



Green Urban Mobility

- transport plans for the Copenhagen capital region



We must keep up the speed!

In recent years, economic growth in the Copenhagen metropolitan area has developed positively. The regional gross domestic product has grown by 22% over ten years. This has also stimulated transport growth on our roads.

Against this background, a number of municipalities have created the Municipal Forum, currently consisting of Albertslund, Ballerup, Brøndby, Dragør, Gladsaxe, Glostrup, Helsingør, Herlev, Hillerød, Hvidovre, Ishøj, København, Lyngby-Taarbæk, Roskilde, Rødovre and Tårnby.

The vision of the Municipal Forum is to maintain a well-functioning transport system that ensures a free flow of traffic to everybody's advantage. We see this as a basic precondition of continuing growth and prosperity in the metropolitan area. For this reason, we must meet the challenge presented by the traffic. We must reverse the trend whereby congestion is growing and road users are finding it ever more difficult to reach their destinations. If we do not do this, road users will experience increasing delays and tailbacks with concomitant difficulty in preserving our urban environment.

It is the Municipal Forum's ambition to clarify how congestion can be avoided. One possibility is the introduction of

congestion charging. We will analyse how this could best be structured and the municipalities involved will create a cooperative framework. During the course of the clarification, a process will be established involving hearings for the capital's citizens, as well as building a dialogue between the parties affected and the decision makers. Provided the necessary support for the introduction of congestion charging in the greater Copenhagen area is gathered, the system could be in operation by 2010.

Provisional studies show that a simple and effective system could consist of a payment boundary around Copenhagen. Motorists would pay a congestion charge when they crossed the cordon. The charge would be automatically levied without the individual motorist having to stop or slow down. The revenue could total over a billion Danish crowns a year and would be used within the greater Copenhagen area to finance improvements in public transport and the road network. It would be one of the largest and most wide reaching investments in traffic infrastructure undertaken with a view to increasing the free flow of traffic; for the benefit of the citizens and business life.



Several large cities have imposed charges on driving in the city: these include Stockholm, London and Oslo.



In **Sweden**, the government has decided to make the regulation concerning congestion charging permanent from 2007. A previous trial, carried out in 2006, proved that a payment boundary can function in practice. The goal is to reduce congestion and improve the urban environment. The result is a 20% reduction in the number of vehicles. Car drivers now experience a considerable reduction in congestion and tailbacks on the entry roads around the Swedish capital. Pollution is similarly reduced.



Since 2003, the Greater **London** Authority has imposed congestion charging based on a payment zone in the city centre. The goal is to reduce congestion. The revenue so collected goes towards public transport amongst other things. Car traffic has fallen by 18% and congestion by 30%. Public transport has gained more passengers, both on the bus network and the underground. Both residents and visitors have shown great satisfaction with the regulation. Such is its effectiveness that in February 2007, London expanded the zone.

If congestion charging is introduced, what will happen...?

Who will pay?

-In principle all motor vehicles crossing the cordon will pay. This has not yet been finally decided however, and it could be sensible to exempt special vehicles or to relate payment to geographical location. There could for example, be exemptions for the bus system guaranteeing excellent transport as an alternative to cars.

What would it cost?

-Payment would be proportionate to the congestion. The normal rate could be 10 DKK, while during rush hour it could be 25 DKK. The tax should serve as an inducement to optimising the use of the limited road network. A limit could be set for the amount to be paid, so that no motorist would pay more than three times a day for example.

How would payment be made?

-Many different payment systems have been used around the world. One possibility is a DSRC transponder system, the so-called CityBizz, corresponding to the present Bridge-Bizz system, well known for its use on the bridges over both Great Belt and the Sound. With a Bizz visible through the windscreen, motorists drive through the payment station without stopping; registration occurs automatically. If the motorist does not have a Bizz, the number plate of the car is identified and a demand for payment is sent to the car owner.

As a motorist, would I be under surveillance?

-No! The Bizz card would only register your passage through a particular payment station at a particular time. Nothing else about your trip would be registered.

Would it be more expensive to be a motorist?

-Yes! A tax is being introduced in order to reduce congestion. This is the main goal of the congestion charge. On the other hand, traffic will flow much more freely and all forms of traffic will find it easier to make progress, both those going into Copenhagen and those going across the city. In Stockholm for example, it has been possible to reduce tailbacks and halve delays.

Will the urban environment improve?

-There will be less traffic noise and less pollution. Those factors affecting health which have been calculated indicate that up to 25-30 premature deaths inside the city area can be avoided each year. Lighter traffic will improve the urban experience; both for residents and visitors and for those moving around.

What does congestion charging mean for business life and retail shops?

-Experience from other cities shows that the variation in shops' turnover is so small that it is difficult to distinguish it from random variations. The transport business will generally profit, in that traffic flows more smoothly.

Does congestion charging have a social downside?

-Experience from Stockholm shows that the group which, on average, pays most in congestion charges was in a higher than average income group. Furthermore, the results showed that people living in the inner city paid on average more in congestion charges compared to suburban residents.

Is the boundary decided?

-No, it will be the subject of investigation. A payment boundary should be placed so as to achieve an optimal decrease in traffic and at the same time ensure geographical, economic and distributional balance.

Has a Bill been brought before Parliament to set the system up?

-No, not at the moment. We cannot introduce congestion charging until Parliament brings in an Act allowing us to impose congestion charging.

When might the system come into existence?

-If the municipalities and central government agree, congestion charging could be introduced in 2010. Well-established technology will be used. In this way we can go directly towards our goal ie, without any experiments with the risk of higher expenses and delayed deadlines.

How will the system function in combination with other regulations?

-Practically speaking, the payment boundary will be based on the same technical system as used by the fixed links and ferries. If a regulation is passed governing road taxing nationwide, it will be combined with congestion charging in the metropolitan area.

Any congestion charging method will be specifically to create more freely flowing traffic, which is not the goal of other rules and regulations.



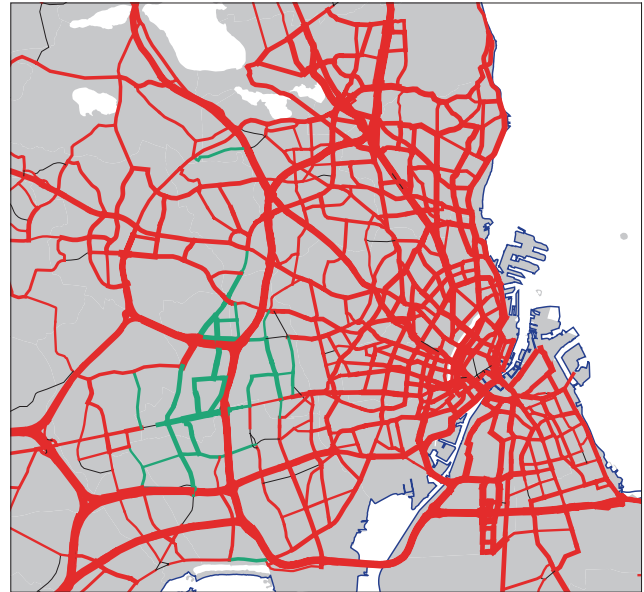
Why introduce congestion charging?

The goal of introducing congestion charging is to create more freely flowing traffic by regulating that part of the traffic which is driving specifically towards the metropolitan area. Congestion charging is a tool which has been used in other cities with this aim in view.

The Danish Road Directorate estimates that traffic growth on main radial roads into Copenhagen will be in the region of 20-35% over the next ten years. In spite of greater traffic-carrying capacity, increased congestion can be expected on many roads in the future. During the rush hour, a decrease in traffic speed to 50-60 kph can be observed on the motorway system.

The closer the cars come to the capital, the greater the congestion becomes. Average traffic speed in Copenhagen fell from 33kph to 27kph in the decade after 1995: a decrease of 20%. Unless this trend rectified, the city's traffic will move at ever slower speeds.

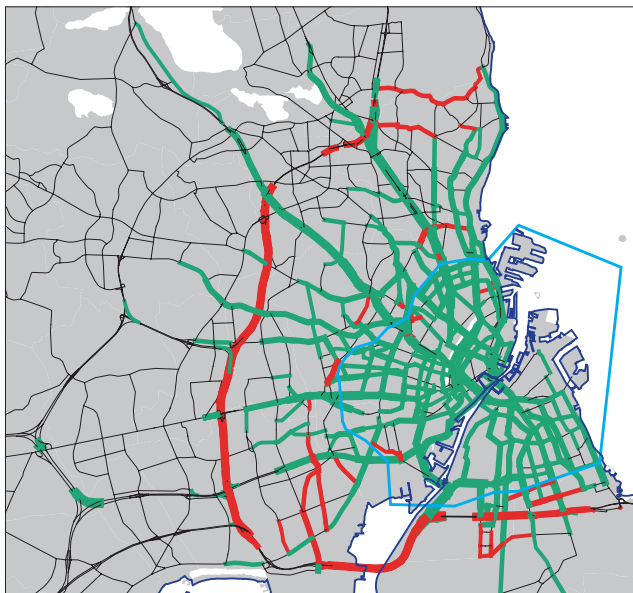
The socioeconomic effect of increasing tailbacks and congestion is already causing an annual loss in the greater Copenhagen area of six billion Danish kroner. Calculations show that congestion charging can reduce traffic by 15% inside the estimated payment boundary. This is equivalent to normal weekday traffic being reduced to the level of traffic as we know it during the holidays, where delays are reduced by up to 50% and where the combined journey time in and out of the city is much better than on those days where pressure on the road network approaches an unacceptable level.



Base scenario

In a passive projection of the development in the greater Copenhagen area until 2010, nearly all roads will have increased traffic flow in the coming years (red=increase, green=decline). The increasing car traffic is distributed a little differently on the road network, but the connecting main roads will experience the greatest pressure ie, increase in congestion. The expansion of the M3 will, everything else being equal, take some of the traffic off the nearby roads.





A scenario with congestion charging

If a payment boundary is introduced in 2010, a considerable reduction in traffic on the road network will occur compared to the base scenario. In Copenhagen, where cars creep forward at a snail's pace during rush hour, considerable relief will be experienced; this will also be the case on roads into Copenhagen. There will be a further reduction in congestion after the introduction of investments in infrastructure which the revenue can be used for:

Afgiftsprovenuet vil kunne medfinansiere

- A new, high-quality light rail system from Lundtofte-Lyngby over Glostrup and then on to Brøndby and Ishøj/Avedøre Holme (Ring 3)
- More Metro lines towards for example, Gladsaxe, Herlev and Rødovre
- Considerable increase in railway capacity in the Ringsted Copenhagen corridor
- More frequent S-trains and regional trains as well as new, rapid shuttle bus services
- Establishing Park and Ride facilities at central terminal points
- Building the Ring 5 transport corridor ie, a new road/rail alignment
- Increased traffic capacity on the road network at for example, Avedøre Havnevej and in Ballerup
- Improved traffic safety and noise screening on major roads together with
- Measures to avoid possible disadvantages of the payment boundary

There will be a considerable decrease in traffic outside the payment boundary as well. The primary entry roads especially will experience a fall in the total car traffic and a corresponding increase in journey speed. A smaller increase in traffic on Motorring 3, about 5%, must however, be expected. In the same way, the payment boundary also carries with it several problems for, for example, Hvidovre, Tårnby and Dragør. As far as possible, these must be avoided by taking special measures. The actual location of the toll cordon has, in any case, not been decided.

Less car traffic provides a bonus in a number of other areas. First and foremost, public transport gets more passengers. This in turn, makes it possible to increase the number of bus and train departures and lines. Fewer cars on the roads makes it possible to distribute the traffic and calm certain traffic corridors to the benefit of the local urban environments.

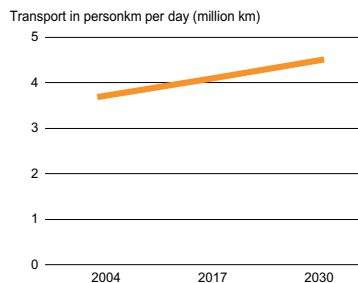
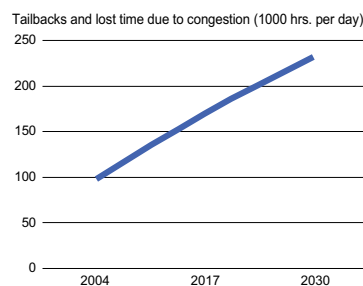
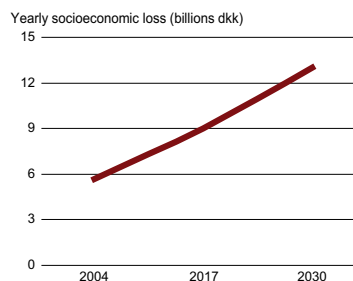
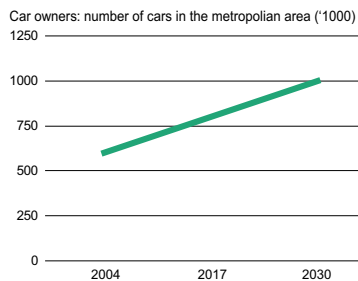
Traffic is increasing

Traffic development is being closely monitored by a number of municipalities in the metropolitan area. We count the traffic and note its speed on important stretches of road. There is an alarming growth. Even the smallest increase in the number of cars increases the delay times greatly. The roads in the region are overloaded to the limit. This affects citizens in many municipalities in the metropolitan area.

Without congestion charging, the amount of traffic crossing the borders of the municipality is predicted to rise markedly in the coming years. Continued economic growth, population expansion and increased integration in the Sound Region are the main reasons for this rise. Over the last ten years, a wide range of initiatives to improve traffic around the municipalities of the capital have been undertaken. For example, new roads, new stretches of rail, the metro, bus priorities and cycle routes have all been implemented. Over the longer term however, the problem cannot be solved by these measures alone.

In different scenarios up to the year 2030, there will be significant changes both in terms of quantity as well as quality in the traffic sector:

- Today, the number of cars per resident in Copenhagen is considerably less than in Jutland. In some parts of the capital, a considerable increase in the sale of new cars can be expected as well as an increase of 25-35% in the combined numbers of cars available over the next ten years.
- The growing volume in cars and the consequent increase in car driving will mean that, temporarily, the socioeconomic loss calculated today resulting from tailbacks and delays will grow from six billion to nine billion kroner per year.



- The Danish technical university has calculated the combined congestion in the area of the capital at 100,000 hours per day. These tailbacks and loss of time are predicted to rise by more than 50% over the next ten years, all else being equal.
- The region's inhabitants travel four million passenger kilometres by car every day.



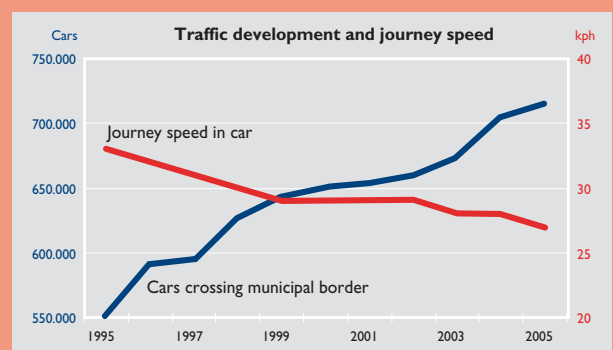
An example:

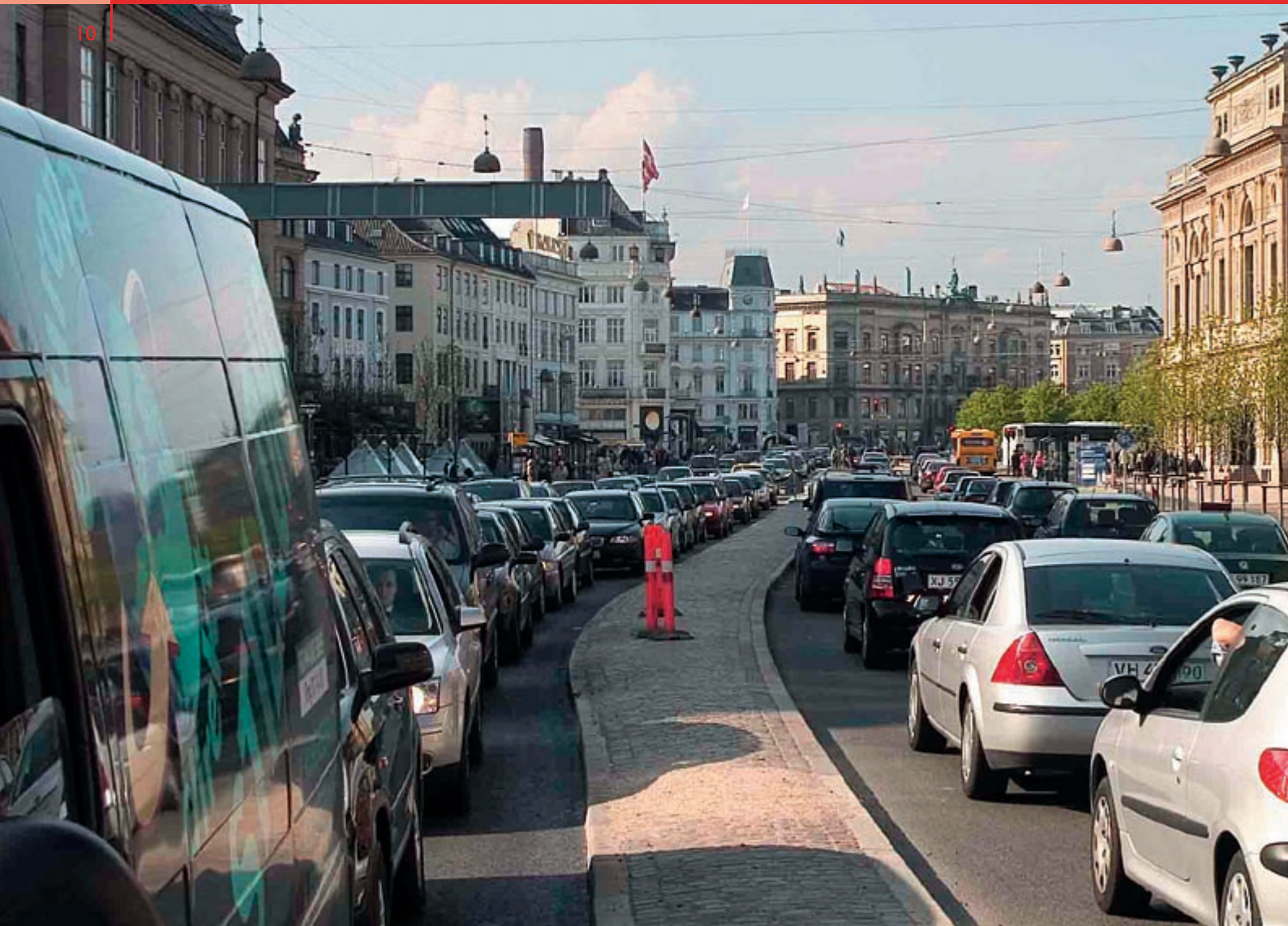
In 2005, the number of cars crossing into the Municipality of Copenhagen every twenty-four hours was 710,000, an increase of 25% since 1995.

This higher number of cars creates more congestion. Since 1995, the average journey speed in a car has fallen by 20% to 27kph today.

Motorists in Copenhagen city lose 4,000 hours in delays in an average hour. Just as much time is wasted on the motorway network around Copenhagen. Almost 20 seconds of every minute in the traffic of Copenhagen are taken up with delays.

In 2001, 2% of the main roads in Copenhagen were hit hard by severe congestion. In three years, the number of roads hit by such congestion had increased by nearly 30%.





Planning phase

Decision-making phase

Implement

2007

2008

2009



The following is a Declaration of Intent for the inter-municipality cooperation ie, the Municipal Forum:

- the basis for a decision will be worked out with reference to the position that congestion charging could be introduced by 2010
- we (the municipalities) will participate in this process
- the more detailed structure of the project is to undergo further analysis to ensure that certain local considerations are met
- the existing Municipal Forum in the metropolitan area will together define a joint suggestion for the use of the revenue. This will be done with a view to improving public transport and to financing infrastructure projects and traffic improvements within and outside Copenhagen. It will be done in such a way as to ensure a freer flow of traffic and a better urban environment
- an organisational structure will be created whereby all municipalities involved, together prioritise the use of the revenue
- cooperative ways of working together will be found so that progress and involvement of all participants is assured
- all municipalities involved will continue the work of analysis to specify the possible technical solutions. The results of this work will be outlined at the organisational structures
- a summary of these results will be ready and processed by mid 2008, as far as it is possible, together with a plan for the subsequent process, which will, at the appropriate time, involve the government, the traffic company Movia, the Region and other parties to a greater or lesser extent.

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Operational phase



2010

Please find more information on:
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