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Sustainable Mobility – Commuter cycling and city logistics in Copenhagen

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ransport is the life blood of a city, its development and its economy. Goods must be shipped in and out, and everyone must be able to get to work, to school or to college. All cities face the same challenges.

All cities are growing and the more people there are, the greater is the need for mobility. This growth increases pressure on the transport that is available as well as the use of the city's public spaces. Today, cars still generally dominate the mobility picture and street space in cities. And car traffic is increasing! So, cities are unfortunately facing huge challenges with regard to congestion, road safety, barrier effects, noise and air pollution, CO2 emissions etc.

We must ask ourselves whether we will continue to use the public urban and road space as we are doing today, or will we rather begin to prioritise how urban space should be used?

Choosing how to get to our destination

When we choose how to get to our destination, our choice depends on time, distance, cost, quality, flexibility and reliability. We also think about the availability of the different forms of transport as well as how the city's infrastructure has been built up and is at the present time.

Generally speaking, these are all parameters which can be adjusted. There is not one unique solution to the problems of the city; the solution lies in the interplay between a



Bicycle and pedestrian bridge over the south of the harbour in Copenhagen



Approach road Nørrebrogade after rebuilding - note how wide the pavement and cycle track are.

variety of diverse approaches. When I go to work I want to have a choice as to how I get there. When I take our youngest to kindergarten and our middle boy to school how can I do it in the quickest, cheapest, easiest and most reliable way?

We want Copenhagen to be the best city in the world to live in. We want it to be a city for people. Provided the physical infrastructure is in place, transport need not only be about getting from A to B. People can get some exercise by jogging or running to work, and children can walk and talk or bike and talk safely with their friends on the way to school. The older generation too, can safely and comfortably take a stroll round the streets and through the parks, sit down and have a cup of coffee, listen to some music perhaps and do a bit of shopping on the way home.

In general, working towards a sustainable city is a long, tough haul that requires discussion, planning and vision – our politicians have got to persevere, be committed, and not least, be willing to invest!

Green mobility in Copenhagen

Copenhagen wants to be the metropolis for green growth and at the same time the world's first carbon neutral capital by 2025. We have a high level of ambition with regard to promoting green urban mobility and this is closely intertwined with our visions for green growth. In the spring of 2012, the City of Copenhagen launched a new Action Plan for Green Mobility. Within the Copenhagen context, the concept of green mobility is defined thus:

"We must make mobility in Copenhagen more cost-effective and green in order to stimulate growth, contribute to a carbon neutral city and the good life in Copenhagen"

We have got to make considerable efforts and act very concretely not only now but way out into the future to realise our vision of efficient, green mobility which both stimulates green growth, supports the quality of life and contributes to a carbon neutral capital. The way to greener mobility in Copenhagen will be about focusing on a major expansion of the road network and bicycle network as well as improvements to public transport. These initiatives require heavy investment and must additionally be complemented with a host of other innovative and communicative actions which will change peoples' behaviour. These will all contribute to making the overall green transport solutions appear attractive and competitive.

It is Copenhagen's ambition that by 2015 at least 50% of people working or studying in Copenhagen, will go to their workplace or educational institution by bike.





Traditional workshops with interested parties in City Hall, Copenhagen

Dialogue process

Increased green mobility in Copenhagen can only succeed if many players contribute and collaborate. The Action Plan is therefore based on an extensive process of dialogue based on the following questions.

- How do we organize the city so that green mobility is the obvious and best form of transport?
- How do we optimise the available forms of green transport from the business, commuters' and citizens' perspective?
- How do we influence peoples' behaviour so that they will use green transport more when the city has been designed for green mobility, and when the green transport on offer has been improved?



Children are the future traffic users so a number of courses are held for children

People who were invited to the workshops were primarily representatives from interest groups and branch organisations, local transport companies, local committees, companies related to environment points and researchers. But the people of Copenhagen were also consulted. An interview analysis was carried out among Copenhageners, who were asked about their attitudes to their choice of transport and green mobility. 90% of Copenhageners believe that green mobility is important for Copenhagen as a major city; they mainly consider the bicycle and the Metro as the best green forms of transport. When it comes to their own daily choices of transport, the environmental factor is not decisive, but the time factor. 'What is the quickest way I can get to work?' is the big question. So, the challenge is how to make green transport competitive with regard to time for Copenhageners, who are generally not more environmentally conscious than people in other big cities.

Copenhagen – the world's best city for cyclists

Copenhagen is one of the world's best cities for cyclists. It has the ambition to become the world's absolute best, and in has the goal that by 2015 at least 50% of the people working or studying in Copenhagen will cycle to work or their place of education. A lot of hard work needs to be done to achieve this goal, and so cycling must be incorporated



Safe and comfortable transport experiences for everybody.

into all phases of planning and all solutions in the city. One of the newer initiatives is Cycle Super Highways, which are aimed at commuters in the metropolitan region, while a second project is City Logistics, which aims at reducing the number of heavy vehicles in the city.

Case: Cycle Super Highways

Torben Stentoft, Director of the National Hospital - "Cycle Super Highways is a really good project. Sixteen thousand of our employees, including myself, bike to work every day. Cycle Super Highways will make it faster, safer and easier for even more people to cycle to work - even those who live farther away. It will create healthier employees and more space in traffic for everyone. "

In 2009, Copenhagen took the initiative and set in motion a broadly based cooperative project with the surrounding municipalities to create a network of bicycle commuter routes in the metropolitan region. This cooperation between neighbouring municipalities in the region is an important foundation for the development of green growth and sustainable transport in the region. The basic idea behind the Cycle Super Highways is to create better conditions for commuter cyclists and to make more people want to choose their bike rather than their car - even over longer distances. This results in a better urban environment, less congestion and a healthier population - thus all road users derive benefit. The routes are planned so that they connect nodal points within the city, such as residential and educational areas and areas with many jobs.

Cyclists & Cycling Around the World

Cycle Super Highways – as fast as possible from A to B

Quality Parameters for Cycle Super Highways

Cycle Super Highways have four overall goals with regard to quality. These have been developed so that cyclists can get the best possible experience from riding on the Cycle Super Highways and are:

- 1. Cycle Super Highways will connect places where there is a concentration of jobs, students and homes as well as providing access to public transport terminals.
- Cycle Super Highways will provide commuter cyclists with the fastest possible route between their homes and their places of work or study. They must be as direct as possible and with as few obstructions and stops as possible, as well as providing enough space for people to cycle at their own speed without being delayed.
- 3. Cycle Super Highways should make the bike ride to and from work or study a pleasant experience for bicycle commuters. The surface of the cycle track should be smooth, there should be high quality maintenance, additional services should be offered, providing the opportunity for good cycling experiences – through for example, the provision of green spaces.
- 4. Cycle Super Highways must guarantee a low number of accidents as well as ensuring that commuter cyclists will feel safe both in traffic and on the less populated stretches of cycle track. This specific assessment must be based on the lighting and visibility of the cyclist in relation to the surroundings.

Cycle Super Highways are designed with as few obstacles as possible, with a strong emphasis on security, safety and high comfort. The common vision for Cycle Super Highways is that the entire capital region will develop into the world's best cycling region. A total of 26 routes have been planned, similar in structure to the expansion of both rail and road network in Greater Copenhagen ie, routes in and out of the city and ring routes across the city. The overall network will amount to about 300 km of Cycle Super Highways.

Case: City Logistics - green goods delivery in the Medieval City in Copenhagen

Imagine the streets of the Medieval City filled with shoppers and the hustle and bustle of city life. Picture environmentally friendly cars which have replaced the big, heavy goods vehicles in the Inner City and glide almost silently around as they fetch and deliver their goods. Not only do traders now have more time to chat to their customers but Copenhageners find it easier to get around. Everybody is happy.

City Logistics - cph will help secure the future cityscape of Copenhagen as a metropolis for people and the environment. How will they do this? By making life easier for traders, giving them the chance to save money and by salving their environmental conscience!



Consolidation center concept



The goal of City Logistics - cph is to create a green and innovative transport and logistics solution: a solution which will reduce noise and greenhouse gases as well as making the air better to breathe: a solution which will improve road safety and create a better urban environment and urban life by reducing heavy traffic in the Inner City.

The principle of City Logistics-cph, as can be seen from the figure about transport flow, is that the city is to be serviced by a city freight terminal located outside central Copenhagen. Suppliers and carriers can deliver directly to the terminal. By consolidating multiple deliveries to stores in the same area and transferring them to more environmentally friendly cars, distribution will be optimised and the number of heavy vehicles in the City reduced.

City Logistics - cph will be able to offer a greener and more environmentally friendly transport solution by for example, using transport with better capacity utilisation and making use of intelligent routing in smaller, quieter and environmentally friendly cars. It is also important that drivers are trained in ECO-driving (fuel efficient driving).

City Logistics – cph as an integrated, logistic solution will be able to deliver for example:

- More flexible pickup and delivery of goods
- Delivery by drivers familiar with the locality and with the individual traders
- Possibility for unpacking and checking of new goods
- Possibility of price marking and installing alarms
- Possibility of warehousing (the trader's own external storage space on the cargo terminal), which can save space for traders
- Possibility of packing orders (Pick-Pack), mainly for operators with e-commerce
- Opportunity to include returned goods (packaging, mail, packages and much more)

Copenhagen Business School and DTUTransport have made analyses of the consequences and opportunities as a result of the introduction of the City Logistics concept and have reached the following results:

The City Logistics-cph concept is expected to be economically viable at 150 registered stores, representing one tenth of the freight volume. It is a realistic possibility that this number can be reached during a demonstration phase of three years.

The 150 stores registered for the scheme can save a minimum of 40-50000 single deliveries and hence the equivalent number of stops per year in the Inner City.

A 10% reduction in emissions (NOX and particulates) in the Inner City and a small CO2 reduction.

A demonstration project is expected to start in 2013 with a private operator. Similar city logistics projects can be established for the café and restaurant industry, and the construction industry.

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Photo credit City of Copenhagen