

Urban Transport Benchmarking Initiative

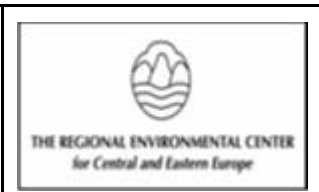


Annex A6.2

Public Transport Organisation and Policy

Site Visits and Case Studies

July 2004



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by



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1 Site Visits

The following descriptions relate to the cities visited by the working group during year one of the Urban Transport Benchmarking Initiative.

1.1 First site visit: Valencia

Overview

The first site visit of the Public Transport Organisation and Policy working group was hosted by the Generalitat Valenciana. It provided insight into Valencia's public transport system and, in particular, its metro network.

Public transport in Valencia

The public transport system of the metropolitan area of Valencia consists of four elements:

- urban buses in Valencia (EMT) ;
- interurban bus services (Metrobus);
- a metro/light-rail network (Metro Valencia);
- sub-urban and regional railways (RENFE, Cercanias).

Metro network

The network of Metro Valencia has a total length of 130 km, 17 of which are underground. A total of 88 stations are situated in surface and 18 are underground. The most recent development is the

Figure 1.1: The Valencia metro network



new section of Line 5, which stretches between el Paseo de la Alameda and the Ayora gardens, with a total length of 2,3km. This is illustrated by figure 1.1.

The site visit started at the Ferrocarrils de la Generalitat Valenciana office (the public company operating the metro and tramway lines in Valencia and Alicante) with a tour of the metro control system facilities and a presentation of recent developments.

From there, the group used the metro and visited a number of stations: Colón, which is in the centre of the city and still has some remains of the ancient roman wall of the city, Benimaclet, which is an interchange point with the tramway leading to the sea-side and one of the Universities in Valencia,

Figure 1.2: Aragón station



Aragón, which is a brand new station, which was finished last May and Alameda, which is very interesting from an architectural point of view.

The design of the Aragón station is similar to that of the two other stations of the new section of Line 5. These stations are situated just under the surface which makes them of easy access to the passengers. They consist of two levels, one inferior with two parallel platforms, one superior with a large area on each side of the station. These areas are designed as open spaces with no central element so that the whole station can be seen from there. One of these areas is equipped with lifts for people with reduced mobility: one connected to the surface, and two leading to the platforms.

1.2 Second site visit: Copenhagen

Overview

For its second site visit, the Public Transport Organisation and Policy working group was hosted by the Greater Copenhagen Authority which co-ordinates public transport in the Greater Copenhagen Region. The site visit provided information on:

- the organisation of public transport, in particular the tendering of bus services, modal integration, and fare integration;
- the operation and the financing of Copenhagen's metro.

Organisation of public transport

The Greater Copenhagen Authority (HUR) was established in 2000 with competence not only for public transport but also regional planning, traffic planning, Oresund co-ordination and development, industrial policy, tourism and culture.

All bus and local rail services in the Greater Copenhagen region are the responsibility of HUR. As far as bus services are concerned, HUR determines the schedules and fares, sets standards for quality, service, and the design of the buses. HUR receives all bus fare revenue from the customers, subsidies from the five public owners (counties and cities which constitute the Greater Copenhagen Region) and pays the operators for their operations, regardless of the number of customers using the individual route. HUR is responsible for route planning but this is carried out in detail in co-operation with the operators. The operators provide the buses according to the standards stated in their contract.

Tendering of bus services

Bus services are subject to tender and are run by private operators. Packages of routes are tendered on gross cost contracts to about 10 operators, ranging from small local bus companies to large international firms. Contracts endure normally around five years.

HUR has set up a number of objectives for the tendering process. A primary objective is to choose the best and cheapest bid. Bids are assessed according to various criteria which are part of a value analysis model. This model takes a number of soft parameters into account in the assessment of the contract. It allows the operators a higher price for their contract if they have, for instance, a modern bus fleet.

Copenhagen initiated the use of customer surveys as the basis for an incentive programme for bus operators. Each year, 30.000 randomly selected customers are asked to rate bus services on the basis of several criteria. These quality surveys form the basis of a ranking of operators, according to which a quality bonus will be paid.

According to HUR, competition has led to declining prices for bus operations and has enabled to set higher standards for bus services, such as better customer information, easier access for people with reduced mobility and senior citizens, and greater passenger comfort.

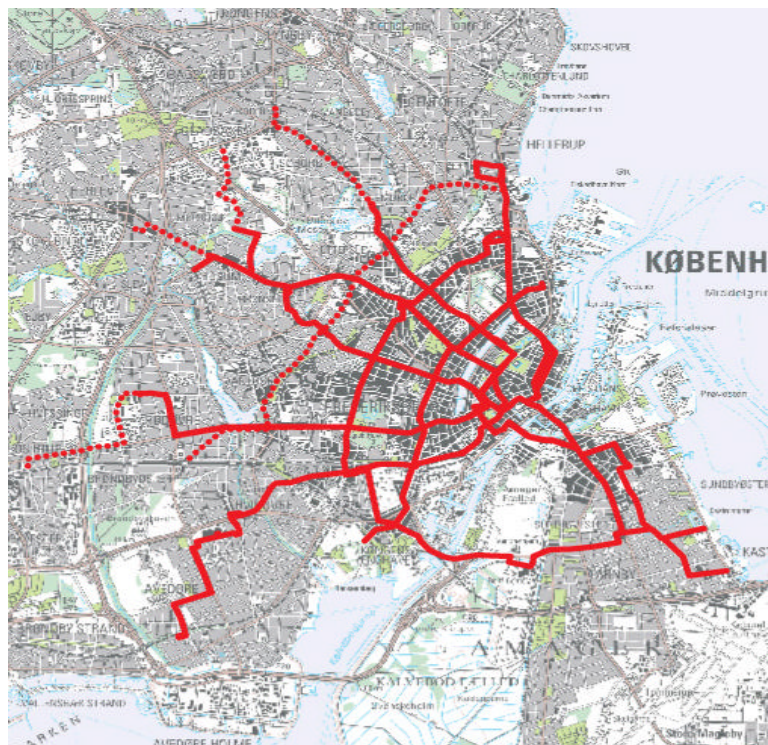
Modal integration

HUR has implemented a combination of measures aiming to facilitate intermodal travel:

- development of traffic terminals (train, bus, car, bicycle): optimal change facilities, accessibility and services;
- co-ordination of public transport services (metro, commuter trains, local trains, bus lines);
- co-ordination of public and private transport (Park & Ride facilities);
- provision of traffic information (minimum waiting time – fixed departure time).

As an example of public transport integration, HUR introduced two years ago a new type of bus service in Copenhagen: the A-buses. This initiative aimed to foster integration between trains, buses and the newly-built metro. A five-minute bus service now operates on six routes in the city centre with excellent connections to train and metro stations.

Figure 1.3: The A-bus network



Fare integration

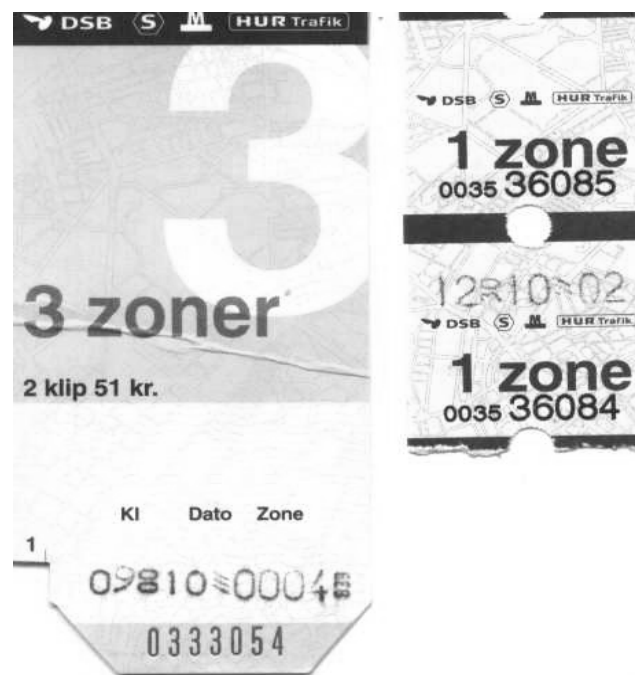
HUR is the fare-deciding authority of the region and the HUR council makes decisions subsequent to a hearing of other involved parties. All revenues collected by the three public transport authorities of the region (HUR, DSB – for regional railways, and Orestad Development Corporation – for the Metro) is a posteriori re-allocated according to the revenue distribution model.

The fare depends on the distance travelled according to a zone system (95 zones in total). The basic idea of the system is that the customer should not be bothered by the fact that a number of authorities work 'behind the curtain' to provide public transport.

Tickets can be purchased from ticket offices at stations, vending machines, or from bus drivers. Tickets are stamped with time, date and departure zone. The passenger pays for the number of zones needed, but the minimum is two zones and the maximum is seven zones. Interchanges between all modes are allowed within a given time frame.

To be able to allocate the common revenue between DSB, Orestad Development Corporation and HUR, all customers are regularly counted. Counts determine which types of tickets have been used. On this basis, the average trip price for each travel mode, including multi-modal trips, is calculated. The revenue is then re-allocated to the three authorities on the basis of the average trip price and the number of trips made.

Figure 1.4: Integrated tickets used during the Copenhagen visit



It is planned to replace the existing ticket system by a smart card. The customer will no longer have to be aware of the fare system or the distance travelled since the fare will be automatically calculated on the basis of the distance between points of departure and arrival.

Copenhagen metro

The second phase of the development of the metro was completed in 2003. The network currently covers the city centre of Copenhagen, Frederiksberg and the new town of Orestad. The metro runs on embankment, elevated track or on street level for 11 km, and in tunnels for the remaining 10 km.

A trip along the metro network provided insights into its specific features.

Station Design

Of a total of nine underground stations, three lie just under street level, while the remaining six are deep underground stations. The deep underground stations lie in an excavation of 20 metres deep, 60 metres long, and 20 metres wide. These underground stations have a large open space from the platform up to the pyramid shaped top, giving a well lit and unobstructed view of the station area.

Figure 1.5 and 1.6: Using the Copenhagen Metro



Automation

The Copenhagen Metro is a fully automated driverless system. Trains are monitored by cameras. Trains and stations are manned with metro stewards who provide necessary information and service to the passengers.

Travel information

On-street displays provide real-time information that enable passenger to better plan their activities. Given the high frequencies during day-time, this information is mostly useful during the evening and the night.

Figure 1.7 and 1.8: Real time information and construction work in Copenhagen

Intermodal travel

All stations offer good facilities for bicycle parking and enable bicycle access. At the Ørestad station, the metro links up with regional and international trains, and a Park & Ride facility has been established.

Financing

The Ørestad Development Corporation was established with the double task to develop the Ørestad area and to build a metro in Copenhagen. The area to be developed is about 600 metres wide and 5 km long, and is situated about 2 km from the city centre of Copenhagen.

The creation of the Ørestad Development Corporation was based on the following principles:

- undeveloped land was given to the Ørestad Development Corporation;
- the company could take up loans for building the Copenhagen metro;
- the metro would raise the value of land;
- the Ørestad Development Corporation would develop/sell land and pay back loans.

The total cost of the project - building the metro and preparing the Ørestad for development – is estimated at 1.5 bn Euro. The cost should be met by selling the land (50 %), direct payments from the owners not contributing land themselves (10 %), in lieu payments of real estate taxes (10%), and operation profit from the Metro (30%).

It is estimated that the Metro will be free of debt after 30 years.

1.3 Third site visit: Dublin and Liverpool

Dublin - Overview

The site visit consisted in a trip along Stillorgan Road's Quality Bus Corridor (QBC) during the morning peak. This ride along one of Dublin's main access road provided insight into the characteristics, the functioning and the effects of Dublin's QBC scheme.

Implementing bus lanes

One key advantage of the QBC scheme is that buses are taken out of congestion blackspots during peak periods. Along dual carriageways, the bus lane was built in place of the hard shoulder, whereas along single carriage roads were squeezed to accommodate the bus lane. Bus lanes are about 3 metre wide. The implementation of the lanes was accompanied by the redesign of junction as well as a number of traffic management measures (eg. ban on many right hand turns).

Figure 1.8: The Quality Bus Corridor during morning peak



QBC in operation: some key figures

- QBC's allow people to reach the city centre from the suburbs in 30 minutes during the morning peak (compared to 75 minutes by car).
- The bus frequency is very high: one bus every minute during peak time.
- Prepaid fare can work out as low as 1 EURO per trip.
- The cost of developing one kilometre of QBC is 500.000 EUR (to be compared to rail-based solutions).
- A single QBC carries over 3500 passengers/hours during peak time.

An integrated approach

The development of the bus lanes went together with further improvements of the service to passengers (wide range of prepaid tickets, shelters at stops, renewal of fleet, low floor access, etc.) Additional measures include the development of supplementary car parks in the outskirts the the city and the development of a cycling network, including bicycle shelters.

The site visit also illustrated the challenge of integrating the forthcoming LUAS tramway lines with the existing bus network.

Liverpool - Overview

The visit to Liverpool provided the opportunity to see how public transport operates in practice in a deregulated environment, and what the task of Merseytravel, as a public transport authority and executive, is.

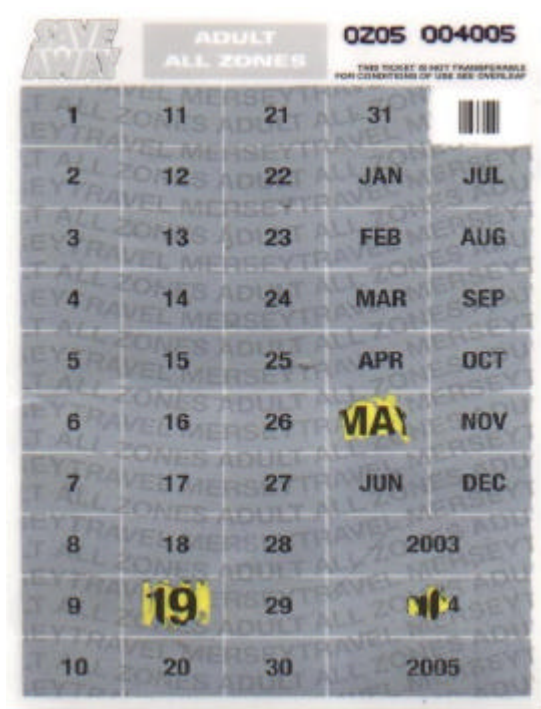
Merseytravel

Merseytravel is involved in the implementation of Liverpool's Local Transport Plan, which foresees notably the development of 15 QBCs, station improvements, the development of interchanges, P&R facilities, and the Merseytram Line 1 between Liverpool and Kirkby. Special efforts are devoted to 'get' people back to the city centre and to help them reach their place of work more easily. Merseytravel is also involved in the Best Value programme, which consists of a commitment by public authorities to deliver the right services at a reasonable cost to the right level of quality. The Best Value programme includes regular performance assessment exercises.

Ticket and information integration

The visit through the network (underground, bus, ferry) provided insights into the level of integration. As far as ticketing is concerned, Merseytravel has co-ordinated the development of integrated season tickets which are available on all modes and all operators. Merseytravel has also co-ordinated the integration of travel information and achieved high standards in that respect. Figure 1.9 (overleaf) illustrates the save-away tickets available in Merseyside.

Figure 1.9: Save-away ticket used during the visit



Station management

The visit of the control centre of one of Liverpool’s largest bus station shown the range of measures implemented in order to co-ordinate the simultaneous operation of buses from competing companies, and to improve the quality, the efficiency and the safety of service to the customer.