A Introduction

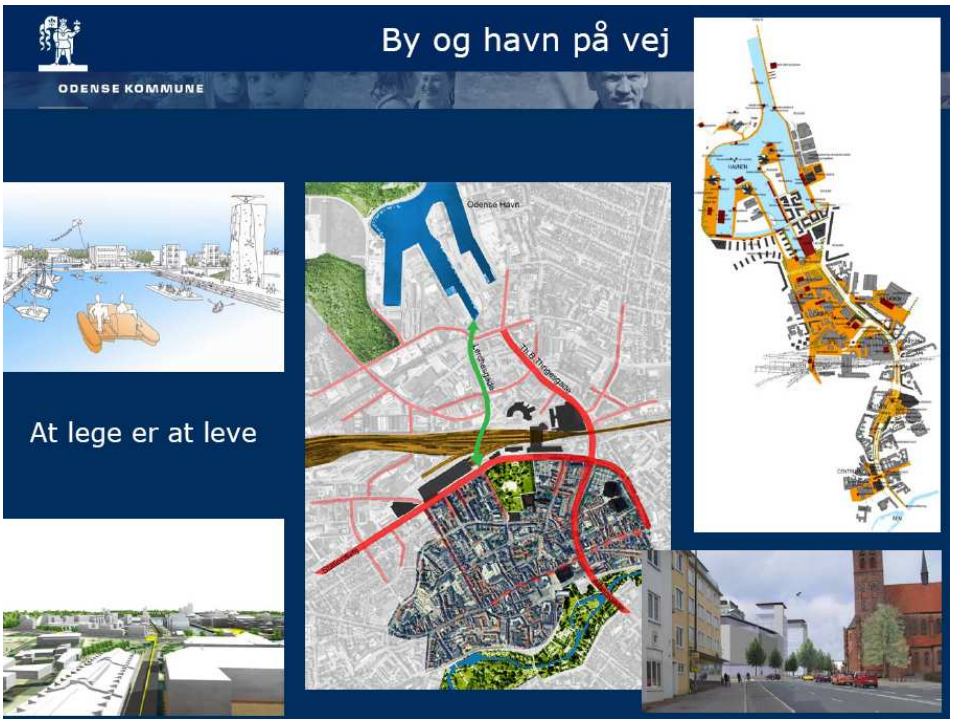
The aim of this measure is to set up integrated mobility management services in the harbour of Odense, a major redevelopment area.

A1 Objectives

- To demonstrate the benefits of integrated mobility management services for a better connection of Odense Harbour and the Odense City centre.
- To involve private firms and the public in the preparation of mobility management services.
- To integrate all sustainable transport modes into existing traditional traffic and transport prognosis models in order to improve the planning of new planning of new services and their evaluation.
- To disseminate mobility management service experiences through training programmes for professional traffic planners.

A2 Description

Odense Harbour is a former industrial area which is currently being converted into more recreational use. New apartments are being built along the harbour front and many new light businesses have settled down in the district. Polluting industries are moving out of the area little by little and the harbour area will over the coming years be integrated into the city centre area. To serve this vision Odense needs an integrated mobility management which includes all modes of transport and a planning strategy where architecture and traffic planning is fully integrated. This is a new type of planning principle for the administration in Odense and this can be seen in some of the recent planning documents.

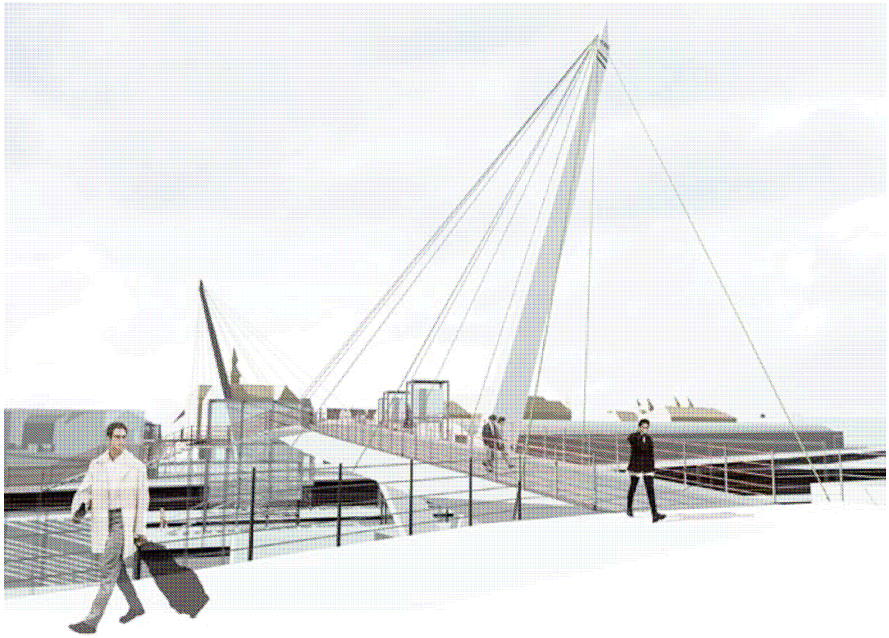


From the presentation at a stakeholder meeting – about connecting the city and the harbour area

B Measure implementation

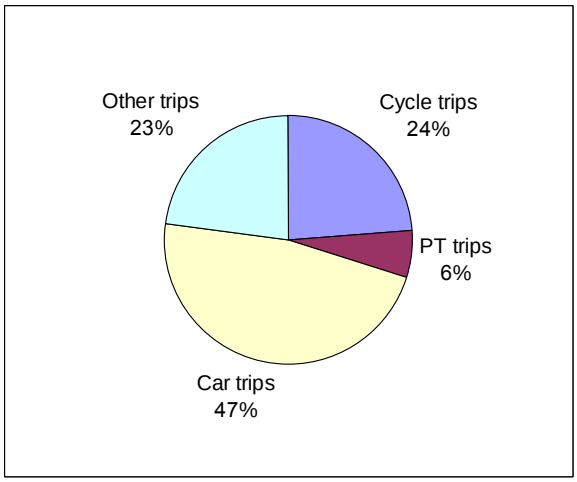
B1 Innovative aspects

A new planning concept for the harbour area could demonstrate how a change in traffic could affect the overall impression of the area. The new traffic and mobility plan takes a holistic approach to the challenge of how to convert former industrial areas into attractive places to live and to work. The reconnection of the area across the main barriers of through going trains and massive car traffic is planned to be overcome by building a new landmark – a fully dedicated bridge for cyclists and pedestrians. The bridge will truly benefit soft road users in shortening distances, and it will clearly highlight the priority of these groups within the newly designed city centre area.



B2 Situation before CIVITAS

Before CIVITAS Odense Harbour was separated as an isolated area without any connection to the city centre. The former traffic plan from 1999 didn't include the harbour area and cars and trucks dominated the roads. The current modal split for Odense Municipality is shown in the pie chart below.



The traffic model for Odense only included car traffic and the possibilities for a change in modal shift weren't considered in the calculations. Cyclists didn't find the harbour area very attractive to pass through.

B3 Actual implementation of the measure

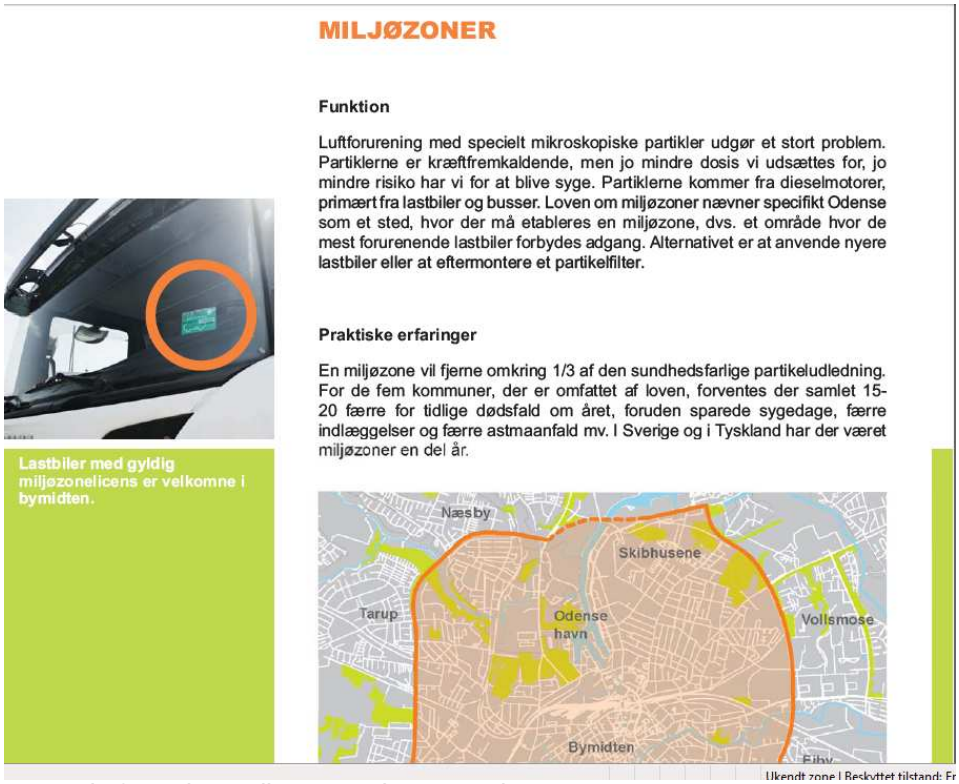
The process of creating a new traffic and mobility plan started in 2007 and has had public hearings in the end of 2008 and the beginning of 2009. The working

group includes the traffic department, the city planning department, the urban planning department, the public transport company and external consultants.

Just before the traffic and mobility plan was started, the urban planning department published a local plan for selected areas in the city centre. This very much linked up to the plan for traffic and mobility and positively affected public opinion.

The plan is very ambitious and includes all modes of transport and both soft and hard measures. Quality of life – a city for people - is very much in focus as one of the main criteria. Urban life is seen as an integrated issue just as traffic volumes and the speed of traffic. Most car parking will be placed in underground facilities.

The working group has published a report on different possible tools to be used. The tools included new mobility initiatives like introducing student bicycles, trams, closing streets to benefit cyclists and pedestrians, new services for commuters, etcetera. This will help give an overview of the actual possibilities and the expected outcomes. Stakeholders and citizens can read through the toolbox and get information on different options.



MILJØZONER

Funktion

Luftforurening med specielt mikroskopiske partikler udgør et stort problem. Partiklerne er kræftfremkaldende, men jo mindre dosis vi udsættes for, jo mindre risiko har vi for at blive syge. Partiklerne kommer fra dieselmotorer, primært fra lastbiler og busser. Loven om miljøzoner nævner specifikt Odense som et sted, hvor der må etableres en miljøzone, dvs. et område hvor de mest forurenende lastbiler forbydes adgang. Alternativet er at anvende nyere lastbiler eller at eftermontere et partikelfilter.

Praktiske erfaringer

En miljøzone vil fjerne omkring 1/3 af den sundhedsfarlige partikeludledning. For de fem kommuner, der er omfattet af loven, forventes der samlet 15-20 færre for tidlige dødsfald om året, foruden sparede sygedage, færre indlæggelser og færre astmaanfald mv. I Sverige og i Tyskland har der været miljøzoner en del år.

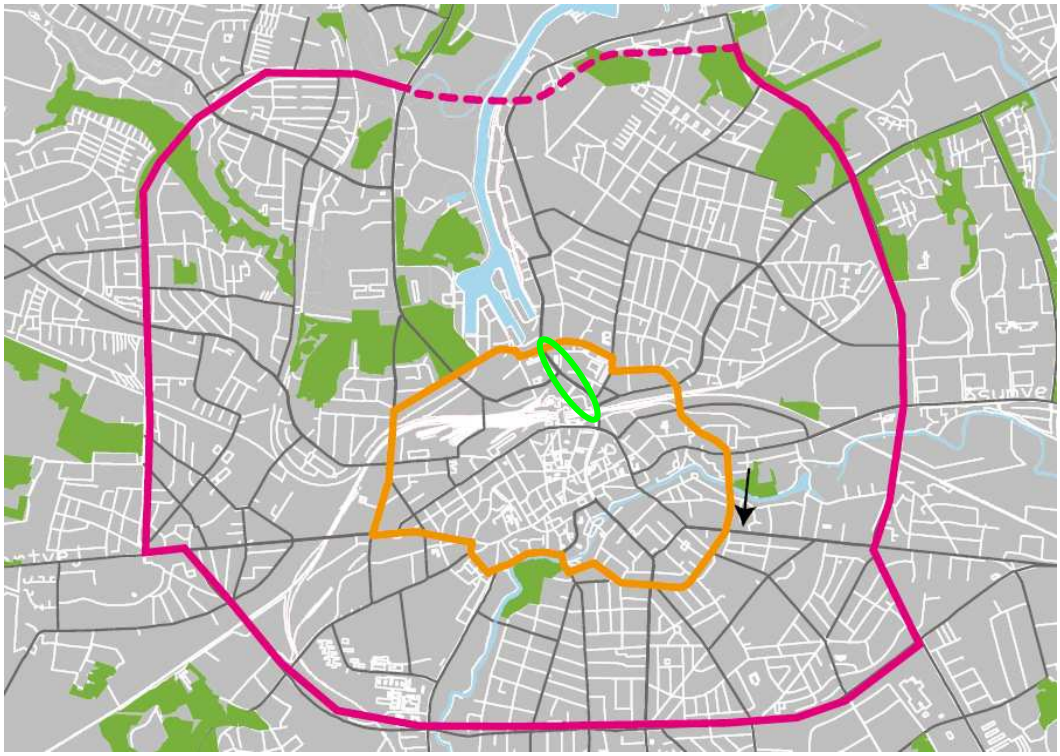
Lastbiler med gyldig miljøzonelicens er velkomne i bymidten.

Example from the toolbox – environmental zones

In May and June 2008 a selected number of key persons were invited for a presentation of the main identified problems and to discuss their view on possible solutions. The key persons were selected in order to cover organisations, businesses and local residents - most of them had been in contact with the administration before hand. A special meeting with the chamber of commerce was held in May 2008 to strengthen the involvement of

the business community for better understanding throughout the future process. The political committee has been on a guided walking tour in the city centre focusing on urban life and possibilities for improvements.

Odense City Council has approved to build the missing link in the ring road system – a bridge across the Odense Canal (the dotted line). In connection to this the main street running form the city centre to the harbour (Thomas B. Thriges Gade – marked with a green circel) will be completely closed for traffic so that 35,000 cars daily must have to drive around the city centre and no longer straight through. The council also decided to implement the first light rail system in Odense and all these measures are integrated in the traffic and mobility plan for Odense. The website www.odense.dk/trafikogmobilitetsplan is in Danish but all information has been gathered here.



To create a stronger connection between the harbour area and the city centre plans have been set up for establishing a local city bus in a ring route, probably run by electric power. The bus might become a free service to higher the number of users and to promote public transport in general. The working group mentions the bus from Toulouse when talking about electric busses in Odense.

The traffic model was planned to be ready in the summer 2008. Due to a massive amount of work this modelling work has been heavily delayed. When it is ready the traffic model will become improved on certain issues to make it more useful in the realisation of our visions. The model will fully integrate car traffic, public transport and cycle traffic. Changes in modal shift will be estimated to prove benefits from different scenarios. The model is set up with help from the leading expert in traffic models, a professor from the Danish Technical University.

To collect basic information on cyclist's choice of route a special web site was set up to collect data. 3,000 cycle trips were drawn on the screen by cycling citizens which gave vital input for the traffic model.


Vi har brug for din hjælp
- fortæl os hvor du har cyklet i dag

Fortæl os hvor du har cyklet i dag og giv os vigtige informationer til fremtidens trafikplanlægning. Indtast dine ture på www.cykelby.dk, og du kan samtidig være med i lodtrækningen om et gavekort på kr. 3.000,- til Odense Cityforening.

Oplysningerne skal lægges ind i en edb-model sammen med oplysninger om biltrafik og kollektiv trafik. På den måde kan vi beregne, hvordan trafikken vil udvikle sig i fremtidens Odense, og det giver et vigtigt grundlag for, at trafikanterne får de bedst mulige vilkår.

Vinderen får direkte besked og offentliggøres på www.cykelby.dk, når vi har tilstrækkeligt med cykelture.

CiVITAS | ODENSE | THE CIVITAS INITIATIVE IS CO-FINANCED BY THE EUROPEAN UNION | CYKELBY

We advertised for people who could tell us were they bicycled and asked them to enter their trips at our website.

The work package also included some very concrete installations – 6 new cycle pumps have been placed around the city centre to provide service for cyclists and to mark cycling in general.

In August 2008 Odense ran a workshop on the findings in the current work with the traffic and mobility plan. The workshop took place at a conference in Aalborg, Denmark with more than 600 participants. In December 2008 Odense made training session including two presentations concerning the plan at a conference with more than 900 participants. Further findings will be presented in coming articles and conferences, nationally and internationally.

In September 2008 we set up a stand on the town square in front of the city hall where people could meet the traffic planners and see materials and films about the traffic and mobility plan.

In February 2009 the Traffic and Mobility Plan was sent into public hearing. 3 meetings were held and some 400 citizens came to give their input and discuss the plan. Each meeting dealt with a specific area of the city, meaning that the discussions were very specific and gave constructive input to qualifying the coming work. This was a good way of addressing the citizens, as they naturally are very interested in major changes taking place in their neighbourhood. The same goes for private companies. One of the outputs of these 3 public meetings was that working groups with citizens and stakeholders were formed various places around town concentrated on individual roads and areas which will be highly affected by the plan. This means that there are now many good stakeholder groups to work with in the future development of the plan.

As a closure to the public hearing the working group held an open house and invited all interested in the plan to come and hear about it, discuss with the traffic planners, see projections of the plan and so on. The event lasted for 4 hours and some 100 citizens came to give their input.

The plan will most likely be adopted by the Council in May 2009.

From the workshops in the public hearing faze – about 50 people attended each of these meeting. The Deputy Mayor opened end ended the meeting.

B4 Deviations from the original plan

The idea about drawing up and implementing environmentally friendly mobility management plans for private companies and residents in the harbour area has been abandoned, due to a change in the target group caused by a rapid development in the harbour area. Many former industries are leaving the area and new businesses are getting in.

This measure now has a much broader target group, since it addresses the harbour area as a part of the entire traffic and mobility plan and thus involves a larger group of stakeholders and citizens

Cycle pumps have been purchased and placed along main roads leading to the harbour.

The harbour and the city center.

B5 Inter-relationships with other measures

The traffic and mobility plan is strongly connected to work package 8.7.O Integration and quality improvements of sustainable modes in Odense. The plan will on the long term create much better conditions for public transport in Odense. Work package 8.7.O has made short term improvements while the traffic and mobility plan will follow up on this.

C Evaluation – methodology and results

C1 Measurement methodology

C1.1 Impacts and Indicators

Table of Indicators. *Insert own table where available, use landscape layout as necessary*

No.	Impact	Indicator
1	To integrate all sustainable transport modes into existing traditional traffic and transport prognosis models	Implementation of system and prove of concept
2	New traffic and mobility plan for Odense	Project in progress involving stakeholders. Comments and input from the public hearings have been gathered and are available to the public on the municipality website: http://www.odense.dk/Topmenu/ByMiljø/Planlægning/Trafikplan/Borgermoder/Borgermoder%202009.aspx

~~Detailed description of the indicator methodologies:~~

- **Indicator 1** (Traffic model) – The model is based on actual registrations from local cyclists. Data is collected from a web site and prognoses are tested against real onsite counting's.
- **Indicator 2** (New traffic and mobility plan for Odense) – The plan is produced by an internal working group in cooperation with consultants. Stakeholders get involved by a well designed process.

C1.2 Establishing a baseline

As part of the calculations the actual traffic flows are fully described as the overall baseline for Odense.

C1.3 Building the business-as-usual scenario

The traffic model includes a business-as-usual scenario for year 2015 and 2020. The scenario includes general development of the city and growth in traffic due to external factors such as economical changes and socio related factors.

C2 Measure results

The results are presented under sub headings corresponding to the areas used for indicators – economy, energy, environment, society and transport.

C2.1 Economy

The total costs for implementation of the traffic and mobility plan exceed € 100,000,000. The traffic and mobility plan gives a number of different benefits:

- Reduced number of accidents
- Reduced environmental impact
- Improved quality of life
- Higher attractiveness for new settlements

These benefits haven't been estimated in terms of economy but the political support indicates that the costs will be lower than the total benefits in the long term.

C2.2 Energy

The traffic model has got all necessary information concerning each car trip, the length of it and the estimated travel speed. This information will be used to calculate the total energy consumption and the CO_2 emissions.

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C2.4 Transport

The traffic and mobility plan includes a whole package of elements – more than 25 different elements have been connected and are presented as a complete package which all together forces car traffic out of the city centre and gives benefits to cycling and public transport.

The specific goals for the Traffic and mobility plan are: 40% more cycling, 33% higher use of public transport and a decrease in car traffic by 16%. The travel speed of travelling with public transport shall increase by 15%.

C2.5 Society

The traffic and mobility plan will in the long term create a much more liveable city where many citizens will experience a rise in quality of life. The city centre will become much more attractive, shops and restaurant will improve their turnovers and streets will become more used by cyclists and pedestrians. Investigations shows that reduced car traffic and reduced speeds will attract more people to use the city centre on a regular basis.

C3 Achievement of quantifiable targets

No.	Target	Rating
1	Production of a toolbox on traffic planning regulations	**
2	Production of a model for cycle traffic	*
3	Production of a traffic and mobility plan	**
4	6 cycle pumps along the ring road	**

NA = Not Assessed **0 = Not achieved** *=Substantially achieved (at least 50%)
= Achieved in full ***= Exceeded

C4 Up-scaling of results

The present day traffic model covers the whole of Odense municipality. The new traffic and mobility plan covers the inner part of Odense – the city centre, the harbour area and some central residential areas. Some of the initiatives will influence the whole population and it is expected that many of the initiatives in the long term will be up-scaled to the rest of the city.

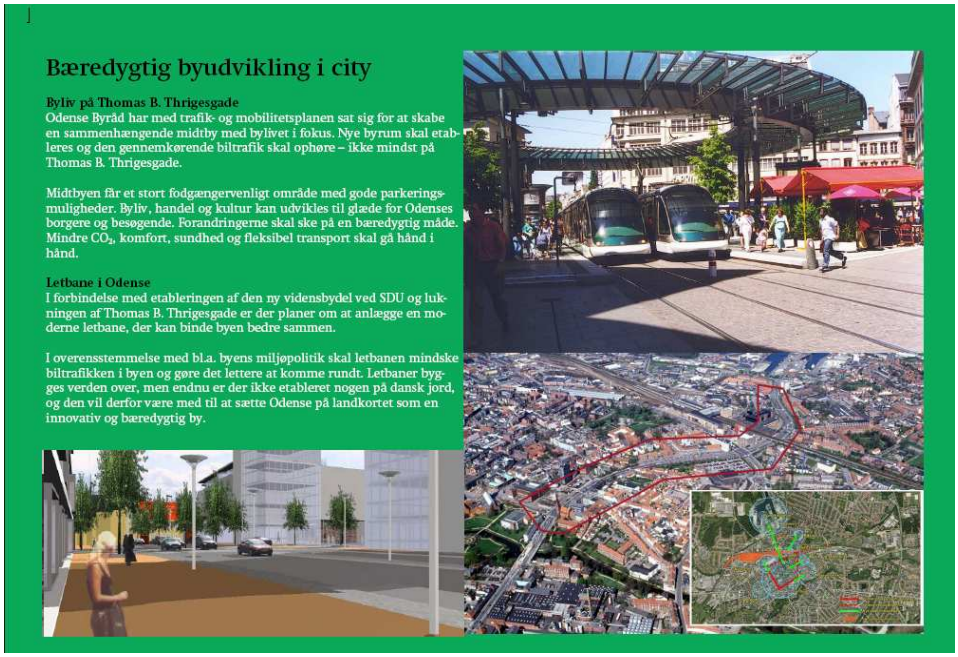
C5 Appraisal of evaluation approach

As this measure doesn't cover the implementation part the results will just include the planning phase and the tools for the planning process.

C6 Summary of evaluation results

The key results are as follows:

- **Key result 1** – Production of a toolbox for traffic planning, including 31 different tools**.** The toolbox is published on the website www.odense.dk/trafikogmobilitetsplan. The site is in Danish but to mention a few of the tools:
  - Tram
  - Park and Bike
  - Electrical busses
  - City bicycles
  - Bicycles for students



Bæredygtig byudvikling i city

Byliv på Thomas B. Thrigesgade
Odense Byråd har med trafik- og mobilitetsplanen sat sig for at skabe en sammenhængende midtby med bylivet i fokus. Nye byrum skal etableres og den gennemkørende biltrafik skal ophøre – ikke mindst på Thomas B. Thrigesgade.

Midtbyen får et stort fodgængervenligt område med gode parkeringsmuligheder. Byliv, handel og kultur kan udvikles til glæde for Odenses borgere og besøgende. Forandringerne skal ske på en bæredygtig måde. Mindre CO_2, komfort, sundhed og fleksibel transport skal gå hånd i hånd.

Letbane i Odense
I forbindelse med etableringen af den ny vidensbydel ved SDU og lukningen af Thomas B. Thrigesgade er der planer om at anlægge en moderne letbane, der kan binde byen bedre sammen.

I overensstemmelse med bl.a. byens miljøpolitik skal letbanen mindske biltrafikken i byen og gøre det lettere at komme rundt. Letbaner bygges verden over, men endnu er der ikke etableret nogen på dansk jord, og den vil derfor være med til at sætte Odense på landkortet som en innovativ og bæredygtig by.

From a brochure introducing the traffic and mobility plan

- **Key result 2** – Production of a cycle traffic model as an integrated part of the VISSUM model for Odense. The model can produce a broad variation of different scenarios and the influence to modal split.

Key result 3 - Production of a plan for traffic and mobility. The proposal including 9 appendixes is published at www.odense.dk/trafikogmobilitetsplan.

- **Key result 4** – Establishing 6 cycle pumps along the ring road to make sure that the pumps are targeted as many cyclist as possible going in and out of the city.

D Lessons learned

D1 Barriers and drivers

D1.1 Barriers

- **Barrier 1** – The cycle traffic model is very complicated to develop as this is a very new concept. The expertise only exists at the technical university where many other tasks are competing on limited time resources.

- **Barrier 2** – The plan for traffic and mobility is very complicated and involves a high number of individual specialists. The process is highly linked up to the political decision level and therefore it is difficult to control how it will progress.

D1.2 Drivers

- **Driver 1** – Thanks to the sale of an energy company, Odense has obtained the economical possibilities to set up a very ambitious plan for investments in the city centre.

- **Driver 2** – Politicians suddenly agreed on some very essential principals for the main traffic corridors in Odense. This gave a clear accept for some of the most controversial parts of the plan for traffic and mobility.

D2 Participation of stakeholders

- **Stakeholders –** a large number of the key stakeholders participated in the information meetings in spring 2008. This generated many good discussions and it seems like most of them fully agree on most of the basic proposals in the plan for traffic and mobility. The stakeholders were organisations, businesses and local residents who would be affected by the plan - most of them had been in contact with the administration before hand. At the first meetings they were informed and presented to both plan and toolbox. Their role was to give input to the further work with the plan before going into public hearing.

D3 Recommendations

- **Recommendation 1 –** The citizens and the stakeholders should be able to fully see how things are developing through the planning process. Everybody should be able to support the initiative after further involvement throughout the ongoing planning project. Early involvement can be crucial for a successful outcome and is therefore recommended. Early involvement also ensures a

larger level of ownership and understanding.

- **Recommendation 2** – New product developments like the cycle traffic models always take much longer time than planned – they need to be initiated from the very beginning of the project and the time schedule should take unexpected delays into account.

D4 Future activities relating to the measure

Odense is going to become the first city with a fully functioning traffic model covering cars, public transport and cyclists. With this tool Odense can predict the impact of major infrastructure projects and try to avoid negative changes in modal shift. This gives much better chances to improve the city's image as one of the best cycling cities in Europe.

The implementation of the plan for traffic and mobility is the most ambitious initiative in Odense ever. The project will lift Odense to a situation where cars should be placed in the outskirts and where cycling, walking and public transport will get a very high priority. This is going to influence the image of Odense to become a much more attractive city to live and to work in.

More developers are expected to come to Odense to invest in business and culture, and Odense will become much more attractive to especially younger people and families – groups which are essentially for the tax revenue on the long term.