



# CYCLE SUPERHIGHWAYS

Capital Region of Denmark

May 2014

# BACKGROUND

Cycling offers huge benefits for the individual as well as for society. For the individual, cycling is healthy, flexible and fast. For society, a large number of cyclists primarily means more efficient traffic movement, reduced congestion and pollution, as well as societal health benefits as a result of increased exercise. 35 % off all commuting in Copenhagen is already done by bike. So how can we persuade even more commuters, to choose bicycling?

When distances are longer than 5km, only 20 % of all commuter journeys are made by bike. So the answer lies in unlocking this potential. To succeed in this, we must make commuters' journey by bike, as fast and pleasant as possible,

so that the positives of riding a bike outweigh the negatives. We must rethink the hierarchy of routes for bikes, and rethink traffic planning across municipal borders. Therefore, 22 municipalities and The Capital Region of Denmark have joined forces to make the region of Copenhagen the greatest cycling region in the world.

The aim of this project is to get more people to commute by bike over longer distances. What we intend to do is spoil the existing and coming bike commuters, by creating a network of Cycle Superhighways, making it even more attractive for them to use their bikes as a daily means of transport. We want people to perceive these routes as a serious alternative, equal to taking the car, bus or train.

**"If we really want to see levels of obesity declining, we have to move on from the rhetoric. We need to see a visible investment in infrastructure that makes cycling and walking the travel modes of choice".**

Tim Crayford, president of the Ass. of Directors of Public Health, UK



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## A UNIQUE PARTNERSHIP

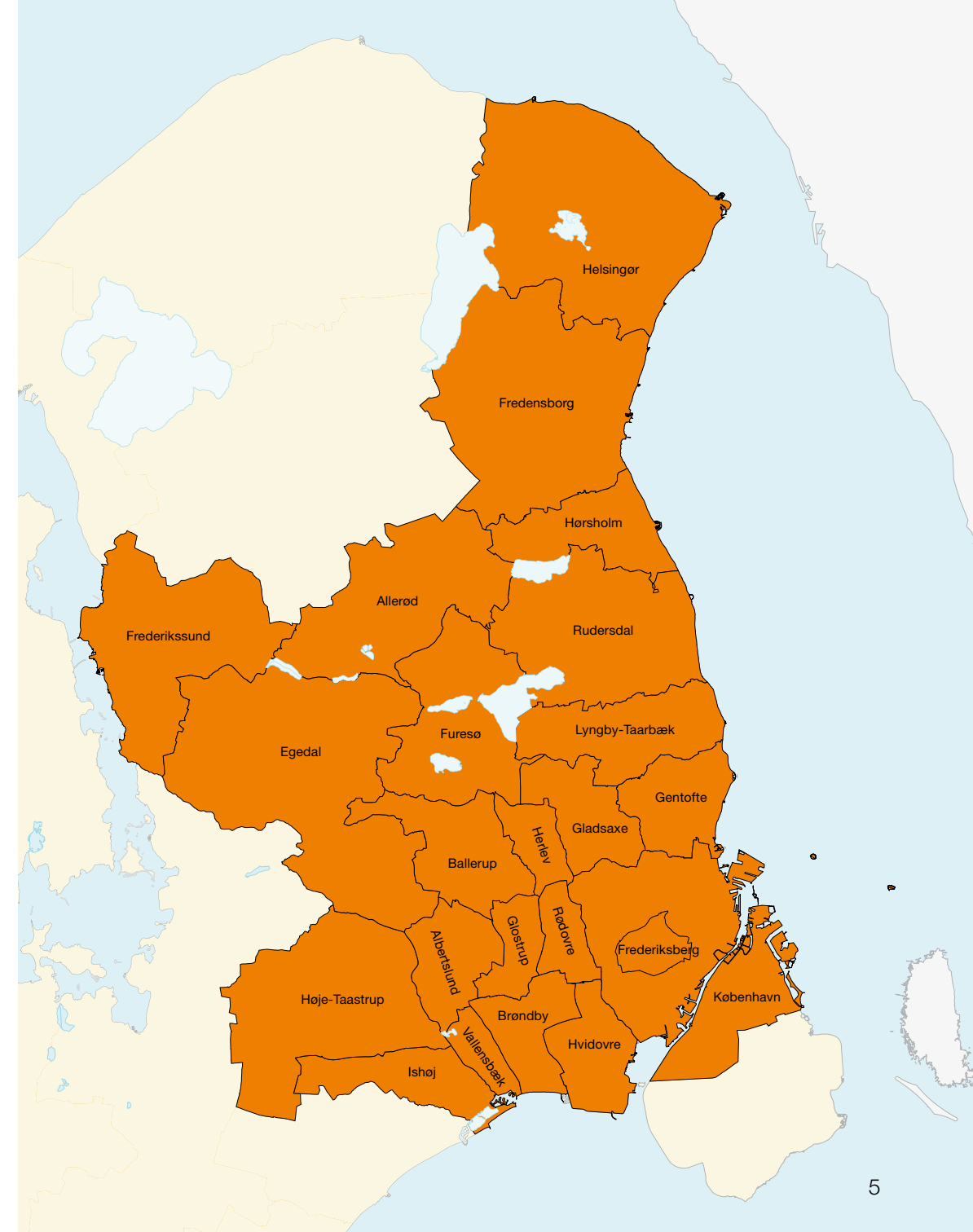
Cars and public transportation already possess a network, which transcends and connects municipalities in the region and in the country. If the bike is to succeed as a competitive alternative means of transportation, there has to be a network of bicycle routes transcending and connecting municipalities.

So far, the hierarchy of roads in Denmark has focused on car users. The cycling facilities have more or less been determined by the rank of the road. This has given many excellent cycle routes alongside car routes. The best routes for bikes however, are not always the best for cars and vice versa. Cyclists always choose the shortest – and thereby the fastest – route. But when it comes to car traffic, the shortest route is not always the fastest. In traffic planning, car routes are often led away from residential areas

for reasons of safety, noise and pollution. Since bikes do not create these problems their routes can go directly through more densely populated areas. This will even be a benefit for those residents, because they can use the cycle routes as well. Twenty two municipalities are working together to create a network of Cycle Superhighways. They have created a common secretariat, to ensure momentum and brand the network.

Together, the municipalities have developed a common conceptual strategy and plan for Cycle Superhighways, adopted by the politicians in all the municipalities.

The routes and secretariat are funded by the municipalities, The Capital Region of Denmark and the Danish Road Directorate.



# THERE ARE MANY GOOD REASONS TO BE A PART OF THIS PROJECT

Developing the concept and routes for the Cycle Superhighways are a great opportunity to try out new innovative solutions. On the Albertslund route, we are working on solutions with the use of green waves. On the Farum route we have experimented with a new type of lighting in the pavement that runs on solar energy.

- Testing innovative solutions
- New experiences gained from pilot routes
- Closer working relationship between municipalities
- More focus on cycling as a means of transportation

The evaluation of the pilot routes will help us gather new knowledge on the effect of the improvements on: the amount of commuters, safety and accident reduction.

A closer cooperation between municipalities creates closer relationships and provides a bigger network, which may be useful in other areas.

In general, such a big project with so many stakeholders brings a lot of attention to cycling and cycling benefits in general.

# A COMPETITIVE ALTERNATIVE

A user of trains knows what he can expect. A certain degree of uniformity in the design of the trains, train stations, timetables and so on. If we want people to perceive the Cycle Superhighways as a serious alternative, equal to taking the car, bus or train, it is essential to have a brand and a concept. A brand and a concept, which citizens in the region are familiar with and which secures uniformity in both design and standard of the routes. We aim for the “C” to become a symbol on par with the Metro’s “M” and the “S” in S-train.

## FACT

A motorist describes their choice of a car as a means of transport, the same way as a cyclist describes their choice of a bike:

*It is flexible and gives a sense of self-determination and individuality.*



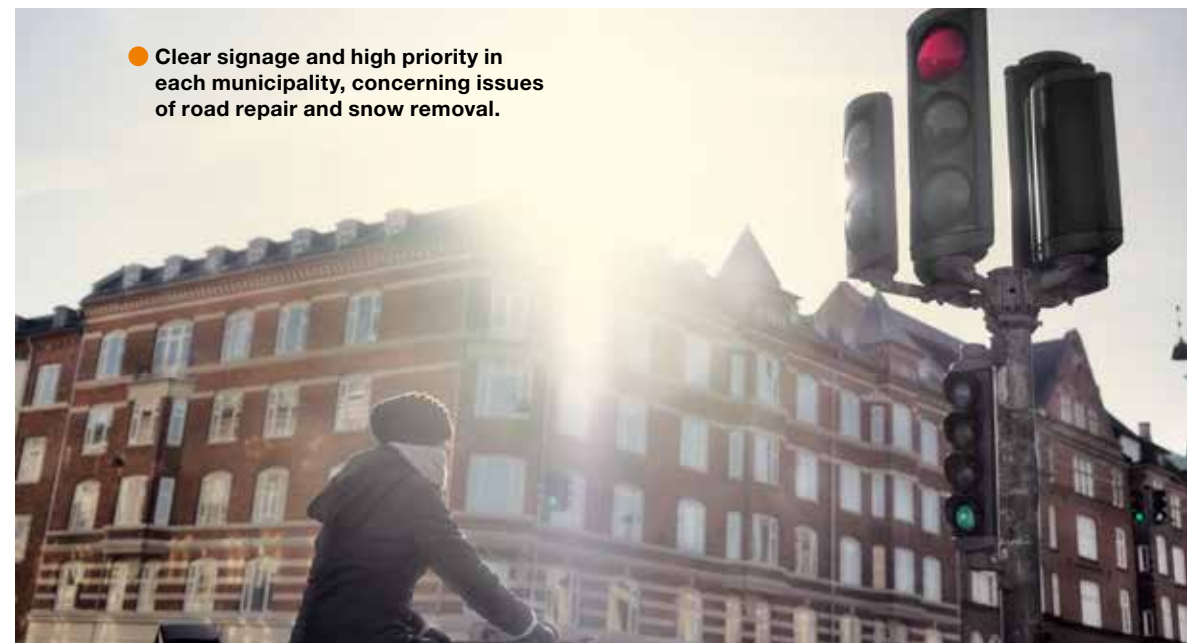
# DEFINITION OF CYCLE SUPERHIGHWAYS CONCEPT

A Cycle Superhighway is a cycle highway, where the commuters' needs have been given the highest priority. The project seeks to create routes that offer **fast, comfortable and safe service**. A Cycle Superhighway is defined both by its location, as well as its physical qualities. The highway should connect areas with many workers and students to their homes, and to public transportation possibilities as well. The highways should be **fast**, meaning as direct as possible and with as few stops as possible. A good example of how this is achieved is by the use of green waves. Traffic lights are normally coordinated in favor of cars, but the aim for the Cycle Superhighways, is for traffic lights to be adjusted for cyclists along the many main traffic arteries. At a speed of 20km/h, cyclists will be able to surf a wave of green lights through the city during rush hour, without putting a foot down.

Furthermore, the highways have to be comfortable and safe. **Comfort** is secured by the use of high quality asphalt

and maintenance. **Security** is achieved for instance, by clear marking and distance to cars including advanced stop lines, to make cyclists more visible to motorists, as well as sufficient lightning. In order to reduce risks of accidents, many intersections will be restructured in order to give cyclists priority. For example, in intersections with separate traffic lights for bikes, the cyclists may get a green light four seconds before cars would. In some cases, the head start would be as much as 12 seconds. These initiatives make the cyclists far more visible in traffic. In addition, you get to where you're going quicker.

Clear signage will make it easy for the commuter to find his way. To minimize clutter, design will be based on traditional signage and we will use existing posts where it is possible. Maintenance is essential for the commuters, especially during the winter. The Cycle Superhighways will be given the highest priority in each municipality, concerning issues of road repair and snow removal.



- Clear signage and high priority in each municipality, concerning issues of road repair and snow removal.



## IT PAYS TO INVEST IN GREAT CYCLING INFRASTRUCTURE

Every day 125,000 people commute in and out of Copenhagen, to work and to school. For every 10 kilometers someone chooses the bike instead of the car, society reduces its CO<sub>2</sub> emission by 1,6 kg and saves DKK 55 in health costs. According to the Technical University of Denmark, the costs from increased traffic in the Capital Region of Denmark, adds up to 10 billion DKK each year. This is two-thirds the price of the Øresund Bridge. Adding to this, the OECD notes that congestion poses a serious barrier to the Capital Regions' competitiveness.

The Cycle Superhighways will provide The Capital Region of Denmark, a safer, faster, direct, continuous and comfortable way of commuting to work and school by bike, with a potential 30 % increase of bike commuters. The network will consist of 467 km of cycle lanes.

The benefits of making a network of Cycle Superhighways are estimated to be:

- an annual reduction of approximately 856 ton of CO<sub>2</sub>
- a socio-economic surplus of DKK 7,3 bn = 1 bn
- a significant reduction in congestion, which is a major challenge for The Capital Region of Denmark.

This can all be achieved for a mere investment of DKK 0,9 - 2 bn.

### HEALTH IMPACTS OF CYCLING – DKK PER CYCLED KM

	Impact on society	Impact on individual cyclist	Total
<b>Health benefits</b>	1.74	3.77	5.51
<b>Accident costs</b>	0.54	0.25	0.79
<b>Total health impact</b>	1.20	3.52	4.72

# UNVEILING THE POTENTIAL OF LONG DISTANCE COMMUTERS

The city of Copenhagen has set a target goal of increasing the proportion of cyclists from 35 % to 50 % by 2015. Today, on distances shorter than 5km, 59 % of all journeys are made by bike. When the distance is longer than 5km, only 20 % of all journeys are made by bike. Based on these counts, the potential of moving commuters to go by bike is largest on journeys longer than 5km.

By upgrading the routes to Cycle Super-highways, we believe that we can raise the amount of bike commuters on long distances with more than 30 percent. Added to the current amount of commuters, this leaves the total estimated potential of the routes at about 52,000 commuters per day.

**”Transport is actually the only sector of the EU economy where greenhouse Gasses continue to increase... Slowing down is not enough. We must reduce the emissions... we must encourage a shift towards cycling and walking.”**

Connie Hedegaard, EU-commissioner

## NEW CYCLISTS' REASONS FOR STARTING TO CYCLE

It's faster	51 %
It's more convenient	32 %
It's healthy	31 %
It's cheap	30 %
It feels good/ good way to start the day	20 %

19 % of existent cyclists started cycling more than two years ago and 9 % started cycling within the past two years. 70 % have always cycled.

## FACT

Counts show, that on journeys shorter than 5km, 59 % of all journeys are made by bike. When the distance is longer than 5km, only 20 % of all journeys are made by bike.

## PERSONS GOING TO WORK OR EDUCATION IN COPENHAGEN DISTRIBUTED ACCORDING TO TRANSPORT DISTANCE AND TRANSPORT MODE

	0-5 km	> 5 km
Walk	21 %	0 %
Bicycle	59 %	20 %
Car	12 %	44 %
Bus	6 %	7 %
Train	3 %	26 %
Other	0 %	2 %
<b>Total</b>	<b>100 %</b>	<b>100 %</b>



# THE CYCLE SUPERHIGHWAY NETWORK

The network has been designed without taking consideration to the hierarchy of roads for car users or municipality borders. It simply focuses on the best routes for bikes. The main goal is to attract more cycle commuters, although the network will be of benefit to all cyclists. The network:

- prioritizes bikes before other means of transport whenever possible
- follows the optimum line as closely as possible
- connects and crosses through municipalities
- has a high and uniform quality throughout the route

To date, 28 routes have been planned in the region of Copenhagen. The 28 routes planned in the region of Copenhagen total a length of 467 kilometers. The estimated full potential of the routes are about 52,000 commuters a day. To a great extent the routes will make use of current roads and paths, but the routes will be optimized in order to live up to the Cycle Superhighway criteria and standards.

The commuters already have access to the first two Cycle Superhighways. The Albertslund route opened in April 2012 while the Farum route came into use in April 2013. The Albertslund route is 17,5 km and the Farum route is 21,7 km. Nine more routes is funded at this point and will be built during in 2014-2018.



# HOW CAN I FIND OUT MORE?

## ONLINE

Visit [www.supercykelstier.dk](http://www.supercykelstier.dk)

## E-MAIL

[supercykelstier@tmf.kk.dk](mailto:supercykelstier@tmf.kk.dk)



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Kommune



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Kommune



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Kommune



Region  
Hovedstaden



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