

## 2. Local transport

1. Please describe the present situation and the development over the last five to ten years in relation to (max 1,000 words):

### 1.1. Length of designated cycle lanes in relation to total number of inhabitants in the city

Hamburg's network of cycle lanes has a total length of 1,700 km. With a population of 1.7 million, this represents one metre per person. The cycle lane network runs parallel to roads for motor vehicles and has been in existence for over 30 years. The cycle lane network, which consists of tracks running parallel to roads for motor vehicles as well as of independently routed cycle paths, has been in existence for over 30 years.

Lanes along streets and roads physically separated from streets/roads: 1,500 km

Lanes along streets and roads only separated by a painted line or the like: 20 km

Routes or pathways exclusively dedicated to bicycles and not running along streets or roads (e.g. through parks): 180 km

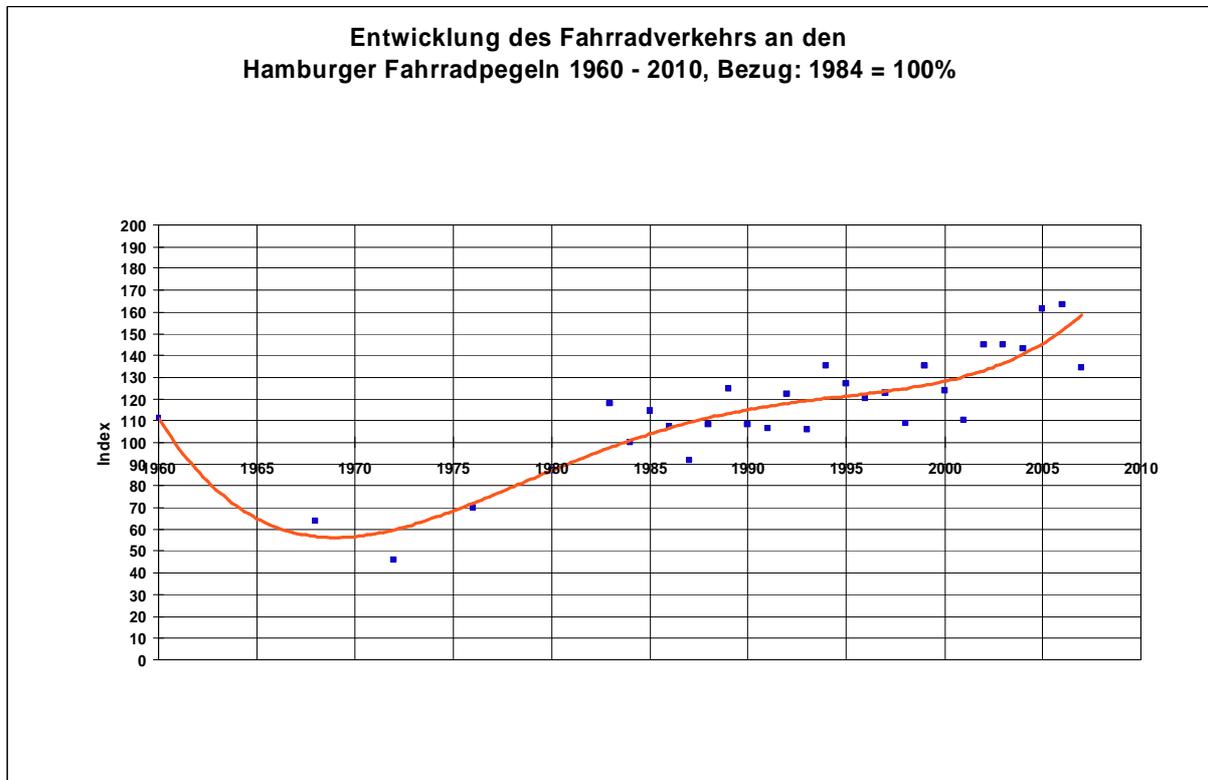
Local roads considered as part of a „cycling network“, but with no separations:

In Hamburg, it is basically possible to cycle on almost any road. On main roads with heavy motor vehicle traffic, there are physically separated bicycle lanes, in areas with a 30 km/h speed limit, you can safely cycle on the main lane. Hamburg's total road network is 3,900 km long, including 45% of 30 km/h speed limit zones with a total length of 1,755 km.

In the past ten years, Hamburg has concentrated on implementing measures to bring its cycle lanes up to a standard which meets modern technical and legal requirements, in particular widening them and introducing more "roll-friendly" surfaces.

In addition to this cycle lane network, Hamburg has begun to implement a network of segregated cycle facilities, the so-called "velo routes network", which will be 280 km long after completion. The velo routes are located largely apart from streets with heavy motor traffic and run primarily through 30 km/h speed limit zones. To date, 18% of the velo routes network is completed (approximately 50 km). Over and above this, there is a network of recreational routes along the rivers Elbe, Alster and their tributaries as well in

Hamburg's green areas and forests. They consist mostly of non-asphalted paths and account for a further 400 km. They are used not only for leisure pursuits, but e.g. also as routes to work.



Development of bicycle traffic at Hamburg's cycle count locations 1960-2010; base year 1984 = 100%

1.2. Share of population living within 300 metres from an hourly (or more frequent) public transport service

The share of population living within a 300 metre radius of local public transport stops (hourly or more frequent) in Hamburg has, for many years, been very close to 100%.

1.3. Proportion of all journeys under 5 km by private car

The results of the study "Mobilität in Deutschland" (Mobility in Germany) MiD, which included a larger than average random sample for Hamburg, indicate that the

proportion of car/lorry users (drivers and passengers) making journeys under 5 km is roughly one third (33%).

In detail, the modal split for journeys from 0 to 5 km in the survey year 2002 is:

- Pedestrians: approx. 40%
- Bicycle: approx. 16%
- Individual motorised transport drivers (car/lorry/motorcycle): approx. 23.5%
- Individual motorised transport passengers: approx. 10%
- Local public transport: approx. 10.5%

#### 1.4. Proportion of local public transport classed as low emissions

At the end of 2007 the proportion of low-emission buses was 75% of the total fleet, including 9 hydrogen-fuelled buses. Hamburg's public transport companies are retrofitting old buses with carbon-particulate filters, if technically possible; new purchases are made exclusively in accordance with the "Euro 5" standards. For details of the bus fleet's proportionate composition as regards „Euro" standards, see attachment „Busflotte Zusammensetzung".

Hamburg's public transport companies run regular training programmes relating to an energy-saving driving style for their drivers and, as a result, have significantly reduced fuel consumption.

With regard to rail traffic both of Hamburg's rapid train networks ("U-Bahn" and "S-Bahn" - underground and rapid trains) are operated using environment-friendly electricity. Most of the services within the regional public rail transport network are electrified, too. When electric operation on the line between Hamburg and Lübeck commences in December 2009, the last older diesel engines which do not fulfil today's environmental demands will disappear from Hamburg.

As regards the underground train system, vehicles of a new, energy-saving generation were purchased to replace older ones, in the period 1988 to 2005. The Type DT 4 vehicles are constructed using light-weight materials and return the electricity released when braking back to the power grid; the result is significantly lower electricity consumption. These modern vehicles make up 68% of the entire fleet of underground train carriages.

A further new generation of vehicles is currently being developed and is planned to progressively replace the old carriages in the fleet, which are over 40 years old, in the period 2012 to 2015. The first vehicles of this generation will enter service as early as 2009. During development of these vehicles, environment protection was accorded a significant role as regards the use of materials and energy consumption.

2. Please describe the measures implemented in the last five to ten years aimed at reducing the total transport volume and at changing the modal split in favour of alternatives to car transport (max. 1,000 words):

The modal split for Hamburg is calculated on an event-driven basis. In 2008, calculation within the scope of the "Mobilität in Deutschland" (Mobility in Germany) MiD survey (journeys according to main method of transport incl. commercial traffic) amounted to the following modal split:

Local public transport	19%
Individual motorised transport passengers	13%
Individual motorised transport drivers	34%
Bicycle	9%
Pedestrians	25%

### 2.1. Pedestrian traffic

In 45% of the road network, speed has been reduced to 30 km/h, providing safer conditions for pedestrian traffic. Many residential areas of Hamburg are designed as traffic-calmed zones. Barrier-free kerbs have been standard in technical guidelines for many years now and are standard all over Hamburg.

In 2006, a special signpost system for pedestrians was introduced covering the city centre and some areas adjacent to it. The signpost system directs pedestrians to more than 80 destinations, such as the main railway and rapid transit stations, to cultural and tourist destinations (theatres, museums) as well as important streets and sites. The signpost system for pedestrians will be extended in coming years.

## 2.2. Bicycles

In 2002 bicycle traffic accounted for 9% of the modal split. The cycle lane network was introduced more than years ago, thus the majority of measures related to it generally concentrate on redesigning cycle paths according to planning and legal guideline updates and revisions. This is an ongoing process.

To avoid unnecessary detours, one-way streets have been opened to cyclists, wherever possible.

The everyday cycle route network links the most important centres of Hamburg's districts with one another and with the city centre.

Hamburg's bicycle transport system comprises many bicycle parking areas as well as "Bike and Ride" facilities for more than 14,000 bicycles at rapid transit stations. For inhabitants in densely built-up districts, Hamburg provides private bicycle sheds that are installed in private and public premises.

It is possible for public transport passengers to take their bicycles with them on rapid transit trains (except at peak traffic hours), port ferries and selected bus lines (in the less busy areas of Hamburg).

An element of public relations for cyclists is the city map (2004) showing the cycle lane network and routes for leisure cycling as well as "Bike and Ride" facilities. Further information is available on the internet ([www.verkehrsinformations.hamburg.de](http://www.verkehrsinformations.hamburg.de)), where cyclists can find information on cycle routes (including a download option), "Bike and Ride", taking bicycles on local public transport, bicycle rental and much more.

In order to achieve wide acceptance, a cycling advisory council was set up and confers on Hamburg's strategy and measures for promoting bicycle traffic. Participants are representatives of various authorities, from politics and from cyclists' federations.

The level of bicycle traffic has been steadily rising in recent years. An annual count of bicycles carried out at 38 locations in Hamburg shows that bicycle traffic has grown by 60% from 1984 to 2006.

## 2.3. Local public transport

Hamburg had already developed a concept for municipal and transport development on both sides of the Elbe in

the early 20<sup>th</sup> century. This concept has been viewed as being exemplary for many decades now and has proven itself right up to the present day: the "Hamburg Arterial Model", which takes the city centre as its focus. The system of main and secondary arteries is supplemented by a concept of regional centres. Almost all main and secondary arteries are connected to rail and metro lines. The goal is to direct residential development in particular along the arteries, where many journeys can be undertaken using the environment-friendly rail networks. The concept has also well-proven itself in recent years.

Local public transport in Hamburg and the direct hinterland has been affiliated in a single public transport association for 45 years now: the "Hamburger Verkehrsverbund HVV" (Hamburg Transport Association), which unites two metro systems, three bus companies and the regional trains of the national rail network. Thanks to the expansion of the "Hamburger Verkehrsverbund HVV" (Hamburg Transport Association) to the adjacent Federal States Niedersachsen and Schleswig-Holstein demand on major railway routes to Hamburg has been significantly increased, and thus a large proportion of commuter traffic from the hinterland has been transferred to bus and rail networks.

There is no data regarding the distribution of the transport volume as per the various transport companies. Instead, the rising number of passengers using the "Hamburger Verkehrsverbund HVV" (Hamburg Transport Association) shall illustrate the development during the past 5 years and the current status:

2003	535.0 million
2004	537.6 million
2005	580.3 million
2006	600.5 million
2007	618.0 million

In the case of the metro lines, the range of services on offer has been significantly expanded in recent years. The most recent development has been the extension in Autumn 2007 of the period, in which underground trains run every 5 minutes, within the scope of the first measures of the "Hamburger Klimaschutzprogramm" (Hamburg Climate Protection Programme). As a result, additional passengers have been attracted to local public transport and thus journeys using individual motorised transport have been reduced.

The introduction in December 2004 of a round-the-clock rapid transport service at weekends has been a huge success. Young passengers in particular are heavy users of this service.

With the extension of the S3 line from Hamburg-Neugraben to Buxtehude and Stade, the Hamburger "S-Bahn" rapid transport company has, for the first time, commenced services reaching far into the Metropolitan Region of Hamburg.

The provision of extensive bus services in the municipality of Hamburg has been improved in recent years, thanks to the setting up of 150 additional bus stops. The number of bus services available in Hamburg has also been significantly expanded and thus increased by some 13% in recent years.

The clear increase in the number of passengers in recent years is also apparent with regard to bus services. Almost half of passenger demand for bus services is concentrated on the 22 most important routes, which have been brought together under the term "MetroBus" to facilitate a uniform public presence.

These buses travel on tangential routes and along the diagonal arteries according to a fixed timetable at minimum intervals of 10 minutes. In the past seven years demand on these routes has increased by some 20%, thus every work day some approx. 80,000 additional passengers use the MetroBus routes.

Since Autumn 2006, only buses have been purchased which fulfil the "Euro 5" emissions class, not in force until 2009 (benefit: reduction of nitrogen monoxide emissions by over 70%). Since the end of 2007, voluntary retrofitting of over 300 buses in the "Euro 2" and "Euro 3" emissions classes with so-called closed filter systems has taken place (benefit: reduction of particle mass emissions by some 90%). In the period 2003 to 2008, the "Hamburger Hochbahn AG" public transport company has provided development assistance for fuel cell buses within the scope of the EU-funded CUTE project (Clean Urban Transport for Europe).

To date, 4 car-free Sundays have been held in 2008; passengers were able to use bus and rail services free of charge on these days. The "Hamburger Verkehrsverbund HVV" (Hamburg Transport Association) won 5,000 new season-ticket holders as a result of these events. "Car-free Sunday" was supplemented by a free open-air entertainment programme.

#### 2.4. Car and lorry traffic

With its so-called „axis model“ (highly efficient road and rail traffic axes) Hamburg, also in coordination

with the Metropolitan Region of Hamburg, is practising for many years already a settlement policy which helps to avoid individual motorised transport.

In addition, Hamburg cooperates with the Federal Government, the Deutsche Bahn AG (German national railway company), the Hafentbahn Hamburg (Port Railway) and other partners to improve the rail infrastructure, as to be able to transport more cargo by railroad.

70% of all container traffic from Hamburg's port with destinations to and from Hamburg's european hinterland (30% of Hamburg's total container handling) is being transported by rail. Hamburg aims to further improve the modal split in favour of rail transport. The transit turnover with destinations Scandinavia and Eastern Europe (30% of Hamburg's total container handling) is already now being transported to 90% by feeder ships.

Over and above this, Hamburg pursues the concept of managing all such traffic which is unavoidable in an environmentally sound manner. By concentrating commercial traffic and individual motorised transport on Hamburg's arterial road network, the other parts of the city are relieved.

In order to optimise the city's traffic processes, Hamburg has developed a comprehensive and networked traffic management which encompasses all modes of transport. The tasks involved are being handled by various municipal institutions with a high degree of cooperation. The operative units of Hamburg's Ministry for Urban Development and the Environment - in charge of operating the traffic light systems, the traffic control systems for the city's motorways and the river Elbe tunnel, the dynamic car-park routing system and the internet portal [www.hamburg.de/verkehr](http://www.hamburg.de/verkehr) as well as for coordinating road works and collecting traffic data - are successfully cooperating with each other as well as with the Police and Port Authority. By means of a technical network, the traffic monitoring camera systems and the traffic management centres of "Hamburger Hochbahn" (public transport company) and Hamburg's police are interconnected.

To achieve a smoother and safer traffic flow, Hamburg is applying innovative technologies in the field of traffic light control for many years now. Currently, there are approximately 1,700 traffic lights in Hamburg, a large proportion of which is already being operated traffic-dependently. The goal is to relieve such roads and crossroads which frequently experience traffic jams and to improve overall traffic flow. This is not only economically advantageous but also contributes considerably to reduce environmental pollution by car exhaust emissions.

To reduce traffic induced by drivers searching for a free car park, Hamburg operates modern, dynamic car-

park routing systems each in the inner city (approx. 30 multi-storey car parks with around 9,200 parking spaces) and in the Harburg district centre (8 multi-storey car parks with around 5,500 parking spaces) as well as around the Altona railway station and at the sports stadiums. The Harburg system was recently modernised and expanded.

3. Please describe planned short- and long-term measures for (max. 1,000 words):

3.1. Reduction of overall demand for transport

A general reduction in demand for transport can, first and foremost, be achieved by means of urban planning measures which shorten journeys to work. These are based on principles such as inner-city consolidation, use of conversion areas close to city centres, focusing of building development projects and building methods on demographic developments and the resultant demand for accommodation and building of new homes close to existing local public transport routes (cf. question 10, section 2.).

3.2. Reduction of individual motorised transport

For the years 2007 to 2012, the Hamburg Senate has launched a comprehensive "Strategy for Climate Protection" with an annual budget of 25 million euros. Transport is a key cornerstone of efforts in this regard. In addition to funds ensuing from the climate protection concept, hundreds of millions of euros of current budgetary funds have been allocated for road-building and road maintenance, of which a proportion is serving to protect the climate. Over and above this, Hamburg's public transport companies are also investing billions of euros not included in state budgets.

3.2.1. Improving the situation of pedestrians as road users

The goal is to achieve a shift from car journeys to journeys on foot for local journeys under approx. 1.5 km. The destinations of these journeys are predominantly shops, schools and to reach local public transport services. A shift away from car journeys can,

first and foremost, be achieved by improving the pedestrian infrastructure, in particular by:

- comprehensive maintenance of existing footpaths which are sufficiently wide,
- closing gaps in the network, thus avoiding detours,
- creation of well-lit, clean roads and paths,
- development of a barrier-free, senior citizen-friendly network,
- building of crossing facilities, focusing primarily on the vicinity of heavily used pedestrian routes close to schools, day-care centres, care homes, sports facilities, etc.,

These measures will generate additional requirements to the sum of 1.1 million euros in the biennial budget for 2007/2008. The same sum has been planned for the 2009/2010 biennial budget.

### 3.2.2. Increasing the attractiveness of the bicycle traffic system

In 2002, bicycle traffic accounted for 9% of the modal split. The target is to reach 18% in 2015. The new "Strategy for Promoting Bicycle Traffic in Hamburg" which was resolved in January 2008, includes important targets as well as 80 specific measures planned to be implemented by 2015. These measures include:

- A network of basic cycle routes (280 km) to be completed by 2015 and equipped with a special signpost system for cyclists. Redesigning the existing cycle lane network will continue to be an important task.
- "Bike and Ride" facilities will be further increased, thus making it even more attractive to combine public transport with use of a bicycle in a chain of journeys.
- In 2009, a public bicycle hire system will be introduced with some 1,500 bicycles and 130 hire stations distributed in an area including the city centre and the most densely populated districts. The first half hour for people using these bicycles will be free of charge.

As an additional long-term measure, a publicity campaign for more bicycle use will be initiated.

In the coming years, an annual budget of 7 million euros is planned for measures concerning the bicycle traffic system.

### 3.2.3. Expansion of the local public transport network

Significant improvements to the local public transport network are planned in coming years:

- Inauguration of the S-Bahn rapid transport system to Hamburg Airport in December 2008
- Inauguration of the underground train line in the "HafenCity" (a new inner-city district) in 2011
- Inauguration in 2012 of the new low-floor light rail system with a 40 km network to connect those city districts, which have previously been poorly connected to public transport
- Gradual changeover to hybrid bi-articulated buses by 2020

### 3.2.4. Measures in the field of individual motorised and commercial transport

In order to reduce the noise and exhaust emissions of individual motorised and commercial transport, the following measures are planned (among others):

- Replacement of suitable traffic light intersections with roundabouts
- Compilation of a framework plan for capacity-oriented traffic light sequences
- Further technical development and stronger crosslinking of the traffic management system
- Modernisation of the traffic management centre; implementation is planned until 2010.
- Development of a lorry routing concept to bundle traffic streams
- Examination on whether to introduce a city toll
- Examination on whether to establish a low emission zone, with particular consideration of commercial traffic
- Conversion of the municipal motor pool to smaller, CO<sub>2</sub>-optimised vehicles
- Ecological driver training for municipal administration employees and drivers working for municipal companies such as the sanitation department and public transportation services

### 3.3. Promotion of less environmentally damaging modes of transport

The introduction of four annual "Car-free Sundays" per year while simultaneously providing the opportunity to use the local public transport network free of charge is a measure with a considerable public relations effect. The running of voluntary car-free Sundays while providing free public transport in the HVV tariff zone together with an entertainment programme on these Sundays is planned within the scope of a wide ranging publicity campaign aimed at persuading people to use the HVV. The measure will be primarily financed by Hamburg's public transportation services, will however generate additional expenditure to the sum of 200,000 euros in the 2008/2009 biennial budget.

### 4. Please describe how the above issues can be documented should your city be short listed for participation in the second phase of the evaluation (Documentation should not be forwarded in this phase) (max 600 words):

- Strategy for Promoting Bicycle Traffic in Hamburg, Hamburg Parliament document 18/7662, see attachment "bicycle traffic"
- Hamburg Parliament document "bicycle hire system", see attachment "bicycle hire system"
- infas first interim report MiD February 2002, see attachments "MiD 2002" and "MiD interim report 2008"
- Coalition Agreement of Hamburg's governing parties for the current 19<sup>th</sup> legislature period, see attachment "coalition agreement"
- Annual reports of the public transportation companies, see paper attachments 1-5
- HVV - brochure, se "attachment hvv"
- Map "Hamburg's Cycle Routes" (Hamburgs Fahrradrouen), 2004, see paper attachment 6
- Hamburg's Strategy for Climate Protection (Klimaschutzkonzept Hamburg), see attachment "Climate Protection Strategy"
- "Hamburger Verkehrsverbund HVV" (Hamburg Transport Association): Changes in demand are observed by means of passenger counts and surveys. Both automatic, continuous counts using automatic passenger counting systems and manual data gathering by personnel are

carried out. An exact analysis of turnover is also carried out as an additional measuring method. In the case of special or locally limited measures, market research is carried out to establish the exact degree of success.