. The “New Realism” which brought the LTP is more a sociocratic type of planning putting emphasis on consultation with stakeholders and the public. From the first LTP to the preparation of the second LTP there is clearly a learning process in which Norfolk County adapts to the signals and guidance from Central Government, but also learning on how to frame a strategy and use consultation to support the strategy. The NDR is a case in point. It is not mentioned in the first LTP 2001-2006, but already in 2001 the “technocratic” planning of the NDR starts with evaluation of different alignments. It then gradually emerges in the annual monitoring reports of the LTP and is included as an item in the consultation questionnaire. About the same time the County pushes to get the NDR into the East England regional strategy, with success. By 2004 it is embedded in the regional strategy and 78% of the population supports the NDR, hence it becomes a natural part of the strategy in the provisional LTP 2006-2011. Focus then shifts to the environmental consequences of the different alignments of the NDR and thereby the focus is also shifted into the neighboring Districts from Norwich District. Some say that the urban population never has got the chance to voice their opinion about the NDR and the whole strategy has been to manipulate and steer the proposal through, which may be said to be “good” old fashion technocratic planning. The case illustrates that while the overall planning process is shifting towards more sociocratic ideals, the established powers adapt readily to new ideals and also learn how to play both strategically and tactically within the new framework.

6.4.3 The goals and signals are not compatible

On all levels the conflicting aims of both investing in infrastructure to reduce congestion and reducing the car traffic, is apparent. In England the Government has set this long-term aim: Reliable, safe and integrated transport for everyone, which respects the environment. This
objective shall be achieved by service agreements setting targets as the following two targets:

- Reduce congestion on the inter-urban trunk road network and in large urban areas in England below 2000 levels by 2010 (joint target with the Highway Agency).
- Secure improvements to the accessibility, punctuality and reliability of local public transport (bus and light rail) with an increase in use of more than 12% by 2010 compared with 2000 levels. (Appendix D, DfT (2004) cited from Hull 2004)

It is difficult to see how this objective can be achieved in urban areas with two service agreements without making a choice of which of these targets is the most important. On the one hand PT passenger numbers shall increase by 1.2% per year and congestion shall be reduced. This increase in PT numbers does not in any way help to reduce congestions as wanted. For such a reduction in congestion car use must be dramatically reduced (the rise in car ownership considered) or investment in road capacity must be very much higher than in the last decade. When goals are ambiguous and conflicting the local agents must take part in all projects and planning processes to maximize the possibility of getting funds or other benefits to their local area. This is apparent in the following statement “City politicians and planners were desperate to attract transport investment of any kind to Norwich which had been cold shouldered for so long by the Conservative-dominated county; even if the Inner Ring Road was not ideal it was linked to other NATS2 investments.” (Greenaway 2000:828)

6.4.4 Growth: Exchange value versus Use value.

Economic growth is wished for everywhere and many business interests and politicians still believe that investment in big transport infrastructure promotes growth. A case study in Bristol and Newcastle showed: “The dominant policy discourse has sought investment in the strategic road network to enhance the economic competitiveness of urban areas.” (Hull 2004). The yearning for more economic growth is strong in Norwich and shows in the day-to-day planning decisions. The £270 million Chapelfield development, which uses the site of a former chocolate factory, provides some 140 new homes, 1000 car parking spaces and about 80 shops. The transport consequences of this major development are played down during the decision process even if it contradicts the PPG13 and the adopted Land Use and Transport strategy. The economic arguments – new jobs and new business – are the most important arguments in this case as in many others. “Local authorities are often too fearful of losing out on new development (and jobs) to impose too many conditions on development (such as location criteria), particularly in the case of major prestige developments.” (Stead 2003) If we look at this from the other side and ask if it is politically possible to vote against a project like Chapelfield, the answers from the interviewed were that “to vote against such a project is political suicide!”

In Norwich there are clearly strong interests in economic growth that push for new development, new housing, new roads, etc. It is the exchange value pursued by the business

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337 Service agreements are the instrument public authorities use to influence other agencies or actors to aim at certain goals, for example to get a bus company to introduce a new route, higher frequency, etc.

338 An apartment building provides a “home” for residents (use value) and rent for the owner (exchange value). See chapter 2.3.2 on Logan & Molotch for further discussion.
community, which is the driving force. The residents’ appreciation of the historic city, the place value or use value, often opposes the development interests in exchange value. This was the conflict in the IRR case. In the NDR case it remains to be seen if this conflict will be strong.

6.4.5 Financing transport infrastructure and Public Transport services

Financing transport infrastructure and public transport services is steered by a complex system, in which private and public both compete and cooperate. There is no longer a clear distinction of what is of private and what is public interest due to the New Public Management ideology. Within the public sector one often talk of joined-up policies and integrated planning, which seem hard to achieve. The Norwich case is a prime example of policies not being joined up and integrated planning being dismantled when partial implementation take place. The rules governing the financing of infrastructure and the organizing of public sector with tasks and authority placed at many levels form the incentive structure. Politicians, planners and stakeholders play on this incentive structure to pursue their different goals.

The LTP is both the land use and transport plan creating the vision and aim for the future of Norwich and the vehicle to be used to apply for getting money to implement the policy. The rules are such that Central Government may fund all new schemes, or scheme A, C, H or no new schemes in the LTP. Thus the LTP strategy may be pulled apart by the funding process both in the realization of different projects and in the timing of these.

Most nations are financed by taxes, which in turn is used for national projects like defense, health care, rail and road infrastructure, etc. This system gets small cracks when motorists have to pay tolls or congestion charges in addition. Both the tax system and the local levy system are very dependent of how the money is used. If the local communities “never” get any benefits, then social unrest may start and challenge the policies. In Norfolk the public clearly feel that their traffic problems are great, and many feel that the Government is not willing to finance the solution to their problems. This over time will be an increasingly strong political argument, which will be used in the LTP bidding process. On the other hand some of the public is strongly for the “green policies” also aimed for in the LTP. In negotiations and decision making between the Government Office, region, county and district involving planners, politicians and stakeholders at all levels, these contradictions will be played on and the result will be highly uncertain.

Vigar, on the topic of funding and “selling” of schemes, states (Vigar 2002:147): The concentration of regulatory and investment power amongst civil servants and ministers clearly make it vital for local authorities to understand changes in the direction of thinking at the centre! Generally speaking local actors paid civil servants at national and regional levels considerable attention, partly because finance was dependent on the “selling” of schemes and packages to civil servants and ministers. The power game often creates a gap between the ambitions and the reality on the ground. In Norwich exemplified with the increase in emissions and congestion. Reduced car traffic would “solve” both these problems, but instead the politicians are pursuing the road-building path because the incentive structure makes that the most rational way to behave for the County politicians. Likewise, few politicians put
effort in pursuing better public transport services since these are deregulated. The incentive structure therefore led to skewed financing of infrastructure and public transport implementation compared to the land use and transport planning goals and joined-up policy aspirations.

6.4.6 Ruling Coalition?

With the New Public Management and the “market-turn” many new stakeholders have entered the land use and transport planning and policy field. The former fixed planning procedures and processes are challenged and new forms of participation and cooperation are formed. Networking becomes important for information exchange and influence. The LTP for Norwich urban area aims to develop more sustainable transport. Hence, managing the city land use and transport development – the ability to change the course – is important. Stone, based on his study of Atlanta, has defined a regime as the set of arrangements by which a community is actually governed, or the informal arrangements by which public bodies and private interests function together in order to be able to make and carry out governing decisions. (Stone 1989:6)

John Greenaway who has studied and followed Norwich politics in a professional capacity was asked if a “ruling regime” existed in Norwich: “The hospital case shows that such networks of powerful elites exists, the Norfolk mafia. Individuals that sit on the university board, John Innes research park board, involved in financing hospital through PFI. Hospital networks linked to conservative party, but good at taking up new Labour’s ideas like Private Finance Initiative (PFI). But always more complex than it seems and full of paradoxes like the radical medic professor fighting for moving the hospital to new site with better research facilities.” The broadening of former technocratic public planning to sociocratic planning open up for “stakeholder planning” (Innes, 1996) and other forms of skewed influence, unless the process is transparent. I will not follow up if such a network also influences LU&T policy in detail, but only comment on the recent involvement of stronger business interests in public planning (see ch. 6.2.9). The NDR for example must probably have a substantial portion of local finance to be implemented. Networking within a group of stakeholders is needed to create such a package of local finance and that process may be interesting to follow to see if a “the ruling coalition” exists in Norwich.

Another point Greenaway raised was on democratic deficit: “Apart from the complexities with the two councils, the loss of power and prestige the local government have experienced over 30-40 years, probably last 100 years is more important. Thatcher started the deliberate building down of local government, and the New Governance continues under Blair: independent national bodies at the local level are created (PFI, Training and Education centers, etc) and at the same time local government is limited both statutory and financially.” Apart from the greater involvement of business interests and the reduced influence of elected councilors, there is also the role and status of public planners in this. I did not in the interviews delve with this question, but very often a discontent emerged. From being public servants charting a good or the best future for the city, the planners felt more and more as underpaid scapegoats. This will probably also influence Land Use and Transport planning in Norwich.

339 The hospital case is reported in Greenaway 2001.
6.4.7 Politics and individuals matter

Key persons matter, indeed they are often crucial in bargaining and networking process, as Vigar found in his study of Kent County Council: *The policy networks tied KCC to sources of funding in Westminster and Brussels, and changes in transport policy at these levels, influenced shifts in the county’s transport policy, but it was also critically dependent on the efforts of key officers to generate social capital, which helped KCC gain resources: Our boss is very shrewd he goes straight in there and finds the decision makers and they like him doing that.* (Vigar 2002:146)

The Kristiansand case showed how local municipality and county politicians cooperated with the MPs – “the Agderbench” – to successfully obtain road funding. It was therefore surprising for me to discover that the MPs in England have little room to influence Government policy on roads investment. They are elected from one-man constituencies and may not easily go into a coalition with other MPs to fight for a road in their area. This is very different to the Scandinavian tradition with several MPs elected from each county and coalitions across party lines and counties are more of a rule than the opposite. Both city and county politicians and indeed administrators keep in close contact with the county’s MPs in Norway. In many cases they are central in creating solutions, especially on road investments. The role of MPs was asked in Norwich, and the following list was compiled from answers to this question: What results are successes for an MP?

- Factory closure resistance
- Press notices on constituency performance, education, etc
- Media stories and picture
- Attract new public offices
- Network use to help industry, districts, individuals
- Generally, attract inward investment

In Norway and Denmark road investment would be prominent on such a list. This is one key to understand the differences between Norway and England. In an equivalent case as the Norwich Northern Distributor Road in Norway, it would be impossible to put the city on the sideline because of the need to get politicians on all levels from the MPs to the city councilors to work together. In England it seems that the MPs play a different and more disclosed role and that the networking between the government office officers and the county planners are most prominent, as the example from Kent above, shows. In the NDR case Norfolk County is sole defining the strategy, which is aimed at convincing the Government Office to adopt the proposal and fund it. One may say that the NDR project becomes more of an administrative project where the words used to describe the project becomes most important, while a similar project say in Aalborg would be far more political, involving politicians and bargaining on all three levels. There is on the other hand no doubt that the Norfolk County politicians are in charge of the LTP process and the plan focus. They are also central in the discussions between the Region and the County.

In these processes certain actors have a far greater opportunity to influence Land Use and Transport planning and policy than others. Also different actors have different time horizons, different strategic skills and ability to gather support. The interview with Adrian Gunson,
Norfolk County Cabinet Member with responsibility for Planning and Transportation, revealed a strong will and burning ambition to improve the transport situation for the (rural) county population, both public transport and car. In the foreword to NATS First Annual Progress Report on the Local Transport Plan 2001/02-2005/06, Adrian Gunson says: “Following the Local Council elections in June, the Council is now in Conservative control. This will obviously mean that there will be some changes in emphasis, for example, a greater emphasis on rural footpaths.” My judgment is that Gunson would follow such a policy very successfully and quite rightly, that was his deal with the voters. Accordingly, the implementation of the NDR has become a major goal both for Norfolk County Council and him personally. The planners in Norfolk County have of course to support this implementation effort. The point I would like to make is that a politician in the same position with less energy and will, could easily be run over by the full time employed county professional planners. Some actors are influencing the LU&T planning and policy (as all other policies) more than others, but it is extremely complex to reveal their true influence.

In such a power game it seems that the sustainable transport goals of reducing car traffic and shift to more environmentally friendly modes, have only few and weak proponents. This is the case for Norwich, and as shown in the earlier chapters for Aalborg and Kristiansand.

6.4.8 What if things had been done differently in Norwich?

Counterfactual thinking tries to imagine what had happened instead, if some events/decisions had been different. We have listed some such events below and will try to answer that question.

- IRR could have been built.
- Land use strategy different.
- Fewer parking spaces at Castle Mall, Riverside, Chapelfield, St. Andrews parking, etc.
- Much better bus services.
- Far fewer P&R places.
- Much improved Bike & Walk network.

If the Inner Ring Road plan had not been stopped by the grass root action and subsequent public inquiry, then we assume that it would have been built in the early nineties. Apart from the physical intrusion in the built environment, I would think that the overall traffic flow in Norwich urban area would only have been marginally higher and the traffic pattern slightly different. The effect would be to move the queues around between the junctions until some sort of equilibrium was reached. It would probably be so marginal that it would be difficult to get a reliable answer from traffic models. The traffic generating effect of the Inner Ring Road would be marginal compared to the yearly traffic growth in the Norwich urban area, which gradually is expanding the congested area from the centre and outwards. The Inner Ring Road could in a sustainability perspective be said to open up for closing the city center for through traffic, but that would have had to be decided by the Highway Committee, which so far has been very pro cars (see ch. 6.3.4.3).

If Norwich had pursued an alternative land use strategy with building high-density mixed-use developments on Brown-fields close to the centre, far more jobs would have been within walking distance from home and far more jobs would have had fair public transport
connections. It is however not certain that more and more specialized jobs and more and more specialized skills would fit this strategy leading to a shift in house or job location or both, instead of shifting the people closer to the city centre. Another possible result of such a strategy could have been a Norwich redevelopment as “the retiree’s heaven” close to the centre, while the young and mobile workforce moved out to more attractive locations? The greater surrounding area influences both the job and housing market in the Norwich area, and any land use strategy could lead to unexpected results. It still seems that Norwich should have been more active in pursuing redevelopment and Brown-field development (with few parking places) close to the city centre than was the case the last decade. It also seems likely that such a strategy to support the adopted sustainable development policy, would have contributed to less car travel.

If fewer parking spaces at Castle Mall, Riverside, Chapelfield, St. Andrews car park, etc. had been built, Norwich would have been less attractive to some car using shoppers. On the other hand one could with less traffic in the city centre use more road space for pedestrians, outdoor shopping and cafés. It might be that the retail turn-over would have been less with fewer parking spaces in Norwich, but that is not at all certain judging from experiences other places. The extension of the pedestrianized area in Norwich is very limited and it might be that enlargement of this area combined with less parking and less traffic would substantially enhance the attraction of Norwich city centre.

Much better bus services benefit firstly those who do not have access to a car. Secondly it would attract some former cyclists and walkers. In most cities the travel time difference, the out of pocket costs and the comfort of the car, make it very difficult to attract people away from the cars to shift to bus transport. In Norwich therefore, better bus services would in itself not do much to the modal choice, but could/can prepare the ground for further restrictions on the car in the city centre. Over time an effective bus priority strategy would reduce bus travel times, but hardly reach competitive door-to-door travel times as experienced with the car. However, if there is no parking available (or it is very expensive) at work or close to work, then public transport becomes attractive. Far fewer P&R places would have the same effect as reducing the number of parking spaces in the centre, as outlined above. One could estimate the effects more precisely by making a survey of the P&R users. However, lacking such data I would claim that the real difference is the planning ideology lying behind these 5000 P&R places in Norwich, which is the traditional thought that it is possible and economically viable to build enough road capacity and parking spaces to cater for future growth in car numbers and traffic, except for the inner city. The White Paper A new deal for transport. Better for everyone scraps this ideology of predict and provide, but in Norfolk County Council it is still alive. Without a real change in the car ideology Norwich will continue on an unsustainable path. The amount of parking available clearly influences car usage.

The Norwich City Council adopted an alternative policy to the County policy by the Mode-hierarchy outlined in chapter 6.3.3, represents a different development path than the present. If implemented it would mean that the soft modes have priority, that a maximum number of parking places would be allowed with new developments, that the 5000 Park&Ride places would be redeveloped for, say, housing and that parking garages in the centre would over time

340 See fx B Norheim, Urbanet, 2007 on a comparison of city centre parking supply in the major Norwegian cities.
be changed for other uses. More effective Business and School Travel Plans would also over time remove most of the employees’ parking, to make them shift mode. Much improved Bike&Walk net in Norwich will improve conditions for walkers and cyclists. A far more comprehensive transport policy including restrictive measures on car use must be in place before mode shifts occur. Such a development path is dependent upon broad support from the public and it would probably require that Norwich Urban Area obtain self-rule for such a policy to have a chance.

6.4.8.1 Summing up the counterfactual discussion
This counterfactual thinking shows that important, but still relatively marginal changes would have taken place if another course of events had happened in Norwich. Each event or measure was not in itself enough to change the development in a substantial way. An interesting question is if these changes could have created an alternative path of development in Norwich. There are examples, as will be seen in the chapter on Davis, that events reinforce former events and create path dependence. But, in the present situation it is probably necessary to make a comprehensive and integrated strategy for Norwich urban area and follow the strategy up with decisions and investments until the strategy is implemented. This requires that the Government devolve the necessary powers to the local authority area according to the EU adopted principle of subsidiarity. The Commission for Integrated Transport has a similar argument:

“In seeking to identify where powers and delivery responsibilities should lie, account needs to be taken of all functions and service delivery relevant to both congestion management and transport accessibility, using the principles of subsidiarity (that decisions should be taken at the lowest possible level commensurate with the achievement of these overall objectives).”

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341 There is space for 600-900 houses on the P&R places, calculated with 50 houses per hectare
6.5 Main conclusions and lessons from Norwich

A city with sustainable transport goals and policy implemented and high local job creation is far more robust than other cities in case of a crisis. Moreover it will have the benefit of less emissions, accidents, etc. and a healthier population. Compact cities with good public transport services, good cycling and pedestrian network and facilities have an advantage in a sustainability perspective. Norwich has not developed the public transport system nor the Bike and Walk system as the backbone of its transport system, although the intention to do so is there (see ch 6.3.3). Over the last ten-fifteen years the bus services have deteriorated making the car the “sole” alternative for most trips. Together with the changes in lifestyles, demography and the location of jobs and housing over a large region, the resulting trend is one where transport in Norwich and Norfolk is becoming more and more environmentally unsustainable.

If Norwich had implemented the sustainable transport policy in the LTP it would have been in a better position to cope with the future, as long as the alternatives to the car is functioning. Both people living and working in the city, and people living in the city and commuting for work, could manage fairly well if public transport services both in the city and the county had been improved over the years. Public transport, however, can hardly cover the long regional work trips to many different locations within acceptable door-to-door travel times.

The regional development in England is in rapid change as shown in the two reports 343: “The people, where will they work?” and “The jobs, where will they go?” The macro economic forces are creating vast urban fields such as South East England. Norwich is at the edge of this field, but clearly influenced by the growth corridors London-Cambridge-Peterborough and London-Ipswich, but Norwich is not a high achiever coming to economic growth 344. The policies and strategies to create growth then naturally take prime importance. The present economic strategy builds on the strategy developed 1997. Sustainable development is embedded in the plans, but the concept is “watered out”. Car traffic generating projects are marketed as sustainable, reduction of car traffic is there as an aim and action, but not implemented. The city of Norwich is becoming less robust and more unsustainable because an active automobility policy is implemented, while the sustainable transport policies and actions seem not to be achieved. The lack of responsibilities in the City Council (lack of unitary authority) may partly be a reason, but the car policy followed in practice is also important. The sustainable transport development, which the LTP and other plans aim at, has not yet led to increased robustness and a more environmentally sustainable transport development in Norwich.

The people in Norwich urban area could have been in a far better position if measures to reach the sustainable transport goals in the plans had been implemented. However, Norwich still has very good opportunities to become more sustainable according to the EST aims: Sustainable transportation does not endanger public health or ecosystems and meets mobility needs.

343 Breheny Michael, 1999 The People: Where will they work? and The Jobs: Where will they go? TCPA (www.tcpa.org.uk)
344 The rate of unemployment in the Norwich City Council area stands at 3.4% compared to a country rate of 2.1%. The Index of Deprivation 2004 indicated that Norwich is the most deprived district in the Eastern Region.
consistent with a) use of renewable resources at below their rates of regeneration and b) use of non-renewable resources at below the rates of development of renewable substitutes. It has a compact and relatively dense city, but also with substantial brown fields that can be used for development. It has good policies, plans and aims according to the planning documents. But, a new course may require that the growth of car traffic is decoupled from economic growth and that restrictive car measures are implemented. With the present fragmented system of government such a policy change seems impossible. There is a need to devolve powers and introduce the principle of subsidiarity, so that the people in the cities get more influence over land use and transport planning and policy.

6.5.1 Norwich Councilors and Public have hardly any influence

LU&T planning and policy as practiced by Norfolk County gives stakeholders preference in front of the elected councilors in Norwich City Council. The latter has political legitimacy and answers to the electorate, the stakeholders answer to no one but their own interest and peer control within the group. The county may choose which group of stakeholders it cooperates with in each case. In the NDR case the different business interests and forums were used to promote the case. Districts in which an opposing view to the need of the NDR was strong, would as far as possible be kept outside the process. Norfolk County has the power to set the agenda and steer the planning process, which may be used to promote one particular solution. Some will say that the period Norfolk County Council both was responsible for Land Use and Transport planning was ideal. The county was sufficient size so that a bird’s eye view gave perspective and then one could close in and plan for Norwich urban area as an entity. Why then did this set up not work properly? First, Land Use and Transport planning is only one measure, it must be coordinated with the effect of other measures and forces as economic instruments, investments and growth motors. The institutions involved must also be coordinated across levels and layers, to be able to provide an integrated policy. Trading with favors/disfavors occurs, and the location of new activity is the premium sought for in these trade-offs. The political system gives few incentives for local politicians to stand up for their voters, when higher levels demand loyalty. Second, it may seem that congestion is the politically preferred way to hide the allocation and non-allocation of means. It is easier to meet the voters and blame someone else (the economy, central Government, the Regional Assembly, etc.) for not solving the congestion problem, than to stand up and say that my political party and I have other priorities. To change the allocation of funds the congestion and traffic problems must possibly become so bad that a climate of desperation is created and the voters demand alternative policies (Vigar 2000). Third, the system of collecting taxes centrally, subsequently handing them out to cities and counties according to the present policy preferences, is not an optimal way of allocating funds for transport infrastructure. This is further aggravated by the public transport services being deregulated and privatized and outside public control.

Two basic weaknesses

1. Sustainable development requires major trend shift in everybody’s car use, hence it requires broad support from the public. Broad public participation is also necessary for such policies to be proactive (the precautionary principle). Is a “climate of despair” the only alternative to create such a broad support and is it a realistic alternative?
2. Local support for higher density, less car use and more walking, cycling and public transport use will not come as long as the car is superior in terms of travel time, quality and “out of pocket costs”. Therefore the soft modes must be made more attractive relative to the car. Further investment in car infrastructure is only sensible if the car user pays all external costs or an equitable system of road pricing is in place.

The LTP process has given the opportunity to plan for reduced travel, but the instruments actually used are only information (e.g. campaign for green driving) and infrastructure provision. Norwich urban area planning issues must be treated in the Norfolk LTP. After the county council decides on the LTP, it goes to GO East England for the bidding process. The LTP is in theory a comprehensive plan, but some elements are always prioritized. There is therefore a risk of the integration built into the LTP will be falling to pieces gradually by partial funding and implementation of projects. Secondly, a major project might come through for political reasons, independent of the LTP consultation. On the other hand, a major project very much needed may never be financed because the Government prioritizes something else, say light rail schemes. Thirdly, there are tensions between national objectives and locally determined strategies, which create difficulties in achieving a comprehensive and integrated approach. In sum:

1. The White Papers are inconsistent giving contradictory or ambiguous signals.
2. The central funding scheme undermines any incentive at the local level to go for “strong” car reduction policies.
3. Regional level institutions have lacked the power to create a framework, which could have overcome the disincentives to adopting travel reduction policies, in particular, the risk of losing out economically to their neighbors.

A broad guiding, spatial framework for land use and transport planning is very important. It must be embedded and rooted in the public, and LU&T must be integrated not only in planning but also with funding system and other economic measures needed to fulfill the plans.

6.5.2 Norwich and the four research questions.

6.5.2.1 Explain the main factors in LU&T change in Norwich.

The most important factor in LU&T change both physical and policy wise was demand for building land creating activity and pressure on the built environment and its transport system.

- The population growth in Norwich urban area happened almost totally outside the city (district) border.
- Norwich has developed its retail business far beyond what the local demand should entail (no. 9 retail city in UK).
- An old historic city with hundreds of listed buildings, Norwich has increasingly been seen as valuable by the public, and therefore put more pressure on politicians to preserve this heritage.
- The increase in car ownership and use has created serious problems for Norwich.
- The need for sustainable development and the need for environmental protection have increasingly put pressures on Norwich.
The new liberalism and the problems of financing the national state have led to new ways of organizing the public sector and the role of changing public institutions.

6.5.2.2 Explore how LU&T change was resisted, opposed, promoted.
Because the population growth took place outside the city borders, the city concentrated on developing the retail and tourism part of the economy, which led to major rebuilding in the city centre. This has been done with great concern for the historic buildings and is an excellent example of combining heritage with modern demands (shopping and tourism). The development of Norwich city centre was done without much opposition.

On transport the County’s predict and provide ideology met resistance from both the grassroots and the city when the completion of the Inner Ring Road came up. But less than a decade later the Northern Distributor Road surfaced as a remnant of the old ideology and is still not finally decided. Norfolk County Council is active in promoting the Northern Distributor Road, so far with little opposition.

The LTP for Norwich urban area, which has received a prize in 2004 when it was judged one of the best LTPs in England, was produced by the County and should be the vehicle to implement Government policy at the local level. The sustainability goals are so far not reached and the LTP is also used to promote the Northern Distributor Road, which will generate more car traffic in the already very congested urban area of Norwich.

6.5.2.3 Examine the role of institutional relations in explaining processes of LU&T change and inertia.
The fragmented roles for LU&T planning and policy have been a major cause behind change and inertia the last 30 years. Norfolk County Council has had the planning powers and the Norwich District (City) Council has become only one of many stakeholders in the LU&T processes. The new regions will further diminish the influence Norwich can exert.

6.5.2.4 To use the above analysis to look for the feasibility of challenging existing patterns of mobility.
Planning documents have from the late 1990s had Sustainable development and protection of the Environment as overarching goals. The Mode hierarchy is an example to follow for other cities since it represents an EST strategy although without any practical effect so far in Norwich. A shift in the planning documents has occurred, but not in the practice of the county planners. The city planners produced The Local Plan 2002, which is a very good plan in an Environmentally Sustainable Transport perspective, but it has not influenced the County much so far. The County supports research on alternative bio fuels, but there are no indications that restrictions on car use may be an option. The City has a more varied view on the need for car reduction strategies, but hardly any real influence.

The traditionally very strong Central Government in UK has kept its position, which in practice give the bureaucrats in the Government Offices very wide powers over land use and transport planning and indeed the funding of the LTP’s and special projects.
6.5.3 Norwich case study lessons

In Norfolk County Council a pro-car perspective still dominates Land Use and Transport planning. To push economic growth and keep the election promises, politicians of most parties struggled to:

- attract businesses and to get other advantages (a new government office located in the county, expansion of existing ones, etc.)
- get money from Government both for investment and services (e.g. Enterprise zones, Public Transport)

Being one of six districts in Norfolk County, Norwich City Council becomes a minor player out of six against the County. This makes comprehensive and integrated Land Use and Transport planning for Norwich urban area biased because the districts do have very conflicting problems, outlooks and aims. Why does this happen when goals adopted both at the national and local level aim at more sustainability transport and claim that restrictions on car use are necessary?

Some lessons:
1. The aims and signals are ambiguous and contradictory. They give room for different interpretations and can be used both to unite and to divide.
2. The institutional structures and the need for growth make it politically “impossible” (political suicide) to vote against/prevent big projects.
3. The incentive structures honor growth, big projects, new areas for business localizations and investment in transport.
4. The “Rules of the game” favor rural areas against urban areas (the dimension county versus city can be found in many contexts as road building versus public transport, buses in the city versus in the rural area, financing of city projects, bus and LRT - light rail transport).
5. The Northern Distributor Road (NDR) may seem rational in a county context, but not in an urban context given the goals set.
6. Sustainability demands precautionary action now to prevent negative long-term effects, but some claim that widely different actions now may lead to the same long-term goal. Hence, rhetoric is used to hide different objectives and the weighting of short term and long term consequences.
7. Fragmented institutions make it very difficult (impossible?) to reach long-term goals.

6.5.4 Sustainable transport strategy for Norwich?

Based on the lessons drawn above, I have made an outline of a strategy to change the course towards an environmentally sustainable transport system in Norwich:

1. A comprehensive bike- and walk network with secure crossings must be established before it will be used to a large extent.
2. The bus services and the bus system must be adapted to suit the customers travel needs and the travel time door-to-door must be less than double of the car travel time. This will require maximum 10 minutes frequency of departures daytime and few bus exchanges. The costs of using the bus are compared with “the out of pocket costs”
using the car. That means that the bus services must be far cheaper than they are today in Norwich (free travel for children under 14 as in London is a good example).

3. When the above points one and two are in place, the parking policy can be gradually sharpened by increasing the price for both public and private parking. Thereafter can regulation of the parking supply, length of time allowed to stay, the localization of the parking places, etc be implemented over time.

4. Land use policy should support transport policy. Norwich should therefore actively encourage “car-free housing” and set maximum limits for the number of parking spaces allowed with redevelopment. Mixed-use\textsuperscript{345} and high-density regulation open for less demand for the car for local trips, and should be pursued. Such regulation is also flexible to meet future changes in demand for housing or offices. It raises questions if developments like Chapelfield and St Andrews car park should be allowed, and if it is possible to prevent such car generating developments? St Andrews car park is certainly part of the “provide for the car paradigm”, but it is probably not possible to prevent developments like these two until a national framework and a comprehensive car restraint policy functions (i.e. points one to three above).

5. Congestion charges and road tolling. The London Congestion Charging, which reduced traffic by 25\% in the city center, is a success according to some and a waste of resources according to others\textsuperscript{346}. It has certainly not got broad political support in England. Norwich on the other hand seems geographically perfect for a combined congestion and tolling system. Such a system facilitates the use of the price mechanism to marginally reduce the peak hour demand, and at the same time collect considerable income. To get political support for such a scheme I believe the following two conditions must be met:
   a) The revenue collected goes to the City of Norwich, and should exclusively be used for transportation purposes (building roads, bus stations, light rail, etc and to subsidize bus fares and services).
   b) An agreement with Central Government, Region and County must guarantee that the Norwich citizens are not losing out in the bidding for funds through the LTP process.

6.5.5 Major lessons from Norwich

In general the number of organizations that have to cooperate to attain a goal decides the transaction costs. When the numbers of actors or organizations increase, the complexity

\textsuperscript{345} Mixed-use as an instrument will be more or less effective depending on the situation in which it is used, see for example the studies by Petter Næss in Copenhagen and other cities. In suburban areas, mixed-use cannot be generally recommended in order to reduce climate gas emissions from transport. If the workplaces are specialized, they are likely to recruit employers from all over the metropolitan area, not only from the local neighborhood, and because the suburbs are generally much more accessible by car than by public transport, most employees will arrive at their workplaces by car. Studies in Copenhagen, Oslo and other places have demonstrated this. As long as it is a city with a strong and attractive centre, densification close to the main centre of the urban region contributes to reduce the amount of travel and to increase the proportion of non-motorized travel. To some extent, residential development close to the centers of second or third order towns may also be favorable in terms of greenhouse gas emissions reduction. Specialized workplaces should, however, not be located to suburban centers, as a large extent of car-based criss-cross commuting is the likely result of such workplace decentralization. However, in urban fields like the Randstadt and South East England where both jobs and homes are undergoing locational changes, the result may be uncertain.

\textsuperscript{346} See for example Litman, Todd: www.vtpi.org/london.pdf
increases and transactions costs go up. British land use and transport planning has undergone major changes during the last decade. New regions have been established and tasks have been shifted between the levels increasing complexity and fragmentation. The different distribution of resources and powers creates imbalances along the private-public dimension, and within the public sector between the levels. The new and old institutions and organizations have to learn to cooperate and function in a changing and uncertain world, not least influenced of the global economic forces, Internet and the new liberalist ideas. This complex world I have tried to pin point in a few major land use and transport planning effects for Norwich:

- The institutional set up with region, county and district make the inter-institutional power play more important than achieving integrated land use and transport solutions for Norwich urban area. Sustainable development goals have not so far had a noticeable impact on the land use and transport development in the Norwich urban area.
- A democratic deficit in the system is associated with the institutional set up and the incentive structure formed. There is a lack of “accountability”. Those persons, who are elected and have to face their voters, do not have the decisive say in land use and transport matters in their area.
- Pro car issues tend to “win” all the time, as exemplified by Westlegate, parking required for redevelopment, and the Northern Distributor Road. It is more than “growth ideology” that causes this, it is also the fact that the car is so much taken for granted – has obtained a hegemonic position – that it becomes a winner time and again.

The Eddington study supports the above conclusions: The current network for sub-national decision-making in transport is highly complex, with a number of different structures and organizations and a large number of players. Within a single functional economic area, a number of different bodies can play a role in decision-making, responsibilities for different policy levers are often split across different bodies, and funding streams may not be structured to make incentives for effective decision-making. Sub-national decision-making bodies often cooperate closely across a single functional economic area – but such partnership working may impose unnecessary costs if it has to cooperate across inappropriate functional splits in responsibility and/or there are too many parties involved.

6.5.6 Devolution of powers needed

Land Use and Transport measures are not sufficient on their own. They can only be used to their full extent as part of a comprehensive policy where the market and economic instruments work together with regulation within an overarching framework (Cervero 2002). To secure involvement from the public and legitimacy for the politicians the principle of subsidiarity should guide the transfer of powers from higher authorities. Land Use and Transport planning and spatial policy at the local level should/must be supported by a framework that prevents the local authority making the “wrong decisions” on issues where important consequences apply to a wider regional or even global scale (avoid ending up in the prisoner’s dilemma).

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To sit in traffic queues every day as many do in Norwich seem a wrong way to solve the demand and supply for traffic capacity. Still, it is not enough only to expand supply; measures to control demand as pointed out in the “New Realism” must be used. However, the “car owning democracy” as Margaret Thatcher called our society where the majority use the car every day, has to support such measures to reduce transport demand. How can one create support for such measures as outlined above in Norwich? The answer to this question may follow this kind of reasoning:

1. The majority must have trust in the politicians deciding (there should be a local referendum)
2. People must be convinced that the money collected for congestion charges or tolls come back as improvement to transport for everybody in the city (the money collected must not be used for schools, etc. or in another place)
3. The Government must guarantee that money collected is a supplement to the ordinary grants received (this condition was guaranteed for the Norwegian city Bergen Toll Road Ring in the mid eighties, but has gradually disappeared with time for later Toll Ring schemes)
4. Another type of communicative planning is called for to get such comprehensive schemes through and make the turn towards more sustainable development possible.

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348 Tony Blair used similar rhetoric in 1996 when he targeted the votes of “Middle Britain”: The Mondeo Man.

349 Amdam propose that a city can use legitimising planning as a meeting place for communicative and instrumental planning to coordinate actions in organisations and society. Legitimising planning is concerned with how cities and regions can use planning as a tool to justify its existence: a) through social mobilising bottom-up, b) through its own actions and achieved results, and c) by accept from higher placed authorities in the management system (Roar Amdam 2005:30).
Norwich case – Annex I
Short list for standard comparison of the case cities – NORWICH

<table>
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<th><strong>Norwich</strong></th>
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<td><strong>Background</strong></td>
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<td><strong>Special LU&amp;T</strong></td>
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<td><strong>Land Use</strong></td>
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<td><strong>LU&amp;T Policy</strong></td>
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<td><strong>Transport Financing.</strong></td>
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<td><strong>Comments</strong></td>
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7 The City of Davis CA— the US Bike City

7.1 Introduction

In this introductory section the Davis Case Study is set. The study is focusing on LU&T planning and policy as an instrument to reach the goal of a sustainable urban transport as part of sustainable urban development. The section contains a description of both the city of Davis and the nearby jurisdiction University of California Davis.

<table>
<thead>
<tr>
<th>Davis facts</th>
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<tbody>
<tr>
<td>In 1925, a city commission was established, and in 1927 the first zoning was adopted.</td>
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<tr>
<td>General Plan GP 1958 was the first comprehensive plan,</td>
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<td>General Plan GP 1973 energy concern and growth control</td>
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<tr>
<td>General Plan GP 1987. Bike plan introduced</td>
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Council: Five elected members to city council, sits for four years, with staggered shifts every two years. Mayor elected by and within the group of five council members.

The City: Size 26 sq km (10 sq miles). Population 65 000 in 2005, average yearly growth in the nineties 2.4%. In the Davis population figures about 17 000 are students, the rest of the students live on campus or outside Davis. GP planning area 160 sq mi, about 415 sq km. 2000 figures: 23 249 houses, 2.5 persons per household, 58% rented 42% owner occupied, income 22 945 dollars (annual growth 3.9%).

The City of Davis is the US Bike City350 and some have even called it The Bike City of the World (Lofland 2004). Davis has been bestowed with “the honor of being the sole community at the platinum level” by the League of American Bicyclists (see ch 7.6.2). Thinking that there was no place for environmentally friendly modes in the US, Davis with an abundance of bikes, but also huge SUVs and trucks, with local well-functioning bus services and quite a few trains daily, forced me to ask questions. Was it a result of deliberate policies and actions, or did it just happen caused by exogenous forces? When so many cities struggle to get people to use soft modes like walking, cycling and public transport how did Davis manage to become a biking city and what role did land use and transport planning play?

7.1.1 The city and the university

The city of Davis is a quiet idyll in an expanse of agricultural land. A “one-company” town 20 km from the state capital of California, Sacramento, the company being the University of California Davis (UCD.)

Davis is 25 square km in area and has 64 000 inhabitants (2560 persons/sq km), a slight decline in population occurred in 2004. Over the last ten years the growth has been on average 1.7 %, most of this strong growth came in a few years. The city “grows” by developing

350 Bicycle Magazine 2003
agricultural land, which is annexed from Yolo County. Growth has been a very contentious issue through the city history. The City Council, which has five members elected on a non-partisan vote, adopted “Measure J” in 2000\(^{351}\). The measure says that any council decision on annexation of land for urban development must be put to the population for a ballot. The local democracy is thus far developed.

Figure 7-1 The location of Davis

The City of Davis presents itself as “the Bike City” and has chosen to use “The Penny-Farthing” or the velocipede as the city logo, giving one aspect of the city identity\(^{352}\). The Bike City was fought through by a group of citizens in the sixties, against strong opposition from the City Council, city administration and the police. It required an election in 1966 for the bike proponents to win, but then all doubts were put aside and the new council introduced bike lanes on all roads where possible.

Figure 7-2 Location of Davis and Sacramento

\(^{351}\) In March 2000, 54% of voters approved a Council-proposed measure requiring a “vote of the people if the City Council approves development on land outside of city limits.”

\(^{352}\) Declared America’s Best Cycling City 1995 by the Bicycle Federation of America
Davis has a grid system with 80 feet (about 24 meters) wide roads and it was only to paint new lines in the streets to create the bike lanes, although exemption from the state regulation on road markings was necessary. But the city went further and said that bike paths should be built in all new developments and the bike network should connect to all schools, green belts, paths and downtown. A bike transportation strategy was created. Along the arterials with heavy traffic it was more difficult to establish good bike solutions, and Davis has still – 40 years after the “bike revolt” not been able to fully implement the bike strategy. “Nothing has really happened with the bike strategy in Old Davis since the seventies” the UCD bicycle coordinator said\(^{353}\) “it somehow stagnated”.

Figure 7-3 UC Davis is also taking care of the bike heritage!

The City of Davis borders to the UCD campus, but has no jurisdiction over the campus area even though it is difficult to see where the downtown of the city stops and campus begins! UCD is a separate jurisdiction and has its own police force, road maintenance staff, planning department, etc. House prices in Davis are high and increasing fast. “The faculty can’t afford to live in Davis” is how the UCD planning director\(^ {354}\) put it.

The University of California has several campuses: UC Los Angeles, UC Irvine, UC Davis and so on. UC Berkeley is probably the most famous of these. UCD started as an agriculture college a hundred years ago and is still very good in biology, ecology and environmental sciences. Another famous research area is at the Institute of Transportation Studies, which excel in alternative fuels and energy (natural gas and hydrogen fuels). UCD is an own jurisdiction and has its own police force, road maintenance staff, planning department, etc. At present there are about 28 000 students and 11 000 faculty and staff positions in total at UCD, but some are located other places in the Sacramento region. In the UCD Long Range Development Plan 2000-2015/2016 the aim is to handle an additional 5000 students and 10 000 employees. (This is an allocation of growth decided by the State of California through the UC Board of Regions.) New housing development for about 4000 students and 500 employees on campus is proposed, but still there will be a demand for housing the coming years from 1000 students and 10 000 persons employed by UCD and affiliated research institutions. The nearly 5000 students and staff living on campus are not registered as inhabitants in the city.

The housing problem caused by low supply and high prices is also enlarged by external demand. “Davis is a “bedroom community” for many Sacramento and the Bay Area” said the city planner\(^ {355}\). Sacramento is only 20 km away, but it is a one-hour drive to the Bay Area and thus a far commute. Commuters, which contribute to a very high traffic density in the peak hours, increasingly use the Interstate Highway I-80 with 4 lanes in each direction and at times the congestion is heavy. Another pressure on Davis to grow is the future prospect of the Sacramento Region. The Sacramento Region Council of Governments has recently produced a Blueprint for the Region towards 2050. From the 1.8 million people today, the region is

\(^{353}\) Interview with David Takemoto-Weerts, 16 May 2005.

\(^{354}\) Interview Robert Segar, 06 May 2005.

\(^{355}\) Interview with city planner Bob Wolcott, 28 April 2005.
expected to grow to 3.5 million people, which means that every year 34 000 new citizens will require housing, schools, transport etc in the region.

The city of Davis has a budget of about $107 million. More than 80% of the budget is created locally. It is therefore a very strong pressure on the City Council for growth just to maintain the level of services the city provides. With a slow growth policy the population of Davis will age and the retired share will increase. The city has had a very successful policy of preventing “shopping malls” to support Downtown shopping, but it also means that quite a few go to nearby Woodlands to shop, which of course reduce the potential sales taxes for the City of Davis. All these factors taken together will give the city considerable challenges the coming years.

During the seventies and eighties a competing image to “the Bike City “of Davis grew: “the Eco City”. With such a background one could think that the City of Davis would be a forerunner regarding sustainable development and sustainable transport, but is it? This is a study of how Davis has approached LU&T planning and how it has performed to influence the development towards more sustainable transport.

The timeline of important land use events in Davis is shown in the next section.
7.1.2 Davis Timeline

<table>
<thead>
<tr>
<th>Nine periods</th>
<th>Year</th>
<th>Events</th>
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</thead>
<tbody>
<tr>
<td>Expectant congregation 1868 – 1871</td>
<td>1868</td>
<td>Davisville founded by Cal P the railroad company</td>
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<tr>
<td>Wheat-growing shipping point 1872 – 1890</td>
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<tr>
<td>Almond cultivation center 1891 – 1904</td>
<td>1906</td>
<td>Start of the university campus</td>
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<tr>
<td>University farm locale 1905 – 1916</td>
<td>1917</td>
<td>Davis incorporated as a city</td>
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<tr>
<td>Urbanizing municipality 1917 – 1929</td>
<td>1925</td>
<td>City planning commission was established</td>
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<td></td>
<td>1927</td>
<td>The first zoning was adopted</td>
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<tr>
<td>Almond cultivation center 1891 – 1904</td>
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<tr>
<td>Depressing locality 1930 – 1945</td>
<td>1929</td>
<td>Wall Street collapsed, depressing Davis</td>
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<tr>
<td>Growth period after World War II</td>
<td>1942</td>
<td>Highway 42 Bypass opened</td>
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<tr>
<td></td>
<td>1958</td>
<td>City of Davis. General Plan. This was the first GP, the first comprehensive LU&amp;T plan.</td>
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<tr>
<td></td>
<td>1964</td>
<td>City of Davis. General Plan amendment of 1958 plan.</td>
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<td></td>
<td>1966</td>
<td>The Bike election, creating The Bike City</td>
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<tr>
<td></td>
<td>1974</td>
<td>City of Davis. General Plan.</td>
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<tr>
<td></td>
<td>1979</td>
<td>Village Homes, “Ideal community”</td>
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<td></td>
<td>1984</td>
<td>City of Davis. GP amendment of 1974 plan.</td>
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<td></td>
<td>1987</td>
<td>City of Davis. General Plan.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>First Bike plan.</td>
</tr>
<tr>
<td></td>
<td>1987</td>
<td>Pass Through Agreement with Yolo County</td>
</tr>
<tr>
<td>Brundtland Commission Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1987</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1994</td>
<td>City of Davis. General Plan. Present</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCD plan very high growth, plus 15.000</td>
<td>2002</td>
<td>UCD Long Range Development Plan</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>Yolo County General Plan &amp; Bikeway Plan</td>
</tr>
<tr>
<td></td>
<td>2004</td>
<td>Sacramento Blueprint Plan</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>Fifth Street Traffic Operation Study</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>UCD Alternative Transportation and Parking Investment Study</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>60% voted NO, 40% Yes to expand Davis</td>
</tr>
</tbody>
</table>

Up to the seventies most people adhered to the slogan *Whatever is good for UC at Davis is good for Davis*. However, then complaints came that the “gown” (the University) made plans and changes without informing the town and taking account of the effects on the “town”. (Loftland 2004:8) This conflict is still there, but very much subdued. The Long Range Development Plan for the University will have tremendous growth impact on Davis, but hardly discussed in the public. It seems that the UCD and City Council agree to make as little noise as possible about the future growth and expansion plans.
In Davis history there are some constants (Lofland 2004:8)

- **Shop at home. Patronize local merchants.**
- **Davis has a severe housing shortage.**
- **We are proud that Davis has a small town character.**

### 7.2 History and situation

#### 7.2.1 Some Davis facts

US cities are “local” governments, voluntarily formed by and for their citizens, but with very different tasks compared to local governments’ tasks in Norway and Denmark. The role of the City of Davis reassembles that of the technical department in a Norwegian municipality, dealing with:

- Growth management (population growth, housing)
- Maintenance of transport infrastructure (also water, sewage, waste)
- Maintenance of parks & green areas
- Built up areas. Monitoring and framework for change.
- Annexation of new land for building.

**The Davis City Budget**

The budget for 2003-2004 was hundred and seven million dollars ($107 000 000 in total and about $1650 per head of population). Different taxes were nearly a third of the income and the biggest item on the income side. Transfers from the state and federal governments were about a fifth of the total income. On the expenditure side parks and community services was the largest item 31% followed by police 28% and the fire corps 17%. In the context of this case study it is important to notice that the city is heavily relying on the income from taxes and development to maintain the level of services. This is a very strong driving force for US cities to develop new housing areas and increase population. UCD is the major employer in Davis with 17 000 employed, the next on the list are the schools (DJUSD) with 800 employed, the City of Davis with 423 employed and the hospital (Sutter Davis) with 385 employed. Thus Davis is uniquely dependent on the university for its existence and livelihood, a true “one company town”.

**Yolo County**

Yolo County is nearly surrounding the City of Davis and UC Davis (Sonora County is bordering along a small stretch towards the south). Yolo County is mainly an agricultural landscape with smaller towns scattered across the county. Close to the City of Davis are the towns of Woodland, Winters and West Sacramento (own jurisdiction separated from Sacramento city).

**Sacramento City and Region**

Sacramento city lies 20 km east of Davis. The city is the capital of California and seat for the Governor (in 2005 Arnold Schwarzenegger) and has some 350 000 inhabitants. In the city region or metropolitan area, however, there are close to 2 million inhabitants. This fast growing region exerts considerable pressure on the property market in Davis (see below), but
not any formal, hierarchical influence on the land use and transportation planning in Davis. SACGO\textsuperscript{356} Sacramento is a voluntary association of neighboring cities and counties.

### 7.2.2 Transportation and Mode Split in Davis

The Davis urban area that has a sharp border against the surrounding agricultural area is divided in two jurisdictions, the City of Davis and UCD. Each of these jurisdictions has different aims and tasks. There are no common statistics for Davis urban area or common studies looking at the area as one unit. In this section we have therefore used the available data and studies to produce a picture of travel in Davis and how these trips are shared between the different modes of travel: car, public transport, walking and cycling, but first, some data on transport in Davis.

#### 7.2.2.1 Transportation in Davis

Davis has 48.8 miles of bike lanes and 49 miles of bike paths. Eighty percent of all collector and arterial streets within city have bike lanes and/or bike paths, the highest ratio in any US city. A UCD campus survey done in 1996 showed that 60 percent of the student population either biked or walked to campus, and 20 percent of faculty and staff walked or biked, averaging 15 000 to 18 000 bikes on campus each day. There is an estimated 53 000 bikes in the city and modal share of 20 to 25 percent of daily trips (Toor 2004:192)

*UCD is very active in providing transportation services.*

At the university the *UCD Transportation and Parking Services (TAPS)* employs a full-time bike coordinator to run the bicycle program. Together with 10 part-time student employees and in conjunction with Campus Police, he enforces traffic and equipment regulations. TAPS offers the Transitpool program for faculty, staff and students, which give discounts and parking permits, etc. Trainpool is another program giving discounts to ride Amtrak trains.

*Unitrans* is a student run organization, provides transit services for the university and the City of Davis. The service that started in 1972 is open to the general public and is partly funded by the City of Davis. Unitrans operates fourteen routes, providing 2.5 million trips annually, and on the average weekday carries nearly 15 000 people. Students pay $24.50 per quarter for the bus program as part of their fees. Annual budget $2.5 million (labour 70%, fuel 10%, materials 20%). Income: student fees 57%, Davis Transportation Development Fund 18%, Yolo County TDA funds 1%, federal operating funds 14%, university contribution 3%, fare and bus pass sales 4%, others 4%. *Green Transport* is being developed in Davis. Twenty-seven of the forty-four bus fleet operated in 2002 on natural gas (CNG) accounting for 80 percent of annual mileage. A research project of mixing hydrogen (30%) with natural gas is used on five buses in full-scale tests.

#### 7.2.2.2 The trend in mode share in US

The trend in mode share for the journey to work in the United States is shown in the following figure. The data is from the national census and mode share is given for every ten years starting with 1960. The automobile was used for 67% of the trips in 1960, since then the

\textsuperscript{356} Sacramento Area Council of Governments
usage has grown to 88% of the work trips in 2000. Public transport 4.7%, cycling 0.4% and walking 2.9% together with work at home 3.3%, add up the rest (Pucher 1999).

Figure 7-5 Mode share, journey to work in the United States since 1960.

Cycling in US had in 1995 a modal share of 0.9% of all trips, walking 5.5%, public transport 1.8% and the car close to 90%. Notice that cycling doubled in last five years in the table:

Table 7-1 Annual US bicycle trips and bicycle modal share, 1977-1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Bicycle trips (millions)</th>
<th>Adjusted bicycle trips mill.</th>
<th>Bicycle modal share %</th>
<th>Auto modal share %</th>
<th>Transit modal share %</th>
<th>Walking modal share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>1272</td>
<td>1476</td>
<td>0.6</td>
<td>83.9</td>
<td>2.4</td>
<td>9.3</td>
</tr>
<tr>
<td>1983</td>
<td>1792</td>
<td>2078</td>
<td>0.8</td>
<td>85</td>
<td>2.2</td>
<td>8.5</td>
</tr>
<tr>
<td>1990</td>
<td>1750</td>
<td>2030</td>
<td>0.7</td>
<td>87.1</td>
<td>2</td>
<td>7.2</td>
</tr>
<tr>
<td>1995</td>
<td>3141</td>
<td>4141</td>
<td>0.9</td>
<td>89.3</td>
<td>1.8</td>
<td>5.5</td>
</tr>
</tbody>
</table>

More than half of all bike trips were for social and recreational purposes in the US in 1995:

Table 7-1 Bicycling by trip purpose, US, 1995

<table>
<thead>
<tr>
<th>Trip Purpose</th>
<th>Percentage of all bicycle trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work commuting</td>
<td>9</td>
</tr>
<tr>
<td>Shopping</td>
<td>12.7</td>
</tr>
<tr>
<td>Personal business</td>
<td>12.5</td>
</tr>
<tr>
<td>Social or recreational</td>
<td>57</td>
</tr>
<tr>
<td>School</td>
<td>8.8</td>
</tr>
<tr>
<td>All trip purposes</td>
<td>100</td>
</tr>
</tbody>
</table>

The US “automobility culture”, which the figure above is an indication of, is far from sustainable, no matter what definition of sustainability one chooses. The question then arises, is Davis, the US Bike City very different from this picture? Which it is, as will be shown in the following.

7.2.2.3 UC Davis campus survey 1996

A 1996 campus survey at UC Davis showed that 60% of the students either biked or walked, and 20% of faculty and staff walked or biked, averaging 15 000 to 18 000 bikes on campus
each day (Toor 2004:193). Both groups compare very favorably with the figures for the US as shown in the national census data\footnote{US national census data 2000. Source: Will Toor and Spencer W. Havlick. 2004: 131.}, where 88% used the car for the work journey.

Figure 7-6 Mode split at UC Davis 1996

7.2.2.4 UC Davis, Housing and Transportation Survey 1988.
UCD employees residing outside Davis are very car dependent (97% of trips). Nearly half of the UC Davis employees, who also lived in Davis in 1988, used the bike for the work trips (45%) while 4% walked. Public transport was used by less than one percent. Only 51% of those UC Davis employees residing in Davis used the car for the trip to work.

Table 7-2 UCD mode split among employees 1988

<table>
<thead>
<tr>
<th>Mode split 1988</th>
<th>UCD employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of trips</td>
<td>Davis residents</td>
</tr>
<tr>
<td>Car</td>
<td>51</td>
</tr>
<tr>
<td>Public transport</td>
<td>0.5</td>
</tr>
<tr>
<td>Walk</td>
<td>4</td>
</tr>
<tr>
<td>Bike</td>
<td>45</td>
</tr>
</tbody>
</table>


7.2.2.5 Mode share in Davis
With the growth in income and car ownership cycling has decreased in Davis. There are very poor statistics from the earlier days, but as Lofland observes: “Several studies and everyday observation showed a marked decline in bike use over the 1990s into the 2000s”. Decline in bike use among high school students was especially dramatic (as was the increase in SUV use among them) (Lofland 2004:146).

A major transport study for Sacramento region has very good data on the present cycling in Davis\footnote{Source: Sacramento Region Travel Survey 2000. Analysis of the 2000 SACOG Household Travel Survey. Prepared by DKS Associates for Sacramento Area Council of Governments. July 25, 2001.}. The following table shows the mode share in the City of Davis, the University of California, Davis (UCD) and the Sacramento Region.
The City of Davis had in 2000 more than twenty percent walking and cycling of the total number of trips, which is very high in a US context. In Davis only 75% of the trips were with the car, which is low compared to rural or suburban Sacramento with a car mode share of 94%. This latter figure is representative for California, except for downtown in the major metropolitan areas. Public Transport in California is virtually non-existent when looking at total travel and average figures.

The City of Davis and the University – UCD - are separate jurisdictions and data on mode share are often given only for UCD since cycling there is very much higher than in the city as such. UCD “work journeys” are probably best reflected in the UCD To/From, which shows 41% of the total as walk/bike trips virtually the same as for All trips. During the day the bike is heavily used for trips downtown as seen in the To/From data with 38% cycling, since walking downtown is slightly too far for lunch trips etc. Public transport makes up about 17% for “work journeys” to UCD, 7% of all UCD trips and only 1% of the Davis trips. This partly reflects that the bus network and services run by the students, is designed to cater for the students travel to and from campus. That being said, the network also does cover both downtown and the whole of Davis fairly well. The UCD campus survey in 1996 is shown below and compared to the 2000 survey data. The rough calculation where the data for students and employees are weighted, show about fifty percent walk/bike share while the four years later and more thorough study show forty percent.

Even if the 1966 survey might be pro bike biased, it is clear that the UCD campus is unique with about half of the trips using soft modes and public transport. Also interesting is that the UCD policy has managed to get 12% of the employees to use Van/Carpool.

The 2000 data are from Sacramento Region travel survey. The 1996 data are from a study by Takemoto Weerts, the UCD bike coordinator, cited in Toor 2004:192, based on questionnaire survey with unknown reliability. The author has done the weighted calculation to make the columns comparable.
7.2.2.6 Sacramento Region. Household Travel Survey 2000

In the Sacramento Region the car is used for more than 90% of the trips, walking 5%, but public transport only 1% and bike 2%. This is typical pattern for most regions in California. Both the City of Davis and UCD come out very favorably in this survey. The car is still the dominant mode for UCD residents with 53%, but 24% cycle, 16% walk and 7% use public transport.

Table 7-5 Mode share for all trips, Davis, UCD and Sacramento Region

<table>
<thead>
<tr>
<th>Mode split 2000</th>
<th>Davis</th>
<th>UCD</th>
<th>Sacramento Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>75</td>
<td>53</td>
<td>91</td>
</tr>
<tr>
<td>Public Transport</td>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Walking</td>
<td>10</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Cycling</td>
<td>12</td>
<td>24</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Sacramento Region Travel Survey 2000. Analysis of the 2000 SACOG Household Travel Survey.

Figure 7-7 Sacramento and Davis. Journey to work by mode 2000

The figure above shows journey to work by mode for Davis City, Sacramento Downtown and Region, notice cycling in Davis. It is the use of the bike that makes Davis most sustainable of the three areas. This is a result of 40 years of bike policy in Davis and the very active policy of the neighboring jurisdiction UCD. Both Davis and UCD have an active policy promoting the use of bicycles, they have invested heavily in the bike infrastructure and run a Transport Demand Management program.
7.2.3 Government and Governance in California.
In this subchapter I have picked out and commented a few central points from planning legislation and practice in California, which is very different from the northern European tradition. William Fulton’s book from 1999: Guide to California Planning, is the main source.

7.2.3.1 Land use regulations have a long tradition in USA
It was surprising to me to discover the long traditions and old planning legislation in USA. California for example decided already in 1937 that cities should produce a General Plan for its territory. One of the first examples of zoning ordinance is from New York’s Manhattan, from 1916, the purpose of which was to secure the interests of the rich, that “mansions of the bourgeoisie” should not be redeveloped. Ownership of land is always important, the driving force in new development. Federal, State, County and Local Government own most land in California. It has been and is an important source of income for counties to sell land to developers to get tax revenue from development. The price of land will therefore be closer to the market value in California than in Europe where the price is often politically decided.

Networking and alliances are also common in California. Local Government Planning and Decision-Making is involved with and often intertwined with the following:
1. Rule makers
2. Government Agencies
3. Real-estate developers
4. Citizen groups.

Consistency between the General Plan and the local plan may be a problem in many countries. To prevent arbitrary political decisions California decided in 1971: The General Plan and Zoning Ordinance must be consistent with each other (page 82). Laws change marginally every year (fairly similar processes both in Congress and State), but the change over time may be great, both regarding signals and practice.

Coming from Norway and discovering that California has managed to control land use along the coast far better than Norway and in line with Denmark and England, made me envious. In 1972 Proposition 20 established the Costal Commission and gave it jurisdiction over development permits and planning in all coastal areas of California. Contrary to Norway there is no way for local authorities to circumvent the Commission.

7.2.3.2 Litigation and political decisions in the hierarchy
1978 Proposition 13 cut property taxes dramatically and thus indirectly exerted strong impact on planning.

Litigation occurs for two main reasons:
1. regulating private property through planning often raises constitutional issues.
2. planning law is based on the concept of “citizen enforcement”, local governments are held accountable to the law through litigation.
Litigation is costly and requires ample resources, which probably make it easier to “run over” a poor neighborhood by a planning ordinance than a wealthy area. Three examples of litigation causes are:

- the statutory case in which the plaintiff argues that some state or federal law has been violated.
- a homeowner group might argue that the local general plan is not consistent with the local zoning ordinance.
- that an environmental impact report should have been prepared on a project, as required by state law.

In 1991 a series of mutual agreements promising cooperation on biodiversity and related issues between federal and state regulatory and landowning agencies has increased cooperation with local government. Political leadership is important for effective cooperation.

States establish the procedural structure in planning, but not contents of plan. In New York, Florida, etc. (about 10 states) the state government plays a direct role in planning policy establishing specific policy goals local government must pursue in land use policy. (Fulton 1999:89) Local Governments have theoretically unlimited freedom, but state agencies might intervene.

### 7.2.3.3 Planning practice & California Environmental Quality Act CEQA

Agreements (contracts) are one main instrument to “control” future development. There is no administrative authority to enforce these, but the agreements are supposed to be enforced by direct citizen action or “citizen enforcement”. Citizens and groups of citizens should hold local government accountable, be watchdogs. Enforcement of planning laws by judges, are according to Fulton (1999:90) apparently preferable to California’s voters and politicians than a bigger bureaucracy in Sacramento (see later about the Davis and Yolo “Pass through agreement”).

“One great weakness of California’s approach to planning policy is that neighboring jurisdictions are rarely required to work together or even take each other’s plans into account. Each try to reap benefits and avoid the harmful side effects like traffic. The only way to gain any influence over its neighbor is to follow the citizen enforcement and sue.” (Fulton 1999:90)

CEQA lawsuits often concern neighboring jurisdictions. Oftentimes these lawsuits are settled for “mitigation money” – e.g. funds for traffic improvements – without going to trial. “CEQA has changed from a tool to stop projects to mitigation machine that spurs forth mitigation measures.” (Fulton 1999:91)

DoT - Department of Transportation (federal) is the major funding source for both highways and transit facilities. Cal Trans, California Department of Transportation, is responsible for state highways. Recently the power to plan these facilities has been assumed by regional transportation planning agencies.

Land use and transport planning legislation and practice in California is different from the Norwegian tradition. It is apparent that more instruments are available, which will open for a wider range of solutions if used.
7.2.4 **University of California, Davis – UCD**

UCD is owned by the state of California and is part of the University of California system. The *Board of Regions* governs the development and management of the UC system, among other things it allocate to each campus a number of students as a goal in their planning. The population of California is growing very fast, mainly due to the number of births. This put pressure on the education system, and therefore the universities are set to increase the number of students substantially in the coming years. After an allocation of growth numbers from University of California *Board of Regions*, UCD must plan for an additional 15 000 staff and students until 2015/2016.

The Long Range Development Plan (2003) is the UC Davis campus General Plan. In the plan enrolment is projected to increase to 32 000 students in 2015-16, an annual growth of 2.2%. Expected total campus growth to 2015, will be plus 15 000 persons (5000 students, 10 000 faculty, staff, research), bringing the total campus population from 36 445 in 2002, to 51 645 in 2016. How can/should the City of Davis cope with this external demand, 10 000 new jobs require housing, schools, services etc. Where should these be localized? Which are the consequences of different alternative locations of new housing and not least, the commuter patterns and GHG emissions associated with these alternative LU&T strategies?

Getting new faculty very often implies two persons needing work, and Davis is too small to offer a wide selection of jobs. Settling outside Davis may therefore be the preferred alternative for many. An article[^359] with title *Searching for the best* highlights that to recruit good people the challenge is great: “about half or more of potential hires involve partner issues” according to the dean of the division of social sciences. High house prices in Davis will further press for location in an area where houses are cheaper. A third cause for settling in Sacramento for single people and young couples without children would be the far larger supply of services and entertainment.

7.2.4.1 **UCD Long Range Development Plan, LRDP.**

The Long Range Development Plan (2003) is a comprehensive plan for the future development of the campus. Below are listed some of the land use and transport goals in the plan:

*Area Objectives:*

1. Transportation. Integrate campus, local, and regional land use and transportation patterns.
2. Housing. Work with the Davis community to provide adequate and affordable housing choices for students, faculty, and staff.
3. Open space. Continue to develop….
4. Economic and Fiscal Health. Work with neighboring jurisdictions….
5. Agriculture preservation. Work with local and regional jurisdictions….

*Resource objectives. Circulation systems:*

1. Continue Transport System Management, measures include
   1-additional bike parking and paths,
2-conversion to alternative fuel vehicles,
3-incentives to decrease single occupancy vehicles, such as transit, rideshare, carpool and shuttle programs.

2. Reduce traffic conflicts
3. Support Transit Systems
4. Multiple Parking Strategies. Keep parking affordable and accessible, including demand reduction measures (such as on-campus housing and shifting support services functions to sites outside the Academic Core) and maintaining low cost parking choices in the overall inventory.

To cater for the future growth UCD plans to build houses for some of the additional 15,000 staff and students. There will be built houses for 4000 students and 500 faculty houses on campus. This is catered for in the: Neighborhood master plan 2003-2015. The area required for the new campus housing will be: 225 acres (53 acres faculty/staff, 30 acres student housing, 17 acres mix-use housing, open space 52 acres, recreation fields 20 acres, elementary school 3 acres, circulation system 48 acres. The length of the internal bike paths is 6.7 km (4.2 miles).

7.2.4.2 A joint transportation systems management plan

For many years the City of Davis and UCD has had a very good cooperation based on the following agreement: “In 1991, the campus and the City of Davis completed a joint transportation systems management plan, which outlined strategies for reducing dependency on single occupancy vehicles and related air emissions. In addition to the bicycle and transit systems mentioned above, the campus actively pursues a range of alternative transportation measures and incentives, including but not limited to alternative fuel programs, rideshare and carpool.”

UCD is actively implementing and developing the means to fulfill the aims of this agreement, but the impression one gets from people is that Davis City Council has been less active in the follow up of the agreement.

7.3 The City of Davis, important and major events

7.3.1 Land use and transportation planning

The development of land use and transportation in Davis can be looked upon as two parallel intertwined processes, the City Council policy and the UCD policy. The people of Davis have contested the strong population growth through decades. Land use and transportation planning and policy are the instruments used by the different groups to achieve their ends. Cases lost often crops up again and influence other cases at a later stage. The development process has turns and twists, but there is a path through the history which we will show in this chapter. Underlying the day to day issues and decisions are major questions about the future of Davis: "Most everyone in town agreed that Davis should grow slowly, recognizing that at some point

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its roads would become overcrowded, bicycling around town would become difficult, crime would approach big-city proportions and the community would face other ills typical in larger cities. Perhaps most alarming was the notion that Davis might lose its small-town character without even realizing it.” (Fitch, 1998: 74)

But how much growth is slow growth? Over the years the opposition groups have developed excellent skills in fighting development plans, obviously having had “professional” help from UCD employees, who were husbands, wives and friends. There is a two sided feeling about growth, on the one side UCD must grow to keep the city economically healthy on the other side there is the NIMBY (not in my back yard) effect and the worry that big society will damage the city as one opposition group puts it361: “\textit{Good cities are rare! Let’s not rush to lose ours.}” It is the path of events and issues that have had lasting and deep effect on the land use and transportation development of the City of Davis we highlight in this section.

Following the path of events require detailed inquiry into the land use and transportation planning processes. Highlighting some events does therefore not mean that the daily practice with applications, proposals, plans and decisions are forgotten.

The major land use and transportation events have been:

- The Bike City 1966
- Village Homes 1975-82
- The General Plan and the Bike Plan 1987
- Pass Through Agreement 1987
- Alternative Transportation Task Force – ATTF 1994-96
- The General Plan and the Bike Plan 2001
- Covell Village 2005
- Diet the 5th Street?

Davis grew at a rail infrastructure junction, and there are still Amtrak services to Sacramento and the Bay Area. Crossing the rail track with roads and to create good access to parts of the city and the highway system has therefore been difficult. Contrary to the European cities, the issues of traffic congestion and the funding of roads are not included in the listing because they are not any longer major issues in Davis, but they have been earlier.

The State Highway 40 Bypass was opened in 1942. Since then there have been conflicts between the State of California and the City of Davis concerning junctions, land, etc. several times. But today the Interstate system is well developed and bypasses Davis close to the City Centre, without being much concern for the City Council. In 1995 the last major controversy was closed after 35 years of fighting. During these years a rail underpass had been tested in three referendums. The following statement from the campaign leaflets shows the intensity in the debate: \textit{“In 1988, Davis citizens saved Central Park from being paved over by the city. Keeping our downtown pedestrian-friendly is equally vital if Davis is to maintain its community feel. A four-lane truck route and 9000 more car trips daily will forever change our city, which is one of the last remaining true downtowns in California.”}362

\begin{footnotes}
\footnote{361}{Wildhorse Opposition Association in a leaflet during a 1995 referendum over the 425-acre project (Fitch 1998).}
\footnote{362}{Opponents to the widening of Richards Boulevard, before the referendum in 1996, cited from Fitch.}
\end{footnotes}
7.3.2 The Bike City - created 1966.

Biking caught on during the Second World War, and continued to be popular throughout the fifties. But there were so many bikes on the streets and sidewalks that many found them a nuisance. In December 1965 the chief of the police announced a “get-tough bike policy” which was a “crash program for citing violators” using “special teams of officers in the field”. The chief “also expressed doubts about establishing bike paths” an idea that had been presented to the Council a year earlier. (Lofland 2004:131)

Eve Child, had been the moving spirit in drafting and circulating a petition calling for “bicycle paths on all arterial streets and parking areas in shopping centers”. “The Council members stared at us incredulously when we presented our ideas, but after a year of work in April 1966 the Council grudgingly authorized a “pilot program” of a few lanes on small side streets”. Bike lanes became a hot topic at the spring 1966 council election and the new Mayor led the authorization of a wide-ranging and arterial system. Thus began what would become a major system of bike lanes and through this Davis also got its identity as a bike city as these metaphors indicate: *The City of Bicycles. The Bicycle Capital of the World.* (Lofland 2004:132)

Davis pioneered bike lanes on streets, although it had to fight the California legislature to make them legal, and creating a model for other cities to follow. The university followed up the city effort by connecting campus with city paths, closing off the campus core to cars, and adding high-visibility bike parking at virtually every campus building. Bike Roundabouts and traffic signals with bike-only light cycles at major intersections are innovative features of the Davis bike culture.

In 2005 Davis is still a bike city

The cycling in the seventies and eighties are not well documented, but the following travel survey data from 2000 supports that Davis is still a bike city. A comparison of modal split in Davis with Aalborg and Kristiansand show that Davis is a bike city even with an European look:

<table>
<thead>
<tr>
<th></th>
<th>Davis Work journeys:</th>
<th>Aalborg 1999</th>
<th>Kristiansand all trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>car 59%, PT 6%, walk 5%, cycling 31%</td>
<td>car 75%, PT 1%, walk 12%, cycling 10%</td>
<td>car 63%, PT 9%, walk 9%, cycling 19%</td>
</tr>
<tr>
<td></td>
<td>Non work</td>
<td></td>
<td>1998 SC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>car 63%, PT 10%, walk 13%, cycling 14%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2001 NTP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>car 70%, PT 20%, walk 3%, cycling 7%</td>
<td></td>
</tr>
</tbody>
</table>

“Several studies and everyday observation showed a marked decline in bike use over the 1990s and into 2000s” (Lofland, 2004:155). One reason for the decline in cycling is the increase in students’ car ownership, as the bike promoter said: “*In my student days, we were*
poor. Now, they’re really wealthy, 80% own cars and many exclusive ones, far more costly than I can afford.”

The League of American Bicyclists honored in 2005 Davis of becoming the sole community at the platinum level among the bicycle friendly communities:

First Platinum-level Bicycle Friendly Community Recognized
The League of American Bicyclists is recognizing Davis, California, as a Bicycle Friendly Community at the platinum level, the first time the top designation has been awarded to any community in the United States. “We're delighted to recognize Davis as an outstanding city for bicycling,” said Andy Clarke, executive director of the League of American Bicyclists. “For forty years, Davis has had one of the highest levels of bicycle use in the country – currently 17 percent of journeys to work are made by bike. This comes as a direct result of policies and choices they have made over the years. Bike lanes and trails permeate the community and enable people of all ages to ride to school, to work, and for recreation and errands. The city and university also have exemplary education, encouragement and enforcement programs.”

Source: (www.bikesbelong.org).

7.3.3 Village Homes

7.3.3.1 Village Homes are born
Mike and Judy Corbett together with some other “environment” students designed in the early seventies Village Homes, a sixty acre (24 ha) mixed-use residential “garden village” incorporating innovative ecological and social features. It was an effort toward sustainable development inspired by Howard’s Garden City (Corbett and Corbett 2000:21).

The principles behind the design of the Village Homes community are ecologically sustainable development and not only the physical design, but also community building by common gardening projects and other collective activities. The design focuses on walking and cycling by putting paths in the green common area (the use of solar energy, treatment of ground water, etc. is not mentioned here). The area set aside for roads and parking substantially less compared to normal designs. The bike paths are connected to the main bike network. The idea was that the design should support that the automobiles were used as little as possible. It has through this ideology also been a strong support for the use of environmentally friendly transport in Davis.

The process of developing Village Homes was met with opposition. “The staff objected to the narrowness of the streets, the inward-facing houses, and the long cul-de-sacs. The fire and police chiefs objected to the layout and worried about access for emergency vehicles. The entire process taught us that change must originate with local elected officials, staff people have a tremendous investment in doing things the same way as they did them yesterday.” (Corbett and Corbett, 2000:25) Thirty-two banks and loan institutions refused to finance Village Homes364 and the design was the laughing stock in realty circles365. Once built it

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363 Interview Tim Bustos 240505
364 The Bank of America did not turn down the loan because of the economic risks involved, but “they simply found the project’s philosophies distasteful.” Corbett 2000:26
became an icon for eco-friendly housing development and visited by famous people (president Carters wife, president Mitterand and Jane Fonda). The Village Homes ideology was founded in ecology: for the environment, for the use of renewable resources, for husbanding with land and water. The design recognized the car, but minimized the area allocated for the car. It used the walk and bike paths as the central transportation element to promote the use of the bike, a design close to the present term “sustainable design”.

According to professor Mark Francis the following points make Village homes unique (Francis 2003):

- Streets: narrow, meandering, cul-de-sac streets.
- Stormwater Drainage System: above ground natural creeks.
- Fences: not allowed on side streets to keep area open.
- Density: standard for total area, but residential lots smaller to get large open spaces.
- Housing mix: range from 500 sq ft to 3500 sq ft.
- Homes and Energy: energy efficient houses, most are passive solar. Some are active solar water, heating.
- Landscaping and Vegetation: designed to support yearly changes in temperature.
- Homeowners Association: 3 gardeners and manager employed to maintain community centre, swimming pool and gardens. Produce sold.

I might add to the list that it also has small community center with a kindergarten, some office, a common swimming pool, and a nice Italian restaurant, Ostaria Fasulo. Originally the name was Plumshire Inn, established by Michael Corbett.

7.3.3.2 Comparison of Village Homes and Conventional Neighborhood

Many books are written about Village Homes, the following comparison of Village Homes and a Conventional Neighborhood is fetched from: Francis (2003).

The themes for comparison were:

- Demographics
- Evaluation of houses
- Evaluation of neighborhoods
- Evaluation of friends and socializing
- Agriculture

The following table shows that Village Homes systematically score better on major sustainability indicators:

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365 Solar technology was very new at this time, and the local estate agents knew little about it and trusted it less. They actively discouraged prospective buyers, disparaged the experimental features of the project, and raised concerns about resale value. Corbett 2000:27
<table>
<thead>
<tr>
<th>Transportation</th>
<th>Village Homes</th>
<th>Control neighborhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average annual miles per car</td>
<td>11 300</td>
<td>13 400</td>
</tr>
<tr>
<td>Average miles per household</td>
<td>210</td>
<td>270</td>
</tr>
<tr>
<td>Average gas mileage of vehicles</td>
<td>27 mpg</td>
<td>23.5 mpg</td>
</tr>
<tr>
<td>Gasoline consumption per car per year</td>
<td>422 gallons</td>
<td>577 gallons</td>
</tr>
<tr>
<td>Gasoline consumption per household per year</td>
<td>753 gallons</td>
<td>1171 gallons</td>
</tr>
<tr>
<td>Energy consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total yearly energy consumption per household (kwh)</td>
<td>44 900 kwh</td>
<td>67 700 kwh</td>
</tr>
<tr>
<td>Recycling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glass</td>
<td>75%</td>
<td>64%</td>
</tr>
<tr>
<td>paper</td>
<td>43%</td>
<td>17%</td>
</tr>
<tr>
<td>Organic waste</td>
<td>34%</td>
<td>29%</td>
</tr>
</tbody>
</table>

Table 7-6 Village Homes, an early example of a sustainable neighborhood development

### 7.3.3.3 Why not replicated?

Village Homes developed 1975-82, has been widely hailed and many books have been written about it, but it has not been replicated, neither in Davis nor other places. Why?

In Davis the Aspen development in the nineties has some of the basic innovative thoughts from Village Homes, and it was expected that Covell Village would further develop these ideas in practice. The Covell Village development was as described in ch. 7.6.8 rejected in a ballot, so even in the span of thirty years the design idea has not spread.

Some comments fetched from the Corbett’s book on why not replicated:

Two of the leading developers in Davis “the main reason there aren’t more Village Homes is there’s only one Mike Corbett” and “requirements now for higher density development in Davis and the ongoing concerns of City Public Works regarding drainage and layout”.

Wolcott and Loux, city planners: “Many citizens throughout the city look with pride to Village Homes and question why no similar model has been built in the past 20 years.” The two planners suggest that the reasons for this are increases in land prices and changes in home styles and tastes. City standards in Davis and elsewhere remain a substantial barrier for a developer wanting to build a similar project.

Mike Corbett offers an assessment of why the project has not been reproduced. “The problem is not that the public does not want it. They come here and see what we have done and say, Why isn’t everybody doing this? But developers are so close-minded. They continue to build thousands of places where you can’t get around without a car.”

The reasons Village Homes are not replicated should also be looked for in the market led system. Profit is one main reason. The image of Village Homes is completely different from what is advertised as the *American Dream House*. The developers don’t want to take the risk of something different. Each developer minimizes his own risk by producing housing that is presented as the “dream” and also he is reinforcing the “dream” with his own marketing.

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When the sub-prime bubble burst, it was shown that the risk was quite large. But the high risk did not hit the developers, apart from the developments being built. The costs were transferred to the house buyers firstly, and to the banks secondly.

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366
Developers also react on the large common area in Villages Homes used for gardening, wine yard and other community activities, thinking that the density is too low. But, the overall density is not very different from other neighborhoods in Davis with about 10 houses per hectare. This is because the design has concentrated the houses with small gardens to the east and a large common area with community facilities to the west. Without an abundant common area, another development will lack the unique qualities of Village Homes. In a private development such areas are as a rule filled with houses, boosting the profits on the development.

Village Homes represented both a novel neighborhood design and a community ideology of participation and cooperation about many common activities. As such the project met with hostility in the banks that refused to fund the development. It therefore needs a developer willing to take this extra cost of convincing the financiers, the public planners and the future buyers. In addition there are as the statements above show, many barriers in the planning system itself. The police think the streets are too narrow and the inhabitants will have difficulties in parking. The public works engineers point out that refuge collection will be very difficult and the narrow streets are difficult to maintain. In other words how the municipalities in their daily practices use zoning and planning ordinances, prevent the ideas in “Smart Growth” and “New Urbanism” to be realized and the unique Village Homes to be replicated.

7.3.4 A measure to prevent sprawl – The Pass Through Agreement

In 1987, the City of Davis and the County of Yolo executed a Pass Through Agreement, in response to the city’s redevelopment plan. The agreement ensures that the city will “pass through” specified property tax increments to the county. The “pass through” is conditioned upon the county not approving “urban development” within the city’s planning area but outside the city border, without city approval, thereby avoiding “leap frog” growth or growth which is difficult to service. In practice this means that Davis City pay Yolo County part of the income from development, against Yolo promising not to allow development close to the city borders. This agreement has been very effective in containing the expansion of Davis and the main reason that shopping centers and other developments have not cropped up along the city’s edge.

This agreement is not giving Yolo County adequate covering of the costs, since the prices in the agreement have not been adjusted over these years. Yolo County has therefore asked to renegotiate the economic terms of the agreement.

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367 At the Yolo seminar in 2005 Judy Corbett pointed out that “Smart Growth” projects still was hindered by the land zoning (see Appendix I under Davis).
368 To be able to control development that is costly to service was one of the main causes for the Norwegian 1965 planning act.
369 Davis Enterprise May 24th 2005.
The first city plan for Davis was produced 1927, while the first comprehensive land use and transport plan for Davis is the General Plan from 1958. Three years later a plan for Davis core area was presented, but failed at the outset. Downtown Davis is sacrosanct for many of the citizens, representing what is valuable: the heritage and roots. When the Core Area Plan ridiculed this attitude: “Like everything else, downtown must change to survive in a changing world, or it will follow the dinosaur to extinction.” it had lost, even though it presented a promising future for Davis: “The focal point of the new downtown would be the Third Street Parade, an ambitious scheme for connecting the university campus with the downtown business district. Lining Third Street would be department stores, specialty shops, restaurants and offices in buildings up to eight stories high. Third would be closed to automobile traffic except at cross streets, and an attractively landscaped pathway would be added for bicyclists and pedestrians. “The gently curving bicycle path will occupy the center of the present street,” the core area plan explained. “Under arching shade trees, there will be benches and sidewalk cafes along the promenades on either side. Fountains, pools, sculpture, light standards, and planting will provide beauty; and commercial display stands, bulletin boards and booths where cigarettes, magazines, books and flowers are sold will enliven the scene.” (Fitch 1998)

This core feeling among Davis residents must be acknowledged to understand the land use and transport planning, and indeed the use of the development control and other measures to safeguard the city.

The State of California legislation has since 1937 required that each city and county prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any adjacent related lands.  

Seven themes are to be included in the general plan:
1. Land use element. “Designates the proposed general distribution and general location and extent of uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private land use of land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan.”
3. Housing element. Existing and projected housing needs.
5. Open space element. To preserve natural resources, production resources, outdoor recreation, public health and safety.
7. Safety element. Risks from seismically induced events, flooding, etc.

In 1961 Livingston and Blayney presented a plan for Davis Core Area Plan, a Davis with a population of 75,000 in 1985. The plan was based on le Corbusier’s ideas.

Nearly 30 years before similar legislation in Norway.
Already in the Davis General Plan 1973, the year after the Environment conference in Stockholm, energy conservation and integrated transport were included as themes in the plan: “a sophisticated, comprehensive energy conservation framework that called for a better integrated transportation system, innovative building regulations and public education.” The director of planning declared that the plan had “changed the shape of the city from sprawling suburbia to a well-managed, compact community.” (Lofland 2004:140)

As part of the General Plan review in the mid eighties, Davis produced the first comprehensive Bike Plan, which confirmed the twenty year old policy of establishing a comprehensive network for walking and cycling covering the whole city with good access to major traffic generators. The Bike Plan also recognized that the bike infrastructure alone was not enough to make people use the bike in competition with other modes. It therefore called for a bike promotion policy to inform the public and make awareness of the positive effects of using the bike. The General Plan and the Bike Plan of 2001 are in essence the similar set of plans from the 1987 ones rolled forward, but with more emphasis on walking and cycling. The 2001 plans were also strongly influenced by the ATTF as described in ch. 7.6.6 below. The General Plan 2001 was produced with extensive collaboration with the residents of Davis. “We are specially proud of extensive public hearings and participation” as the planner said.

**Bike plan**

The statements on the Bike Plan and Bike Promotion that follows are from an interview and talks with Tim Bustos the Davis Bicycle and Pedestrian coordinator. “Bicycle transportation is institutionalized in the General Plan. The city adopts policy of bike travel in new developments, ensure links to existing trip generators (standards and design guidelines). One of the best bike networks in the country. Good lanes and paths and most important good connections both in communities and along arteries.”

“The Bike City is threatened by the change in demography. New people with no culture of using bikes or public transport, is moving in. Together with less self containment, ie people both living and being employed in the city, puts pressure on the city economy, the transport system in different ways and indeed the mode split.”

On bike promotion and encouragement: “We have picked the fruit. Now demography is changing. Earlier people were attracted to Davis by UCD and Bikes, but now people are flocking to Davis. They are more auto centric, more inclined to use their cars. When they move here, they are not changing their habits. Quality of life is lowered, even that was the reason they came!”

There are some successes, like the “Bike commutes” and “Bike week” promotions, they are really important. A lot of people on the fence, they say: I would like to use the bike, but… They need incentives. People are scattered over a scale “Never ever bike” to “Positive, possible bike user”.

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372 Tim Bustos was thereafter employed fulltime as the City of Davis Bicycle and Pedestrian coordinator and UCD followed up and employed David Takemoto-Weerts as the UCD Bicycle coordinator.

373 Interview with Bob Wolcott 180505.

374 Interview Tim Bustos, Davis Bicycle and Pedestrian coordinator 20th May 2005
“Hardest to reach are the young people, the students. We were broke when we were students, but now students are affluent. More ride cars now and more ride costly cars. Commercials to get people to buy new cars use enormous amount of money, we can’t compete. They talk about image – what your girlfriend or mate think of you. That’s why we do bike days etc. we can’t compete.”

There are several lessons in these statements: First, the city has institutionalized cycling in the land use and transport planning, and importantly in the standards and design guidelines. The city has thus secured that the cycling mode is equally important as roads in new developments. Second, the bike city is threatened by change in the population, income, car ownership and life styles. To get their time-budgets together many people have to use the car. The Blueprint for the Sacramento Region discussed below, illustrates this point. Thirdly, bike promotion is necessary to give the environmentally friendly cycling mode a voice, although a tiny one compared to the massive marketing of the car. Bike promotion can in a local community attract some new cyclists and it supports the existing bike users.

**Bike planning and parking policies**

Goals of the Bike plan:
- Goal to maintain system of facilities
- Encourage bike travel

The Bike plan shows that a lot can be improved with the bike infrastructure and maintenance, and it accordingly sets many specific goals. However, many of the goals are the same as in the former Bike Plan, and the means proposed are education, encouragement, and similar. Although these means are important, one may ask if not Davis should have developed minimum standards for the bike infrastructure similar to those in force for roads and traffic. Such standards would strengthen the city planners’ position in negotiations. As it is the developer and the city may come to some development agreement, in which the bike net may or may not be the loser. Without such standards it is also very difficult to improve the old part of the network, which certainly has deficiencies.

7.3.6 Alternative Transportation Task Force – ATTF

The City Council set up the Alternative Transportation Task Force 1994[^375], charged with exploring “the potential for increasing the use of transportation modes that provide an alternative to the gasoline or diesel fuelled automobile.” The ATTF report was divided into two parts. Part one deals with the basic problem of car dependence and the lack of LU&T integration, which is thorough and very principal. Part two is a list of policy items with description and proposed action, divided into Primary and Secondary Projects. Primary projects are listed under headings:

1. Bicycle Transportation.
2. Pedestrian Transportation.
3. Electrical vehicles
4. Transit

[^375]: UCD Institute of Transportation Studies was founded three years before in 1991.
Main conclusions from ATTF:

- Recommend to put new criteria for land use and mobility into the General Plan.
- City Council to oversee the development of new criteria.

The task force recommended: “systemic changes to land use planning and transportation systems, as well as specific short-term improvements that would enhance bicycle, pedestrian, electric vehicle and transit transportation”.

Most of the recommendations were adopted in the General Plan in 2001. Implementation of the General Plan objectives with actions is however another issue, as the parking policy objective to underpin more transit use show:

GP policy 4.1.1  Reduce parking at locations that are well served
Parking charges at UCD campus is not popular with the Davis downtown business association, but it verbally supports the City Council strategy. However, it strongly resists introducing a stronger parking policy and parking charges downtown. The bike coordinator had the following comment to this policy item in the General Plan: “Difficult, continues to be controversial, e.g. train depot. They demand parking even if they live a mile away.”

7.3.7 Growth, Ecology and “Measure J”

The “election revolution” of 1972 is how Fitch describe the birth of “progressive ” Davis, which had “an abundance of middle-class high-achievers out to save the world”. Failing that, they at least want to save Davis from “urban sprawl, suburban shopping malls, the world’s love affair with automobiles and other afflictions of the modern world” (Fitch 1998). Bob Black, former student president and new 1972 member of the City Council, was an ecology front fighter. He was also close to the group around Mike Corbett thinking of building an ecologic village – the Village Homes. The 1973 GP was hailed as ”a sophisticated, comprehensive energy conservation framework that called for a better integrated transportation system, innovative building regulations and public education”. The Davis planning declared that the plan had “changed the shape of the city from sprawling suburbia to a well-managed, compact community” (Fitch, p140).

Davis likes to talk of itself as the Eco City, an understanding that goes back to the seventies and the 1973 General Plan, which at that time was very radical. It also opened up for the famous development Village Homes and the attempt to design a community on environmental and ecological principles. The idea was among other things that the design should support that the automobiles were used as little as possible. It has through this ideology also been a strong support for the use of environmentally friendly transport in Davis. The Eco city movement somehow fizzles out with the Reagan era, but the sustainable transport ideas and control with development linger on.

Growth has been a very contentious issue through the city history. Before the 1972 election a task force revising the General plan proposed to limit and control the city’s future growth

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376 Interview Bob Wolcott
377 The city of Davis web site www.city.davis.ca.us/pb/cultural/about.cfm
378 Between 1950 and 1987 the yearly population growth was incredible 6.4 % (Bike Plan 2001, page 1)
through a system of housing allowances. In 1981 the council voted to limit the population at 50,000 in 2000. In 1986 measure “L” was adopted “Davis should grow as slowly as possible, and that annexations should be discouraged.” The Davis city council sought to forestall future threats of sprawl by the “pass through agreement” with Yolo County (see above). According to this the city purchased the county’s promise “not to develop on Davis borders” with ongoing payments to the county from the city’s redevelopment agency” (Fitch, p139). At the turn of the millennium another decision on growth control came. The City Council, which has five members elected on a non-partisan vote, adopted “Measure J” and put the proposal before the electorate in 2000\textsuperscript{379}. The measure says that any council decision on annexation of land for urban development must be put to the population for a ballot. This measure became decisive in the Covell Village development proposal, as we will outline below.

### 7.3.8 Covell Village

Covell Village\textsuperscript{380}, a 160 hectare area which was proposed to be developed with about 1600 houses was the first proposal put before a ballot according to “Measure J” in November 2005. The city administration seemed strongly in favor of developing Covell Village\textsuperscript{381} and had together with the developer put forward a proposed agreement in which the developer put in a “package” of additional benefits for the community.

The project was presented as “new urbanist” with emphasis on walk-ability, attractive design, open space and habitat areas and other features\textsuperscript{382}. The design for Covell Village have a very good internal system of bike paths placed in open green space and also excellent contact with the main bike network in Davis. Nine over- and underpasses were to be built to improve the safety and attractiveness of the bike mode. Free public transport was to be provided to the residents (see also the Kristiansand case for discussion on zero fare). The Covell Village proposal did include all demands from the City providing for walking and cycling. This substantial “package” of benefits reflects that the developer had to make the new development seem like a good “thing” to more than half the electorate in Davis, to be able to go ahead with project, which has a sales value of upwards of one billion dollars when finished.

*The Covell Village Plan went through the following public process:*

- **Planning Commission:**
  - May 18: Public hearing
  - May 25: Deliberation/recommendation
  - June 1: Deliberation/recommendation

- **City Council:**
  - June 7: Initial public hearing
  - June 8: Additional public hearing

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\textsuperscript{379} In March 2000, 54\% of voters approved a Council-proposed measure requiring a “vote of the people if the City Council approves development on land outside of city limits.”

\textsuperscript{380} Designed by Michael Corbett, the designer of Village Homes.

\textsuperscript{381} Judged from statements in several articles in Davis Enterprise spring 2005.

\textsuperscript{382} “Principles of New Urbanism” adopted by the Congress for the New Urbanism, promotes neighborhoods that are walkable; interconnected; mixed use and diverse; a range of housing types, sizes and prices; quality architecture; increased densities; defined center and edge to neighborhood; with centrally located public spaces; a smart transportation network, including bicycle and pedestrian friendly design elements, and sustainable features that reduce use of finite fuels and respect the natural environment.
June 14: Deliberation  
June 21: Deliberation/decision  
November 8th 2005: Ballot/Referendum according to “Measure J”

7.3.8.1 Series of presentations in Davis Enterprise

_Covell Village plan takes shape_[^383].

The developer of the 388-acre site would have to build and equip a new fire station for the city, buy another police car and fund other public safety operations, maintain the subdivision’s park for several years, help pay for traffic calming measures on nearby streets and preserve agricultural land, according to a draft agreement between the developers and the city. Bill Roe, one of the developers: “the draft agreement is the result of an unprecedented partnership with Davis citizens and Davis city government. Crafted after decade of public input, design, planning, review and negotiation, the agreement guarantees that this innovative solar neighborhood will bring benefits to all Davis and reflect our community’s values.”

Opponents, organized as a large residents’ group, Citizens for Responsible Planning, say that the project represents fast growth, would burden existing streets, facilities and residents, and violates the 2001 update to the City’s General Plan. The Davis Enterprise also answer the opponents: “If approved as written, the developers would have to preserve 776 acres of agricultural land, install rooftop photovoltaic systems on every single-family home in the project, and fund a community amphitheatre and public art.”

_Project’s fiscal analysis still neutral[^384]._

The proposed 422-acre Covell Village could cost the city $284 000 per year on average and bring in $344 000. Davis Finance Director Paul Navazio ran calculations on varying inflation, city personnel costs and home appreciation values. Base case scenario used a 3% inflation rate, 5% appreciation in homes resale value and 5.4% annual increase in personnel costs (for providing city services to the new residents and housing area), which gives on average $66 000 net revenue per year, or $998 000 over the 15-year time frame. If better conditions: 2% inflation rate, 7% appreciation in homes resale value and 4.4% annual increase in personnel costs, it will generate on average $344 000 per year in net revenue for the city.

The project:
- 1864 homes and housing units,
- parks and habitat areas, a school site,
- facilities for several local organizations and the Davis Joint Unified School District,
- a retail centre across from Oak Tree Plaza and
- a city fire station

The ballot theme:
_“The trick here is to find a way we can do all that that’s rational and uphold the purpose of Measure J, but also is realistic enough to accommodate some flexibility as conditions and needs change over time”_ said Bill Emlen, community development director for the city.

The draft ballot list does the following:

- Allocates a number of units to each type of housing proposed in the subdivision and a number of acres for each type of open space proposed.
- Dictates the types of offices, retail and other non-residential operations allowed in the commercial “Village Centre”
- Spells out some design characteristics for the neighborhood, such as energy-efficiency measures, some detail on how traffic would flow and some specifics on how houses would be designed.
- Lists the developers’ obligations and funding responsibilities.
- Outlines the phases of development for subdivision, including specifying a timeline for the construction and sale of the designated affordable housing units for low-, moderate and middle-income residents.

7.3.8.2 Developer Contributions, Dedications, and Obligations

The Covell Village project has been planned over the last 10 years. During this time there have been extensive talks with the city. The result of these talks are shown in the following listing of what the developer will contribute to the city:

As part of the development of the Project, the Developer shall:

- Designate a 3-acre site for a fire station.
- Provide $4.202 million dollars in funding to construct and equip a 12,000 square foot Fire station.
- Donate $470,000 for fire apparatus and a police vehicle.
- Donate $12.1 million over a 9 year period towards City public safety operating costs.
- Donate land and $2.75 million for a community center recreation building to be located in the Village Center.
- Acquire and donate to the City the existing Nugget fields located on the east side of Pole Line Road.
- Donate to the City for agricultural preservation, fee title or agricultural easements on 776 acres of land, 722 of which are contiguous acres and directly adjacent to the City boundary.
- Donate a 10-acre site within the project to the Davis Joint Unified School District (“DJUSD”).
- Donate $1 million to DJUSD for capital improvements.
- Establish a financing district to provide funding for DJUSD schools in the estimated amount of $60 million dollars over 30 years.
- Maintain, and pay the cost of maintaining to city standards, parks, and greenbelts for a period of five and one half years from the date the City approves the final map encompassing the park and/or greenbelt.
- Fund a community amphitheater and public art improvements.
- Establish a transportation assessment or financing district on properties in the Project to fund unlimited bus use by its residents. Operational shortfalls in early years will be fully funded by Covell Village.
- Install 1KW solar photovoltaic systems on single-family residences.
- Construct 9 bicycle/pedestrian undercrossings, including Covell Boulevard and Pole Line Road, linking Covell Village to the City’s bicycle/pedestrian network.

Such substantial obligations the developer has agreed to must be passed on to the house buyers. The demand for houses in Davis must be very high to secure the developer a return on
his investment. It is interesting to see the range of obligations agreed on. They include a new fire station, recreation center, a new school and $2 million per year in 30 years to the school district, free bus transport for the new residents and 9 undercrossings for bikes and pedestrians. To keep in the eco-city tradition, all houses in Covell Village will have solar panels.

7.3.8.3 The “Measure J” ballot and vote.

In March 2000, 54% of voters approved a Council-proposed measure requiring a “vote of the people if the City Council approves development on land outside of city limits.” Until 2005 this Measure had not been used, but came up in the fall of 2005 regarding Covell Village.

The Davis City Council adopted the Covell Village resolution with a four of the five council member for the motion, against one vote against, in June 2005. The resolution was however not effective until after a referendum had been held: “This Amendment shall not be effective unless and until the action is ratified by the voters in a “Measure J” election, as specified in City of Davis Ordinance 2008, the Citizen’s Right to Vote on Future Use of Open Space and Agricultural Lands Ordinance.”

The referendum according to “Measure J” adopted by the City Council in 2000, became “Measure X” in the election of 8th November 2005.

On November 8th 2005 19 015 out of 36 658 registered Voters (51.8%) took part in the referendum. 59.9% voted NO, while 40.0% voted YES to annexation of land for Covell Village.

7.3.8.4 Conclusion on Covell Village

The ballot result was an enormous surprise to the establishment in Davis, who had backed Covell Village strongly. It was also a big surprise to me, after following closely the preliminary presentation and promotion of Covell Village in spring 2005. The presentations in the press show that there is a considerable distance between the cost of each house and the price they expect to get. 10 years of planning, ample public facilities seem to be accepted without much concern for the total economy of the project. What was at stake was a NO in the ballot, which would mean postponement of the project for several years and risk that it would never be realized. This explains the unusually high “development gain” offered to the City.

There is substantial value in the project. Say 2000 houses each selling for $500 000 which gives a total sales value of one billion dollars for the whole project. The pressure to realize the project will therefore probably resurface again after some time. From a land use and transport planning point of view, the Covell Village design supports the bike city. Within the area is good walk and bike net. This is connected to city network with nine undercrossings and offers therefore a high safety level. The estate is also within cycling distance to UCD and downtown. On a higher regional level, it might be that many of the possible house buyers in Covell Village would work outside Davis and then use the car.
7.3.9 Diet the 5th Street?

Crossing the Fifth Street has for years been a dangerous for both bikers and walkers. It was therefore taken into the General Plan under Policy MOB 1.9: Implement the following specific projects to improve traffic flows and increase the use of non-vehicular transportation modes. This was followed up with: Action item 2.1.5:

*Pursue study to determine feasibility of removing two motor vehicle lanes on Fifth Street, between “A” and “L” Streets (currently a four lane facility). Add bike lanes with additional space that will be created.*

The City accordingly got a consultant to come up with a proposal. On 12 May 2005 Davis Safety Advisory Commission met to decide the issue. The meeting was open to the public and shown on local television. The recommendation was: *Maintain the current configuration of 4 lanes on Fifth Street between B and L Streets. Approve safety improvements at junctions with C, D, and J Streets.*

This recommendation was against what the public had expected from the General Plan decision and led to a counter report from the North Davis Community. The area community group had before the meeting made an impressive report with high professional quality. Steve Tracy, was the professional planner that presented the alternative plan “Diet the 5th Street”. It in essence wanted to put in cycle paths and shorter and safer pedestrian crossings by reducing the number of lanes from 4 to 2. The neighborhood also reported 60-80 accidents per year, against the officially recorded 4 pedestrian and 22 bicycle accidents over 5 years. After 20-30 of the public had addressed the meeting, only one had spoken for the City’s proposal. It was fairly clear that the community proposal could handle the traffic, and it was highly probable that the Diet plan would improve the situation for vulnerable road user a lot.

But only one of the four men on the Commission voted for “Diet the 5th Street” the local public alternative. Tim Bustos told me later that he was sole in Public Works who supported the Diet, and he was ordered not to speak at the meeting. It shows that local politics are not always the same on the concrete level as it is on the General Plan level.

How can this vote be explained? The city proposal was developed in cooperation with a consultant over a long time and represented conventional traffic engineering thinking about car traffic capacity. There are only a few consultants who have any experience with considering pedestrians and bikes in traffic planning. Traffic accident statistics under-report the number of pedestrian accidents, which can explain the difference in accident numbers between the city proposal and the alternative plan. It might be that this explains the traditional proposal the city put forward. A tradition that has for decades focused only on solutions for the car may also react with hostility when a community challenges their professional authority as happened in this case. Lastly, the case says something about the connection between the General Plan and implementing of tasks that challenge the free car

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386 “I am the only one supporting the community proposal, none of the engineers at Public Works do. I was not allowed to speak at the meeting 12th of May.”
387 In Norway less than 10% of the bike accidents are registered according to the National Cycle Plan, 2001.
use. Public Works clearly thought that the alternative plan would lead to reduced capacity and rallied against it.

7.3.10 California, Sacramento, Yolo and Davis growth 2005

7.3.10.1 Strong population growth
The population on the west coast is growing strongly:
- California grew from 2004 to 2005 with 539,000 residents or 1.5% to 36.8 million (36,271,000 – 36,810,000). This is mainly natural growth and the Latinos and Asian birth rates make the ethnic composition of the state change.
- Sacramento County increased with 1.8% from 1.346 to 1.369 million.
- Yolo county grew 1.7% from 184,660 to 187,743.
- Davis lost inhabitants for the first time ever and ended up with 64,401 – a reduction of 132 compared to the previous year.

In the Sacramento region several cities had growth rates well above 5% per year: Elk Grove 10.6%, Lincoln 16.8%, Yuba City 13.5%. These are “new” suburban cites in the Sacramento area were the developers are very active building new housing.

The growth in the Sacramento region comes mainly from two sources:
  a) outlying areas in the region, and
  b) former residents of the Bay area who want cheaper housing.

7.3.10.2 Growth and Development in Yolo County.
Yolo County (183,042 inhabitants 2003) is updating its general plan based on the idea “the highest and best use of land within Yolo County is one that combines minimum urbanization with preservation of productive farm resources and open space amenities.”

Joint local/county/state organizations drive much of the land use change. There are three major players and/or big employers: the state/local government, the university (UCD), the Cache Creek Casino (This is a major employer and income generating machine, and also a major actor on the property market). Preservation of natural resources and agricultural land, increasing the costs of housing, demands for better services and infrastructure, social inequity, and growing budget problems are just some of the difficult issues facing the county.

7.3.11 The Blueprint for the Sacramento region
Sacramento Area Council of Government (SACOG) produced the Blueprint for the Sacramento region towards 2050. SACOG is a cooperation between the six counties El Dorado, Placer, Sacramento, Sutter, Yuba and Yolo (in which Davis lies). By 2050 there is in the region expected another 1.7 million people, one million new jobs and 840,000 new homes. With the present car ownership transferred this will also mean another 1.3 million cars one the roads the coming decades.

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388 Statistics from the major newspaper Sacramento Bee, May 05 2005
SACOG initiated the Sacramento Region Blueprint Transportation/Land Use Study to examine future growth patterns and the potential effects on the regions transportation system, air quality, housing, open space and other resources. Significant future congestion would be the result if the present growth patterns and current transportation investment priorities continued. Extensive public participation was thought necessary and local officials, civic groups, environmental advocates, the development community, business leaders and the public were brought together in the attempt to guide how the region grows over the next 50 years. From March 2003 and over the next year 37 workshops in neighborhoods, cities and counties were held together with two Regional Forums. More than 5000 people used the projects interactive modeling software to study how the region might develop. A Draft Blueprint Scenario was presented in the autumn 2004. This was followed up by a public opinion survey (interactive on www.sacreregionblueprint.org or questionnaire to be returned). In addition a scientific telephone poll was done.

7.3.11.1 Blueprint: Awards and prizes

The Sacramento Blueprint was well known and already before the project had been finalized, several awards were bestowed on it.

- The Governor’s Award for Environmental and Economic Leadership, 2003.
- The American Institute of Architects California Chapter Presidential Citation, 2004.

The awards were given because of the innovative way the Blueprint promoted environmental values, for leadership in public government, and the modeling of how land use and transport interact, which was used to explore the environmental effects of alternative locations in the region.

7.3.11.2 The two Scenarios

Two Scenarios were chosen by the SACOG Board of Directors for presentation to the public:

- Base Case Scenario
- Draft Preferred Blueprint Scenario for 2050

The situation in 2000 and the expected situation in 2050 were:

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>1.949 million</td>
<td>3.653 million</td>
</tr>
<tr>
<td>Jobs</td>
<td>0.921 million</td>
<td>1.885 million</td>
</tr>
<tr>
<td>Households</td>
<td>0.713 million</td>
<td>1.540 million</td>
</tr>
</tbody>
</table>

Amount of growth:
- People: 1.7 million
- Jobs: 1 million
- Dwellings: 840 000
Many more cars
At present 785 cars per 1000 persons, which keeping the cars per head constant, the number of cars will increase from 1.53 million cars in 2000 to 2.87 million cars in 2050.

Provide housing choice
Under the Base Case in 2050 over two thirds of the region’s housing would be single-family homes on large lots. Under the Blueprint Scenario, most housing would still be detached single-family, but 18 percent would be single-family homes on small lots.

Use of Existing Assets
Under the Base Case all new development would be on vacant land. The Blueprint Scenario suggests 13 percent of all new housing, and 10 percent of all new jobs, would occur through reinvestment.

Use land efficiently
Under the Base Case, new development would need an additional 660 square miles (1700 sq km) of land. In the Blueprint Scenario, 13 percent of all new housing, 300 square miles (780 sq km) of new land would be needed for urban areas.

Conserve Natural Resources
The Base Case would convert 166 square miles (430 sq km) of agricultural land into urban uses. With the Blueprint Scenario, 100 square miles (260 sq km) would be converted from agricultural to urban uses.

Mix Land Uses
Under the Base Case scenario, 26 percent of people would live in communities with good or balanced, mix land uses by 2050. In the Blueprint Scenario, 53 percent would live in balanced communities.

Design for Quality
In the Base Case scenario, 34 percent of people would live in pedestrian friendly neighborhoods. In the Blueprint Scenario, in 2050 that number would rise to 70 percent.

Provide Transportation Choices
By using the Blueprint growth concepts for land use and right-of-way design, use of soft modes will be encouraged, and the remaining auto trips will be shorter it is claimed.

<table>
<thead>
<tr>
<th>Type of trips (in percent)</th>
<th>Auto</th>
<th>Transit</th>
<th>WalkBike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
<td>92%</td>
<td>1.1%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Base Case Scenario</td>
<td>93.7%</td>
<td>0.8%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Draft Preferred Blueprint Scenario</td>
<td>84%</td>
<td>3.0%</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Daily vehicle minutes of travel (per household per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing</td>
</tr>
<tr>
<td>Base Case Scenario</td>
</tr>
<tr>
<td>Draft Preferred Blueprint Scenario</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vehicle miles traveled (per household per day)</th>
</tr>
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<tbody>
<tr>
<td>Existing</td>
</tr>
<tr>
<td>Base Case Scenario</td>
</tr>
<tr>
<td>Draft Preferred Blueprint Scenario</td>
</tr>
</tbody>
</table>

Growth to be located near transit
In the Base Case, 2 percent of new housing and 5 percent of new jobs are located within walking distance of a bus or train service with 15-minute frequency. In the Blueprint Scenario, those figures rise to 36 percent of new houses and 38 percent of new jobs.
Per capita emissions
With the Blueprint Scenario, per capita, there will be 14 percent less carbon dioxide (greenhouse gas) and particulates (related to asthma) compared to the Base Case.

7.3.11.3 Comments on Blueprint Scenario
Professor emeritus Al Sokolow\textsuperscript{389}: “The Blueprint is unrealistic unless something is done to the land use planning policy. Yolo county loses 600 acres per year. Blueprint says it will lose 20 sq miles the next 50 years, 300 acres per year.” As presented there seem to be little doubt as to what alternative developments, which is most sustainable. The Base case projection continuing shows a sprawling car dependent development in the region like in the Bay area. However, even the Blueprint Scenario show a daily vehicle travel per household of 56 km, which with about 700 000 new households by 2050 gives an additional daily VKT of 39.2 million kilometers. On a yearly basis this amounts to (an addition to the present population travel) about 14 billion vehicle kilometers traveled. The immense challenge of how to cope with the negative consequences like greenhouse gas emissions from this transport work is not discussed in the Blueprint.

The Blueprint Scenario clearly illustrates that it is possible to change the development trends in the region even under very high future growth. To a European it seems the obvious way to go, both in terms of life quality and building a more resilient society. Through the legislation and land use planning system in California the means to govern the future land use development is there. It requires that the SACOG cooperation continues, and that the costs and benefits from future developments are distributed “fairly” between cities and counties. This represents a formidable task, and past history does not support the idea of managing growth, far less steering the growth towards “smart growth” and “TOD – transit orientated development”.

Investment in transport infrastructure has facilitated longer work journeys and a wider choice of places to live. In the Davis Bike plan from 2001, this trend is commented: “There is, however a dramatic shift in demographics now occurring within the city. As the I-80 corridor continues to grow between San Francisco and Sacramento, Davis is becoming the new “suburb” or “bedroom community” to larger cities in northern California, such as Sacramento. There also appears to be a growing number of residents that commute to the Bay Area.” (Davis Comprehensive Bike Plan, May 2001, page 1) Another aspect of this trend is that firms are more and more “foot-loose” and localize more unpredictable than before. How the investment in the highway system will influence where people live and where jobs will be located, will transform the spatial activity pattern and thus the demand for transport capacity (i.e. road-capacity). This applies for the SACOG region, but also the interconnection with the Bay Area.

The challenges in the region calls for an integrated land use and transport strategy and an effective Land Use and Transport policy. There is not any indication that the present system, which is heavily relying on the market demand and developers proposals, will be able to break the present trends as shown in The Base Case Scenario. The Blueprint Scenario is a vision of an alternative future, which requires substantial changes in the present strategies and policies.

\textsuperscript{389} At the UCD Yolo seminar May 2005
7.4 Analysis and Discussion

7.4.1 Davis, a sustainable island in a sea of sprawl.

The achievements of Davis are great. The city stands out compared to other cities in California. Davis has:

- A comprehensive and safe bike network
- Many cyclists (31% of all work trips on bike)
- Cheap and good public transport running on alternative fuels
- Established mobility management (bike promotion, car sharing, parking policy)
- Avoided edge developments by land use control
- Set a new standard for community development (Village Homes)
- Developed subsidiarity within a Californian framework

In sum Davis is unique in the way the city has managed to develop a multifaceted governance system where the ultimate power rests with the citizens. Davis is unique in the way the city has managed to retain a very high number of cyclists against the powerful US “car society”. Davis is also unique in the way an integrated land use and transport policy has been incrementally developed resulting in high awareness of the need for environmentally sustainable transport and concrete actions resulting in a good public transport system using alternative fuels. Davis is also unique as being a “one company town” coexisting with UCD in a symbiotic relationship, without UCD the bicycle city would probably not exist and neither the city? The lesson is that UCD has followed up the city strategy, and developed and implemented a “business travel plan for the university” according to the city’s strategy. (UCD has implemented the host city’s strategy far more effective than the universities in Kristiansand, Aalborg and Norwich, even if these strategies were different)

7.4.2 Future: Davis is part of a huge and expanding region

Challenges to Davis Bike City

The challenges to Davis Bike City are the present growth pressures due to changes in jobs and housing, and the slightly longer term threats from income growth, car ownership and lifestyles. The major global challenges seem not yet to influence people in general. The demography of Davis is changing also because the post-war “baby-boomers” are retiring. With increasing numbers of retired more houses come up for sale and the new house buyers may be turning Davis into a dorm-city for Sacramento and Bay Area. There is already a trend for some students, staff and faculty to live outside Davis. The Davis City no growth policy has contributed to increasing house prices. UCD claims that the house prices increase far more than faculty salaries do. “Faculty can’t afford to by a house in Davis”. With increasing income, car ownership also increases, and some students buy flats instead of renting. Combined with modern lifestyles, these factors pull some of the students and faculty to settle closer to Sacramento. At the same time the high prices and few new small flats for rent or sale, push these groups out of Davis.
What’s taken “for granted”?  
The climate challenge seems to have little impact on the American car society. There seem to be a basic belief in new, cleaner fuel technology and perpetual high mobility. One might say that the car discourse has reached hegemonic position. There is hardly a voice to be heard in the public discourse that oil resources are scarce and the use of petrol should be economized. Rather the gas price is far too high and must come down again: “If I could I would lower the price of gas for you immediately” president George W Bush.  

Market instruments like congestion tolls, parking charges, impact fees on development are kept outside the common debate and will be difficult implement. The most popular vehicles (the US has about 800 vehicles per 1000 persons) are the Pick Up Truck (the larger, the better, with engines often 5-6 liters) and SUV (special utility vehicles.) The image of these vehicles, and indeed their need for space, is very much supporting housing development with minimum two garages, plus parking space for guests and teenage children cars. “Smart growth” development or the Davis renowned development “Village Homes” seem close to absurd against the need for supplying adequate space for the families cars.  

Speaking in Davis, Jared Dimond explained what he called the phenomenon of the gated community, where members have their own security force, their children attend private schools, and they receive pensions and health care. There is no motivation for them to care about the state of the police force outside their gates, public education, health care or Social Security. The US with its ideals of isolation and consumerism, has become the gated community of the world. With globalization, media and mass communications, one country falling, no longer falls unnoticed, he said. Is there a chance that Davis will be moving towards “a gated city”? At present Davis is a very open and including city, but the no-growth strategy and land use planning policy will push house prices further up and at some stage small gated neighborhoods may be created. This may be supported or hindered by the municipality land use planning and planning ordinances. In the long run Davis need to be supported by a regional framework that allows Davis to continue along an environmentally sustainable path created by an alternative land use and transport policy to most other cities. Two challenges a) car use and b) segregated and locked in neighborhoods.  

7.4.3 Which factors were influential in LU&T change in Davis?  

In Davis there has been a continuing contest between growth and slow change since the early days. This still continues and therefore Lofland named the period from 1990 onwards as Contested place. Within this framework ideas and ideology from the outside has descended on Davis and turned into policy and projects. The first of these ideas was Dutch cycling practice which was adopted in Davis after broad public pressure. The council election in 1966 became a Bike election, against the Establishment fronted by the Chief of Police and City officials. The second wave of ideology was the ecology and environment wave around 1970. This lead to a “revolution” at the council elections 1972, longhaired and even bearded councilors replaced the suit and tie image that thus far had prevailed. The ecology and

391 See also the article by Knaap “A requiem for smart growth.”  
392 Author of Guns, Germs and Steel: The Fates of Human Societies.  
393 The California Aggie 180505
environment wave also gave birth to Village Homes, a renowned housing estate in Davis built on the sustainable principles of energy conservation, husbandry of land and resources plus reduced pollution.

Village Homes built on collective ideas: cooperation, sharing and local self-sufficiency instead of car-based activities like shopping in malls, etc. Cycling was of course the mode of travel in the high-quality neighborhood with lots of open spaces and commons, instead of neighborhoods designed for the car with individual “show houses”. The birth was not easy, however, and again the Establishment was strongly against new ideas. In the short term Village Homes represent a high-quality trend break as against the traditional sprawling housing development in the US. In the long term Village Homes represent the future ideas of more self-contained neighborhoods as later promoted as Smart Growth and New Urbanism.

The Davis officials fought the Village Homes proposal for years, using the adopted technical standards and regulations as weapon. The roads were too narrow for the fire engine to get through and it couldn’t get out again from the cul-de-sacs, and so on. Today Village Homes is a thriving place. Many books have been written many about it, the wife of president Carter visited the place, and Judy Corbett, one of the developers, became “Time woman of the year”. The car accessibility is good by European standards, but slightly constrained compared to other neighborhoods. This may be one reason why Village Homes never caught on, never was replicated. The sustainable, ecological image is contrary to the houses representing the American Dream, which have a highly individualistic image, three garages and plenty of space around. Evidently this is where the developers find their profits! The Reagan era pushed all collective ideas aside, individualism and market forces ruled. After the Brundtland report some of the environment ideas from the seventies surfaced. In Davis the City and UCD went into The Joint Transportation Management Agreement. This is very much based on sustainability ideas: promoting cycling, develop public transport and use parking policy as a restraint on the car. Both partners employed their own Bicycle Coordinator to follow up the agreement. Some years later the Alternative Transportation Task Force (ATTF) proposed that the City Council should adopt strong “sustainable transport” aims. The university has been far better than the elected Davis City Council to follow up these aims and implement change. UCD still continue the agreed policy with parking pricing, preferences for car-sharing, support for car-sharing and economic support of public transport.

The City’s Bike policy has over the years turned into symbolic policy with most emphasis on information and campaigns to change people’s attitudes, more than a policy for improving the bike infrastructure and increasing bike use. The General Plan and Bike Plan from 2001, both keep the cycling and walking aims high. Both want to protect the environment and have a steady and slow growth. Extensive consultations over several years with the public in Davis in preparing the General Plan should have made it representative for the majority of citizens. But “Diet Fifth Street” which was the North Davis Community alternative to the Fifth Street plan “the solution for the car” that the City promoted, had no chance to be adopted. Even if the “Diet Fifth Street” plan was inline with the General Plan and the Bike Plan, and also widely supported both professionally and by the local area, it lost. It may be that the plan lost because it threatened the free car use and reduced car capacity slightly to improve conditions for cycling and pedestrians? This may lead to the question if bike projects only are possible if “cars” are not threatened? The adopted plan for Fifth Street is conceptually based on traffic management ideas from the sixties, while the “Diet Fifth Street” was in line the present
thinking in traffic safety and the “New Urbanism” ideas. Ironically the traditional male pro
car planning ideas were fronted by female engineers both as official and consultant at the
Davis Safety Advisory Commission meeting May 2005. In the Fifth Street case the
Establishment and the free car ideology won against both the City Council’s adopted aims and
objectives, and against a vast number of very engaged citizens.

The Fifth Street case was decided finally by the City Council. It was not possible to test the
decision in a ballot. That was not the case with the proposed city extension, the Covell Village
plan, which surprisingly lost the ballot 8th November 2005. 60% of the voters said no to the
new housing subdivision, contrary to the advice of the Establishment, the City Council and a
host of well-known citizens.

7.4.4 Facilitators and barriers to change towards the environmental
agenda?

The 1966 “Bike election” forced change against resistance from the Establishment, fronted by
the Chief of Police. The mood of the times in the years with Vietnam opposition, the election
1972 and several years of fighting with City officials (Standards and regulations were used to
fight the proposed design) opened up for the Village Homes development.

After the Reagan years, the Brundtland Commission report 1987 brought the Joint UCD and
City of Davis agreement. It also led to the Alternative Transportation Task Force (ATTF),
which the City Council set up. But still and continuing, “planning” was out, the market forces
ruled and the aims and recommendations led to few practical consequences.

The transport geography in California has over the years changed bringing increasing sprawl
and long distance commuting, which made cycling and walking modes only to be used in the
neighborhoods. The car society, with more than 800 cars per 1000 persons, has become so
embedded in California that the car is close to being the only mode. In Davis, from the outset
such a “natural” cycling city, one should think that the use of the bike would have been kept
at the high level from the seventies, but the no growth policy and the general change (income,
population structure, lifestyles) have supported increasing car use. However, a more proactive
policy by the City Council (like the UCD policy) could have maintained more bike and walk
use. How Davis voters would have reacted to a more proactive policy, we will never know.

The adopted “Measure J” in 2000, became the end for Covell Village, who lost in the 2005
ballot. The Davis citizens have literally said “Stop the world, I want to get off!” The long
history of conflict between population and economic “growth” in short modernization on the
one side, and “to keep Davis as it is” on the other side decided the ballot. One may say that
people turned against growth at the referendum this time around. The Covell Village offered
Davis a host of benefits, among them extensive bike and walk network, plenty open spaces
and solar panels on all new houses. All of these are very positive in a sustainability
perspective, but not enough to convince the citizens of Davis. Maybe it was also a vote
against further growth in car transportation, further climate change, further depletion of fossil
resources and so on?
7.4.5 Which role did institutions – “the rules of the game” play in Davis?

One difference between Davis and the European case study cities, is that the citizens of Davis, the City and the City Council have far more power over Land Use and Transport than in European cities. Firstly, a majority in the City Council rules with a final say, which is not hampered by other, higher levels of government. Secondly, the Council can bind the later Councils decisions by adopting measures like “Measure J”. With a non-partisan vote, this is a far more direct democracy than we have in Europe, possibly with the exception of Switzerland. Thirdly, Davis is not dependent on higher levels of Government to finance the budget, public transport or transport infrastructure. The lobbying for funds from higher levels, which is a prime task for European local politicians, is not necessary for the Davis politicians. Hence the opportunity to run an integrated Land Use and Transport policy is far greater in Davis, than in Europe as was shown above. Still the Davis politicians has to adhere to public opinion and is less free to maneuver than the university administrators, which to some extent explain the difference between the city and the university.

The institutional framework and how power is distributed across government levels make it possible for the Davis City Council to decide land use and transport policy without inference of the county or state. However, without the UCD’s own active policy and support of the city’ policy it would probably not have been implemented. This is a major difference to Europe where the national governments directly and indirectly have a great influence on local authorities. Within this framework there are still vested interests that resist changes and the hegemony of the car culture is making policy shifts towards environmentally sustainable transportation very difficult. It is necessary to develop a framework from the federal level through the state and down to the local level for environmentally sustainable transport to become effective. Without such a framework it will become very difficult for a city to promote sustainable transport on its own.

The sustainability agenda in the University City of Davis has far better terms than in most places, because of the well-educated and environmentally concerned inhabitants. In the sixties and seventies this came through both in voting and in policies, but in the eighties with “market rule” were words like environment and planning and sustainable hardly used. However, in the new millennium it seems that the global environment discourse has regained some influence on local policy in Davis.

Possibly will the increase in fuel prices swing the pendulum back towards more environmental concern and action? The dramatic fall in the sales of SUVs and big Trucks in the autumn of 2005 may be a sign of changing attitudes to the car. If this is followed up by an upsurge in the demand for smaller more environmental friendly cars, it may also lead to demand for a more sustainable Land Use and Transport policy at the local level? At UCD, the Institute of Transportation Studies (ITS) has become a leading research institute on alternative fuels. The increasing oil prices further boost ITS research funding and Davis will probably continue to be the real life laboratory for this research.
7.5 Conclusions and Lessons

7.5.1 Counterfactual discussion

What would have happened if Village Homes were never built, or if the Bike petition lost at the election in 1966? It is of course impossible to give more than a speculative answer to such counterfactual questions, but they may shed light on the development that occurred. In the following table some of the important events in Davis are looked at under such counterfactual thinking:

<table>
<thead>
<tr>
<th>Event</th>
<th>If the event had not happened?</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bike City 1966</td>
<td>Davis would have been far more car dependent today</td>
</tr>
<tr>
<td>Village Homes 1975-82</td>
<td>Housing in Davis would be far more sprawling, with less green open space and certainly less cycling. An interesting question is if Peter Katz would have written the book “New Urbanism” without Village Homes?394</td>
</tr>
<tr>
<td>The General Plan and the Bike Plan 1987</td>
<td>These plans embedded the Bike city and the Eco city further in the minds of Davis citizens and strengthened the identity of Davis as place. Such perceptions were later decisive in the Covell Village referendum. Without these plans the two positions as Bike coordinators would not exist, and the bike strategy non-existing. Possibly influenced the vote on Covell Village?</td>
</tr>
<tr>
<td>Pass Through Agreement 1987</td>
<td>Instrumental in preventing edge developments, without it Davis would have got shopping malls at highway junctions.</td>
</tr>
<tr>
<td>Alternative Transportation Task Force – ATTF 1994-96</td>
<td>ATTF did strengthen the perception of Davis as future orientated sustainable city with concern for the environment, active in preserving resources through cycling and solar heating. The synergy between the city and UCD was further strengthened by ATTF. Without adoption of the task force’s ideas, the buses would probably still run on ordinary fuels, and UCD would probably be a little less successful on hydrogen research?</td>
</tr>
<tr>
<td>“Measure J” 2000.</td>
<td>The measure strengthened democracy (subsidiarity) by transferring power from politicians to the citizens. Without this measure Covell Village would have been developed. It has also consequences in the future for all new developments.</td>
</tr>
<tr>
<td>The General Plan and the Bike Plan 2001</td>
<td>These plans outline the vision and aims for land use and transportation in Davis as small-scale bike friendly city, not wanting to grow fast or sprawl. Without these plans the future course would be less distinct.</td>
</tr>
<tr>
<td>Covell Village 2005</td>
<td>It is a paradox that Covell Village project fits with the vision outlined in the two plans above, if the “residents” would work in Davis. If they all would be commuting, then Covell Village would contribute to the increasing car dependence in the region.</td>
</tr>
</tbody>
</table>

Table 7-7 Counterfactual discussion: If the events had not happened?

This counterfactual discussion shows how dependent events are of earlier events, and how gradually the path towards the bike friendly Davis of today has been developed. The land use and transportation system has increasingly been improved. The bike network with over- and undercrossings is extensive, and the modal split in Davis has a unique cycling share. The path drawn has been vulnerable many times. If one or more of the events had not happened, Davis would probably have developed quite differently. Most certainly this different path would

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394 Peter Katz, Peter Calthorpe, Elizabeth Plater-Zyberk, Andreas Duany, Elizabeth Moule, and Stefanos Polyzoïdes were invited to dinner at the home of Judy and Michael Corbett in 1990, which led to The Ahwahnee Principles (Corbett 2000:11). It very likely also led to the first congress of “New Urbanism”?
have been the “car-led” path, resulting in less walking and cycling. It is also probable that the “car-led” path would have led to a more sprawling development, like in nearby Woodland.

The question of additionality or ‘deadweight’ is a key problem in counterfactual thinking. It revolves around the counterfactual question of what would have happened had a particular public policy, grant, plan, etc. not been implemented. To what extent has the policy contributed to particular outcomes, i.e. had an additional effect, and to what extent has it simply reinforced what would have happened anyway, i.e. been ‘deadweight’? (Hambleton and Thomas, 1995:13) The methodological problems in an attempt to isolate the effects of a single factor in multi-causal social relationships are grave (Sayer, 1992).

If we apply that thinking to the Davis events listed, the ATTF and the GP 2001, both may be said to contribute little, the course of events would be the same. I will doubt that. The ATTF clearly has influenced the choice of fuel on the buses and also supported research at UCD who got a laboratory outside the door. The same can be said about the General Plan. Without it Davis would have had less force to meet the pressure from the regional population growth and car dependence. The Covell Village (if built) would not be suitable as a “bedroom community” under the GP thinking, but should facilitate housing for local people and therefore sustainable transport within Davis (whether that would have been the result, we will never know. The voters clearly didn’t take the risk.).

The events listed form the trajectory of the Davis development, each event seem to reinforce the path and thus give additional weight to that particular path, which has been a path of growth control and environmentally friendly bike transport.

7.5.2 **Davis is different**

The framework and structure for Land Use and Transport planning in Davis is different from Europe in several respects.

*Funding*

First, local taxes pay for public transport services, investment and maintenance of roads (Federal grants are available for public transport in the metropolitan areas). The costs and benefits of new development are also born at the local authority level. This may introduce NIMBY effects, but on the other hand who are better than the local authority or as in Davis, the population in a referendum, to decide such issues? The legitimacy of decisions taken in a referendum is very high, which is important when market forces drive most other decisions.

*Growth pressure*

Second, Davis has a strong and continual growth pressure on it. UCD grows rapidly and faculty and students need housing and services. The city fights not to be run over by this growth. Also, the surrounding Sacramento region is growing fast and puts even more pressure on Davis, which can be read in the high house prices. The Davis City decisions must be read in the light of this growth pressure.
**Self-rule**
Third, Davis has far more independence and power to rule Land Use and Transport on its own territory. The EU policy of “subsidiarity” can be seen in practice in Davis. The Davis local authority has power over the land use and transport network in the jurisdiction, but not the highways or rail lines. The State deals with the highway and the city its own network, as long the highway is not functioning as a local distributor within the city. This is contrary to the three European case cities where the highway also is the major local road in lack of a bypass. Then questions arise on the use (access and intersections for the city) and indeed on financing the part of the road with many uses. This mixed use and mixed funding of urban roads, is therefore a major issue in the three European cities.

**Public participation – ownership to development**
Fourth, and linked with subsidiarity thinking mentioned above “the wearer knows where the shoe gnaws”. Many like Vigar claim that “to achieve a more sustainable transport policy in the future, commitment from citizens is vital for successful implementation” (Vigar 2002:200). The story of Davis shows a long time commitment for cycling, for environmentally friendly housing, for alternative and low energy transportation, and growth control. These issues have been fought, some lost and some won. In some of the cases, the people in power use the structure and institutions to win. An example is that the Davis Bicycle Coordinator was not allowed to speak in the Fifth Street case. He opposed the strong car oriented traffic engineering ideology in the administration, and stood on the side of the adopted City Council aims and the North Davis community. He represented a threat to the Public Works engineers’ paradigm and was silenced, which is one of many examples of biased information and the power play in organizations. Davis has a safety valve in that the City Council may decide that certain issues must be decided by a referendum, a mechanism in which Covell Village lost. “Diet Fifth Street” never got the chance to be tested by the public.

### 7.5.3 Questions asked and lessons learnt

**Question one: How was the land use and transport connection in Davis? Which were the effects of planning and policy on the choice of transport mode? Was the development caused by a deliberate policy and was it sustainable?**

The development of the land use and the transport system is well connected in Davis. The City Council made a decision in principle in the 1960s to develop a bike network. This has been gradually expanded and cycling and walking is now embedded in the planning and policy structure. UCD has developed an integrated transport policy for the car-free campus in cooperation with the city. It was based on the principle of the bike network mentioned above, and further developed to cover all modes (public transport, walking, mobility management including parking policy) plus testing and using alternative fuels on buses. The Davis policy has been put to the people in elections and referendums; it has been deliberated, tested and contested over years. Davis has a far more environmentally sustainable transport system than most US cities and can be compared with some of the best practice European cities. However, looking towards the future for Davis the threats are there.
**Question two: How could the observed land use and transport development be explained? Which were the factors facilitating cycling and which were the factors inhibiting more sustainable transport development?**

Cycling infrastructure combined with bike promotion, traffic management schemes and parking policy are factors that promote cycling. Both Davis City and UCD have for many years successfully done this, and the number of daily cyclists is far higher than most places in the USA. Hindrances for cycling and walking in Davis where the basic infrastructure is in place, is lack of safe infrastructure, particularly safe crossings Downtown. It is the perceived safety, which is important for people’s choices. The Davis City Council has not been able (wanted?) to implement pedestrian streets, parking restrictions or other measures, which are regarded as negative towards the car. Secondly, the alternative modes available and the time, cost and ease of using these, govern mode choice. The car is a superior mode for most people for most journeys, even in Davis. To break the embeddedness of the car culture at the city level seems very difficult without a strong framework.

**Question three: What if any, are the lessons from Davis for medium sized cities in Europe?**

*Subsidiarity in practice* 395.

The first lesson from Davis is how local democracy has been developed based on the principle of subsidiarity. The decisions both for land use and local transport are taken at the city level without interference from higher levels. The American and European traditions have evolved substantially different. Subsidiarity is, ideally or in principle, one of the features of federalism. In a European context subsidiarity is the idea that a central authority should have a subsidiary function, performing only those tasks, which cannot be performed effectively at a more immediate or local level 396. For land use and transport planning in Europe the competence for planning and decisions should accordingly be decentralized or delegated from central government to regional or local authorities. In California and Davis one may say that the subsidiarity principle is established since the city decides both land use and transport policy, and is sole responsible to finance and implement the policy. The City of Davis has gone even further and introduced a referendum in particular cases as the final decision maker. Thus the decisions of the elected representatives in the council may be checked/controlled by the voters. This makes the council decision-making more transparent and enhances democracy. The transparency the referendum demands gave Davis a sizeable development gain through the Covell Village negotiation, which would have been released if it had been adopted.

*Integrated land use and transport planning – a necessity*

The success of Davis in creating a relatively environmentally sustainable city has two main causes: firstly the self-government of Davis and secondly cooperation with the physically close but separate jurisdiction UCD. Both of these have the final say in land use and local transportation issues and may implement their own strategies. Both of these jurisdictions have had the power to implement their own separate program and policies. In Davis they have

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395 Subsidiarity is the principle which states that matters ought to be handled by the smallest or the lowest competent authority. Also see chapter 2.1.7

396 The Oxford English Dictionary
cooperated and implemented an integrated land use and transport strategy. This is unlike cites in Europe. The problem of implementation in Government hierarchies is well known. Plans and decisions may be developed and decided by one state organization and financed by another, while implementation often demands active players locally (Friedman 1987). The second lesson from Davis is that integrated land use and transport planning is necessary, and further that the organization responsible for planning and policy should also be responsible for funding and implementation. Attached to this is that the major employers and institutions like universities, must adhere to and support the city land use and transport strategy.

*An Environmentally Sustainable Transportation Framework*

The third lesson from Davis is that a city cannot in the long run develop a sustainable transport policy without adapting the policy of the larger region it is part of. If the state of California and the Sacramento region had an active sustainable transport policy, Davis would have had more understanding and leeway to develop restrictions on car use. Without such a framework, the city policies will be limited to “promotion and marketing” of sustainable transport policies. A hierarchical framework across levels is necessary for a city to develop in a sustainable way and to avoid what Hull cited above called “*the regulatory abyss and the institutional fragmentation of policy makers and public transport providers*”. There is also a necessary condition that the instruments and tools available at the local level must not be contradicted or opposed by more general instruments decided by the state or at federal level.

Davis has developed measures that work with the market e.g. Pass through agreement, Urban extension ballot. The Pass through agreement is an example of Davis paying the County compensation for not developing the land at the city border. The Urban extension ballot would, if the City Council proposal had gained a majority of votes, have given the city a substantial development gain, which is close to finding the market value of the development. In the three European cities such development gain usually remain with the developer. Such measures are less common in Europe that mainly relies on zoning regulations. There is also an important side effect of these measures, that they are openly discussed and transparent. This limits “confidential negotiations” and “closed politics” to a minimum and gives fewer opportunities for corruption or handing out favors.
# Annex I – Davis Case

## Short list for standard comparison of the case cities – Davis

<table>
<thead>
<tr>
<th><strong>Davis</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
</tr>
<tr>
<td>The US Bike City from the mid sixties and still. University city with no jurisdiction over UC Davis, which grows strongly. Davis General Plan aims at slow growth, city expansion to be decided in referendum (Measure “J”) NIMBY, highly educated university employed citizens, commuting increasing, house prices soar. Undergraduates are not allowed to bring cars, and are extensive bike users.</td>
</tr>
<tr>
<td><strong>Special LU&amp;T</strong></td>
</tr>
<tr>
<td><strong>Land Use</strong></td>
</tr>
<tr>
<td>No reserve land for building, except densification. Annexation of agricultural land outside city borders necessary to grow. City Council decision to annex land for urban development must be put to the people in a referendum, Measure “J”, e.g. Covell Village 2005. Strong steering possible, but “No Growth” Davis is limited of being an “Island Paradise” in a sea of sprawling metropolis. The close neighbor jurisdiction UCD secure strong growth in jobs, hence future employment of no concern of City of Davis.</td>
</tr>
<tr>
<td><strong>LU&amp;T Policy</strong></td>
</tr>
<tr>
<td>The Bike City and later the Eco City (Village Homes) has strongly influenced the design of new housing estates (e.g. Covell Village) green, parks, water, paths, etc. Downtown however very car dominated with parking everywhere along streets and off street, instead of bike lanes/paths. LU for shopping in the city strongly managed. No major Shopping Mall in city! Ample, wide corridors for road infrastructure secured, even in new housing estates (one example of New Urbanism: Aggie Village/MF) Well connected to Interstate highway and rail system. Two bikeway projects built: house demolished and Putah Creek underpass to 5 mill $.</td>
</tr>
<tr>
<td><strong>Transport Financing.</strong></td>
</tr>
<tr>
<td>Highways are not a responsibility of the city council. The F-Street case and controversy shows how city administration/public works/consultants overrule massive citizen involvement for less car capacity and more secure BW facilities. City Council responsible for both solution and financing of local road and BW safety schemes. This is the same as in most countries, not Norway. Old Davis has a poor BW net, which must be enhanced and enlarged over the ordinary city budget. Development of new housing estates pay for connection to existing network for all modes. Hence, solution up to the developer, except when annexation must be done. Then the developer must put forward a proposal which is so good that the voters by it. This gives the city administration ample bargaining power against the developer, limited by the development giving adequate returns, i.e. a market functioning. PT in Davis is remarkably good because it is financed and run by the UCD students. The net cover Davis fairly well and the services cost 1 $ per ride, but undergraduates for free (TAP). During vacations the services are very limited.</td>
</tr>
</tbody>
</table>
8  From the past to the future?

The climate threat, the urban transport chaos, the population explosion, the north – south divide, and the questions of sustainability fill the media. What relevance has land use and transport planning in medium sized cities to these questions? In the earlier chapters I have looked on the role land use and transport planning has had in four cities’ development. In this chapter we try to assess the usefulness of land use and transport planning as an instrument to govern future development. I therefore explore three different hypothetical situations.

8.1  Introduction

The study of the four cities has been an effort to create knowledge about land use and transport planning broadly defined, and its effects on development and change. The knowledge produced has been used to reconstruct and describe the path of development to understand the forces and mechanisms creating events on that path. Can this knowledge produced as part of a backward looking perspective, be used to understand the future, and in case how?

Kierkegaard’s aphorism “we live forwards and understand backwards” can be said to resemble what I have been trying to do. I have tried to understand the past development in the cities with the purpose of using this understanding as an aid or tool for the future. Gunnar Olson takes this statement a bit further and asks: “What does it mean to understand?” in his book Abysmal where he in depth studies the philosophical basis for crossing the abyss between our past and our future. He uses the god Janus, the doorkeeper, who can see both ways as his medium to answer the question. My position on taking some knowledge and understanding from the past and apply it on the future is that philosophically the answer is no, we can have no knowledge about the unknown future, only beliefs, although the beliefs can be more or less well founded. However, as we have seen in the four cities, there are structures and institutions strongly embedded in our world and making us take some things for granted, without questioning. So what I try is to question “that for given taken” by exploring the effects of three different “future” situations on our type of cities. If most things continue, what will be the effects of interfering say with land use and transport policy? To explore this thought I have done three tests or simulations into the future of the four cities or similar cities. The three tests are:

1. Two alternative policies BAU (business as usual) and EST (environmentally sustainable transport development) are tested on an imaginary model, the city of KAND.
2. What are the effects of alternative home locations for 15 000 new employees at a) UCD in Davis, and b) UiA in Kristiansand?
3. What if an oil crisis occurred, how would the people in the cities cope?

398 This exploration has been done before I compare the four cities, because I believe that some future thoughts would be inherent in my thinking and then it is better to do the tests explicitly, instead of discussing their merits afterwards.
8.2 The city of KAND – the imaginary model city

The first question asked in this chapter is how growth and development would impact on the transport trajectories under different assumptions of modal split the next 20-30 years in an imagined city of 200 000 inhabitants.

8.2.1 Basic situation

The city of KAND is an imaginary model city to be used for reflections about the future. First we look at the city under a trend or business as usual (BAU) perspective and calculate the change in travel and CO₂ emissions until 2030. Then an environmentally sustainable transport (EST) policy is charted and at last the two policies BAU and EST are compared.

Basic premises

The city had 200 000 inhabitants in the year 2000, and the population growth is 1 % per year. The trend from 1990 to 2000 is fairly close to the change in the four case cities described earlier.

- The length of the average local trip was 5.6 km in 2000, which is increasing by 1% per year.
- The number of local trips per head and per day was estimated at 2.4 trips/day in 2000. This will be increasing by 0.3 trips/day per 10 years.

The person kilometer traveled per day was in 2000 for the city a total of 2.69 million pkm (980 million person km for the whole year). If we imagine a business as usual (BAU) trend for city of KAND 1990 - 2030 some key figures are shown in the next table:

<table>
<thead>
<tr>
<th>Mode split</th>
<th>1990</th>
<th>2000</th>
<th>BAU2010</th>
<th>BAU2020</th>
<th>BAU2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>66</td>
<td>76</td>
<td>80</td>
<td>84</td>
<td>88</td>
</tr>
<tr>
<td>Public Transport</td>
<td>14</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Walking</td>
<td>15</td>
<td>13</td>
<td>11</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Cycling</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Population 1% growth per year</td>
<td>180 000</td>
<td>200 000</td>
<td>220 000</td>
<td>242 000</td>
<td>266 200</td>
</tr>
<tr>
<td>Local Trips per head&amp;day</td>
<td>2</td>
<td>2.4</td>
<td>2.7</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Local Trip length</td>
<td>5</td>
<td>5.6</td>
<td>6.2</td>
<td>6.8</td>
<td>7.4</td>
</tr>
<tr>
<td>Total daily person km, million</td>
<td>1.80</td>
<td>2.69</td>
<td>3.68</td>
<td>4.94</td>
<td>6.50</td>
</tr>
<tr>
<td>Change from 2000</td>
<td></td>
<td></td>
<td>137 %</td>
<td>184 %</td>
<td>242 %</td>
</tr>
</tbody>
</table>

Table 8-1 Key figures for the growth in KAND towards 2030.

From the table one can see that total local travel in the city measured in person kilometer increases from 2.69 million pkm per day in 2000 to 3.68 million pkm per day in 2010 (long trips outside the city is not included). The very large change in person kilometer traveled has

399 The average length of local trips is estimated to 5.6 km after an assessment of how many trips are intra urban or local trips (about 40% of the total trip length) and how many are long trips out of the city. The 5.6 km length of local trips is also a conservative estimate to avoid charges of blowing up the figures and results.

400 Travel activity, both number of trips and length of trips, increases with increasing income and education. An increase of 0.3 trips/day over 10 years can be expected if GDP continues to grow as forecast.
three causes: longer journeys because of dispersion and sprawl, more trips because of income rise and greater population.

### 8.2.2 How will modal split develop in KAND?

The basis for the different simulations done has been the following table showing what I have called a BAU trend continuing until 2030. The increase in mode share for the car was ten percentage points from 1990 to 2000. In the forecast this increase is gradually decreasing toward a share of 88% in 2030 as shown in the table below. It is supposed that the amount of car travel will peak at about 88% of the total travel (in Sacramento region the equivalent figure for 2000 was 93%).

<table>
<thead>
<tr>
<th>Mode</th>
<th>1990</th>
<th>2000</th>
<th>BAU2010</th>
<th>BAU2020</th>
<th>BAU2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>66</td>
<td>76</td>
<td>80</td>
<td>84</td>
<td>88</td>
</tr>
<tr>
<td>Public Transport</td>
<td>14</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Walking</td>
<td>15</td>
<td>13</td>
<td>11</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Cycling</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

*Table 8-2 Modal split for KAND until 2030.*

The numbers in the table are presented in the column in the next figure, showing the well known trend of increasing car traffic and diminishing travel with soft modes. This figure is probably not very different from the equivalent in many other medium sized cities.

*Figure 8-1 Trend in modal split for KAND towards 2030*

In the next figure the total daily travel per mode is shown. With the car a total of 2 million person km was done daily in 2000, this will increase to about 5.7 million person km in 2030. Walking is increasing from 0.35 million person km in 2000 to 0.55 million person km per day in 2030. The walking share was 15% in 2000 and the share falls to 8% in 2030, still the total person km walking increases due to the population growth of 33% for this period and the increase in mobility. Public transport shows a small increase for this period, but the cycling mode a reduction.
8.2.3 What if modal split is kept at the 1990 level?

What will the picture of 2030 be like if modal split is kept at the 1990 level with 66% car, 14% public transport, 15% walking and 5% cycling? Remember that both the number of trips and the length of local trips are steadily increasing towards 2030, mainly due to increase in income. When this increase in mobility is combined with the increase in population in the city of KAND, then the total travel in 2030 becomes 6.5 million person km (same as in BAU 2030). The next figure shows the travel per mode with 1990 modal split level.

The increase in the use of the car is much lower when the modal split is kept constant than in the BAU alternative. It ends up with 4.3 million person km per day in 2030, while the BAU alternative above showed 5.7 million km with the car. There are substantial gains in keeping the mode split constant in a city, not allowing the car share to keep increasing. Both walking and public transport grow to a level close to one million person km each when modal split is kept at the 1990 level. Still, even this trajectory with constant 1990 modal split is far from sustainable. In 2030 this policy alternative is not anywhere near the 1990 car travel, and hence emissions affecting the local as well as the global environment will be much higher than in 1990, even if the modal split is kept constant at the 1990 level. The car usage is more than three times that of 1990 in 2030. Public transport is four times as high as 1990, which should
mean more buses and better frequency. The real benefit from this scenario probably lies in the fact that the population will use walking and bike for 20% of the journeys, which will lead to better health, better condition and less fat. However, the contribution to global warming is three fold (assuming that the CO₂ emissions per car is constant) and the same when it comes to local emissions of CO, NOx and particles.

### 8.2.4 An Environmentally Sustainable Transport policy for KAND

An environmentally sustainable transport (EST) policy for the city of KAND aiming at 50% environmentally friendly transport as cycling and walking, and 50% motorized transport has been designed. It is the transport volume measured in person km, which is divided fifty-fifty. The gradual change in modal split is shown in the figure below.

![EST Environmentally Sustainable Transport in the City of Kand. Modal split 50-50 in 2030](image)

**Figure 8-4** EST policy in KAND, change in MS towards a fifty-fifty split in 2030, %.

The trajectory of such an EST policy aiming at half the person travel shall be done by walking and cycling is shown in the figure below. Car travel peaks at 2.5 million person km per day between 2010 and 2020, thereafter it is very slowly reduced.

![Person kilometre travelled in KAND with an active EST policy - km million per day](image)

**Figure 8-5** EST policy in KAND, total travel per day per mode, million pkm
8.2.5 The BAU and EST policies compared

The most interesting part of the comparison of the BAU and EST alternatives is that a small and gradual shift can in the long term becomes a major change of course in a more sustainable transport development direction. The car use increased from 1.2 to 2.1 million person km from 1990 to 2000, and is forecasted with another similar increase till 2010 reaching 3 million person km per day in the City of KAND. From 2010 the increase in car use continues in the BAU alternative.

If we look at the EST trajectory it starts in 2000 and has a slightly lower increase in car use than in BAU, but still increasing to 2.5 million person km in 2010. Associated with this increase in the car use in the EST alternative is an increase in walking (from 0.4 to 0.6 million person km), cycling (from 0.1 to 0.2 million person km) and use of public transport (from 0.2 to 0.5 million person km) between 2000 and 2010.

This no way implies dramatic changes taking place over ten years. However, over three decades the difference between the policies becomes significant. Needless to say that the EST policy is close to achieving the policy goals set in many cities. For most people I would guess that they would hardly notice if the policy was EST rather than BAU, because the gradual change caused by a tightening of the measures gives people time to adjust their travel behavior. Even if this gradual change towards EST had been implemented one ends up with a doubling of the transport volume from 2000 to 2030 (BAU represents a tripling). If vehicle technology is improved so much that the emissions are on average halved for the total car population, the total climate gas emissions will be constant. The main point from this exercise is therefore that it is possible to change towards an EST trajectory and obtain substantial emissions reductions compared to the present trends. However, to attain a level of mobility that is sustainable further reductions in the emissions from transport must be done. The challenge is formidable, which underline the need to start bending the present unsustainable path is urgent. Why is it that the BAU policy continues everywhere, while the simulation shows that it is possible to change towards the EST development without much hardship? I shall come back to this question in the last chapter.

Figure 8-6 BAU and EST policy, City of KAND, million pkm per day per mode.
8.3 Home locations for 15 000 new employees at UCD and UiA

8.3.1 Introduction

The next question asked was how the location of the homes of 15 000 new employees at two universities affects total travel and emissions. In the first simulation the 15 000 are employed at the university UC Davis and in the second simulation the 15 000 are employed by UiA in Kristiansand. I have done the exercise to evaluate the effects of different policies on two real life situations. How does it matter where workers locate their homes in relation to their work? This is a fundamental question in land use and transport planning and many plans have been made to make the distance as short as possible between the work place and home. But the choice of home location is influenced of many factors outside the realm of land use planning. Still empirical evidence show clearly that urban structure influences travel, see Næss (2006).

8.3.2 UCD get 15 000 new employees

Davis will get 15 000 new jobs (10 000 staff and 5000 students) in the next 10-12 years according to the UCD Long Range Plan. Imagine that all:
   a) settle in Davis
   b) settle in the Sacramento Region outside Davis

Only journeys to work are looked into in the experiment. Those who settle in Davis will adopt a modal split according to policy intentions expressed in the plans as shown below. For those who settle in the Sacramento Region there are two alternatives. The BAU (Business As Usual) alternative is an extension of the present modal split and trends, while the EST (Environmentally Sustainable Transport) alternative is constructed. The modal split figures used are shown in the table below. These are combined with the average distance home-work-home from the second table and used for calculation of travel per mode, total travel and associated CO₂ emissions.

The assumptions used in the calculations are the following:
250 workdays/year
BAU: car occupancy 1.2 car, 18 passengers per bus in Davis and Region.
EST: car occupancy 1.0 single driving, 4 when car sharing, 25 passengers per PT vehicle
Emissions of CO₂ car 200g per km, bus 400 g per km

The modal split assumptions are shown in the table below. The Davis and BAU Sacramento Region figures are close to the present, while the EST Sacramento region represents a dramatic change in travel compared to the present mode choice.

<table>
<thead>
<tr>
<th>Modal Split</th>
<th>Car</th>
<th>Car share</th>
<th>PT</th>
<th>Bike</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis</td>
<td>20 %</td>
<td>-</td>
<td>20 %</td>
<td>33 %</td>
<td>27 %</td>
</tr>
<tr>
<td>BAU Sacramento Region</td>
<td>93 %</td>
<td>-</td>
<td>7 %</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EST Sacramento Region</td>
<td>20 %</td>
<td>40 %</td>
<td>40 %</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 8-3 Modal Split in Davis and Sacramento, simulation of home location.
The estimated average distance between home and the university is 5 km shorter for those using public transport than the car in the Sacramento Region because you have to live not too far away from the transit route to choose public transport.

<table>
<thead>
<tr>
<th>Average distance home-work-home km</th>
<th>Car</th>
<th>Car share</th>
<th>PT</th>
<th>Bike</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis</td>
<td>8</td>
<td>-</td>
<td>6</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>BAU Sacramento Region</td>
<td>60</td>
<td>-</td>
<td>50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EST Sacramento Region</td>
<td>60</td>
<td>60</td>
<td>50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 8-4 Distance to work for the location of 15 000 homes simulation.

### 8.3.3 UCD results of locating 15 000 homes at different places

The following table shows total and individual travel (work journeys only) per year both in person km and vehicle km, and it shows the total and individual CO$_2$ emissions per year. It is striking that if all 15 000 locate in Davis the CO$_2$ emissions per individual will be exceptionally low, only 0.07 tons or 70 kg per person, while in the extreme alternative of all located outside the city, each person emits 2.35 tons of CO$_2$. This shows that land use and transport policy have a huge potential.

<table>
<thead>
<tr>
<th></th>
<th>Davis</th>
<th>SacReg EST</th>
<th>SacReg BAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum PKM per year</td>
<td>20 000 000</td>
<td>210 000 000</td>
<td>222 500 000</td>
</tr>
<tr>
<td>Sum VKM per year</td>
<td>5 250 000</td>
<td>70 500 000</td>
<td>175 694 444</td>
</tr>
<tr>
<td>Sum CO$_2$ tons</td>
<td>1 100</td>
<td>14 700</td>
<td>35 278</td>
</tr>
<tr>
<td>PKM/person</td>
<td>1 333</td>
<td>14 000</td>
<td>14 833</td>
</tr>
<tr>
<td>VKM/person</td>
<td>350</td>
<td>4 700</td>
<td>11 713</td>
</tr>
<tr>
<td>CO$_2$ tons/person</td>
<td>0.07</td>
<td>0.98</td>
<td>2.35</td>
</tr>
</tbody>
</table>

Table 8-5 Total and individual travel and CO$_2$ emissions, different locations of homes

The figure below illustrates the large difference between the case that all settle in Davis and all in Sacramento Region. If all settle in Davis the average length of the work journey will only be a few kilometers and the associated transport volume and emissions low.

![Figure 8-7](image-url)
The differences between the BAU and EST policies on 15,000 people located freely in the Sacramento Region with one thing in common the work at UCD in Davis, are large. The figure shows that the vehicle km traveled are less than half for the EST alternative compared to BAU. The total traffic (work journeys only) is reduced from 175 million vehicle-km to 70 million vehicle-km, a reduction of 60%. This substantial reduction in car use has of course a similar reduction in emissions, accidents, etc. The CO₂ emissions in the BAU alternative is 35,278 tons of CO₂ per year, which in the EST alternative is reduced to 14,700 tons of CO₂ per year, a reduction of 58%.

When all settle in the Sacramento region the average length of the work journey will be much longer. The difference in person kilometer traveled in the Sacramento BAU and EST alternatives are not big, but the difference is large between the vehicle kilometers traveled. This is caused by reduction in the car mode and shows that even if land use policy is market-led the transport policy might matter to a large extent. If the transport policy makes people shift to other modes for the work journey, then the CO₂ emissions per individual might be reduced by about 60% from 2.35 tons to 0.98 tons.

The figure gives several messages, firstly it the self evident situation that if a company in this case UCD, increases with 15,000 new employees and they all come to live in close distance to their work, both the person km traveled and the vehicle km travel will be low. More surprising is the very large difference between locating the 15,000 people in Davis alternative to their location in the Sacramento Region. The person km traveled increase ten times. The second main message from the figure above is that it is possible to handle transport in different ways and it matters a lot regarding GHGs and fuel consumption. Perhaps the most important message is that the CO₂ emissions from the work journeys of the same 15,000 people located in Davis instead of the Sacramento Region, only would be 0.07 tons CO₂ per person per year. This is extremely low and illustrates that a compact city with a strong bicycle policy can go very far towards environmentally sustainable development transport.

8.3.4 UiA in Kristiansand gets 15,000 new employees

The effect on transport volume and thereby CO₂ emissions of alternative home locations for 15,000 new workers has also been simulated for Kristiansand and UiA (at present there are about 8000 students and staff at UiA). The first simulation is that all 15,000 locate their home in Kristiansand and travel to work with the same modal split as at present. The location of their homes within Kristiansand will be all over, but half is expected to locate in the new areas allocated in the general land use plan (Kommuneplan).

The second simulation is that all 15,000 will be located in Agderbyen Region outside Kristiansand. The prime locations are Søgne, Songdalen, Lillesand and Mandal. Two alternative transport policies are tested. One is the present policy of business as usual BAU and the second is an environmental sustainable transport policy EST. The work journey in the BAU alternative is dominated by the car while the EST alternative presumes that an active transport policy has shifted people into car-sharing and public transport.

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401 The pkm differ in the BAU and EST alternatives because people in the EST alternative locate closer to transit interchanges and therefore travel shorter than if located in distributed settlements
The assumptions for the UiA simulation are the following:

The modal split assumptions are shown in the table below. The Kristiansand and BAU Agderbyen Region figures are the same as the present mode split, while the EST Agderbyen Region represent a dramatic change in travel compared to the present mode choice.

<table>
<thead>
<tr>
<th>Modal Split</th>
<th>Car</th>
<th>Car share</th>
<th>PT</th>
<th>Bike</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristiansand</td>
<td>69 %</td>
<td>-</td>
<td>5 %</td>
<td>6 %</td>
<td>20 %</td>
</tr>
<tr>
<td>BAU Agderbyen Region</td>
<td>93 %</td>
<td>-</td>
<td>7 %</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EST Agderbyen Region</td>
<td>20 %</td>
<td>40 %</td>
<td>40 %</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Table 8-6 Modal Split in Kristiansand and Agderbyen, location of 15 000 homes.*

The estimated average distance between home and the university is 5 km shorter for those using public transport instead of the car in the Agderbyen Region because people have to live not too far away from the transit route to choose public transport.

<table>
<thead>
<tr>
<th>Average distance home-work-home km</th>
<th>Car</th>
<th>Car share</th>
<th>PT</th>
<th>Bike</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristiansand</td>
<td>16</td>
<td>-</td>
<td>14</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>BAU Agderbyen Region</td>
<td>44</td>
<td>-</td>
<td>40</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>EST Agderbyen Region</td>
<td>44</td>
<td>44</td>
<td>40</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Table 8-7 UiA average distance to work, location of 15 000 homes.*

### 8.3.5 UiA results of locating 15 000 employees at different places

The following table shows total and individual travel (work journeys only) per year both in person km and vehicle km, and it shows the total and individual CO₂ emissions per year. If all 15 000 locate in Kristiansand the CO₂ emissions per individual will be 0.46 tons per person, while the Business As Usual policy (close to the present) each person emits 1.73 tons of CO₂ close to four times as much.

<table>
<thead>
<tr>
<th></th>
<th>Kristiansand</th>
<th>EST Agderbyen Region</th>
<th>BAU Agderbyen Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum PKM per year</td>
<td>46 875 000</td>
<td>159 000 000</td>
<td>164 000 000</td>
</tr>
<tr>
<td>Sum VKM per year</td>
<td>34 646 000</td>
<td>51 900 000</td>
<td>128 889 000</td>
</tr>
<tr>
<td>Sum CO₂ tons</td>
<td>6 958</td>
<td>10 860</td>
<td>25 889</td>
</tr>
<tr>
<td>PKM/person</td>
<td>3 125</td>
<td>10 600</td>
<td>10 933</td>
</tr>
<tr>
<td>VKM/person</td>
<td>2 310</td>
<td>3 460</td>
<td>8 593</td>
</tr>
<tr>
<td>CO₂ tons/person</td>
<td>0.46</td>
<td>0.72</td>
<td>1.73</td>
</tr>
</tbody>
</table>

*Table 8-8 Travel and CO₂ emissions from different locations of homes*

The figure below illustrates the large difference between the case that all settle in Kristiansand and all in Agderbyen Region, the distance from UiA to the location of the home is very important. The difference in *person kilometer traveled* in the BAU and EST alternatives are not big, but the difference is large between the *vehicle kilometers traveled* in the BAU and EST alternatives (and the corresponding emissions). Assuming a shift from BAU to EST, the CO₂ emissions would be reduced by 60% from 25 000 tons to 10 000 tons per year. If an effective policy to implement the goal of shifting persons from cars to public transport had been in place in the Kristiansand region, then commuters shifting to public transport and car-share could obtain a similar reduction.
The next figure illustrates the importance of how people are transported. The first message is the self evident situation that if UiA increases with 15 000 new employees and they all come to live in close distance to their work, both the person km traveled and the vehicle km produced will be low. It is a very large difference between locating the 15 000 people in Kristiansand alternative to their location in the Agderbyen Region. The person km traveled increase three times, hence policies that make people settle close to work will reduce commuting and CO$_2$ emissions substantially. The second message from the figure is that an effective transport policy shifting people from cars to public transport and car-sharing has a huge potential. The vehicle kilometer traveled can be reduced by 60% if an effective bus alternative and organized car-sharing are in place.

Lastly, the simulation did not test an EST policy for Kristiansand, but used the present modal split. The 15 000 workers produced 34 million vehicle kilometer in Kristiansand. This large transport volume indicates that the potential for a substantial reduction is there, but requires an effective transport policy, which so far has not been the case.
8.3.6 Comparison of the two cities.

If we compare the location of all the 15,000 homes in the universities’ host cities Davis and Kristiansand, it is noticeable that the person km traveled are larger in Kristiansand than Davis as the next figure shows. The average travel distance is therefore larger in Kristiansand than in Davis. Looking at the vehicle km traveled the difference has increased, which is because the people in Davis use the bike and walk more than in Kristiansand.

![Figure 8-10 Transport in Kristiansand and Davis, person km and vehicle km in millions.](image)

Davis is an example of a compact city having had a bike policy for many years. Both the university and the city have developed an integrated land use and transport policy. The UIA in Kristiansand has a new campus, which is designed based on the car as the main mode of transport with ample parking close to the buildings while the students have to walk several hundred meters to the bus stop. Land use and transport planning is one explanation of the difference between the cities. If Kristiansand and UiA develop a transport policy aiming at mode shift then substantial reductions in the CO$_2$ emissions from the work journeys can be obtained.

On the regional level there are similar differences as shown in the next figure. The large difference in transport volumes between locating the 15,000 new jobs within the city versus in the region is very noticeable. The person kilometer traveled in the BAU alternative is fairly similar to the EST alternative in both regions, but when changing to an EST policy a large difference in vehicle kilometer traveled occurs causing a reduction in emissions. The Sacramento region is larger than the Agderby region and hence the gain in vehicle km traveled is greater because of the longer distances.
The lessons from this exercise are several, I will highlight two:

Firstly, a transport and travel policy producing an effective and efficient public transport service together with a good car sharing system have the potential to reduce the CO₂ emissions substantially without reducing accessibility drastically.

Secondly, a land use and housing policy combined with economic incentives that make people choose to live close to work (at least one of the workplaces in case several in the family work) will have a tremendous impact to reduce CO₂ and other greenhouse gases. It will also save fuel and contribute to better health because of more walking and cycling.

Notice that the lessons drawn point to an integrated set of instruments, like a transport and travel policy and a land use and housing policy combined with economic incentives. The present lack of “joined up” or integrated policies has been caused by the fragmentation of public policy and because of all the barriers and hindrances that prevents society and politicians reach their goals, discussed several places in this study. The Sacramento Region and Davis will have a good starting level to implement these to policies, if and when a global agreement on CO₂ that forces everybody to reduce their use of the car will be in place. The number 15 000 (5000 students and 10 000 research staff) is taken from the UCD Long Range Plan. All of these can be settled on UCD land as an extension of the City of Davis, but location also in the city is probably better.
Theoretically it is possible to imagine a fairly drastic transformation of land use and transportation even in such a car based area as the Sacramento Region. The two major hindrances for such transformations are: a) a supply led housing market, and b) our dependence and pleasure of the car.

The Kristiansand and Agder Region have less chance of implementing the necessary policy to promote a change in location and transport policy. That is because of the planning paradigm taking the car for granted, “the car has come to stay”, and the fragmented institutional structure that prevents a comprehensive plan-led policy to be established. Theoretically there are substantial gains, but to obtain those gains two changes must be effectuated. Firstly, the land use policy in Kristiansand must change to make housing more affordable and attractive combined with a restricted parking policy at the university. Secondly, the public transport must be more attractive especially higher frequency and faster travel time, but price and comfort is also important.

8.4 What if an oil crisis occurred?
The third question asked is what if an oil crisis occurred, how would the daily life in the four case cities be affected?

8.4.1 Introduction

The oil crisis scenario is tested out on each of the four cities and the “same” two high income families with two or more cars. That is because such families will probably be more representative of the situation 10-15 years ahead judging from the expected increase in income. Trend data suggest that rising car ownership and use is largely a function of rising real per capita income. As income per capita increases, the relative price of automobile travel declines and value of time increases, making the higher speed of automobile travel more attractive. With fixed travel time budgets this means that the distance between home and work can increase, something that is further facilitated by improved roads. Automobile ownership and use has increased faster in Europe than in the US over the past decades, and most in the high-income groups, but still the US is some twenty years ahead. Commuting to work is increasing partly caused by the decentralization that is occurring in most urban areas in Western Europe.

Two “typical very successful family” is chosen as the medium to explore the effects of an oil crisis. Both families earn well and are well educated, the woman is a university professor and the man is a high school teacher. Family A lives and works in the city, while in family B both workforce participants commute to work far distances. The families have three cars, which is an increasing group in all the four countries.

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403 Pucher and Lefèvre 1996.
404 Gillespie 1999 The changing employment geography in Britain, in Breheny M, ed, The People. Where will they work?
405 In Kristiansand 24% of families have 2 or more cars, in the neighbouring municipality Sogn the number is 42% and in US 62%.
Both families use their cars a lot, but the distance traveled for the journey to work is far longer for the commuting family B. The three-car family is very common in the US, but not yet in Europe. With household income above NOK 750 000 then in Norway 2% have no car, 35% one car and 63% two or more cars (RVU 2001). With rising real incomes we are on the way to catch up with the US also on car ownership. The other strong trend caused by rising incomes beside increasing car ownership is that people travel more, both with their cars on local and longer trips, but also with airplane to more distant destinations. There is also an associated land use sprawl, people buying bigger and better houses further away, resulting in fast increasing commuting in all four cities. The two “successful families” A and B are critical cases designed to capture these changes, to make the results more valid and interesting. The simulation was also checked for how it would impact on low-income families.

The four cities are of different shape and form
Kristiansand with the bridges in transport system defining the structure has a longitudinal u-shaped form. About half the population live within cycling distance to the centre, although some housing estates are on top of hills. Most new developments as laid out in the plan (Kommuneplanen) take place 10 km or more from the city centre. This development is towards the east and the plan foresees Kristiansand growing into Lillesand municipality. The regeneration of city centre and building on formerly vacant land (Elvebredden øst, Tangen, Odderøya) will increase the population in the city centre with more than two thousand persons. Aalborg has grown around the shortest crossing of the Limfjord, about one third of the population live north and two-thirds south of the Limfjord. Within 4 km from the centre one finds the majority of the population. The distance between the City Hall and the outskirts of the built-up area is 6-8 km.

Norwich has grown around the castle and cathedral and spread out from the market place in a circle. Most of the urban population lives within a 4 km distance from the City Hall. The Norwich District’s (municipality) population of 120 000 persons live within a radius of only 3 km. Davis is located at the railway junction and designed as a grid lay out. Most people live within a distance of 4 km to the City Hall and nearly all less than 6 km. The terrain is flat and superb for cycling.

These differences and all other available data as travel surveys, etc. have been used when I have evaluated the effect of an oil crisis for each of the two families in each of the four cities. The evaluation started with locating home and workplaces. Then the alternative ways to travel to the different destinations and purposes where looked at in turn. On this basis some general conclusions were drawn. In the presentation below I only describe the starting situation and the main results for each city.

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406 This is true for families with children, the main contributor to sprawl. There is also a tendency that when the children grow up, some of these families buy homes close to the city centres. This trend is further pushed by divorce, lifestyle changes, etc.
8.4.2 The travel patterns for the families A and B in four cities

Overview of the situation for Family A and Family B in each of the four cities.

<table>
<thead>
<tr>
<th>Kristiansand</th>
<th>Family A</th>
<th>Kristiansand</th>
<th>Family B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family A consists of two adults working full time and boy 12, girl 18. They live and work in Kristiansand and have three cars. She is professor at UiA, he teaches at a local high school. Both use their car for work and the girl drives to high school. Most weekends they go for long overnight trips.</td>
<td>Family B consists of two working adults and boy 12, girl 18. They live in Kristiansand, she works in Lillesand 30 km away. He works in the Tvedestrand 100 km away. The girl drives to high school. They are very active in the weekends and use all three cars a lot for shorter trips. Occasionally they go for long weekend trips.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aalborg</th>
<th>Family A</th>
<th>Aalborg</th>
<th>Family B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family A consists of two adults working full time and boy 12, girl 18. They live and work in Aalborg and have three cars. She is professor at AAU, he teaches at a local high school. Both use their car for work and the girl drives to high school. Most weekends they go for long overnight trips.</td>
<td>Family B consists of two working adults and boy 12, girl 18. They live in Aalborg, she works 30 km away. He works south of Viborg 100 km away. The girl drives to high school. They are very active in the weekends and use all three cars a lot for shorter trips. Occasionally they go for long weekend trips.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Norwich</th>
<th>Family A</th>
<th>Norwich</th>
<th>Family B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family A consists of two adults working full time and boy 12, girl 18. They live and work in Norwich and have three cars. She is professor at UEA, he teaches at a local high school. Both use their car for work and the girl drives to college. Most weekends they go for long overnight trips.</td>
<td>Family B consists of two adults working full time and boy 12, girl 18. They live in Norwich, she works in the Steam Museum at Diss 30 km away. He works in the outskirts of Peterborough 100 km away. The girl drives to college. They are very active in the weekends and use all three cars a lot for shorter trips. Occasionally they go for long weekend trips.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Davis</th>
<th>Family A</th>
<th>Davis</th>
<th>Family B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family A consists of two adults working full time and boy 12, girl 18. They live and work in Davis and have three cars. She is professor at UCD, he teaches at a local high school. Both use their car for work and the girl drives to high school. Most weekends they go for long overnight trips.</td>
<td>Family B consists of two working adults and boy 12, girl 18. They live in Davis, she works in Sacramento 30 km away. He works in the Bay area 100 km away. The girl drives to high school. They are very active in the weekends and use all three cars a lot for shorter trips. Occasionally they go for long weekend trips.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.4.3 If an oil crisis, how will the four cities fare?

To answer this question each city has been dealt with separately, but here I use Kristiansand as an illustration of how the assessment was done. In a distance of 3 km from the city hall about 20 000 people live, 25% of the population in walking distance. Within 5 km from city hall about half the Kristiansand population live, cycle distance. Topography in Kristiansand is very varied, several housing estates are 100 meters above sea level with winding and steep roads as access roads (Tinnheia 2500 inhabitants, Slettheia 3500 inhabitants).

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407 I have set walking distance to 3 km and cycling distance to 5 km, which obviously can be discussed. In times of crisis I would think that these lengths would be acceptable to the majority.
inhabitants, etc.), while the one square city centre Kvadraturen is on level 5-10 meters. The difference in height and the steep roads make cycling and walking less attractive than in a more gentle landscape.

In Kristiansand 85% of the car trips take place within the city, 11% to and from city, and 4% outside city. The family B where both adults commute is as yet a small, but growing minority. The total number of trips within Kristiansand was 200 000 trips per day, but only 23 000 trips between the city and other places.

8.4.3.1 Travel changes in the four cities

Family A: The number of short trips by car severely curbed. Girl stops driving to school. No cars used for local work trips. Long overnight trips still priority one, but some substituted with other modes and destinations. Davis is coming out best for this family A because of the compact city, well developed bike/walk net and fairly good public transport. Norwich is very compact, but poor bike/walk net and poor public transport makes local trips strenuous. Aalborg has a good bike/walk net, which is far more used than in Kristiansand that has a fair bike/walk net. However, in both these cities the distance across town for those living on one side and working on the other, is beyond cycling distance for most people. Both cities have the basis for a good public transport system. Because of the low density the bus services will be infrequent and consequently the journey time far longer than when it was done in a car.

Family B: The number of short trips will be severely curbed. Girl stops driving to school. The woman shifts to bus and the husband enters car-sharing schemes with two others. (Reduced fuel consumption for work by 2/3, also the wife’s Toyota Corolla used by husband for his car sharing trips) Weekend trips reduced and new combination of trips organized (reduce km traveled by 50%). Davis is coming out best for this family B because of the compact city with short distances to the local bus stops and the railway station, and fairly good public transport services to the major destination/work places around the city. If the husband is not able to join a car-sharing scheme, he will be really worse off because of poor public transport to most places 100 km away from Davis.

Norwich is the centre of a radial road network around the city. The bus services are very infrequent in the sparsely populated rural area with small towns and villages scattered around. Car-sharing should be possible for many because of the large number of people living in the Norwich travel to work area (370 000).

Kristiansand is the “engine” in the regional development, taking place within a spatial structure consisting of a narrow band of settlements along the trunk road located as pearls on a string, Kristiansand being the big pearl in the middle. This structure is very good for developing public transport and car-sharing. Fairly fast after the oil crisis workers would probably cooperate and start car-sharing, the bus improvements would take a little longer time to happen. Our man in family B commutes to work in Tvedestrand from Kristiansand on a daily basis. At present there are 92 persons who commute between these two places in that direction. It will be difficult to organize car-sharing since they are so few commuting. Public transport demand will probably also be low for the whole stretch and hence it will be necessary for our man B to change bus once or twice with the extra time and costs required.

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SSB Pendlingsstatistikken

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Aalborg has a more circular travel to work area more similar to Norwich. Therefore commuters like our family man B will suffer from poor public transport supply and few others to share a car with for his particular destination.

8.4.3.2 Consequences and Evaluation

**Family A:** The major change in lifestyle is not using the cars for work or school, and reduced car use for other local trips. Change to walking, cycling and public transport for local trips, more local shopping and leisure. The long leisure trips marginally reduced in length and numbers. The total family cost of travel increases, but not dramatically. The family adapts by not using the car for local trips. Instead they use more time consuming alternative travel modes, which give positive effects of getting closer to the local community and the health effects of more physical movement. The saved costs for local trips are more than offset by the increased costs for weekend trips, which the family tries not to change. This family manages to continue with most former activities, but the shift of transportation modes make life less flexible and transport more time consuming. The costs for transport increase. Most families like this one will probably say that their lifestyle has been changed, but with both negative and positive sides. The families in Davis and Norwich manage an oil crisis quite well regarding local trips because of the compactness of these two cities. In Kristiansand and Aalborg there are say one quarter of the population, that live/work in the outskirts and outside cycling distance to the city centre, which will get some problems with travel.

**Family B:** Both parents will use more time for work trips and flexibility is reduced even if the car-sharing alternative functions for both. If car-sharing is not possible, then the time used for travel will increase a lot. The weekend trips have to be reduced, which reduces the activities the family took part in. The consequences are more costly and time-consuming travel, which require more organizing. It makes life less flexible than before for all. More time is needed for travel and the journeys are far more costly. The active life of the family using a large geographical area had to be substantially reduced. Most families like this one will probably say that their lifestyle has been changed a lot in a negative way. In family B both husband and wife commute out of their home city. In all four cities it is likely that the question of changing jobs or home will arise, because of the time spent on the work journeys.

The Norwich family will probably manage best for long journeys due to the densely populated and a well developed transport system in the region and manage an oil crisis quite well regarding local trips because of the compactness of the city. In Kristiansand the modern lifestyle households who go skiing at Hovden 230 km away every weekend in the winter and practice golf, sailing and water sports in the summer will be hit hard of fuel rationing. The same type of households in Aalborg will manage better due to shorter distances to most activities. Davis people will have to dramatically cut the recreational travel they are in habit of, like skiing beside Lake Tahoe and surfing along the coast.

8.4.4 Summing up the oil crisis scenario.

An oil crisis will hit different people differently in the four cities, but in general most people will adapt to the new situation and continue to work at the same place as before, it is the non-work trips that will have to be changed.
For most of those living and working in the same city (Family A), the consequences are acceptable, but those with a very “modern” car oriented life style may find them close to unacceptable. This is especially so because work and leisure tend to be organized around fast travel with the car.

For all of those living in the city and working outside the city (Family B), the consequences are severe because the journey to work may take too much time. Again those with a very “modern” car oriented life style will find the consequences of an oil crisis very time consuming and thereby breaking up their carefully worked out time budgets. To many people this may seem a very negative change of lifestyle and reduced life quality. People are very flexible and will in reality choose between many alternatives to meet an oil crisis, one such way will be to work from home as much as possible.

Davis citizens living and working in Davis are very well positioned in the case of an oil crisis:

1. Transportation: Walk, Bike, Public Transport can handle most local journeys over night.
2. Housing: Village Homes show how! Covell Village can be built in short time. Downtown can be substantially densified.
3. Energy: Buses already on natural gas. Housing can expand the use of solar energy and water heating.

However: Those citizens commuting to work will have to change travel habits to car sharing and use public transport. For some the journey time to work will be very much longer than before. Those who have lived an active outgoing life for recreation far away, which is applies to many in Davis, will have to change their habits.

Let us take Aalborg as an example and look back at the EST aims: Environmentally Sustainable Transport does not endanger public health or ecosystems and meets mobility needs consistent with a) use of renewable resources at below their rates of regeneration and b) use of non-renewable resources at below the rates of development of renewable substitutes. The hypothetical oil crisis will make transportation in Aalborg more sustainable than at present because of the shift to soft modes (this also holds for the other cities, but Aalborg has the most pronounced EST-goals). The resulting modal split will be in the direction of both the Charter and Commitments, and the Traffic and Environment Action Plan. Thus external forces may help Aalborg City to achieve its goals, something the city has not so far managed.

How would an oil crisis impact on low-income families?
The low-income no car family would experience improved public transport services because of increased demand, and thus benefit by an oil crisis. The low-income family with a car would experience an oil crisis as negative since the increased cost of fuel would put pressure on an already strained economy. The impact on those families would also depend on their dependency of the car to cope with daily life. The location of homes and jobs would decide the impact they would feel. Already there is a concern that access to the employment market is difficult without access to a car (see the Norwich case). An oil crisis would hit low-income families with a car hard, and this will be worse if homes and jobs are located such that the public transport alternative is poor. Some of these families would probably fall out of the job
market or experience difficulties getting access to the job market because of the increased costs of using the car.

Lastly, there seems to be no reason to believe that an oil crisis will be so unacceptable that people will revolt and blame their politicians. The consequences of an oil crisis seem to be tolerable for the majority in all four cities. In the longer term supposing the oil crisis is lasting there will be changes in both home and job locations, and the travel patterns for shopping and recreation will probably change a lot.

8.5 Summing up chapter eight

We asked three questions about the future in this chapter.

- Two alternative policies BAU (business as usual) and EST (environmentally sustainable transport development) are tested on an imaginary model, the city of KAND.
- Which are the effects of alternative home locations for 15 000 new employees at UCD in Davis?
- What if an oil crisis occurred, how would the people in the cities cope?

The question of BAU and EST policy trajectories and the effect of different policies show that most people probably would adapt to EST policy without having to change their lifestyles completely. An EST policy developed over ten years would save substantial amounts of oil and largely reduce CO$_2$ and other emissions, thus fulfilling the stated objectives and aims. Hence to understand the resistance to turn away from the BAU policy and the interests that support the present very unsustainable land use and transport planning and policy one has to look elsewhere than to the effects of an EST policy, because that will be very effective in reaching set goals.

The alternative locations of the homes of 15 000 new university employees at Davis and in Kristiansand illustrates that land use planning can contribute to shorten trip distances and in an integrated policy contribute to mode shift. There is a vast difference in the amount of transport produced if new workers locate in city or in the region outside the city. The consumption of fuel could yearly be reduced from 7000 liters per person to 2000 liters (Kristiansand) and 9000 liters to 300 liters (Davis), and the CO$_2$ emissions per person from 1.73 tons to 0.46 tons (Kristiansand) and 2.35 tons to 0.07 tons (Davis). Associated with this reduction in the amount of transport is a reduction in all other negative factors the use of the car produce, as accidents, local emissions, noise, etc.

Both in California and Europe the freedom to settle wherever you want is held in high regard. When this value is combined with the freedom to use the car whenever and wherever you want, the result is the expanding travel to work areas as one see in the Agderbyen and Sacramento regions, as in Aalborg and Norwich.

The answer to the third question is that the social and economic elite in the cities would manage fairly well with an oil crisis. The long distance commuters and the low-income families with a car would suffer the oil crisis the most. The cities with a balanced transport system and policy would manage well, while those cities with a policy based on a strong car-
ideology would be worst off. The low-income family with a car would experience an oil crisis as negative since the increased cost of fuel would put pressure on an already strained economy and some of these families would probably experience difficulties with access to the employment market. The other main lesson from the what if an oil crisis question was that there will not be created a strong crisis, most people in the four cities will cope with an oil crisis fairly well. Hence, not even an oil crisis will create a strong pressure on the politicians and by that create more demand for sustainable transport development. The oil crisis simulation shows that the gap between the environmentally sustainable transport development goals and the evidence created on the ground may continue to widen.

The theory holds, most of the necessary instruments are there, but it is the use of the instruments that is lacking. Without a political leadership that really works towards EST goals and a consistent policy framework from the national level down to the cities being in place, we can forget about sustainable transport development.
9 Discussion

9.1 Introduction to the discussion

This chapter sums up and further examines the evidence in the preceding chapters and returns to the theoretical discussion in chapters 2 and 3 to address the aims of the dissertation which are restated below.

The aims of the dissertation are:

- How was the connection and interaction between land use and transport in the cities? What effect did planning and policy exert on the choice of transport mode? Was the development caused by a deliberate policy and was it sustainable, and in case how and why?
- How could the observed land use and transport development be explained? What were the factors facilitating cycling, walking and public transport; and what were the factors inhibiting more sustainable transport development?
- What if any, are the lessons from the case cities for other medium sized cities in Europe?

The first two aims are discussed in this chapter, while the lessons drawn are presented in chapter 10. A comparison of organization and Land Use and Transport policy responsibilities in the four cities is shown in the diagram on the next page. Similar diagrams were used extensively in cross comparison of the cities and a more elaborate one is included as an appendix to chapter 9. The diagram is related to the discussion in chapter 2 on typology and the model presented in Figure 2.5.

Further in the chapter a discussion on the detailed results extracted from the above case studies of the individual cities is presented and then discussed in a cross comparison of the cities.
Scheme of comparison of policy responsibility and results in the four cities.

<table>
<thead>
<tr>
<th>City</th>
<th>What was the LU&amp;T connection and interaction?</th>
<th>Land Use Planning</th>
<th>Development Control</th>
<th>Transport Planning</th>
<th>Road Infrastructure &amp; Finance</th>
<th>Public Transport &amp; Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Norway Kristiansand</strong></td>
<td>Car transport was an important driver in the location of business and homes. LU policy adapts to demand for building land. City Centre pressure. CONTEXT: fast economic growth, toll road special. INSTITUTIONS: support car and economic growth.</td>
<td>Municipality decides LU plans. AIM: Facilitating growth.</td>
<td>DC an instrument in a market-led LU planning</td>
<td>Municipality should plan transport structure in the general plan, but relies heavily on Highway Agency</td>
<td>Parliament/National Highway Agency finances roads, plus user payment. 3rd generation local user Toll Roads Package</td>
<td>PT financed by county who decide fares and subsidies. BusMetro infrastructure directly financed by MoT, HA, County and City</td>
</tr>
<tr>
<td><strong>Denmark Aalborg</strong></td>
<td>Car transport was an important driver in the location of business and homes. LU policy adapts to road infrastructure. CONTEXT: periphery with very slow growth. INSTITUTIONS: LU&amp;T an instrument for growth.</td>
<td>Municipality decides LU plans. AIM: Facilitating growth.</td>
<td>DC an instrument in a market-led LU planning</td>
<td>Municipality in cooperation with County produces plans</td>
<td>Parliament/National Highway Agency finances roads.</td>
<td>PT financed by city after the 2007 reform, before that the county.</td>
</tr>
<tr>
<td><strong>England Norwich</strong></td>
<td>Park&amp;Ride well integrated in City Centre shows integrated LU&amp;T planning. Outward urban LU expansion, but LU depends on old transport network. CONTEXT: Norwich historic city. Building land very scarce. INSTITUTIONS: Strong Central Government. Norwich city without LU&amp;T powers.</td>
<td>County decides structure plans AIM: Facilitating growth. Locate new homes.</td>
<td>DC an instrument to take care of listed buildings and keep the position as retail city</td>
<td>County makes the Local Transport Plan, the focus of which may not be integrated urban policy</td>
<td>Government finances roads through a bidding process on the Local Transport Plan. Major projects special bidding procedure</td>
<td>PT market solution, but County subsidize some routes. Public Private Service Agreements.</td>
</tr>
<tr>
<td><strong>California Davis</strong></td>
<td>LU was managed, local T-network planned for all modes. Trunk road bypasses city. CONTEXT: UCD provides growth, no city concern. INSTITUTIONS: Davis has self-rule in LU&amp;T planning.</td>
<td>Municipality decides LU plans, but Referendum for Urban extension AIM: Control growth.</td>
<td>DC an instrument to steer / control development towards aims</td>
<td>The City Council makes the general plan with transport planning integrated. No mixing of inter and intra urban traffic!</td>
<td>The major highways are not an integrated part of the city structure as in the 3 other cities. Davis finances own roads.</td>
<td>Davis PT student/UCD run TAP Financed by student levy, UCD, and City plus passenger income. An interesting model to try out other places?</td>
</tr>
</tbody>
</table>
9.2  Comparison the 4 cities, regarding LU&T issues

9.2.1  The quest for growth.

The four cities were at the start of the twenty first century in different situations regarding growth. Kristiansand was bursting with confidence after a decade of strong growth, however the end of the eighties was different. Aalborg has only increased population with a few thousand over 40 years, which hardly gave the municipality room for new tasks. The old city of Norwich, now an administrative district in Norfolk County, has had a constant population about 120,000 for many decades while the population outside the city border has grown strongly and caused that the population in the Norwich urban area has doubled. Davis has grown strongly as the principal settlement servicing the former agricultural college, now the University of California, Davis. The UCD has grown strongly for years and with it Davis. The city of Davis is the only one of the four that has a sharp distinction between the city and the surrounding rural area.

The different growth histories and paths impinge on both the perceptions on how the present situation is and the outlooks towards the future. Agency and actors each with different perceptions of the future act within formal and informal institutions. Sometimes there is congruence between the formal and informal institutions and the results seem rational and goals are achieved. Other times only partial goals were achieved as we repeatedly have seen above in the case descriptions of the four cities. Very often the goals promoting the car were the ones realized, while the aims concerning an environmentally sustainable transport future were not achieved.

I have several times proposed that the principle of subsidiarity (as practiced) should be used to change the institutions governing land use and transport planning in the three European cities to redress this. The alternatives to devolve powers and give the cities (functional urban areas) self-rule regarding land use and transport policy, are three:

- Continue with the present practice and institutions.
- Concentrate powers to the national/regional levels and reduce the influence of the local people.
- Dismantle the less than a hundred years old land use and transport planning system, and let landownership and the market rule.

The first two alternatives or a combination of the two will probably be in the interests of all the organizations and the vested interests in and around land use and transport planning system. In my opinion the major problems revealed in this study will remain unsolved with all three alternatives. The new liberal ideology has already as shown above influenced the land use and transport planning system to a large extent, possibly a start of a dismantling process? The effect of this market turn in planning has been a market-led land use planning and a transport planning with the car as the main (sole) object.
9.2.2 Land use

Kristiansand
Kristiansand has had a stable majority – Conservatives and Christian right – for decades and a land use and housing policy based on an ideology of facilitating growth. The Structure plan (Generalplanen) from 1969 reserved huge areas of building land, which still is enough for a couple of decades. Land reserves for building (supply side management) has been a key element in this policy to keep prices down and attract businesses. Inward investment is also lured with very attractive housing estates, green city and a splendid coastline as part of the land use policy. There has been a broad agreement about this policy. As part of the Sustainable City project a densification policy was adopted but NIMBY reactions caused a lot of political pressure and the politicians closed the public planning activity for greater density and let it be up to the market to come up with densification projects. The politicians also reacted on was the administrative reduction of building permits to build on new land in support of the densification policy. This led to a limitation on the supply side with sharp price increases as a result, which was politically unacceptable, at least rhetorically. The sprawling land use in the Kristiansand region is partly caused by the competition between municipalities to attract new people to settle, a competition that also keeps the value of land down. One could propose interference in this market from the regional level. In that case the region (in practice two counties) had to allocate a maximum of new houses to be built in each municipality. That would be impossible to think of as a locally agreed solution because of lack of trust in the county. It had therefore to be part of a national policy, but that would also have been “impossible” because of the political climate, a broad political majority would keep the liberalized housing policy and never think of forcing municipalities through an allocation of a certain number of houses to be built.

In England they have a system of regional allocation of housing (see Norwich case), but that is to solve the opposite problem. The challenges in Great Britain are vast areas of substandard housing, enormous migration from the north to the southeast and that far too few new houses are being built. Norwich has therefore been allocated the task of building 30 000 new houses until 2020. The idea that the Norwegian or Danish Government should allocate regional and municipal housing quotas with the purpose that the quotas should prevent some municipalities to build new houses to force people to settle somewhere else with the aim of reducing car commuting is politically entirely unacceptable at present.

Aalborg
Aalborg has reserves land for building that will last decades, both close to the city centre as redevelopment on both sides along the Limfjord, and in the outskirts where large growth areas are planned. Considerable investments in utilities for these areas, are sunk. Land Use and Transport policy has aimed at establishing Aalborg as the growth pole and prospering regional centre in north Jutland. Building land reserves are available for at least twenty years and can receive the location of a major company “over night”. Ample areas along the waterfront are being released due to decline in industries. Transport corridors and junctions have influenced Land Use more than the opposite way in Aalborg. The major shopping centre City Syd has had consequences for the shop-structure in the region, by attracting shoppers from a large area. The proposed development of City Nord has therefore not been granted permit because of this reason. Shopping in the city centre versus peripheral shopping is an issue often discussed.
Norwich
Norwich urban area has experienced strong population growth, but outside Norwich city border. The Norwich city council is therefore mainly concerned with the reuse of built area. Major redevelopments are changing the city centre from industry to mix use shopping/offices/flats with ample parking. 5000 parking places are established in six Park and Ride schemes with bus shuttles to city centre. The conceptual model behind LU&T planning and Park&Ride as part of this thinking is “maximum of free car use” except the City Center. Land use strategy is now the responsibility of East England Region, while Norfolk County is still responsible for the transport strategy and is the “heavy” partner in the Norwich Area Transport Strategy partnership. The Norwich Area Transport Strategy area is divided between three district councils with their different problems and opportunities. This difference in views will show in the solutions and strategy the partnership develops. LU policy and strategy is different in England/Norwich compared to the other cities, because of the scarcity of building land. The Buchanan legacy of coping with the car and at the same time give due consideration to historic buildings and environments, has been followed with great success in Norwich. The structure plan 1997 has not the Northern Distributor Road in it, and neither the first Local Transport Plan in 2000. It emerges in 2001, and is thereafter presented as an important part of the Local Transport Plan. The NDR road project, which lies outside Norwich District border, will if built relieve through traffic and improve conditions in the city. But there are also major growth interests behind the NDR, which aim at improving the access to the employment area at the airport, better conditions for commuters and the developers of new housing estates.

Davis
Davis’ close neighbor the separate jurisdiction UCD, secures strong growth in jobs, hence to facilitate growth is of no concern of City of Davis. There are no reserves of land for building, except through densification. Annexation of agricultural land outside city borders is necessary for the city to grow. A City Council decision to annex land for urban development must be put to the people in a referendum, the last such attempt was the Covell Village proposal in 2005. The Bike City and later the Eco City (Village Homes) has strongly influenced the design of new housing estates: green, parks, water, paths, etc. Downtown is however very car dominated with parking everywhere along streets and off street, instead of bike lanes/paths. Land Use for shopping in the city has been managed strongly, preventing the major shopping chains to locate. Ample, wide corridors for road infrastructure have been secured, even in new housing estates (one example of New Urbanism exists: Aggie Village). Strong steering of land use is possible, but “No Growth” Davis is limited of being an “Island Paradise” in a sea of sprawling metropolis. Davis is different: a strong environmental concern, well educated and highly competent residents (UCD employees) and a reaction to growth has brought the city into a unique position regarding land use and transport development.

9.2.3 Transport, financing of infrastructure and services

9.2.3.1 The four cities
Kristiansand Transport
New leaders in 1992 managed to solve the major problem through many years, the trunk road E18 and lack of capacity, even if the former leaders had tried the same. The new trunk road, financed by road tolls, was obtained by clever use of the existing institutions and by building stakeholder consensus. The consensus of interests about the Toll Ring and substantial
investment in the highway leave some interests out. Those were the car-less and those wanting shift to a sustainable development course. Parking policy has been a constant, only with yearly adjustments of parking charges to follow inflation.

**Aalborg Transport**

Road tolls are not allowed in Danish cities. The system of financing roads is by Government grants. The decision on the 3rd Limfjord crossing gives the county opportunity to fight for Government investment money as part of the national highway network system (can be contested by the state). This may become an important decision in the struggle to get financing as compensation for investments in Copenhagen area. The big H (store H) compromise about the Great Belt connection, which led to building the motorways E45 and E39, might be a model for securing compensation of a Femer Belt decision? The 3rd Limfjord decision was facilitated by very skilful political maneuver by the county mayor, while the Aalborg mayor opted out of the process.

**Norwich Transport**

England changed /is changing both transport policy and government structure. It started with the Blair Government introduced the white paper “A New Deal for Transport” where the decoupling of transport growth from GDP growth was sought. In effect road building should be curbed and public transport improved. Local Transport Plans (LTP) were introduced as the main instrument to implement national policy in the cities. The old system with a very strong central Government, made the policy contingent. Who would get financing where and when could not be foreseen. It remains to be seen if the new Local Transport Plan system is an improvement. Central Government is still very strong/decisive in allocation of road investment money. The regions are about to get a greater say in the decision process. For years the conservative Norfolk County had to get investment money for roads in the labour city of Norwich, from a conservative Government. With Blair the same conservative Norfolk had to get money for transport projects for a no longer labour city in competition with the problems and projects in the huge urban areas like London, Birmingham and Manchester.

**Davis Transport**

In Davis highways are of no concern to city council because the trunk road is not passing through the city centre. The City Council is responsible for both solution and financing of local roads, Bike and Walk network and traffic safety schemes. The development of a new housing estate has to pay for connection to existing network for all modes. Hence, the design is up to the developer, except when annexation must be done. Then the developer must put forward a proposal, which is so good that the voters “buy” it. This gives the city administration ample bargaining power against the developer, limited by the development giving adequate returns, i.e. a functioning market. Public Transport in Davis is remarkably good because it is financed and run by the UCD students. The net covers Davis fairly well and the services cost 1$ per ride, with zero fare for undergraduates.

### 9.2.3.2 Financing infrastructure and services - a general argument

The major reason for a very different development regarding road building is the way it is financed. The diagram above shows similarities and differences between the cities. Both Norway and Denmark has a system where the Parliament finances a road program exclusively. This means that when a project has come into that program it will be built sooner or later. Hence there is massive effort to get projects into that program.
Both the Kristiansand and the Aalborg case had such road planning and programming as major events, and in Norwich planning of the major road NDR gradually emerges from 2001 onwards. In addition Kristiansand has adopted Toll Road financing, which makes proposals pass through Parliament at great speed compared to the traditional program. The third Toll Road package entails that users pay about 85% of the costs and Government only 15%, but then the implementation and building of new roads goes fast.

This system of a national road program makes it virtually impossible to have an effective, integrated and comprehensive transport policy for the city. This is because financing of the alternative to the car, public transport, is done at county or municipal level where more funds to public transport means that money for something else must be cut, like old folk’s homes or schools. This fragmented system can explain why the politicians in the Parliament one day adopt sustainability goals and the next day they are distributing money to increase car use. The same goes for local politicians, they move from sector to sector or decision to decision without having to have an overall rational attitude, only make decisions on each case in isolation based on intra-sector rationality.

The roads in Norwich shall be financed through a bidding system according to the quality of the Local Transport Plan or as a major scheme. With limited resources this gives the Government officials a major say in how money is allocated on different projects and the “selling” of projects becomes important. Vigar points out that “The concentration of regulatory and investment power amongst civil servants and ministers clearly makes it vital for local authorities to understand changes in the direction of thinking at the centre. Generally speaking local actors paid civil servants at national and regional levels considerable attention, partly because finance was dependent on the “selling” of schemes and packages to civil servants and ministers: We spend much of our time ensuring that they (the civil servants) are well fed when they are here and we try and break down barriers, and try and develop rapport. Over the TTP we see them almost weekly, they are almost part of our team so they understand when they sell things to their bosses and we understand their problems.” (Transport planner cited in Vigar 2002:146)

Key persons matter in the “selling” of projects to obtain funding is an experience many planners share, as this story from the county of Kent in England: “The policy networks tied Kent County Council to sources of funding in Westminster and Brussels, and changes in transport policy at these levels influenced shifts in the county’s transport policy, but it was also critically dependent on the efforts of key officers to generate social capital, which helped Kent County Council gain resources: Our boss is very shrewd he goes straight in there and finds the decision makers and they like him doing that.” (Transport planner cited in Vigar 2002:146) The E18 story from the Kristiansand case is a similar example of selling the project to the national decision makers.

The Government in England also advocates the use of Private Finance Initiatives (PFI) that can be an extra lever in the bidding process. The selling of projects, the negotiations with the different decision makers, the networking to create support for the project and not least the leverage that PFI may provide by putting political pressure on the officials may make the process arbitrary. Overall this seems to be a system that is not well designed if environmentally sustainable transport shall be the outcome, which easily may be sidelined in
such processes. This is mainly due to the uncertainty introduced by the PFI financing, which probably will be supported and partly provided by local business interests. The business interests will be concentrated on getting money for road building, the other parts of the Local Transport Plan may easily lose out in such a process.

For the city of Davis the problems are different. The Interstate Highway passes by with several junctions and the railway passes through the city centre. The mix of local and long-distance traffic using the major roads is not the case in Davis as in the three other cities.

The general lessons are that in Kristiansand, in Aalborg and in Norwich key persons good at timing and selling of projects, made profound difference to the road projects’ chances of being funded and implemented. In all three cities, the projects had been on the agenda for years without making progress. Then “new persons” took charge and succeed.

9.2.3.3 Financing public transport infrastructure and services

Planners have since the sixties seen public transport as a main mode of transport competing with the car within cities (Vigar 2002). Time and time again this has been repeated in policy documents, like Norwegian white papers. However, public transport has continually lost competitive edge of two reasons: economy and travel time. The car has become relatively cheaper to public transport over many years. While the car costs are decided in the market (except external costs of emissions, accidents, etc.), it is the politicians who decide the price of public transport. They decide the fare level by paying the difference between the revenue and costs of public transport in both Norway and Denmark. The public transport travel times door-to-door in the cities are in general twice (between 1.5 and 3 times longer) compared to car travel times (see CfIT 2004).

Bus travel times can be reduced in several ways, important measures are an own priority track, priority at traffic signals, own lanes, etc. The road network in cities is designed and managed for the car. At traffic signals a bus counts as three passenger car units and green light is given according to the number of cars approaching the junction. With another conceptual model the city network could be designed to optimize the time used to transport persons instead of optimize the time used to handle the cars (a car carries on average 1.5 persons and a bus about 30 passengers in city traffic). On both of these issues economy and public transport travel time the politicians are in charge. The bus fares are decided year by year as a budget item. The traffic signal settings are decided by the Highway Agency traffic engineers within a broad framework, which is not preventing them from setting the signals according to the number of persons transported. Thus in any city the City Council can decide to prioritize passenger transport instead of cars, but they hardly ever do. Angela Hull used the word abyss to describe the gap between public transport policy aims and the policy the politicians practice (see ch. 2.1.3). The cost of public transport will probably increase with the general growth in costs. I have made a proposal that could stem the cost and fare spiral in public transport by attracting more passengers:

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409 First stated by Barbara Castle who was Minister of Transport, GB.
410 E.g. St. meld. nr. 26 (2001-2002) Bedre Kollektivtransport
Public transport – a Green Grant proposal

Today, the county allocates money after first deciding how much to schools, how much to public transport, etc. Then the allocation is geographical distributed, how much to urban area and how much to the rural rest. This allocation decides price, frequency and quality of public transport services in Kristiansand and Aalborg.

One could for example imagine a Green Grant to public transport, which would give each passenger 20 NOK per trip instead of making the passengers pay (the amount to be sufficiently high as to be effective)\(^\text{411}\). The goal of mode shift has been there for ages, but not very successful. The amount of travel and therefore emissions caused by commuters in the Kristiansand region is substantial. The Green Grant to public transport users (and operators to improve services) can potentially reduce large amounts of these emissions. The attractiveness of the car is very great and the dependency of it keeps increasing. It is a challenge to increase the attractiveness of public transport in order to make it more competitive with the car. Instead of focusing on negative measures for the car, a positive set of instruments may be created to facilitate mode change, but the institutional setup prevents that at present.

To create a multimodal system with more balanced role for each mode, the main thing to change is institutions that govern the allocation of funds to road building and to public transport. The Government should do an exclusive allocation of funds to a public transport program, the same way as the roads are funded. This will remove the present system where public transport is set up against old folks’ homes. Secondly, the organization of public transport could be after a spatial model (county, municipality, urban area) or a sector model (part of the Highway Agency or an own public sector), but the allocation model should be the same as for road investment money. Thirdly, at what level should the allocation of money be done (central, regional, local)? The Kristiansand case shows, as a lot of other evidence, that the present institutions and organization represent a hindrance to reach the goals of modal shift, which are deemed necessary to achieve environmentally sustainable transport development. The present rules and organization must be totally changed to remove this hindrance. It is not enough with minor changes in organization. I would argue that the principle of subsidiarity could remove some of the present barriers. The powers for transport infrastructure and services should be devolved to the local urban areas and thus given as much autonomy as possible. There are few arguments besides traditions that prevent such devolution of powers when the national interests are safeguarded. For example to decide local toll collection rests in the Parliament, but the money is collected locally from predominantly local users and spent on local projects so why should the Highway Agency and the Ministry of Transport have such a strong position in the process?

9.2.3.4 Parking policy in the cities

In Kristiansand the City Council keeps adding parking places in the city centre. The new concert hall *Kilden* will be built with 400 parking spaces and planning is ongoing for 1000 places underneath the city square. In addition several thousand parking spaces will be built as part of building of flats, shops and offices in the centre. These parking places will of course generate traffic, which the present road network in Kvadraturen can not handle with an acceptable level of service. The Kristiansand parking company owned by the municipality seems to focus on income and providing more and more spaces following the general traffic

\(^{411}\) Alternatively or as a combination to the price the passengers could get free breakfast, newspapers, drinks, etc. Such measures are already well known from air transport and long-distance bus transport Kristiansand-Oslo.
growth. The parking norm for new building is still the “free car use” regulation from the early seventies, although recently modified for the city centre. A continual debate is going on about the level of charges and amount of parking. The parking policy has not been used to reduce traffic, the competition between city centre shopping with paid parking and shopping at malls with free parking outside the centre being one reason.

In Aalborg, the parking requirement norm for new buildings is still requiring many spaces (the functional approach) after a review some years ago. The technical administration building as an example is situated on a vast parking lot even if it is part of the new waterfront revival (also with poor accessibility by bus). A continual debate goes on about the level of charges and amount of parking. The parking policy in Aalborg has not been used to reduce traffic, the competition between city centre shopping and outside shopping malls being the reason. Aalborg is also developing the city centre with easy car access and good parking facilities as the main conceptual model, although the Aalborg Charter and Commitments prescribe the opposite. Hence both Kristiansand and Aalborg will continue the next five to ten years (that is the time needed to change the committed local plans) to develop car traffic generators and make their city centers even more car orientated.

In Norwich it has become clear to most politicians that the vulnerable city centre with its historic buildings must be safeguarded against car traffic, but still the level of traffic and the number of parking places to be allowed is discussed. Norwich has detailed parking norms for new building and regeneration to keep the level of parking in the centre constant. The Park & Ride schemes with 5000 places are part of that policy. Also there is a policy to make firms and other institutions like the University produce Business Travel Plans and use workplace parking as an instrument to provide more green travel.

The City of Davis is not using parking as a means to shift mode, nor is paid parking introduced. However the UCD follows an active parking policy with parking provision and charges well balanced, preferences for car share and so. The parking policy is integrated in the University transport policy and worked out in cooperation with the city.

9.3 The study results

9.3.1 A new role for public land use and transport planning.

The major finding in this study is that the main function of the land use and transport planning system in the three European cities is to support and facilitate inward investment. Land use planning functions to keep the supply of land for building as high as possible given the local constraints. Transport planning has two interconnected purposes: one purpose is to acquire money for road investments from the Government and Parliament, and the other is to secure a well functioning and effective road network, free for congestion. The impacts of land use and transport planning in the three European cities differ. In Kristiansand the toll collection is providing the city with a high class, very traffic generating motorway system. Aalborg already has a motorway through the city, which strongly influences where jobs and people locate. The 3rd Limfjord crossing will further influence land use and strengthen car dependency. Norwich urban area has not got money for road building for years. Congestion is therefore worse than
in the other cities. Still the city has managed to stay in the Top Ten as a retail city, partly due to 5000 Park&Ride places established.

The results from this study fits with the conclusions from a major research program that showed that the planning legislation in Norway is adequate: “it is not the weaknesses in the planning act that is the main reason” (Loktra 2000: 52). The formal governing opportunities have been increased in Norway through changes in the planning act⁴¹². The Kristiansand case shows that HA has strengthened its role and impact contrary to the intentions in the legislation changes, because the municipal politicians realize that the only way to obtain money from the state is through the Highway Agency. They also think (rightly or wrongly) that the competence in the HA is better than in their own administration and that the role of municipal planners should be to support growth and development. Municipality planners should therefore concentrate on legality control of projects and assess the plans’ compatibility with the municipal master plan. The municipality planners can if they are at all included be “hanger-on” in such processes. Both in Aalborg and Norwich a similar focus on road planning was revealed.

The fragmented institutions set high demands on the ability to govern and the ability to take the opportunities given. This requires knowledge, competence and the ability to build networks and coalitions to create support in governance processes. With a greater influx of “private” planners and more emphasis on the behavior of private actors in the market, the indications are that this is a development that weakens public planning.

9.3.2 How do the findings relate to the research questions?

First some meta explanations:

- The markets decide, the elected politicians are not governing only administering change.
- Is there a lack of real support for the adopted goals? Or is it so that contradictory goals and repeated goal discussions highlight the sustainability goals, promote car growth and hide the politicians’ powerlessness? The politicians benefit from institutions that hide the powerlessness. Institutions that are protection against overbids and populism, also make politicians unaccountable.
- Lack of crisis understanding. There is real disagreement about consumption, investment, saving and the time dimension to-day - or - in the long term. Political promises for years ahead, as plan decisions often are, shield the real intentions and short-term actions.
- Automobility has become a societal institution, embedded in the structure, making local business growth inseparable from growth in the car system.

Looking at the more detailed land use and transport planning, the weak implementation of goals can be explained by:

• The goals function as symbols, they have been the same over decades and are rolled forward and presented slightly differently from time to time. However, there are hardly any questions about the past and on how it went, of what goals were achieved or who was responsible for what policies, monitoring of performance is virtually non-existent.

• City development, land use and transport trends continue in conflict with the goals and the gap keeps increasing. The modal split share goes in the wrong direction and accidents remain a major challenge, because growth has first priority.

• The local environments in the cities are improved, but the local and global emissions grow and accidents and noise continues to be major problems, but not so strong political problems that policy change is needed.

• The city development is less environmentally transport sustainable today than a decade ago, and to turn the trend requires greater effort for each year coming. This can be caused by deliberate policies of pushing the problems ahead to future generations and/or a belief that new technologies will solve the problems.

9.3.3 On the gap between aims and results.

9.3.3.1 Growth and highways
Three of the cities had a new major road on top of their list, but not Davis. The threat of future congestion was the stated reason for this priority, but the aim was also very much to support economic growth in the city. Three of the cities were very occupied with growth, but not Davis. Davis has the University of California Davis as a growth machine next to the city centre. The city of Davis has because of the rapid growth at the university over the years become more and more occupied with controlling growth (Fitch, 1998). The three European cities have on the contrary been working on a broad scale to create growth. City branding and marketing is one such effort, network building and cooperation with business another, and the support of business estates and “parks” focusing on knowledge industries, creative industries and information and communication technology is a third way of facilitating growth. The combination of a university, research institutes and new businesses in “knowledge parks” to support innovation is the “hot thing” at the moment. The cities use land use planning to offer attractive sites for such activities to expand and to attract new businesses to settle. Attracting inward investment (Logan and Molotch, 1987) has become an important activity and therefore road investment is sought for. The investment part of the road network is important in a growth perspective, together with other aspects such as congestion relief and not least to improve car accessibility for businesses and workers.

The three cities had to obtain money for road building from the Government. The rules governing such allocation set the terms of the local planning process, which at the same time had to use the statutory land use and transport planning process. In Kristiansand the Mayor and the County Highway Agency Director, both new at the time, managed the planning process exemplary through a two by two set of hurdles, and the city is fast expanding the capacity of the road network financed mainly by local road tolls (this road building effort will continue the next 10-20 years because of the toll agreement with the Parliament). In Aalborg the County Mayor gave the planners two years to finish the planning for the 3rd Limfjord connection, after 30 years of “planning”. In September 2003 the road alignment was fixed in
both the City Council and the County Council on two consecutive dates\textsuperscript{413}. These decisions, which were not without conflicts, open up for the fight to get money from the Parliament (Folketinget).

Norfolk County with a traditional Conservative majority in the Council, restarted the planning of the Norwich Northern Distributor Road in 2001 to relieve congestion in the centre of Norwich city, to improve access to Norwich Airport and nearby business park and to improve the road network in the northern part of Norwich urban area. The Blair Government introduced a new transport policy in 1997 named \textit{“The New Realism”}\textsuperscript{414} which says that the problem of increasing traffic demand cannot be solved by increasing road building, both the growth in passenger and freight transport must be decoupled from the GNP growth, the transport demand management (TDM) policy was born. The Norwich Northern Distributor Road, which incidentally is strongly opposed by the Green Party in Norwich city, may seem to be against Government policy and the presentation of the project has therefore focused on how it supports that policy by saying it will provide a better environment and cleaner and greener city. The County is very skillfully using the Local Transport Plan, the East England Region and its cooperation with business to circumvent the hurdles ahead for the road project. \textit{“The finance is the Achilles heel of the Northern Distributor Road”} said a Norwich City Councillor\textsuperscript{415}. The planning is still going on and different private finance initiatives are sought for.

Davis is in another situation, not having to strive for growth, but it is also different with respect to the road network. The trunk road network in USA was “finished” thirty years ago. Davis has access to the Interstate Highway passing close to the city centre, with several grade-separated junctions. The highway has three lanes in each direction, but need increased capacity to be able to keep up with the traffic growth. In the sixties and seventies there were huge conflicts between Davis and the Highway Agency about design solutions and who should pay for them, so they were a bit ahead of European cities.

\begin{flushleft}
\textbf{9.3.3.2 Summing up growth and highways.}
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The quest for economic growth is closely connected to the car system and ideology. An ideology that is oblivious to all other solutions than building more roads. When the solution – a new road with more capacity – is clear, the institutions form the problem and process. There is strong competition about scarce money for road investment and to get into and be prioritized in the national road program as in Norway and Denmark, require skillful dealing and coalition building. The best players get their roads funded and implemented, it is not decided by cost-benefit factors\textsuperscript{416}. The incentives and disincentives are forming the planning process: one has to get broad agreement about one alignment, and there must not be any doubt that the “right” solution has been found. In practice this means that the Norwegian National Policy Provision for Coordinated Land Use and Transport Planning from 1993, which demand that public transport alternatives to road building proposals \textit{should} be evaluated, are

\begin{flushright}
\textsuperscript{413} After an appeal to Naturklagenævnet, the alignment must be reconsidered, it is not legally “fixed”.
\textsuperscript{414} This nickname is probably more known among researchers than the planners I interviewed.
\textsuperscript{415} Interview with Rupert Reed, Green Party
\end{flushright}
put aside. There is a risk for such an evaluation to open up for discussion of alternatives and doubts about the effectiveness of the road proposal.

The city “Toll Road Rings” are unique to Norway in which a formal agreement between a city and the Parliament allows a city to collect money from road users with the purpose to build new roads. The local area must be willing to pay substantial parts of the total costs of highway projects as tolls (85% locally financed of the last Toll Road Package in Kristiansand)\footnote{417}. The “bidding” process in England based on the Local Transport Plan is a process where the Government Office administrators decide. It is more closed and far less transparent than the Scandinavian process for financing roads. Another major difference is the strong political involvement at all levels in Norway and Denmark, while in England that had been transferred to officials.

The competition about scarce resources as road investment allocations, has another and important side. If the money is not coming to “my” city or county, it may end up in the neighboring city or county. The spatial impact of investments leads to the formation of coalitions like rural against urban, centre against periphery. It was this dimension that forced up the local share in Kristiansand. In Aalborg the 3rd Limfjord connection was used as an argument for the periphery to get some compensation from the rapid growth in Copenhagen. In Norwich I would guess that if the city had been a “unitary” then the Norwich Northern Distributor Road would have been looked at differently. It might possibly not have been under planning, although politicians may see that project as the only option to acquire large Government funds. It was Norfolk County who has a different perspective than the city, who proposed the road.

9.3.4 Wrong combination of means with regards to aims

There is a long tradition in believing that the car will solve the majority’s transport problems, possibly with the exception of a small minority of politicians without political strength. The task of land use and transport planning has been seen to facilitate car-based development, regardless of goals, ambiguous or not. (Confer Buchanan’s belief in the car, but difficult because of heritage, economy – not enough money for investment, and in Norway where farmland largely was preserved and escaped of city expansion, because new developments leap-frog farmland and the new housing estates were developed in forest/nature areas further away from the city centre with car only access.)

The detached house has been (and is) the dream that is marketed, usually planned as a neighborhood with access from the major road, which transferred/caused the state to become responsible for the traffic instead of the developer and the municipality. Public transport was not necessary and the BikeWalk provision only within the neighborhood if at all. (Ideologies from le Corbusier to Colin Buchanan, and Frank Lloyd Wright and the ode to the car, which contributed to the model for house design: the detached house, and for neighborhoods: low density and easy car access).

\footnote{417 At first a toll-agreement secured a major portion of the funding from the Government. Some small amount is set aside for PT and BikeWalk investments.}
9.3.5 Wrong pricing of transport lead to waste of resources?

Lack of fair pricing in transport has been recognized for decades, but only very marginal changes have been done to the system. It is the external costs (accidents, emissions, noise, etc.) from both freight and passenger cars which is not covered. Too low costs lead to excess consumption, but that does not necessarily imply that more correct costs would lead to increased use of more environment friendly transport. The effects of higher costs, i.e. more of the external costs covered by car users, could either lead to reduced car use or have no impact on car use because the costs would be transferred to other budgets. In Norway there is also a substantial group that claims that the external costs are more than covered. The Government tax on cars bring in yearly about 45 billion NOK, while the Government spending on the road transport system is only about 15 billion. Irrespective of this discussion the interesting question is if land use and transport planning has been used to compensate for these external effects? Such compensation could for example be that a development is stopped because of the lack of BikeWalk path and safe access to schools. The municipalities can use both compulsory and voluntary measures to solve the problems and let the development go ahead, but in fact such measures are very little used. There are two main reasons for this, firstly the politicians want the project to go ahead without putting extra costs on the project (the growth argument) and secondly, and associated with the first point there is a profound scare that developments of any size are "lost" to the neighboring municipalities.418

The pricing of public transport does not cover the cost of travel. Public transport is therefore subsidized or as it is called “public purchase of travel”. The organization of public transport is at the county level in Norway and funds are allocated to public transport after competing with funds for schools, etc. The result is that the public subsidy is far below the “optimal” which is around 40% (Larsen 1993, Norheim 2002). The organization of public transport has been debated in years without the Government being willing to change the system. In Denmark where the system was fairly equal to the Norwegian, the responsibility for public transport is now transferred to the municipalities. In England, which deregulated and privatized public transport in the late eighties, there is a trend towards greater public responsibility for public transport, which can be seen in concessionary fares for passengers above 60 years of age and free public transport for below 16 years. The effects of the public transport organization and institutions are however equal in the three cities: there has not been integration of the different modes in a comprehensive multimodal transport policy. The road sector and the car ideology has a hegemonic position, while public transport is treated as a social responsibility where a minimum level of service should be maintained. The task of keeping enough activities at the county level to keep it viable has in Norway been more important than an integrated transport planning policy in the big cities. Note that a comprehensive policy does not automatically mean an optimal implementation of the policy, the problems of implementation and timing both in time and space as indeed resistance to the plans will still be there.

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418 IKEA chose to locate in the Sørlandspark after heavy infighting. The infrastructure and access is in Kristiansand while the site itself is in Lillesand municipality in another county. The Insigelse instrument has been used several times against different plans in the Sørlandspark, common for these have been “too fast growth, the effect on retailing in the region and too much pressure on the road capacity”.
9.3.6 Mode shift

The car offers door-to-door transport in comfort and the far lowest travel times compared to public transport. The car is also cheaper than public transport when, as people usually do, only count “the out of pocket costs”. If one also includes frequency of service, waiting time, regularity and punctuality, and a very low standard of traffic information to users, then it is clear that the car is the “winning” mode. The large parts of the public transport users in the three cities were persons without access to the car. In Kristiansand and Aalborg there are clear indications that university campuses with ample free parking together with the increasing car ownership among students are shifting students from buses to cars at a noticeable speed. Increased car availability among students also makes it possible to rent detached housing further away. In Davis the university had a rule of first year students not being allowed to bring a car as an element in the integrated transport policy to support walking, cycling and the use of public transport (free for undergraduates and one dollar fare for others). But also in Davis there are quite a few students who rent houses in the surrounding area (Westlands, Sacramento) and drive to Davis. This is increasing it is claimed, because of the high price on rental. I have the impression that in Norwich the same underlying forces are at work, yet without having come as far as in Kristiansand or Aalborg. There are several reasons for this. Firstly, the students are a year or two younger when they start at university, and secondly the university has a parking and travel plan policy to promote green travel and reduce emissions. There are also attempts from the County/City to improve public transport in Norwich, but few levers to be effective.

There are two main lessons from this lack of mode shift. Firstly, an integrated transport policy is working well in Davis (especially at UCD) with means and instruments used, which are available but not used in the three other cities. Secondly, there is a lack of monitoring and a disinterest in following how the total transport picture is changing in the cities. This lack of knowledge supports the business as usual policy, which in Kristiansand and Aalborg is a supply led land use policy to facilitate growth and a transport policy to promote car use. The public transport policy, which is a “budget” policy where the allocation to public transport decides the services and prices, is separated from the road infrastructure policy and the parking policy. The improvements and changes made in the cities from 2002 onwards as the BusMetro in Kristiansand and metro bus in Aalborg, the bus priority at traffic signals and information systems in all three cities are all realized with extra money from the Government and/or from EU projects. None of these, as such very positive public transport improvements, have been part of an integrated land use and transport policy where restrictive measures to reduce car usage were an issue. It is a “carrot policy” designed from the top down by the governments without the stick, in Norway it is even called “reward money”. These ideas and projects will be useful and benefit public transport and the users. It is also useful for the cities and the governments in building a picture of being public transport friendly and effective in implementing projects. Both the cities and the governments know that these improvements may only have a marginal effect on mode choice. As the County Transport Planning Director said420: “The test of the BusMetro project is the ability of the municipality to use land use planning to densify around the major nodes.” Such Transit Oriented

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419 The same type of improvements to public transport has been discussed generally and also in these three cities for thirty years!
420 Interview County Transport Planning Director, Leif Storsve
Development requires either a demand in the market for such intensive developments or the municipality has to run an active land use policy and use the levers available to facilitate such heavy developments. With the tradition in Kristiansand of being adaptive to the market forces, it might take a very long time before the BusMetro will be instrumental in making people shift from cars to buses.

9.3.7 **Road investment generates new traffic.**

The investment in new roads and increased capacity in urban areas generate new traffic. The most interesting question in this regard is how it affects land use planning and other modes in the cities. Fosli found that the effects of the toll ring financed investments in Bergen were: *Both car and bus accessibility were improved, but the travel time for cars far more than for public transport.* In other words the massive investment in new roads in Bergen has made the car more attractive and competitive versus public transport. There are clear indications that this is already the case in Kristiansand and Aalborg. With the plans for E39 and Rv456 in Kristiansand and the 3rd Limfjord crossing in Aalborg it is likely that the travel time difference in both cities will continue to increase to the benefit of car drivers.

Land use takes longer to change, but changes in the pattern of both house and business location will probably give a further push towards commuting and increase the travel to work area in both cities. Land use and the location of new buildings are of course influenced by a set of driving forces and factors. In Kristiansand as well as in Aalborg, commuting across the city border has increased over the last 10-15 years, and it is very likely that the new road capacity will work together with and strengthen the factors pushing for sprawl. The proposed Norwich Northern Distributor road will probably have the same traffic generating effects, but how it will affect land use is more uncertain. This is due to a much larger regional population and the way the region will be influenced by the Greater London area. The two growth corridors London-Cambridge-Peterbourgh and the Thames Get Away will also impact on the development of Norwich in the coming years.

Davis has had a high-class main road system with sufficient capacity for years, so the issue of major road investment in the city is not applicable. However, the Davis case show that land use can be controlled. Sprawl is not “a force of nature”, but is the result of the land use plans and policies run over the years. Urban sprawl is in such a perspective a result of a deliberate policy in the sense that the politicians in positions either have let it happen, or been active in making it happen. They have had the means to contain land use and prevent sprawl, but chosen not to use these instruments.

9.3.8 **Risk and vulnerability.**

A side issue of land use and transport planning and implementation in Kristiansand is the very high vulnerability of the road network. The land use development has taken place a short distance from the trunk road passing through the city. The planned use of the national trunk

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road as the main artery in the transport system lowered the costs of new development and gave Kristiansand a competitive advantage at that time. However, the resulting city and transport structure is very vulnerable to accidents or sabotage since there are no other connections, which can serve as substitutes or alternatives. If Kristiansand were to experience a “French type of transport strike” where trucks are used to block roads, the city would be brought to a standstill only with three-four trucks. This vulnerability and high risk should have been an issue in the municipal plan, but the lack of coordinated planning and the implementation of the transport infrastructure lagging many years behind the land use development have brought the present vulnerable road system. In Aalborg there are only two crossings of the Limfjord making it vulnerable to sabotage and accidents. The 3rd Limfjord crossing was also argued from a risk and vulnerability perspective, without that being a major issue. Norwich and Davis have a much wider road network and are hence less vulnerable to such incidents.

9.3.9 Hindrances.

The lack of public money for road investment has been a major hindrance for the implementation of the strategic land use and transport plans in the three European cities. The land use development has gone ahead while the transport infrastructure lagged behind. With increasing income and car ownership, car traffic increased and congestion grew gradually worse. Public transport patronage and cycling both fell with the increasing car ownership. The political problem increased with the increase in local queues and congestion. This was never a problem in Davis but a major one in each of the three other cities. In Kristiansand the financing of roads by the toll road ring has “solved” the problem of car accessibility to a large extent. But the institutions formed have meant that the public transport and cycling modes have suffered from lack of investment and the financing of services.\textsuperscript{423}

In Aalborg the 3rd Limfjord crossing was not expected to be built for many years, but is now in place in case money for investment should come. The public transport and cycling modes have in Aalborg as in Kristiansand suffered from the lack of priority and money.

The congestion in Norwich is worse than in Kristiansand and Aalborg, but the major road they are planning seems contrary to the Government’s “New Realism” policy. Whether and when the road will be decided and implemented is uncertain. Public transport was deregulated and privatized in the eighties, with the effect that Norwich has the poorest public transport services of the four cities. Cycling has not for many years been taken seriously in British transport planning as a mode of transport for short distances to work, school, shopping, etc. The Norwich bike network, which has got little attention and little money for years, is also poor in comparison with the networks in Kristiansand and Aalborg. The Local Plan from 2002 tries to readdress this with a mode hierarchy putting walking and cycling as the top modes.

“A key element of the strategy is the adoption of a hierarchy of transport modes in which, as a general principle, greatest priority is given to transport modes with the least environment impact. The mode hierarchy is:

\textsuperscript{423} In late 2007 there is a discussion of using the toll road income to finance better public transport services.
1. walking
2. cycling
3. public transport
4. taxis
5. essential motor vehicles
6. non-essential motor vehicles”

Time will tell if this mode hierarchy will become the guiding principle for land use and transport planning in the Norwich district or urban area. In Aalborg a similar mode hierarchy was launched many years ago, but it soon disappeared from the planning documents.

9.4 Summing up the discussion.

The discussion can be summed up in a few sentences. Firstly, the quest for growth and inward investment has ruled the land use and transport development in the three European cities. In this growth perspective the car has been a major driver, wanted, supported and facilitated by the land use and transport planning system.

Major efforts to create a more environmentally sustainable transport development have been done as the Sustainable City project in Kristiansand and the Aalborg Charter and Commitments are prominent examples of. The evidence on the ground, however, still shows an unsustainable trend and an increasing gap between goals and achievements. As such the mode hierarchy introduced in Norwich represents another effort to change the former path. The question is if it will challenge the car-led land use and transport planning and facilitate a trend break, or will it only be a symbol of the right “sustainable” intentions to conceal the business as usual planning practice?

The City of Davis has over many years managed to follow a unique land use and transport planning path. It is a success story regarding cycling, which is all the more remarkable happening in such an extremely car dependent society as California. The most important lesson from Davis is the example of direct democracy – an example of “power to the people” well worth studying.

The prospects for the future and the lessons will be discussed further in the next chapter.
Appendix Chapter 9: Comparison of 4 cities, regarding LU&T issues

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<tr>
<th>Background and Land Use &amp; Transport connection</th>
<th>Kristiansand</th>
<th>Aalborg</th>
<th>Norwich</th>
<th>Davis</th>
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<td>After several years with slow growth, the population has grown 1% per year last decade. Designated as Sustainable City 1993-2000 by MoE. Toll Roads finance major Highways E18 &amp; E39. ATP project aims at making LU&amp;T planning and financing more integrated. Bursting of confidence 2005!</td>
<td>Aalborg Charter 1994, pledging more sustainable city development, has reached far out, 1800 cities have joined. Population growth very slow, and far behind earlier expectations. Strong centre-periphery issues. E45 &amp; E39 finished from German border to northern ports.</td>
<td>Norwich is proud of being no. 9 major retail shopping centre in UK. NATS – Norwich Area Transport Strategy, is put together by a partnership consisting of 4 partners: Norfolk County, Norwich City District, Broadland and South Norfolk Districts.</td>
<td>The US Bike City from the mid sixties and still is. University city with no jurisdiction over UCD, which grows strongly. Davis General Plan aims at slow growth, city expansion to be decided in referendum (NIMBY) Highly educated university employed citizens, commuting increasing, house prices soar. 1st year undergraduates are not allowed to bring cars. Students are extensive bike users.</td>
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<th>Special Land Use &amp; Transport Issues</th>
<th>Kristiansand</th>
<th>Aalborg</th>
<th>Norwich</th>
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<td>SC goals fail. PT and BW volumes after less than when SC-project started, contrary to goals. E18 road infrastructure built – selected information /effectiveness. E39 plan based on 85% Tolls financings. Innsigelse from HA state against local authority. Contradiction between car culture and planning for sustainable transport development. Car commuting and sprawl increases.</td>
<td>The “right” LU&amp;T goals, but no instruments to promote/push LU. E45 &amp; 3rd Limfjord are winners and influence strongly future LU. Allocation to Trafik- og Miljøhandlingsplanen skewed, car culture the winner. Job creation seen as the major task.</td>
<td>Redevelopment of old industrial sites in the city centre has added thousands of square meters of floor area of shopping, offices and parking (Castle Mall, Chapelfield, etc). Poor PT, but major improvements planned (information system, bus priority schemes and bus terminal to £5 million). Gov. allocated 30000 houses to city region. The Northern Distributor Road (NDR) is the major LU&amp;T planning issue.</td>
<td>No-growth island in a sea of sprawling growth. Measure “J”: Democracy enhanced by referendum. Bike City, but the car culture wins in the long term? University of California, Davis, UCD, an own jurisdiction that has pushed for and implemented environmentally sustainable transport policies.</td>
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<td>Land Use</td>
<td>LU planning has secured great reserves of building land within municipality (&gt;30 years). LU and T have been uncoordinated. Major new roads paid for by local tolls will influence strongly on LU in large area. Commuting and regional LU are changing rapidly. Weak/fragmented steering of investment in infrastructure. Growth focus. “Sunset” industries are turning into “sunrise” industries as Elkem Solar. Reserve land for building will last decades, both close to the city centre with redevelopment on both side along Limfjord, and in the outskirts where large growth areas are planned. Considerable investment in utilities for these areas, are sunk (put in ground) making LU steering difficult. Large need for new jobs. Strong growth in Norwich urban area, but takes place outside city border (Broadland, South Norfolk). Major redevelopment areas in city centre changing from industry to mix use shopping / offices/flats with ample parking 5000 parking places in six Park and Ride schemes with bus shuttles to city centre The NDR which lies outside Norwich District border, will relieve through traffic and improve conditions in the city. But also give access to employment area at the airport, for commuters and developers of new housing estates. No reserve land for building, except densification. Annexation of agricultural land outside city borders necessary to grow. City Council decision to annex land for urban development must be put to the people in a referendum, Measure “J”, eg Covell Village 2005. Strong steering possible, but “No Growth” Davis is limited of being an “Island Paradise” in a sea of sprawling metropolis. The close neighbor jurisdiction UCD secures strong growth in jobs for many years, hence growth is of little concern for City of Davis.</td>
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<td>LU&amp;T Policy</td>
<td>Long term security for ample land reserves to facility growth in jobs/population. Within this policy framework marginal shift of emphasis in policy over time (restrictive/not restrictive). Ample supply of land for housing building to secure affordable housing has been and is a keystone in Krs policy. Land allocation for the road system a technical issue like other utilities (water, sewage, electricity, etc). The main highway structure fixed since the mid-fifties with only marginal changes since. LU and investment in road capacity has not been coordinated. Sørlandsparken - shopping to be expanded or prevented? Innsigelse from County. Tension between planning (planners) and policy (centre hierarchy, densification, parking, environment, sea shore). LU&amp;T policy has aimed at establishing Aalborg as the growth pole and prospering regional centre in north Jutland. Reserves for building land for at least twenty years. The city can receive the location of a major company “over night”. Ample areas along the waterfront being released due to decline in industries. 3rd Limfjord corridor being fixed in 2003 after decades of discussion, controversial and contested. City Syd has had consequences for the shop structure in the region, by attracting shoppers from a large area. Development of City Nord not relevant because of this reason. Shopping in the city centre versus peripheral shopping discussed. Transport corridors and junctions have influenced LU more than the opposite way. 3rd Limfjord is already said to influence land prices. The Norfolk County Council has ruled the city for 3 decades. The NATS area is divided between three district councils with their different problems and opportunities, which explains a string of retail centers just outside the Norwich border. LU policy and strategy is different in England/Norwich compared to the other cities, because of no abundance of building land. The public inquiry stopped the Inner Ring Road and created a lot of bad feelings between the county and city, some of it is still there. The structure plan 1997 has not NDR in it, and neither the first LTP. It emerges in 2001, and is presented as an important part of the LTP being prepared. Norfolk County Council decided which alignment NDR crossing the river Wensum, strong environmental objections came. The Bike City with bike network and Village Homes have strongly influenced the design of new housing estates (eg Covell Village) green, parks, water, paths, etc. Downtown however very car dominated with parking everywhere along streets and off street, instead of bike lanes/ paths. LU for shopping in the city strongly managed. No edge developments or major Shopping Mall in city outskirts! Ample, wide corridors for road infrastructure secured, even in new housing estates, but also one example of New Urbanism: Aggie Village built by UCD. Well connected to Interstate highway and rail system. Two major bikeway projects built: one where house was demolished and the Putah Creek underpass to 5 mill $.</td>
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<td>Transport Planning &amp; Financing of Infrastructure and Public Transport Services</td>
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<td>How to get money for roads? Road infrastructure. National government final say (Stortinget). NTP planning instrument, road investment program. Partial funding of stretch of road, essential for each stretch to get into program. Toll road financing became a necessity in the nineties. E18 &amp; E39 pre-emptive consensus planning by regime coalition. Task to get: local &amp; county support and agreement crucial. E18 success, E39 success (partial highway agency success, tunnel instead of bridge). The price to pay for the road investment agreement with toll financing, was money for PT, BW and Traffic Safety projects. PT services are financed by the county, and as such of little concern to the city. Walk/Bike infrastructure paid for by road owner. “The car embedded society”.</td>
<td>3rd Limfjord decision gives the county opportunity to fight for Government investment money as part of the national highway network system (can be contested by the state). Very skilful political maneuver by the county mayor, while the Aalborg mayor opted out of the process. Important decision to get financing as compensation for investment in Copenhagen area. The big H (store H) compromise about the Great Belt connection, which led to building the motorways E45 and E39, might be a model for securing compensation of a Fener Belt decision? Major changes done in PT network and services 2003. the aim was to reverse the decline in passenger numbers.</td>
<td>The white paper “A New Deal for Transport” sought the decoupling of transport growth from GNP growth. In effect road building should be curbed and PT improved. Local Transport Plan was introduced. The old system with a very strong central Government, made the policy contingent. Who would get financing where &amp; when could not be foreseen. The new LTP system is supposed to be better. Also the NDR is part of LTP for NATS area, but lies mainly in Broadland District with local environmental problems. Some might ask if alternative ways to road building might solve the problems? The alternative planning concepts “Free Car Use” or using PT as the main system in urban areas, may well be the decisive factor when they apply for financing NDR. PT in Norwich is not integrated in the transport policy.</td>
<td>Highways are of no concern to city council. The F-Street case and controversy shows how city administration/ public works/ consultants overrule massive citizen involvement for less car capacity and more secure Bike Walk facilities. City Council responsible for both solution and financing of local roads, BW and safety schemes. A very good BW network has been created, paid for by development. Old Davis has a poor BW net, which should be enhanced and enlarged over the ordinary city budget. PT in Davis is good, it is partly financed by student fees and run by the UCD students. UCD and Davis city finance the remaining of the services. The PT net covers Davis fairly well and the services cost $1 per ride, with undergraduates riding for free (TAP). There are fair regional rail as well as bus services.</td>
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<td>Comments</td>
<td>Kristiansand did not change towards a more environmentally sustainable transport development course, even if it had opportunity, the right goals, and the backing from the Ministry of Environment. Why? 1) National policy supports car expansion. 2) All incentives lead the politicians (and planners) to favor the car system. 3) The public in general are without any direct influence of the local events, unless they vote for change, which is virtually impossible because local elections are the choice between national parties. The principle of subsidiarity and local referendums on land use and transport matters, would transfer power from vested, undemocratic interests to the people in Kristiansand.</td>
<td>Aalborg seems to do everything so right, but still it is on an unsustainable course. A strategic policy of increasing the speed of the waterfront developments including affordable housing, combined with very restrictive development in the outskirts would increase density and the opportunities for walking and cycling. Such a policy could change the course towards more PT demand, giving better services, which again attract customers, and so on. Combined with more restrictive parking in the centre and at work places, Aalborg might shift course towards more environmentally friendly transport. However, the problem with increasing car commuting, which produce many vehicle kilometers and large CO₂ emissions has been left to be solved by national policies.</td>
<td>Norfolk County has allowed the Norwich expansion to happen across the municipality border in the surrounding districts. The Norwich city council is mainly concerned with the reuse of built area. Major industrial companies closing down in the city centre have opened for redevelopment, and more sites will be available. Shopping and offices have been a priority, like the very well designed Castle Mall. The Buchanan legacy of coping with the car and at the same time give due consideration to historic buildings / environment, has been followed in Norwich, but Norfolk follows a road building path. The Inner Ring Road was stopped in a Public Inquiry, but the NDR soon became the big issue. The conceptual model behind LU&amp;T planning and P&amp;R as part of this thinking is “free car use”. The citizens of Norwich may seem “powerless” against Norfolk, which follow an unsustainable path.</td>
<td>Development of new housing estates pays for connection to existing network for all modes. Hence, solution is up to the developer, except when annexation must be done. Then the developer must put forward a proposal which is so good that the voters buy it. This gives the city administration ample bargaining power against the developer, limited by the development giving adequate returns, i.e. a functioning market. The F-street case, which was a conflict between traffic safety for vulnerable road users versus car traffic capacity and level of service, and the lack of B&amp;W facilities Downtown show that Davis still have far to go in an environmentally sustainable transport development direction. Still, <em>Davis, the Bike City</em> has managed to follow an environmentally friendly path few if any other city has managed.</td>
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10 Experiences and lessons for the future

This study of four cities in four countries has revealed some interesting results, but that does not mean that the results can be planted in another city in another country with success. The conclusions drawn in this chapter should therefore be looked on as a source of information and hopefully inspire some thoughts on how to improve land use and transport planning in other cities.

The use of a referendum to decide urban extensions as in Davis, seems to have much in favor: enhanced democracy, transparent planning and more accountable politicians. I will guess that such a proposal will in Norway and Kristiansand be met with silence and ignored. If a response comes then it will be on a high level of principles, a horde of referendums will undermine the national state, etc. but the vested interests in keeping things as they are will not be discussed. There will be little help that local referendums are used a lot in Switzerland, and as we have seen in Davis California.

The evidence from the past makes the belief in the cities’ ability to change from an unsustainable trend towards an environmentally sustainable transport future, very low. However, the direct democracy in Davis offers hope that the three European cities may change, a necessary change long overdue.

10.1 Introduction

In this concluding chapter we return to the research question and findings discussed in chapter nine. To make recommendations for the future it is necessary to have some notion of what the future entail for land use and transport in medium sized cities. To create some knowledge of such future challenges we did three simulations in chapter 8. The results from chapter 8 are presented in the next section 10.2 and are together with the results from the city studies as discussed in the preceding chapter, used in the next sections drawing lessons from this study.

The lessons presented are firstly applicable for land use and transport planning in the four cities. But I hope that they may also function as an inspiration more generally about land use and transport planning and how it can and should be improved to better meet the major challenges facing us.

We briefly touched upon the trends in global population and car growth in chapter two. The Business as Usual trend as exemplified in chapter 8, illustrate the effects such policies in the cities, but few politicians worry. Twenty years after the report Our Common Future and ten years after the Kyoto protocol that never was ratified by USA, the politicians continue to push the targets ahead: “by 2050 we shall reduce...”. This discussion is focusing on what we

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424 The Kyoto protocol had by 2005 been ratified by countries that together produced more than 55% of the CO₂ emissions in 1990 and entered into force, later Australia also has ratified the protocol (www.wikipedia.org).
can do Now. What small incremental change can be done to change the course in medium sized cities? Are there any good lessons from abroad?

10.2 The future challenges for the cities

In chapter 8 three simulations about the future were done:

- Two alternative policies BAU (business as usual) and EST (environmentally sustainable transport development) were tested on an imaginary model, the city of KAND.
- What are the effects of alternative home locations for 15 000 new employees at UCD in Davis?
- What if an oil crisis occurred, how would the people in the cities cope?

BAU or EST?
In the city of KAND the simulation of BAU and EST policy trajectories and the effect of different policies exemplify that present BAU policies lead to devastating consequences. It also shows that most people probably would adapt to EST policy without having to change their lifestyles completely. An EST policy developed over ten years would save substantial amounts of oil and largely reduce CO₂ and other emissions, thus fulfilling the stated objectives and aims. The question then becomes how to make the change from BAU to EST?

Homes located close to Jobs?
The alternative locations of the homes of 15 000 new university employees at Davis and in Kristiansand illustrate that land use planning can contribute to shorten trip distances and in an integrated policy contribute to mode shift. There is a vast difference in the amount of transport produced if new workers locate in city, compared to or in the region outside the city. The consumption of fuel could yearly be reduced with 70% (Kristiansand) and 97% (Davis), and the CO₂ emissions with similar magnitude (work journeys only). The Davis example illustrate that a compact city can reduce emissions substantially: from 2.35 tons to only 0.07 tons in Davis. Associated with this reduction in the amount of transport is the reduction in all other negative factors the use of the car produce, such as accidents, local emissions, noise, etc. Both in California and Europe the freedom to settle wherever you want, is held in high regard. When this value is combined with the freedom to use the car whenever and wherever you want, the result is expanding travel to work areas as one see in the Agderbyen, around Aalborg and Norwich, and within the Sacramento region. How can homes and jobs be located closer together?

What if an oil crisis?
The first lesson from the simulation of an oil crisis is that the social and economic elite but also people in general, would manage fairly well with an oil crisis. The long distance commuters and the low-income families with a car would suffer the oil crisis the most. The cities with a balanced transport system and policy would manage well, while those cities with a policy based on a strong car-ideology would be worst off. The low-income family with a car would experience an oil crisis as negative since the increased cost of fuel would put pressure on an already strained economy and some of these families would probably experience difficulties with access to the employment market. The other main lesson from the what if an oil crisis question was that there will not be created a strong crisis of desperation, most people
will adapt to rationing and very high oil prices fairly well. Hence, not even an oil crisis will create a strong pressure on the politicians and by that create more demand for sustainable transport development. The oil crisis simulation shows that the gap between the environmentally sustainable transport development goals and the evidence created on the ground may continue to widen.

10.3 What is the problem and how have the different cities handled it?

This study shows how four cities have perceived the problem (aims), how the cities wished to solve the problem (plans) and how the cities have acted to solve the problem (realpolitik). The cities aim for a sustainable development in which care-taking of scarce non-renewable resources, reduced climate gas emissions and an adjustment to the carrying capacity of nature are important elements. The main problem is the increasing gap between the actual land use and transport development in the cities and an environmentally sustainable transport development trajectory.

Among the four cities, only Davis in USA has been able to control land use and implement a policy aiming at an environmentally sustainable transport system. Davis has actively pursued a policy to make the city a good place to live, it has put “use value” above “exchange value”. The principle of subsidiarity – decisions to be made at the lowest competent level – is part of the foundation of the US federation. In Davis this principle has put the inhabitants in the driver seat, not the developers and municipal administration. The European Union has also adopted the principle of subsidiarity, but it is not followed in Denmark or England. The land use and transport planning and policymaking in the three European cities are fragmented and dysfunctional. National policy represents a major hindrance for a more sustainable transport development at the city level. Some key comments to the four cities follow below. The description of likeness and unlikeness, agreements and disagreements, for each issue and city can be contained in these metaphors:

Kristiansand – the tale of two cities
Aalborg – the mother of the famous Charter, but…
Norwich – a puppet on a Government string
Davis – the bike city, well prepared for a climate crisis

Kristiansand – the tale of two cities
The land use and transport planning in the – Sustainable City – Kristiansand is both praised for sustainable development and a prize winner, but the institutions (rules of the game) have prevented / excluded other solutions than car based plans. Even the seven year Sustainable City project failed to achieve its goals. The institutions have structured the actors to work for more road building with the aid of media, organizations and individuals. The car is rapidly transforming the land use and transport in the Kristiansand region. Pursuit of growth (exchange value) led to the success in road investment, but failure in reaching sustainability goals and targets. Kristiansand is at the same time the prize-winning Sustainable City and the Climate Villain, the latter being subdued in the marketing of the city, which perhaps can be said to be double talk, or “the tale of two cities”.

Norwich – a puppet on a Government string
The local government in Norwich has failed to overcome the institutionalized process and different ways of thinking about the problem. The Government has failed to reduce the number of cars in the city, and the balance between land use and transport development has been disrupted. The Government has been a puppet on a string, controlled by national and European policies, which have placed an emphasis on economic growth.

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Aalborg – the mother of the famous Charter, but…
More than 1800 cities have signed the Aalborg Charter. In Aalborg there is still, contrary to the Charter ideas, a market-led land use and location policy that to an increasing degree has led to homes being spread over a large region and jobs concentrated to highly accessible areas along the major trunk roads. There is also another trend of both people and jobs moving back into the city centre. Individual car transport is both a major driving force in and caused by this transport-geographical development. The forces of sprawl seem stronger than the forces of concentration. Growth interests (exchange value) use the rules to maximize local inward investment. The great success for the Aalborg Charter and the Aalborg Commitments is so far mainly symbolic, with only marginal effect on land use and transport policy.

Norwich – a puppet on a Government string
Norwich is among the Top Ten retail cities in England, and very proud of the 5000 Park & Ride places established. The fragmented governance structure for the Norwich urban area both geographically concerning borders, across levels and organizations, and within layers (quangos, NGOs and business organizations) has made governing and management by objectives very difficult, possibly impossible? The output and outcome of the land use and transport planning processes are very uncertain. The strong Government and formal institutional structure in England, has made Norwich the “city of lost opportunities”. Institutions and organization have prevented building a strong city identity: “I am from Broadland District, not Norwich”. A city not so poor that the Government had to intervene, not so rich to do it on their own and severely limited by the fragmented institutions.

Davis – the bike city, well prepared for a climate crisis
Davis has kept on a course towards sustainable development, and is the US Bike City. There has for years been a contest between fast growth and slow growth. Davis is a “contained island paradise” in a sea of regional sprawl. The people in Davis have so far decided to follow a slow growth and environmentally friendly development path. A different mood in the population may change this. The future for Davis will depend on how and to what extent the strong forces leading to the sprawl in the Sacramento region will affect Davis. Up to now the city with extensive self-rule has in practice put Place value above Exchange value. The principle of subsidiarity is the basis for the US-federation. Davis like Ulysses (binding himself to the mast not to be lured astray) has made rules that give the people power over the city council and developers. These rules, among them referendum to be used for urban extension, enhance democracy. Davis has succeeded better than most cities to curb car use and promote public transport, walking and cycling.

10.3.1 Politicians are clinging to power and positions
The comparison clearly shows that the national authorities have been the main hindrance to EST in the cities. The institutional set up and the framework guiding the authorities’ actions and inactions must therefore be looked at to explain the lack of achievements of the sustainable development goals. Behind the individual events described in the cities one often finds an active person driving the innovation through despite opposition, but few of them were politicians. The elected leaders played more of an administrator’s role than that of a
leader fighting for a more sustainable future for the city. How can that be explained? An explanation can be that the formal and informal institutions rule and the politicians clinging to positions don’t dare or manage to change the dysfunctional institutions. The EST goals may be sincerely wanted by the politicians, but not wanted enough to drive a goal directed action, far less to implement the goals.

10.3.2 Land use, development control and transport

The development in the cities did not function as expected by the model introduced in chapter two: that there is a reciprocal development of land use and transport, guided and governed by planning and development control. Land use (and also the increasing car ownership) has come first and created a strong demand for car transport afterwards. The result has been an increase in the commuting across municipality borders and the Travel to Work Area. Development control could not stem this expansion of the cities into new jurisdictions, apart from in Davis.

Investment in the transport system has lagged behind the land use development, but still the investment made in road capacity has “shrunk the region” – increased the area covered within a set travel time – with the effect that people settle further away from the city centre and accordingly commuting to work has been fast increasing during the later years. Development control has not functioned as an instrument to govern land use and transport development, it has become a mechanism for facilitating growth. Institutions (rules and structure) that drive forward a car dependent society have been created. Those without access to the car are losers. This lack of ability and/or will to control the car use is the main land use and transport problem in Kristiansand, Aalborg and Norwich. It is also the prime reason for the present unsustainable path these cities follow.

In Norway the rapid economic growth has further strengthened this development because the car users have paid large sums in road tolls, sums that are invested in new roads in the cities, which again generate new car traffic. In Aalborg the institutions have brought about new road plans for crossing the Limfjord. It is uncertain when the plans will be implemented, but politics are the art of improvisation, clever actors may maneuver in such a way that the third crossing will be implemented in the short term. In Norwich the situation is more complex. The huge migration to Southeast England is very important for the economic growth in the country. However, the Government is not able to finance the necessary infrastructure as roads, houses, railways, etc. The competition about scarce resources is greater in Norwich than in the other three cities. It is the growth ideology that rules, the planning of the Norwich Northern Distributor Road is an example of the car alternative having hegemony. Congestion is a means, albeit possibly unintended, which may increase the understanding for the lack of public money and thereby for the Government transport policy on the one side, while on the other it leads to frustration over the waste of time and money, over the politicians lacking ability to solve problems and not least pressure to force solutions of the congestion problem. Park&Ride is a cheap way for the Government to keep the demand for money for road building from Norfolk County pending. It can also be used to sell Norwich as a progressive city having an EST policy.

Solutions on the congestion problem will to a great extent be decided by local conditions (conf. London Congestion Charging). How the institutions governing land use and transport
are made up and how the organizations are formed (regions, county, unitary, district and where the tasks are placed), are together with the general driving forces crucial for how the cities will develop in the future.

Davis is in a unique position compared to the European cities since it is not dependent on the national authority. The principle of subsidiarity is part of federal state and through that Davis has self-rule contrary to the three other cities. The city has used this self-rule to introduce the option of a referendum in cases regarding urban extension, which makes the local politicians accountable to a degree unknown in the other cities. One may go to Davis to learn about active and direct democracy.

To sum up:
- The belief that the cars solve most transport problems for most people is strong.
- The lag behind in funding of the roads compared to land use development, has made national road investments the first and only (?) priority.
- Most politicians do not really see public transport as an alternative to the car, the emphasis is therefore to provide an acceptable minimum level of public transport services.
- The gap between the goals and results of the land use and transport policy can be explained by the time-lag from the governmental adoption of a road proposal until road financing become available, which is a lag that as practice shows must be closed before other modes get attention.
- That the local and global emission from car traffic is not at such a level that makes it necessary for local politicians to act with negative instruments to reduce car traffic. The Government has to introduce major incentives to promote the use of such negative instruments in the cities.
- The use of parking regulation, as a means to curb traffic is unlikely at the local level, unless a national framework that governs parking policy is in place.

10.4 How could this situation have been avoided?

10.4.1 Potentials

To take the potential of public transport as an alternative to the car first: It can’t compete with the car door to door on travel time. It can’t compete with the car on price (out of pocket costs). These two basic imperatives must be taken into consideration when defining the role of public transport in cities. If public transport is to have a role as the sustainable development goals entail – goals all the cities have adopted – then public money should/must be used to secure that the public transport has an adequate and effective route network, that the frequency and quality of the services are good, and the fares are attracting passengers, not pushing users away. This role should be defined for each city as part of an integrated land use and transport policy and financed to be able to fulfill such a role. The present system quasi-market and user financed public transport services are not working effectively in any of the three European cities, and certainly not towards the stated goals. The knowledge is there to substantially improve public transport in the three cities. It must therefore be other and more important reasons that make governments continue with institutions and organizations that are
barriers for public transport to play an effective role in an environmentally sustainable transport development.

The same can be said for the cycling policy. There is nothing to hinder a government to use say a few percent of the national road investment program per year on a national cycling investment program, hardly noticeable in the road sector but an amount that would represent a huge improvement for the bike mode and networks in a few years. Why does this not happen when cycling is an important mode in an environmentally sustainable transport development? There must be strong forces that prevent governments and politicians to achieve their goals. Who, what, where, when are these forces? It is too simple only to blame the formal institutions, because far greater changes in institutions and organizations have been done for example within the health sector in these countries the later years. Why does not the same type of change happen in the transport sector? It has not been because of lack of knowledge, well-researched improvements have been proposed. On the contrary there exist a fair amount of research pointing in the same direction (LOKTRA 2000, CfIT 2004, 2006) and also as this study shows, Davis has managed to develop and practice a land use and transport policy that achieve the sustainability goals far better than the three European cities.

Parking policy is not used instrumental to regulate traffic volumes in any of the cities. Paid parking in the city centre has been introduced to regulate the length of stay and thus increase car accessibility to the city centre shops and services. A few hundred meters from the city centers in the three European cities there is free parking where one can stay all day. Davis has not introduced paid parking. Norwich has 5000 parking spaces on six Park&Ride sites with shuttle buses to the city centre. The building codes are still based on a parking requirement for free car use, with minimum norms for the number of places required according to the floor area and use of each building. It is discussed in Kristiansand to set maximum limits on the number of places allowed, but not yet adopted. The requirements are somewhat modified for the city centers with fewer places required than in the outskirts, Norwich having the most detailed regulation. Kristiansand has for the central business district a system of reducing the parking requirement against paying for each place less than the required number into a parking fund “free-purchase”. This fund is then used to provide multistory parking in the city centre. The neighboring jurisdiction to the city of Davis, UCD does use parking policy as a means to regulate car traffic and facilitate mode shift.

Local parking policy is a blunt instrument in a car embedded and car dependent society. An effective local policy can only function within the frame of a strong national parking policy, possibly with the exception for the city centers.

10.4.2 Hindrances

There are major barriers for the three European cities to change course. First and foremost there is the notion that politicians in positions will not give any of their power away. The same goes for the officials and administration, they cling to their power. I have claimed that fragmentation of powers between sectors, levels and layers is the main cause of the land use and transport planning system not delivering and the major barrier to sustainable development of the cities. The cities must have a local authority that develops a vision for the city, a
strategy to reach the vision and the powers to implement that strategy together with the citizens and wide body of stakeholders.\textsuperscript{425}

Davis has such powers and has succeeded. None of the Parliaments of the three European countries is willing to devolve the necessary powers. In Norwich we have seen that local party politics and positions twice prevented administrative reform. In Norway the MPs have for a long time been “allowed” to come back to their county and take the praise for some budget money for a road or for support of cultural activity. These two areas have become the only ones where a MP can operate individually, the rest of the policies are ingrained in a bigger system. If the authority and money for roads (except trunk roads) and public transport were devolved to the cities, the lawmakers would be left with little to show off at home. Devolvement of road authority and finance to the cities except for the trunk roads would also leave the Highway Agency with less resources and power. The Minister of Transport, the Department of Transport and the Highway Agency are not willing to accept that as earlier discussions have shown.\textsuperscript{426} There are apparently very strong powers in central Government that must change attitude to devolution of powers before the cities can develop in a sustainable direction (the opposite possibility that central government force or induce cities to change is not very realistic as long as the government to such an extent depend on taxation of the car for its income). Both England and Denmark are members of the European Union and should be obliged according to the principle of subsidiarity to devolve powers, but are moving very slowly on this point. Neither Norwich nor Aalborg can for many years expect to experience a situation where all powers over land use and transport planning and policy are devolved to the City Council (except trunk roads and rail lines) judged by the recent history.

The hindrances for changing this policy may seem small and meaningless, but still the hindrances are not removed. Take for example the organization of public transport and financing in Norway, which is placed at the county level. One could imagine that the money used on public transport in the five biggest cities (except Oslo that is more complex) was transferred from the counties and given directly to the cities as a sum to be used on public transport. The major argument against doing that is that the Government should not “earmark” funds since it reduces the autonomy of elected county and city councils. Then one could say that the municipality get a lump sum of money for public transport, but is free to use it as they please. The similar argument that road investment money could be transferred to these five cities and allocated as the city councils preferred, is not acceptable because of national goals and interests. That these two systems historically and at present are giving results that are contrary to the national goals is somehow a different matter. The vested interest, the power of status quo (jobs, roles, status, profit) and the resistance to change, make Norway continue to organize public transport in a way that benefits the car and hides the responsible decision makers: “The established organizational structure is suitable if one wishes a further increase in car use in cities, and at the same time finds it appropriate that no one is directly responsible for this development.”\textsuperscript{427}

This pointed statement fits very well with the findings in this study. To cater for the car there have been active and proactive effort to expand the road network, even if the challenge of

\textsuperscript{425} See Richard Rodgers and Mark Fisher \textit{A new London} 1992 for a similar idea.
future congestion is years ahead. The public transport and cycling modes get positive support verbally, but the same politicians avoid responsibility for the lack of goals achievement. The fragmented governance system makes it possible for politicians to remove themselves from any responsibility of past performance and turn focus on what’s most promising for the future. Another way to avoid responsibility is put emphasis on and glorify what they do as the present Norwegian Government has repeatedly done lately: “We have increased rail investment with 50%, the best ever.” The fact that rail investment has for years been very low, which make a small increase huge, when it is presented as a percent increase, is kept silent.

The car is such an object we all like to have and have come to be dependent upon. We are not easily giving this good up, as already Colin Buchanan warned about in Traffic in Towns. Instead of building a system to facilitate a shift from the car to more environmentally friendly modes, we have built barriers and hindrances to prevent a sustainable transport development. Most of these barriers are at the national level. They are man made and thus they can hopefully be changed?

10.4.3 Democratic deficit – exchange value and use value revisited.

Policy makers are often faced with significant conflict between two broad strategic objectives:

- To enhance mobility within the urban economy through reduction in congestion and other dis-benefits associated with road traffic.
- To improve levels of accessibility to urban amenities for all residents.

The mobility aim falls into the category “city as economic space” where the prime role of urban transport is to maximize mobility of labor and capital (work journeys, business trips and goods transport). The policy objective is to increase economic growth and the means used are road building to increase capacity. This fits with “exchange value” of the city and also with Tönnies’ “Gesellschaft” – the shifting urban association (Kristiansand and Aalborg can be put in this category while Norwich has in a political and administrative meaning lost its city status, and people their sense of Norwich as a place forming their identity?).

The accessibility aim falls into the category “city as social place”. It is the “use value” of the place, which is in focus. The policy objective is social development, which urban transport contributes to by maximizing individual accessibility to urban amenities. With this individual accessibility perspective one must also include other modes than the car: public transport and cycling and walking. The individual perspective must also include universal transport or “transport for all”. Again perspectives close to “Gemeinschaft” or community, a less flexible social construct putting more emphasis on place and less willingness to change. Davis clearly belongs in this category. These two perspectives on the city – the exchange value or the use value of place – show that in the three European cities the exchange value has had preference, while in Davis the use value was dominant. This reflects the lack of local power over land use and transport policy in the three European cities. The representative democracy is not able to include the citizens’ feelings for their place when the quest for growth is on the agenda.

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428 Docherty 1999:12
Sustainable development requires among other things, that people shall forego consumption today to save resources for future generations. Sustainable development is therefore not possible without broad and active involvement from the public in planning and governance. To achieve EST in the three European cities, fundamental changes in institutions must be made. I have proposed the subsidiarity principle as one way to stop fragmentation and achieve integrated planning. But, this principle is not enough by itself because no city can in the long run behave contrary to the development in the surrounding region. Davis has the basic framework necessary and has managed to pursue a completely different and more sustainable course than the Sacramento region. To maintain such a trajectory in the future Davis need that the city policies are supported by the policies at the state and federal level.

10.4.4 A perspective from the interviews

From the interviews with politicians, but also top leaders in the municipalities, it was clearly expressed that the welfare of people and especially work opportunities was their most important task. Sustainable development was one of their important tasks, but not one of their most important tasks judging from their answers and according to the role they had. This was surprising for me with my focus on LU&T planning, but among the planners I found a problem-understanding fitting with my expectations. That may be understood as EST is one of many important issues and tasks, which occupy decision makers at the local level, but not an overriding aim that forms the frame for the municipal activity. Apart from Davis, the municipal or city LU&T plans can be said to promote and aim for Sustainable Development as a premise for the municipal planning. This is the case for Kristiansand, which has strengthened the sustainability vision and aims in the latest plan (Kommuneplan 2005), for Norwich (LTP 2001/05) and not least Aalborg that has further developed the Charter from 1994 into the Commitments 2004. Davis in California uses less time, energy and effort on the goals and objectives, but much more emphasis is put on “what Davis is doing and can do”.

Another dimension coming out of the interviews was that the politicians, top administrators and planners seem to live in two different cultures or express different attitudes and values, which may be caused by their different roles. In general the politicians and top administrators had a strong interest and concern for job creation, population and economic growth and less interest in sustainable development. The planners exposed the completely opposite view with a strong interest in sustainable development and little interest in growth. The interpretation of planning and plans will thus be different from planners to politicians. These two views, the politician’s and the planner’s, are in the matrix below used to explain the character, the importance and the impact attached to LU&T planning:

![Economic Growth Concern Matrix]

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429 Interviews with Hav, Jensen, Wallevik, Valvik, Austad, Gunson.
**Box 1: Business as Usual BAU or Market rules**
The present LU&T planning is placed in Box 1 because it was not used actively as an instrument neither for employment nor sustainable development. When both politicians and planners show a weak interest in using LU&T planning as an instrument it resembles a market driven situation or a business as usual attitude. LU&T planning is done because it is statutory, because it gives an overview and indeed as an instrument to acquire government funds for highway infrastructure. Planning then becomes important in the presentation of the city to central government, or in the marketing of the local solutions and the benefits that will accrue if government funds are allocated to the city. The presentation or marketing will then often put emphasis on different aspects according to what the city wants and who the provider of funds is, etc.

**Box 2: LU&T planning used in job creation**
The politicians interviewed were interested in the people’s welfare. Employment and access to jobs therefore became the main task. Land use and transport planning should provide building land for new employment and new housing. There should always be attractive building land available for the municipality to attract new firms to localize. Transport planning was used to develop a functional road network with high service traffic flow level for cars and minimum congestion. Transport planning also served as basis for getting Government funding for highway infrastructure.

**Box 3: Strong concern for sustainable development, low concern for employment.**
In this box many of the planners can be found, they often identify with Sustainable Development. The “Sustainable City” Kristiansand is such an example, created by local and central government experts together with consultants. The aims were splendid, but the gap to the unsustainable LU&T development path of Kristiansand increased. The politicians supported the project, but did only show weak interest in it.

**Box 4: Strong concern for both growth and sustainability.**
The Brundtland report *Our common future* advocated sustainable development through economic growth and this is also the situation advocated in many Government documents on environmentally sustainable transport\(^{430}\). Land use planning should plan for compact cities with mixed use and high density at transport nodes (TOD). Transport planning should facilitate maximum of bike and walk modes for local trips and energy efficient public transport between the city centre and nodes in the transport network\(^{431}\). How can politicians’ interests for the welfare of the voters here and now, be combined with perspectives of sustainable development, which is welfare in the long-term?

**What can the matrix tell?**
If the gap between unsustainable and EST development increase, and one wants to narrow or close the gap, then land use and transport planning should be put in Box 4, where both politicians/top-leaders and planners have a strong interest in promoting both economic growth and policies to mitigate climate change. This will probably require both incentive changes and

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\(^{430}\) The broad discussion if economic growth and sustainable development are in conflict or compatible, is not included here. See Næss 2006b for further discussion.

\(^{431}\) For further discussion see Næss (2006), Newman and Kenworthy (1989, 1999), and on Smart Growth and New Urbanism: Katz, Reid, Ewing
changes in institutions. First and foremost the local politicians, who are responsible to the voters, must be given the opportunity and incentives to behave rationally according to EST goals. This is not the case at present, when central government institutions “force” local politicians to work for “automobility” rather than “sustainability”.

The principle of subsidiarity may help solve many of the present LU&T imperfections or paradoxes. In USA this principle is a part of how the federal constitution is built up. The development of Davis clearly shows that it is possible to get on to a sustainable LU&T path for a local authority. This is hardly possible in the three other cities with the present institutions. The European Union has adopted the principle of subsidiarity, but national institutions and traditional practice hamper the change towards such practice. Unless strong external forces are applied, it will take many years before “the principle of subsidiarity” becomes the “rule” in the three European cities.

Another path can then be to introduce incentives for local politicians to behave according to the interests of the local authority. Again Davis is a good example. The city has itself developed rules so that the voters can control the city council through referendums. Two highly successful cases (see ch. 7) show that power has been shifted from planners to the politicians and to the voters. This shift from mainly a representative democracy to a more direct democracy has enhanced LU&T planning and policy in Davis.

10.4.5 Competence

“The planner” was a highly esteemed profession in the sixties and the seventies. With the new liberalism and New Public Management long-term planning has gradually been replaced with short-term strategy and city branding, as if the city is a commodity that can be sold (exchange value) and not a cultural community where people live and interact.

This general development has influenced planning law and practice. The role of the planner and her self-esteem has changed accordingly. The planner’s status also differs depending on where he is employed, which may affect outcomes of planning negotiations. This has probable over time weakened the land use planners more than the transport planners and lessened the impact of integrated planning and plans (place value) on behalf of sector plans (exchange value). Kristiansand is a good example of this where the seven-year Sustainable City project, which should develop the whole city in a more sustainable way, came to nought. At the same time the very unsustainable road building project were realized. The resources available and the competence of the planners clearly did influence the output of these two processes.

The change towards city marketing instead of city planning, also make necessary that information is controlled and streamlined. Professor emeritus Røyne Kyllingstad claims that: “Where earlier the planners took an active part in public discussion, they are now silent in Norway. The result is that lobbying and short-term perspectives steer land use planning, -

432 Many of the interviewed planners looked back and stated “before it was - better”
433 Road planners in Norway allocating huge investments, are far more esteemed than a planner in a municipality.
"a development tailor-made for property speculators". Another result is that the professional planning competence has become less in demand and perhaps irrelevant. Politicians and administrative leaders may deliberately give biased and misleading information about plan proposals in the press, without in practice any possibility for the planners who has made the plan proposals to correct it.

To solve this – I think – increasing problem of sidelining the land use and transport planning profession and competence, Kyllingstad proposes to “give the planners power in the planning process, as they had before the 1965 Building Act.” My proposal would rather go in the different direction, not using the law, but using the principle of subsidiarity and devolve powers so that people feel that the land use and planning process is concerned with their welfare and future. In addition the process must be transparent and access to information open. The discussion on the way on forward and on plan alternatives and solutions should be created through participation of as many as possible. Together with a referendum clause as in Davis, a better democracy can be created, a democracy with open planning processes making the possibilities of corruption less.

10.5 Lessons and learning

10.5.1 Lessons

The focus in this study has been on local travel in medium-sized cities and I will draw three lessons from the study:

Lesson one is that we can “relatively easily” reduce our car use and shift to public transport, cycling and walking. There are two ways of doing this: a) by a holistic national and local policy, or b) that the climate change will force us to change.

Lesson two is that land use and transport planning and policy can be controlled and managed. It is possible to set goals and achieve them, but it requires long-term and visionary leadership instead of the present short-term policies. I strongly believe that the public, given the chance, would facilitate such changes in land use and transport policy.

Lesson three, which ties in with lessons one and two, is that there is an urgent need to make politics transparent and politicians accountable. I believe the way to go to achieve this is decentralization and devolution of powers according to the principle of subsidiarity.

These lessons are supported by a recent report: --The actions have only to a small degree led to active processes of learning with systematic reviews. They have not contributed to institutional changes that to a greater extent could have resulted in more holistic assessments

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436 I am by that not saying that our recreational trips out of the city or our flights to exciting destinations don’t matter, on the contrary.
and actions in cities. The result from three decades of planning has to the contrary been a continual effort on building road infrastructure, reductions in public transport services, environmental problems and to a small extent a city development that coordinates land use and transport system. City and transport planning in Norway reveal a history of repeated actions to change the policies in a more environment friendly direction. The result of this planning has been very limited.437

When “obvious” improvements of a system are not taking place, then they may not be so obvious. One such obvious thing is that we all want sustainable development, but do we?

10.5.2 Do we really want sustainable development?

I have argued that LU&T planning should be decided at the urban level, according to the principle of subsidiarity. Even if that will not solve all problems, there is the advantage that decisions carry greater accountability. I assume that there exists a national framework, which aims at sustainable development and thus support regional and local authorities aiming at sustainable development. We have seen that the present national frameworks in Norway, Denmark and England are major hindrances to achieve environmentally sustainable transport development in medium sized cities.

Even after a national framework supporting sustainable development is in place, there will still be a need to get people to change their consumption patterns: less car use and more use of environmentally friendly modes. Active politicians and city council will still be needed to make the local land use policy and the local transport policy support sustainable development, but success will be more likely since the basic national framework will be supportive of such policies, not a hindrance as at present.

The output from the planning process and the outcome was mainly formed by the institutions and organizations set up to build roads. To make it possible for a city to turn towards environmentally sustainable transport system development, alternative modes to the car must be given a chance. The present system excludes other solutions than the car solution. To change the system it is necessary to make new rules – new institutions. I believe that sustainable development is only possible through broad public participation on the grass roots level in the local urban area in question. To make people shift from cars to other modes they must be willing to make the shift and also act accordingly. A shift may be caused by moral, economic or other reasons and therefore incentives that support these reasons should be created. We have seen that the present rules made by the national state are dysfunctional for the promotion of sustainable development in cities. These rules will prevail if the public are not really wanting sustainable development.

10.5.3 Learning from experiences in the four cities.

Two well known lessons (Kleven 1990, Olsen 1994) are confirmed by this study:

1. Planning may come into conflict with wished action (a paradox if planning has to do with certain knowledge based thought processes before action) and then planning has

to give way, or it is broadened, or toned down, or discarded to make this conflict disappear.

2. Decision makers (politicians) have a resistance to prioritize between aims because, if they do they may soon find themselves out of office. It seems that they think: It’s better that I compromise and go on with the job, than the opposition taking over.

In Kristiansand there are several examples of how these two general lessons crop up and were dealt with. The major item was how the Sustainable City and the E18 processes could run in parallel without the major conflict between road building and sustainable development being questioned. The answer to that is that the institutions are made such that the apparent conflict never had to be confronted, it was organized out. The representative democracy is working on consensus as a rule. It is put under strain when having to choose between conflicting goals. Institutions are made such that politicians can say yes I choose both, and never be confronted with the paradox at the same time of aiming at reducing while the policies are increasing the use of cars. Institutions are purposely built over a long time period and among many other issues, also to prevent that these two situations arise. Institutions are therefore not easy to change, which both the Norwegian and the British case show by the misfit between administrative borders and the urban area. Still they are man made and they can be changed as the Danish administrative reform from 2007 shows. Davis is the prime example of how institutions enhance democracy.

This study reveals that the needs for changes are first and foremost changes at the national level – the devolution of power to the cities. This should be accompanied by minor reforms:
- Road planning and financing.
- Public transport planning, financing of services and infrastructure.
- How environmentally sustainable transport development is dealt with/not dealt with.
- The role of cycling and walking, planning and financing of infrastructure.

These four points show that there is a lack of integration, of comprehensiveness, of holistic thinking. Why are these issues not integrated, when it seems the most natural, self-evident thing to do? Obviously there must be strong interests opposing integration. Some explanations may be that
- the car is deeply embedded in the structure
- our dependency of the car in everyday life
- the Highway Agency tradition, competence and role, and the employees’ self interest

It is not enough to change organizations and increase the money for public transport to attain the EST goals, because of the complexity of interests behind the present structure and instruments. I think there are three different ways to go, remembering the two imperatives with which we started this discussion:
- To make the politicians accountable and encourage political leadership, the decisions on major conflicts must be forced into the open and made transparent. Questions like these should be put to the voters: Do you choose more sustainable development and less road building, or the other way around?
- Work with the market by using levers or means supporting market forces to turn in the right direction, for example as I have suggested by Green Grants to support environmentally friendly behavior.
• Extensive use of the principle of subsidiarity, which would give people more say and enhance local democracy.

Behind these three proposals lie questions about the way our democracy works. All three ways must be used if Land Use and Transport planning in cities are to contribute in the effort of reducing the climate challenge and shift towards environmentally sustainable transport development in the cities. I believe that more self rule to cities will show that people are willing to change lifestyle and make sacrifices if they feel it is sensible and worthwhile, and that their contribution matters. I also believe that people are far more willing to act than the Government and politicians in power are.
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APPENDIX I

Definitions and glossary

EST environmentally sustainable transport
LU&T land use and transport (planning, policy, etc)
PT Public Transport
P&R Park and Ride
SC sustainable city
VKT vehicle kilometers traveled
pbl the Norwegian planning act

CAQA clean air quality act
EIR Environment Impact Report
EIS Environment Impact Statement
CBD Central Business District

Abbreviations and some terms used Norwegian political parties:

Norwegian political parties, names, abbreviation and English translation:

Arbeiderpartiet Ap Labour party
Fremskrittspartiet Frp Progress/Future party
Høyre H Conservative party
Kristelig Folkepart KrF Christian democrats
Senterpartiet Sp Centerparty
Sosialistisk Venstreparti SV Socialist party
Venstre V Liberal party

Norwich case, abbreviations used:

NATS - Norwich Area Transport Strategy
IRR - Inner Ring Road
NDR - Northern Norwich Distributor Road (also abbreviated NNDR)
PI - Public Inquiry

RTS – Regional Transport Strategy
SEA – Strategic Environmental Assessment. (E.g. SEA RTS is the strategic environmental assessment of the regional transport strategy)
EIA – Environmental Impact Assessment
EIP – Examination In Public
IRS – Inter Regional Strategy
TWA – Travel to Work Area

GO EE - The government office in East England: www.go-east.gov.uk
EERA - The East of England Regional Assembly (elected/appointed): www.eera.gov.uk
The public-private partnership web side: www.eastofengland.uk.com
Quango – QUasi-Autonomous Non-Governmental Organization, have been used to describe a range of organizations to which governments may have devolved power.

**Kristiansand Case**

**Persons interviewed**

Bjørg Wallevik, H, mayor, 1992-2004
Harald Furre, group leader, H
Harald Sødal, deputy mayor, Krf
Tore Austad, group leader, H, also former PM and Minister of Education,
Bernt Erik Olsen, leader city planning commission, Krf
Kjell Landmark, prominent left councilor, Green City Party
Alf Holmlid, group leader, SV
Harald Synnes, former mayor, former MP, Krf og Sp

Asbjørn Grøvan, technical director
Tor Sommerseth, city director
Erling Valvik, city director
Øystein Holvik, environment director
Ingvald Kårikstad, planning director
Grethe Sjøholt, city planner
Arne Bulie, chief architect
Riseng, Kåre, planner

Andreas Setsaa, HA director
Kjell Abildsnes, County planning director
Leif Storsve, County transport planning director
Inge Os, chief public transport planner

**Kristiansand documents**

*Documents have been looked into for all the cases in the list of important land use and transport plans, projects and decisions in Kristiansand 1987-2005.*

MIK miljøvern i kommunene 1989-1992
Miljøhandlingsplanen 1994
Miljøby 1993-2000

Bråvann, strid om gjennomføring av kommuneplanen 1987. Omkamp 2005
Odderøya forsvarer tilbyr Kristiansand deler av øya. Lokal strid om boliger.
Otra nedre del. Mange utbyggingsprosjekter som Høivoll, Tangen, Kjøita.

TP10 1989-1991
KT forsøk 1991-1994
Kollektivpakke I og II 1995-
Metro Kristiansand 1999-
E18 regulering og bompenger 1991-1996
E18 Varoddbrua bompenger 1986-1994
NVVP 1986. 1993
NTP 2001-2011
NTP 2006-2016
E39 Gartnerløkka og vestover
Andre: veg til Kjevik
  Veg til havn Kongsgård

Sørlandsparken med handel fra 1986. Næringsklynge bil fra 95-.
HiA sammenslåing og lokalisering. 1995-1998
Krigsskolen 1990-1992

Kvadraturen
  Havneplanen 1985-1993
  Euroterminalen 1998-
  Murbyen bevaringsplan 1992-2000
  Kulturhus 2000-
  Parkering
  Estetikk
Arealpolitikken
  Boligtoanter og priser
  Næringsstomter
  Fortetting

Reports

Meland, Solveig. 2007. RVU 2005 – Hovedresultater for Agderbyen. SINTEF

National program Sustainable Cities project can be found on:
http://odin.dep.no/md/norsk/dok/andre_dok/reports/022005-990517/dok-bn.html

Side xx Kristiansand hadde best utvikling I takst, 1992-2003 80% av 1990, alle andre byer mellom 100% og 160%.

RVU Agderbyen, Sintef 2006,
**Aalborg Case**

**Aalborg Interviews**

Borgmester Henning Jensen  
Amtsborgmester Orla Hav  
Rådmand Henrik Thomsen  
Engineer Svend Tøfting  
Architect Peter Nordskov Kristensen  
Planner Tommy Madsen  
Architect Eric Møller  
Planner Henrik Jess Jensen  
Senior lecturer Anker Lohman-Hansen  
Lecturer Carsten Jahn Hansen  
Chief public transport planner Jan Øhlenschlæger  

Journalist Mogens Møller, NordJyske Stiftstiende

**Aalborg documents**


Aalborg kommune (1973) *Aalborg Generalplan. Arbeidsrapport nr. 3*, Teknisk forvaltning, Aalborg.


Aalborg kommune, Magistratens 2. avd, (1979). en større trafikkanalyse for Aalborg Bykerne, basert på trafikk data fra 1971, men supplert med snittellinger og OD midthbyen, men ikke MS beregnet, rapportert i flere rapporter:

1. Aalborg Bykerne *Reg Arealanvendelse*
2. Aalborg Bykerne *Reg Trafikk*
5. Aalborg Bykerne *Idekatalog*


Aalborg kommune (2003). *Plan & Bæredyktighed Redegjørelse.* ”Fremover vil det således blive et grundvilkår for alle lokale/regionale miljøer at klare sig i skærpet konkurranse.”


Aalborg kommune (2003). *KOLLEKTIV TRAFIKPLAN.*

City of Aalborg, Technical Department, (2004). *Sustainable mobility. What has happened in Aalborg during the last 10 years?* This is the summing up of the actions since the *Aalborg Charter* was signed 1994.

City of Aalborg, Technical Department, (2004)”*Sustainable utility supply in Aalborg”*

Aalborg kommune (2005/06) *Traffic and Environment Action Plan*


Government publications Denmark


Norwich Case

Norwich interviews

Cooke, Hereward. Councillor Lib Dem.
Gledhill, Bob. Councillor Green Party
Lubbock, Judith. Councillor Lib Dem.
Morrey, Brian. Councillor Labour.
Reid, Rupert, prof philosophy, EAU, Councillor Green Party

Watt, Andy. Chief transport planner, Norwich City

Gunson, Adrian. Councillor Conservative, Norfolk County Council.

Interviews Norfolk County admin:
Mark Thomsen,
David Cummings
Chris Kutesko
Allison McErlane

Greenaway, John. Senior lecturer, EAU

Norwich documents

Urban & Regional Policy (practice of Alan Wenban-Smith) Final Report to Norwich and Norfolk Transport Action Group, August 2004

NATS: Norwich Northern Distributor Road. Stage 2 Environment Assessment Report. Need for the Scheme. 8 JB/R1C093 Rev

Some of the most important Land use and transport policy papers to Blair’s Government were:


  
  CfIT March 2007 *Moving forward: Better Transport for City Regions, Annex 1: Performance*
  
  CfIT March 2007 *Moving forward: Better Transport for City Regions, Annex 2: Summary of legislative powers and duties*

PPG438 13 Transport. *Guidance on Regional Transport Strategies and Local Transport Plans*

**East of England Region**


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438 Planning Policy Guidelines
Special on road financing and charging

DoBERR (2007) Review of sub-national economic development and regeneration, http://www.communities.gov.uk/publications/citiesandregions/snr which stated that the government would allow those city regions that wished to work together to form a statutory framework for city regional activity, including powers over transport, skills, planning and economic development. Under the government’s Transport Innovation Fund, city regions can band together to pilot forms of road pricing, such as the Manchester Congestion Charge being considered by councils in Greater Manchester.

The Transport Innovation Fund (TIF) is a transport funding mechanism in England. Its creation was announced by Her Majesty's Government in the July 2004 White Paper, 'The Future of Transport’. The fund has two strands for supporting different types of project: Congestion TIF where local authorities bid for funds for their own schemes; and Productivity TIF where the DfT will identify schemes of national importance. TIF represents a new approach by the Department for Transport (DfT) to allocating some of its budget for England.

Davis Case

Davis interviews and talks:

Bob Wolcott, City planner
Tim Bustos, City bicycle coordinator
David Takemoto-Weerts, UCD bicycle coordinator

Robert Segar, UCD planning director

Rob Thayer, UCD professor emeritus
Mark Francis, UCD professor

Johnson, Robert. UCD professor
Susan Handy UCD professor
Ted Buehler, UCD student
Chris Congleton, UCD student

Seminars and meetings

I had the pleasure of participating in a series of three public seminars arranged by UCD phd students, on “The Future of our Region.” The seminar dealt with: 1) The City of Davis. 2) The Yolo County. 3) The Sacramento Region. Moderators and panels were:

The City of Davis seminar: Sharon Huntsman moderator, Dick Dorf prof, Chuck Roe builder, Mark Spencer teacher and activist, Cully Thomas politician.
The Yolo County: Prof Jeff Loux, UCD extension, moderator. Farmer Charlie Rominger. Director Judy Corbett. Prof emeritus Al Sokolow. Yolo County Supervisor Helen Thomsen.

Participated in the public meeting in Davis on *Fifth Street*. Steve Tracy, was the professional engineer that presented the Diet plan.

Seminar on Sustainable Campus Transportation Davis 24 May 2005, with Will Toor, University of Boulder Colorado the author of *Transportation and Sustainable Campus Communities*.

**Davis documents**

City of Davis 1958. General Plan. This was the first GP.

City of Davis 2001. General Plan. Present


Yolo County General Plan
Yolo County Bikeway Plan

UCDAVIS May 6, 2005 *Alternative Transportation and Parking Investment Study*

**Sacramento Region Blueprint – Transportation and Land Use Study**, information can be found on: www.sacregionblueprint.org/

APPENDIX II:
Charter of European Cities & Towns Towards Sustainability
(as approved by the participants at the European Conference on Sustainable Cities & Towns in Aalborg, Denmark on 27 May 1994)

- Part I: Consensus Declaration: European Cities & Towns Towards Sustainability
- Part II: The European Sustainable Cities & Towns Campaign
- Part III: Engaging in Local Agenda 21 Processes: Local Action Plans Towards Sustainability

Part I

Consensus Declaration: European Cities & Towns Towards Sustainability

I.1 The Role of European Cities and Towns

We, European cities & towns, signatories of this Charter, state that in the course of history, our towns have existed within and outlasted empires, nation states, and regimes and have survived as centres of social life, carriers of our economies, and guardians of culture, heritage and tradition. Along with families and neighbourhoods, towns have been the basic elements of our societies and states. Towns have been the centres of industry, craft, trade, education and government. We understand that our present urban lifestyle, in particular our patterns of division of labour and functions, land-use, transport, industrial production, agriculture, consumption, and leisure activities, and hence our standard of living, make us essentially responsible for many environmental problems humankind is facing. This is particularly relevant as 80 percent of Europe's population live in urban areas. We have learnt that present levels of resource consumption in the industrialised countries cannot be achieved by all people currently living, much less by future generations, without destroying the natural capital.

We are convinced that sustainable human life on this globe cannot be achieved without sustainable local communities. Local government is close to where environmental problems are perceived and closest to the citizens and shares responsibility with governments at all levels for the well-being of humankind and nature. Therefore, cities and towns are key players in the process of changing lifestyles, production, consumption and spatial patterns.

I.2 The Notion and Principles of Sustainability

We, cities & towns, understand that the idea of sustainable development helps us to base our standard of living on the carrying capacity of nature. We seek to achieve social justice, sustainable economies, and environmental sustainability. Social justice will necessarily have to be based on economic sustainability and equity, which require environmental sustainability. Environmental sustainability means maintaining the natural capital. It demands from us that the rate at which we consume renewable material, water and energy resources does not exceed the rate at which the natural systems can replenish them, and that the rate at which we consume non-renewable resources does not exceed the rate at which sustainable renewable resources are replaced. Environmental sustainability also means that the rate of emitted pollutants does not exceed the capacity of the air, water, and soil to absorb and process them. Furthermore, environmental sustainability entails the maintenance of biodiversity; human health; as well as air, water, and soil qualities at standards sufficient to sustain human life and wellbeing, as well as animal and plant life, for all time.

I.3 Local Strategies Towards Sustainability

We are convinced that the city or town is both the largest unit capable of initially addressing the many urban architectural, social, economic, political, natural resource and environmental imbalances damaging our modern world and the smallest scale at which problems can be meaningfully resolved in an integrated, holistic and sustainable fashion. As each city is different, we have to find our individual ways towards sustainability. We shall integrate the principles of sustainability in all our policies and make the respective strengths of our cities and towns the basis of locally appropriate strategies.

I.4 Sustainability as a Creative, Local, Balance-Seeking Process

We, cities & towns, recognise that sustainability is neither a vision nor an unchanging state, but a creative, local, balance-seeking process extending into all areas of local decision-making. It provides ongoing feedback in the management of the town or city on which activities are driving the urban ecosystem towards balance and which are driving it away. By building the management of a city around the information collected through such a process, the city is understood to work as an organic whole and the effects of all significant activities are made
manifest. Through such a process the city and its citizens may make informed choices. Through a management process rooted in sustainability, decisions may be made which not only represent the interests of current stakeholders, but also of future generations.

I.5 Resolving Problems by Negotiating Outwards
We, cities & towns, recognise that a town or city cannot permit itself to export problems into the larger environment or to the future. Therefore, any problems or imbalances within the city are either brought towards balance at their own level or absorbed by some larger entity at the regional or national level. This is the principle of resolving problems by negotiating outwards. The implementation of this principle will give each city or town great freedom to define the nature of its activities.

I.6 Urban Economy Towards Sustainability
We, cities & towns, understand that the limiting factor for economic development of our cities and towns has become natural capital, such as atmosphere, soil, water and forests. We must therefore invest in this capital. In order of priority this requires

• investments in conserving the remaining natural capital, such as groundwater stocks, soil, habitats for rare species;
• encouraging the growth of natural capital by reducing our level of current exploitation, such as of non-renewable energy;
• investments to relieve pressure on natural capital stocks by expanding cultivated natural capital, such as parks for inner-city recreation to relieve pressure on natural forests); and
• increasing the end-use efficiency of products, such as energy-efficient buildings, environmentally friendly urban transport.

I.7 Social Equity for Urban Sustainability
We, cities and towns, are aware that the poor are worst affected by environmental problems (such as noise and air pollution from traffic, lack of amenities, unhealthy housing, lack of open space) and are least able to solve them. Inequitable distribution of wealth both causes unsustainable behaviour and makes it harder to change. We intend to integrate people's basic social needs as well as healthcare, employment and housing programmes with environmental protection. We wish to learn from initial experiences of sustainable lifestyles, so that we can work towards improving the quality of citizens' lifestyles rather than simply maximising consumption. We will try to create jobs which contribute to the sustainability of the community and thereby reduce unemployment. When seeking to attract or create jobs we will assess the effects of any business opportunity in terms of sustainability in order to encourage the creation of long-term jobs and long-life products in accordance with the principles of sustainability.

I.8 Sustainable Land-Use Patterns
We, cities & towns, recognise the importance of effective land-use and development planning policies by our local authorities which embrace the strategic environmental assessment of all plans. We should take advantage of the scope for providing efficient public transport and energy which higher densities offer, while maintaining the human scale of development. In both undertaking urban renewal programmes in inner urban areas and in planning new suburbs we seek a mix of functions so as to reduce the need for mobility. Notions of equitable regional interdependency should enable us to balance the flows between city and countryside and prevent cities from merely exploiting the resources of surrounding areas.

I.9 Sustainable Urban Mobility Patterns
We, cities & towns, shall strive to improve accessibility and sustain social welfare and urban lifestyles with less transport. We know that it is imperative for a sustainable city to reduce enforced mobility and stop promoting and supporting the unnecessary use of motorised vehicles. We shall give priority to ecologically sound means of transport (in particular walking, cycling, public transport) and make a combination of these means the centre of our planning efforts. Motorised individual means of urban transport ought to have the subsidiary function of facilitating access to local services and maintaining the economic activity of the city.

I.10 Responsibility for the Global Climate
We, cities & towns, understand that the significant risks posed by global warming to the natural and built environments and to future human generations require a response sufficient to stabilise and then to reduce emissions of greenhouse gases into the atmosphere as soon as possible. It is equally important to protect global biomass resources, such as forests and phytoplankton, which play an essential role in the earth's carbon cycle.
The abatement of fossil fuel emissions will require policies and initiatives based on a thorough understanding of the alternatives and of the urban environment as an energy system. The only sustainable alternatives are renewable energy sources.

I.11 Prevention of Ecosystems Toxification
We, cities & towns, are aware that more and more toxic and harmful substances are released into the air, water, soil, food, and are thereby becoming a growing threat to human health and the ecosystems. We will undertake every effort to see that further pollution is stopped and prevented at source.

I.12 Local Self-Governance as a Pre-Condition
We, cities and towns, are confident that we have the strength, the knowledge and the creative potential to develop sustainable ways of living and to design and manage our cities towards sustainability. As democratically elected representatives of our local communities we are ready to take responsibility for the task of re-organising our cities and towns for sustainability. The extent to which cities and towns are able to rise to this challenge depends upon their being given rights to local self-governance, according to the principle of subsidiarity. It is essential that sufficient powers are left at the local level and that local authorities are given a solid financial base.

I.13 Citizens as Key Actors and the Involvement of the Community
We, cities & towns pledge to meet the mandate given by Agenda 21, the key document approved at the Earth Summit in Rio de Janeiro, to work with all sectors of our communities - citizens, businesses, interest groups - when developing our Local Agenda 21 plans. We recognise the call in the European Union's Fifth Environmental Action Programme "Towards Sustainability" for the responsibility for the implementation of the programme to be shared among all sectors of the community. Therefore, we will base our work on co-operation between all actors involved. We shall ensure that all citizens and interested groups have access to information and are able to participate in local decision-making processes. We will seek opportunities for education and training for sustainability, not only for the general population, but for both elected representatives and officials in local government.

I.14 Instruments and Tools for Urban Management Towards Sustainability
We, cities & towns, pledge to use the political and technical instruments and tools available for an ecosystem approach to urban management. We shall take advantage of a wide range of instruments including those for collecting and processing environmental data; environmental planning; regulatory, economic, and communication instruments such as directives, taxes and fees; and mechanisms for awareness raising including public participation. We seek to establish new environmental budgeting systems which allow for the management of our natural resources as economically as our artificial resource, 'money'. We know that we must base our policy-making and controlling efforts, in particular our environmental monitoring, auditing, impact assessment, accounting, balancing and reporting systems, on different types of indicators, including those of urban environmental quality, urban flows, urban patterns, and, most importantly, indicators of an urban systems sustainability. We, cities & towns, recognise that a whole range of policies and activities yielding positive ecological consequences have already been successfully applied in many cities through Europe. However, while these instruments are valuable tools for reducing the pace and pressure of unsustainability, they do not in and of themselves reverse society's unsustainable direction. Still, with this strong existing ecological base, the cities are in an excellent position to take the threshold step of integrating these policies and activities into the governance process for managing local urban economies through a comprehensive sustainability process. In this process we are called on to develop our own strategies, try them out in practice and share our experiences.

Part II

The European Sustainable Cities and Towns Campaign
We, European cities & towns, signatories of this charter, shall move forward together towards sustainability in a process of learning from experience and successful local examples. We shall encourage each other to establish long-term local action plans (Local Agendas 21), thereby strengthening inter-authority co-operation, and relating this process to the European Union's actions in the field of the urban environment. We hereby initiate The European Sustainable Cities & Towns Campaign to encourage and support cities and towns in working towards sustainability. The initial phase of this Campaign shall be for a two-year period, after which progress shall be assessed at a Second European Conference on Sustainable Cities & Towns to be held in 1996. We invite every local authority, whether city, town or county and any European network of local authorities to join the Campaign by adopting and signing this Charter. We request all the major local authority
networks in Europe to undertake the co-ordination of the Campaign. A Co-ordinating Committee shall be
established of representatives of these networks. Arrangements will be made for those local authorities which are
not members of any network. We foresee the principal activities of the Campaign to be to:

- facilitate mutual support between European cities and towns in the design, development and
  implementation of policies towards sustainability;
- collect and disseminate information on good examples at the local level;
- promote the principle of sustainability in other local authorities;
- recruit further signatories to the Charter;
- organise an annual "Sustainable City Award";
- formulate policy recommendations to the European Commission;
- provide input to the Sustainable Cities Reports of the Urban Environment Expert Group;
- support local policy-makers in implementing appropriate recommendations and
- legislation from the European Union;
- edit a Campaign newsletter.

These activities will require the establishment of a Campaign Co-ordination.
We shall invite other organisations to actively support the Campaign.

**Part III**

**Engaging in The Local Agenda 21 processes: Local Action Plans Towards Sustainability**

We, European cities & towns, signatories of this Charter, pledge by signing this Charter and joining the
European Sustainable Cities & Towns Campaign that we will seek to achieve a consensus within our
communities on a Local Agenda 21 by the end of 1996. This will meet the mandate established by Chapter 28 of
Agenda 21 as agreed at the Earth Summit in Rio in June 1992. By means of our individual local action plans we
shall contribute to the implementation of the European Union's Fifth Environmental Action Programme
"Towards Sustainability". The Local Agenda 21 processes shall be developed on the basis of Part One of this
Charter. We propose that the process of preparing a local action plan should include the following stages:

- recognition of the existing planning and financial frameworks as well as other plans and programmes;
- the systematic identification, by means of extensive public consultation, of problems and their causes;
- the prioritisation of tasks to address identified problems;
- the creation of a vision for a sustainable community through a participatory process involving all
  sectors of the community;
- the consideration and assessment of alternative strategic options;
- the establishment of a long-term local action plan towards sustainability which includes measurable
  targets;
- the programming of the implementation of the plan including the preparation of a timetable and
  statement of allocation of responsibilities among the partners;
- the establishment of systems and procedures for monitoring and reporting on the implementation of the
  plan.

We will need to review whether the internal arrangements of our local authorities are appropriate and efficient to
allow the development of the Local Agenda 21 processes, including long-term local action plans towards
sustainability. Efforts may be needed to improve the capacity of the organisation which will include reviewing
the political arrangements, administrative procedures, corporate and inter-disciplinary working, human resources
available and inter-authority cooperation including associations and networks.

Signed in Aalborg, Denmark, 27 May 1994