

Urban Transport Benchmarking Initiative Year Two



Annex A2.1

Behavioural & Social Issues in Public Transport Working Group

Annex to final report

July 2005



THE REGIONAL ENVIRONMENTAL CENTER
for Central and Eastern Europe

Annex A2.1

Behavioural & Social Issues in Public Transport

Annex to final report

Prepared for

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Directorate General for
Energy and Transport

by



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1. INTRODUCTION

This document represents annex A2.1 of the Urban Transport Benchmarking Initiative's year two final reports and contains information in support of the final report of the Behavioural and Social Issues in Public Transport working group.

Section 2 of this annex contains the data guides from years one and two of the Behavioural and Social Issues in Public Transport working group, which participants received to assist them in the collection of the thematic indicators, and contains full definitions for all of the indicators collected. Section 3 contains summaries of the interesting practices observed at the working group's two site visits which took place in Paris, Brescia and Bologna during year two of the Urban Transport Benchmarking Initiative.

2. DATA GUIDE FROM YEAR TWO

This section of the annex was taken from the data collection guide circulated to participants in the working group in order to assist with the collection of the data collected for the second year of the project. As well as providing the participants with an in depth record of the indicators agreed for collection during the working group's second round of benchmarking the guide included answers to frequently asked questions regarding the benchmarking process. The main guidelines for the collection of data are outlined below and the remainder of section outlines the definitions of the indicators collected by the group.

Guidelines

- The project team acknowledges that the definitions and collection methods used to obtain data are certain to vary between cities. It is therefore very important that where pre-existing definitions for data indicators are used (as opposed to those stated in this document) the cities define what the figures mean; otherwise the data collected will be of no use.
- The recommended study year for the Urban Transport Benchmarking Initiative's second year is 2003, which will provide an update on the first year of the study. It is recognised that cities will have varying levels of data; where data are not available for 2003 please supply data for the nearest year data is available for. As before this does not matter as long as what the figures represent is clearly defined. Please provide time series data where it is available and state which year each figure applies to. In every case where the data refers to a year other than the elected study year (2003) please state the year the specific data refers to.
- In this document the study areas have been loosely defined because it is recognised that each city will have data relating to varying geographical areas. All that matters is that the data is locally defined and consistently relates to the same area throughout the study.
- Please enter the data that corresponds to each of the indicators into the data collection form which is presented in an MS Excel spreadsheet.
- If there are any questions concerning the availability of an indicator or if any clarification is required please contact the working group rapporteur by e-mail at: neil.taylor@ttr-ltd.com.

a) Background Indicators**Market Share of Public Transport**

This is the percentage of *all trips* that are made using *all public transport modes* in the urban administrative area. This can be calculated from the data given for the common indicators and can be obtained from regional data as long as this is clearly stated on the form.

Public Transport Patronage

There are two indicators that apply to this section:

Season Pass Trips

This refers to the percentage of all public transport trips that are made using season passes over the course of one year. Season passes are defined in two ways and data should be collected for each definition. A monthly season pass is a ticket valid for travel on all public transport modes for one month. An annual season pass is a ticket valid for travel on all public transport modes for one year.

Season Pass Ownership

This indicator is the percentage of the urban administrative area's population that own an annual season pass. This can be calculated by dividing the population of the urban administrative area in 2002 (or nearest year) by the number of annual season tickets sold (in the same year for which population data is available). In addition please provide data for the percentage of the urban administrative area's population that own a monthly season pass.

Development of the Market

This section looks at the changes in the background indicators over time:

Change in public transport market share

This is the change in indicator 1.1 over a ten year period. If data is not available for a ten year period then please state the nearest possible period. This data is already displayed as a percentage so please state the percentage share at intervals 1 and 2:

For example

1992: 55% 2002: 75%

Change in Season Pass Trips

This is the change in indicator 1.2.1 over a ten year period. If data is not available for a ten year period then please state the nearest possible period. This data is already displayed as a percentage so please state the percentage share at intervals 1 and 2:

For example

1992: 55% 2002: 75%

Change in Season Pass Ownership

This is the change in indicator 1.2.2 over a ten year period. If data is not available for a ten year period then please state the nearest possible period. This data is already displayed as a percentage so please state the percentage share at intervals 1 and 2:

For example

1992: 55% 2002: 75%

b) Knowing The Market

Population structure

The indicators in this section look at the age and employment structure of the population in the city:

Age structure of population

Please state the age structure of the population in the urban administrative area. It is appreciated that each city is likely to have its own method of breaking down the population so there is no strict requirement here. An example below outlines how to present the data:

0-17: 3%	41-60: 28%
18-25: 7%	61-75: 21%
26-40: 22%	75+: 19%

Employment structure of population

Please state the employment structure of the population in the urban administrative area. As before, each city is likely to have its own way of segregating the employment categories, but below is a suggested example:

Full time employment: 56%	Part time employment: 14%
Retired: 12%	Student/Full time education: 8%
Unemployed: 8%	Other: 2%

Marketing Effort

The indicators in this section seek to determine the effort the city puts into marketing its public transport. Although it is acknowledged that for each city more than one organisation will be responsible for marketing public transport, please collect data for your own organisation as a minimum. Where possible please collect as much information as possible for each organisation responsible for the promotion of public transport (or the city as a whole) and state which organisation the figures presented relate to.

Marketing department

This indicator is a qualitative one and requires a yes/no answer to the following question:

“Is there a dedicated public transport marketing department in the city?”

Marketing employment

What percentage of total employees (full time positions or an equivalent) work in the marketing department?

Marketing budget

What percentage of the annual public transport budget is spent on marketing public transport?

Customer Satisfaction

These indicators seek to discover the extent to which customer satisfaction surveys are used by the cities in the group:

Last customer satisfaction survey

This indicator asks how many months it has been since the last customer satisfaction survey was undertaken.

Frequency of customer satisfaction survey

What is the interval in months between customer satisfaction surveys? If customer satisfaction surveys are continuously undertaken please state this too.

Overall customer satisfaction

Overall, what level of customer satisfaction has been achieved? Please state either qualitatively (e.g. the majority of travellers are dissatisfied with public transport) or where a scale is used please state the overall average response and show the scale used.

Passenger Comfort

This indicator asks for the average level of passenger comfort recorded in the customer satisfaction survey. As with indicator 2.3.3 please state the average response and the scale used for the question (where appropriate) or give a qualitative statement which reflects the majority of customers' opinions about passenger comfort as indicated by the customer satisfaction survey (e.g. very good, very poor etc).

Accessibility

This indicator asks for the average level of accessibility of public transport as recorded in the customer satisfaction survey. As with indicator 2.3.3 please state the average response and the scale used for the question (where appropriate) or give a qualitative statement which reflects the majority of customers' opinions about the accessibility of public transport as indicated by the customer satisfaction survey (e.g. very good, very poor etc).

Punctuality

This indicator asks for the average level of punctuality of public transport as recorded in the customer satisfaction survey. As with indicator 2.3.3 please state the average response and the scale used for the question (where appropriate) or give a qualitative statement which reflects the majority of customer's opinions about the punctuality of public transport as indicated by the customer satisfaction survey (e.g. very good, very poor etc).

Security

This indicator asks for the average level of security of public transport as recorded in the customer satisfaction survey. As with indicator 2.3.3 please state the average response and the scale used for the question (where appropriate) or give a qualitative statement which reflects the majority of customer's opinions about the security of public transport as indicated by the customer satisfaction survey (e.g. very good, very poor etc).

Trip Purpose

This indicator requests information about the distribution of trip purposes for public transport. It is recognised that trip purposes will vary between cities and therefore no example has been given. Please also state the year that the trip purpose data was collected for.

c) Products and Services

Products and services offered

The indicators in this section are concerned with the range of public transport products and services that each city offers.

Inventory of public transport products and services

This is a qualitative description of the range of products and services available. This should include the range of ticket types, the public transport modes operated, the total length (in km) of bus, tram, train, metro and tram networks in the urban administrative area (see common indicators), special offers, local initiatives, combined ticket offers and anything else available under the public transport service. Where necessary the responses for this indicator can be submitted in a separate document. Please give brief descriptions of each of the products/services offered.

Public transport stops

For this indicator please state the number of public transport stops in the urban administrative area and if possible show the number of stops for each transport mode.

Peak hour service interval

Please state the peak hour service interval for each mode of public transport in the urban administrative area. The peak hour is defined as the busiest daily transport hour and is often between 08:00 and 09:00 in the morning or between 17:00 and 18:00 in the evening.

Integrated timetables

This indicator seeks to discover whether an integrated timetable is available for passengers. If an integrated timetable is available then please state which public transport modes are included.

Park and Ride & Bike and Ride

This indicator looks at the number of Park and Ride and Bike and Ride spaces provided in the urban administrative area. Some respondents may not have data for the number of bike and ride spaces, but everyone in the group should be able to provide park and ride information.

Fares and Ticketing

This section considers the range of tickets and fare types offered for use on public transport in the urban administrative area.

Fare structure

Please give details of the range of different tickets and fares available for use on public transport in the urban administrative area. Prices should be displayed in Euros.

Concessionary fares

This indicator requests information about the concessionary fares that are available on public transport in the urban administrative area. Please state the range of concessions and the percentage discount offered on a standard fare.

Ticket sales

Please state the breakdown of ticket sales for public transport in the urban administrative area. For example:

Annual Season tickets: 33%	Young person concessions: 10%
Senior Citizens concessions: 12%	Standard single fares: 13%
Weekly travel pass: 8%	Monthly travel pass: 14%

Change in season ticket sales

This indicator requires the percentage change in sales of annual season tickets over the last ten years. If possible data should be displayed as the percentage change between 1992 and 2002.

Integrated ticketing

Please state whether an integrated ticketing system is currently in place in the city and, if it is, please describe which public transport modes are incorporated into the system and how many operators are included. If there are any future plans to implement or extend an existing integrated ticketing scheme then please give details about this too.

Smart Cards

Are smart cards and other hi tech forms of cashless ticketing available to public transport users? If yes then please give details of the number of smart cards that were in circulation in 2002. How many operators are covered by the smart cards? Please also describe the mechanism/type of smartcard (e.g. contactless).

Combined tickets and other special offer tickets

Please state whether combined tickets are available which incorporate the public transport journey to a theme park, museum, theatre or other event/site of interest. If they are available in your city please state the number of combined tickets that were sold in 2002.

d) Communication

Public Transport Information

The indicators in this section look at the extent of public transport information that is made available to the customers.

Integrated public transport information

Is public transport information available from one source for: 1) all public transport operators, 2) the whole metropolitan area, 3) all different transport modes in the metropolitan area and, 4) transport services for tourists.

Information media available

This indicator requires a description of the different types of information media which can be accessed by public transport users. An example is given below:

Website: Journey planning, timetables, ticket information, accessibility information.

Call centre: Number of operators, information provided.

Customer travel centre: Number of locations, information provided, covers all operators/only one operator.

Public transport call centre

Please give details of the number of calls made to the public transport call centre for the year 2002.

Public transport website

This indicator poses several questions:

Is there a public transport website (please respond yes or no)?

If yes, how many "hits" per year does it receive?

Does it include a journey planner function?

What percentage of website users used the journey planner?

Language availability

In which languages is public transport information available at the call centre, on the website and in the customer travel centre?

Real time public transport information

What percentage of stops and stations in the urban administrative area are equipped to provide real time travel information on visual display boards?

Public transport complaints

How many public transport-related complaints were received in 2002?

Response to complaints

What is the standard response time when dealing with complaints?

Promotion and Education

These indicators are concerned with the promotional and educational aspects of public transport in an attempt to look at the efforts being made to promote public transport to potential users.

Promotion of public transport

This indicator requires the number of visits made to schools or companies in 2002 in order to try and raise awareness of public transport.

Classroom materials

This question requires a yes or no answer to explain whether classroom materials are available for schools. If they are then please give a brief description of the information provided.

Partnerships

Are the city authorities or local public transport operators actively seeking to develop partnerships with major traffic generators located in the urban administrative area? (Please respond Yes or No). If they are then please give details of the type of partnerships being established and the number of schemes that were set up in 2002.

3. GOOD PRACTICE CASE STUDIES FROM SITE VISITS

3.1 Paris, December 2nd and 3rd 2004

The Paris site visits took place on the afternoon of Thursday, December 2nd 2004 and involved trips to:

- The major public transport interchange at La Défense.
- The fully automated Metro Line 14 and its control room.
- The information call centre for Infomobi, a call centre dedicated to people with reduced mobility.

In addition to the site visits, the group received a presentation from Isabelle Bachmann about the loyalty programmes operated by RATP. The remainder of this section of the report outlines the site visits and presentations received

Site Visit 1: La Défense

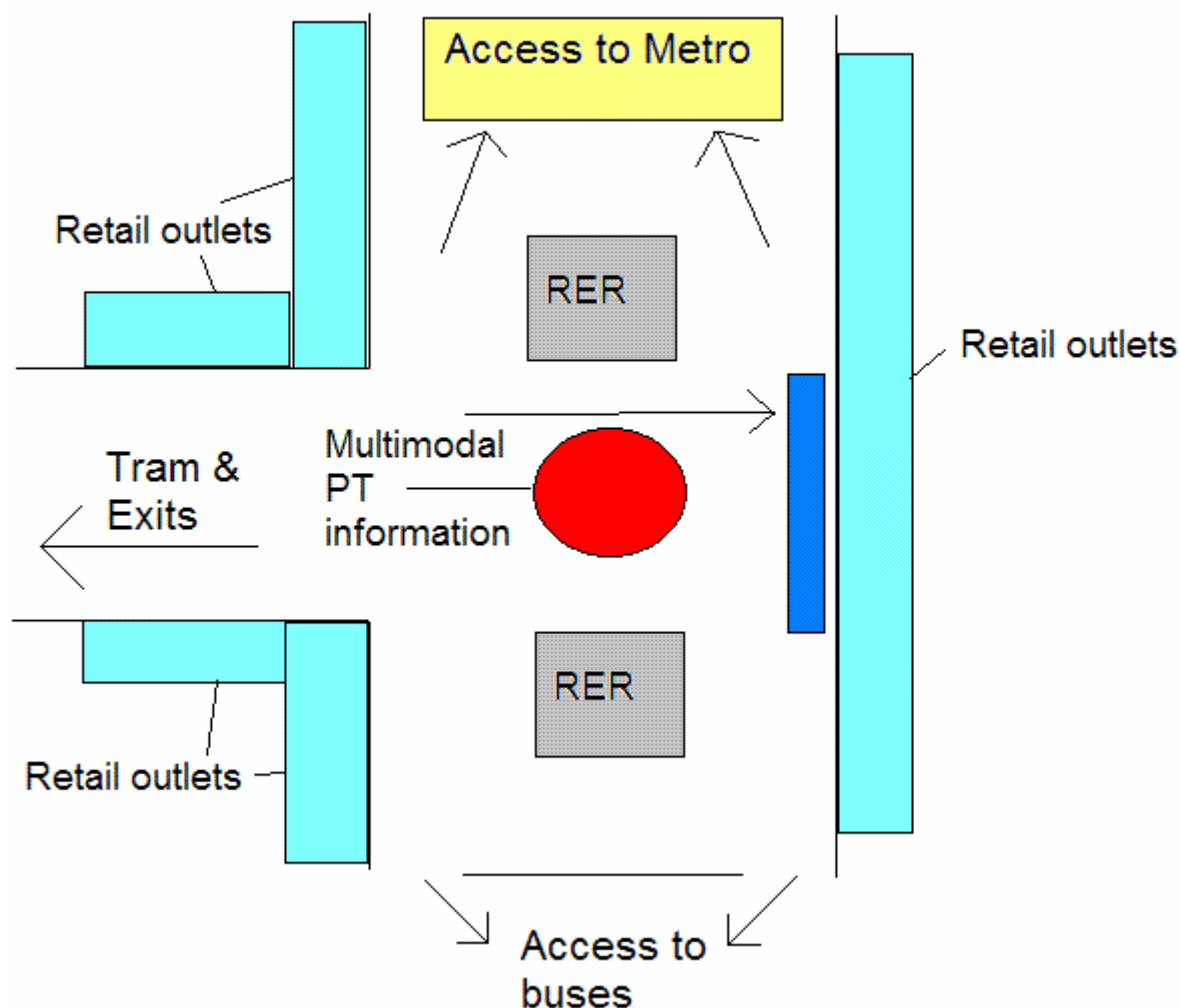
The working group visited the multimodal public transport interchange at La Défense which, along with the station at Châtelet, is one of the busiest interchanges in Paris. The interchange handles approximately 450,000 people per day, many of whom are commuters accessing the modern commercial centre of La Défense, while others use the station as a point of access to the city of Paris and its public transport network. The station links bus services with RER line A, Metro line 1 and Tram route 2 and also serves the tourist demand, being the closest station to “la Grande Arche”.

One of the interesting aspects of the interchange at La Défense is that the space is shared between the public transport infrastructure and retail outlets. The main concourse is set out as a tunnel, with the space at the sides being devoted to retail activity, and access to the RER and metro network in the centre (see figures 3.1 and 3.2).

Figure 3.1: The concourse area at La Défense



Figure 3.2: Diagram of main concourse at La Défense



As shown in figure 3.2, the information provided for travellers at La Défense interchange is multimodal. The real-time departures for all modes are visually displayed by the departure board on the concourse wall (see figure 3.3) and this includes buses as well as metro, tram and RER. In addition to this the integrated information centre, located in the middle of the concourse, is staffed by employees from RATP, SNCF and OPTILE (the group of independent bus operators in Paris), see figure 3.4. As a result information is available for all modes of transport within central Paris, irrespective of the operator that serves the route. This avoids the need for three different information kiosks (i.e. one per set of operators) and emphasis has been placed on de-branding the provision of public transport information in order that the service offered is of greatest benefit to passengers. This approach follows the logic that a person is not necessarily interested in who operates their service, but they are interested in being able to access relevant public transport information.

Figure 3.3: Multimodal departure board at La Défense interchange



Figure 3.4: Multimodal information centre at La Défense interchange



As well as visiting the information centre the group saw the bus loading areas of the interchange. These have been integrated within the main station, in the manner of an airport terminal, in order to make access to the buses much safer. Figure 3.5 illustrates how the buses are incorporated into the main terminal in order to prevent the need for passengers to cross roads or encounter any road traffic. This greatly improves the loading and unloading of buses and improves the image of using the bus, because you no longer have to go “outside” to wait in the cold or rain for the bus; it is actually accessed within the interchange. In addition, the bus departures are all visibly displayed in real time by each of the gates (see figure 3.6) which further enhances the user friendly nature of the bus.

Figure 3.5: Gated access to the buses at La Défense



Figure 3.6: Real time bus information in the bus terminal at La Défense



Finally, the working group visited the CCTV observation centre at La Défense interchange, where they were briefed about the function of the observation room and the role the emergency team plays in being able to respond quickly to any incidents.

Site Visit 2: Metro line 14

The second site visit in Paris involved a trip from Gare de Lyon to Bercy on the fully automated metro line 14, the newest metro line in Paris and the first new metro line to be built for 60 years. Opened in 1998 and completed to its current level in 2003, the line is also the first in the city which is driverless in its operation and controlled remotely by computer. The fact that there are no drivers

means that a greater frequency of service can be provided, with the headway between services being as low as 1 minute. The lack of drivers also makes it possible for the platforms to be shielded from the arriving and departing trains, with an additional set of doors preventing people and objects from falling onto the track between the platform edge and the train. This greatly improves the operational reliability of the services. The doors are illustrated in figure 3.7:

Figure 3.7: The metro line 14 station at Gare de Lyon



The fact that the metro line is entirely new means that all of the stations are very modern, with next train/second train real time information on all platforms. Many of the stations have been designed to provide an architectural interest too. There are plans to extend the existing line 14 to increase the congestion-relieving effect it has had upon metro line 1 and the RER line A in central Paris.

RATP is also investigating the feasibility of upgrading the existing lines in order to widen the scope of driverless operation and fully automated metro systems to the city's "classic" lines. The main issues with such an approach are the need to overcome technical difficulties which relate to the application of automated technologies with older rolling stock and also the potential labour issues with drivers who may feel they are being displaced as a result of increased automation. A potential method of automating the existing network is to remove the number of lines which have branches to them (such as line 13) by segregating the lines into two and automating both of them.

The final part of this site visit was spent at the control room for metro line 14, where the group learned how as few as two people could operate the line, although on a normal day there are four operators in the room.

Site Visit 3: Infomobi call centre

The final site visit on Thursday December 2nd was to the call centre for the Infomobi service, which is a telephone/e-mail/website information service for people with reduced mobility living in the Ile de France region (see www.infomobi.com). The service is reasonably new and is still being improved, but nonetheless already handles approximately 340 calls per month. The group was given a useful demonstration about how the call centre operators worked and how they would handle calls in order to help someone plan their route. The operators at the call centre also demonstrated how they were able to give detailed information of walking distances, lift locations and where people could seek assistance during their journey. One of the most important outcomes of the scheme is that disabled travellers are empowered to travel by public transport in Paris through better knowledge. The scope of Infomobi is such that it can provide up-to-date service information about elevators in a specific station, which is reassuring for wheelchair users to know before they travel.

One of the current drawbacks for the users of this system is that they cannot book demand responsive systems at the same time as they are requesting public transport information. As a result the callers have to be transferred to the demand responsive transport operators, or re-dial the number. This is seen as a barrier which deters people from using the service and one of the aims for the near future is to provide an integrated service in terms of handling bookings for the demand responsive transport service.

Presentation of “IMAGIN R” loyalty programme for young travellers

On Friday December 3rd 2004, the group received a presentation about the loyalty programme Imagin R’ which has been set up by the public transport operators in Paris, primarily RATP. The presentation focused specifically on the concessions offered to younger people in Paris and as a result of the loyalty programme. Prior to Imagin R’, which was introduced in 1998, there was no public transport fare package for younger people in Paris. As a result this scheme is the first to offer younger people discounted travel (between 30% and 50% reduction) in the city of Paris and this is possible due to the support the scheme receives from STIF, the Region Ile de France and surrounding Départements. The scheme was one of the first integrated tickets to be introduced in the Ile de France region and it permits young people to benefit from the discounted fares during the week and at weekends, irrespective of the zones they travel in.

The scheme is aimed at two key groups; juniors (aged 12-26) and majors (aged 26+) and the core target group is the 900,00 people aged 10-25 that live in Paris. The mission statement for Imagin R’ is “We can help you go further during your free time” and the success of the scheme can be measured by the 75% penetration rate of the core market (680,000 card holders). This success has partially been attributed to the effort that has gone in to branding public transport to make it attractive for younger people. This has been achieved through positive advertising, focusing on full mobility, living life to the full and making people happy, which has been coupled to attractive offers and good deals. These have included promotional ties between RATP and partners such as cinema chains, McDonalds, clothes retailers and Euro Disney. Offers like these, and the publicity generated by the advertising, support one of the core themes based around respect for the Imagin R’ brand.

If the Imagin R’ brand continues to be perceived as “cool” the logic is that the healthy following already established among young people will be maintained. In order to maintain the freshness of

the product, RATP seeks to improve *Imagin R'* for its users on an annual basis. In addition to this the *Imagin R'* website (<http://www.imagine-r.com>) is used to advertise short term offers and events. One of the current aims for the development of the scheme is for RATP to further utilise the database of young people that they have developed in order to address and improve perceptions of public transport, as well as engage younger people in public transport issues. In part this has already been realised through the “Integrale” scheme, which focuses on people aged 26 and over who have been used to the promotions and reductions offered by *Imagin R'*. The aim is to keep people interested in public transport after the age of 26, because there is a perception that once people no longer qualify for the reduced fares and promotional offers they stop using public transport.

3.2 Brescia, March 14th and 15th 2005

The site visit to Brescia was jointly attended by the Behavioural and Social Issues in Public Transport and the Cycling working groups. The site visit was made possible by a number of individuals and organisations from Brescia including:

- Maurizio Tira and Chiara Bresciani of the University of Brescia
- Claudio Bresciani and Valeria Ventura of the Municipality of Brescia
- The Managing Director, Andrea Mazza and other staff at Brescia Mobilita
- The Deputy Mayor for Brescia (Transport and Environment)

The two working groups were welcomed by the Deputy Mayor of Brescia (Transport and Environment) and the Managing Director of Brescia Mobilita. Two presentations were then given to the cities on the topics of cycling policies/plans in Brescia and the planned transport projects/facilities in Brescia.

The Brescia technical visit took place on the afternoon of Monday March 14th 2005 and involved a cycling tour of the old town and the southern area of the city. The following sites of interest were visited:

- The cycle routes through central Brescia and the old town area of the city.
- The “LAM” High Mobility lines which are segregated urban bus lanes being constructed on the most heavily congested routes in the city.
- The pedi-bus routes through the southern areas of the city which offer a safe, traffic free route to school for children.
- Cycle parking infrastructure at numerous local sites of interest and at one workplace in the city

Presentation on Cycling Policies and Plans in Brescia

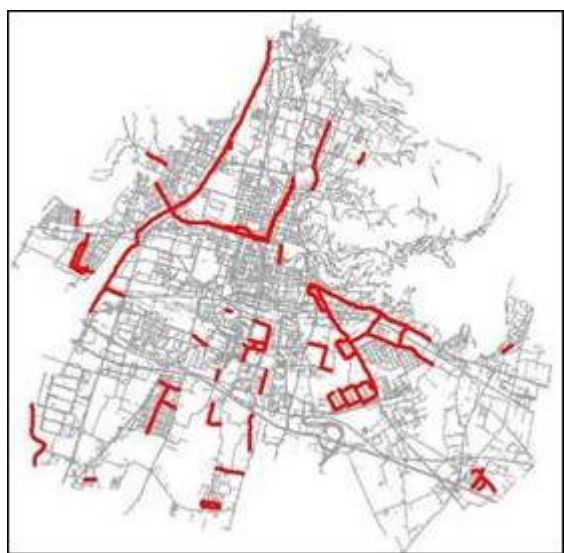
This presentation provided information on prevailing levels of cycling in the city, as well as various plans for improving cycling in the future.

The city of Brescia has nearly 200,000 people living in its administrative area and covers an area of over 90km². The city sits within the regional Province of Brescia which itself has a population of over 1 million inhabitants and covers an area of nearly 5,000 km².

Mode share of the bicycle is dwarfed by the private car according to recent statistics, but the Municipality has intentions to improve the situation in a number of key areas:

Infrastructure maintenance – annual inspection of cycle paths, including bicycles to be ridden on them.

Network extension – promotion of new cycle routes and connection with cycle tracks on rural roads and other parts of the province. The diagrams below show the cycle network length in 2001 (44km) alongside the intended 200km length for the future. At present the network is about 115km.

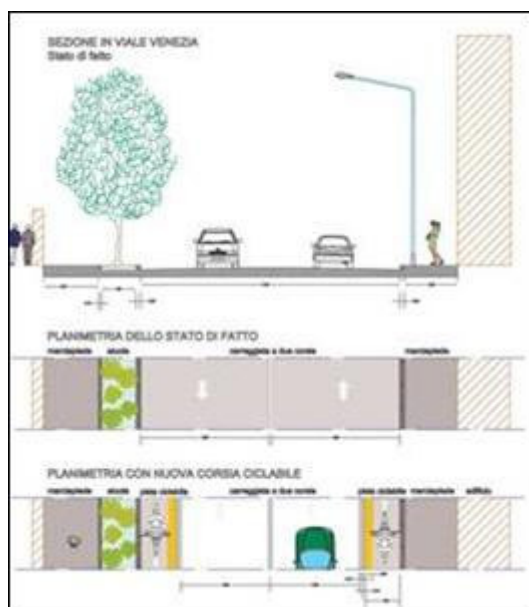


Cycle network (2001)



Cycle network (200X)

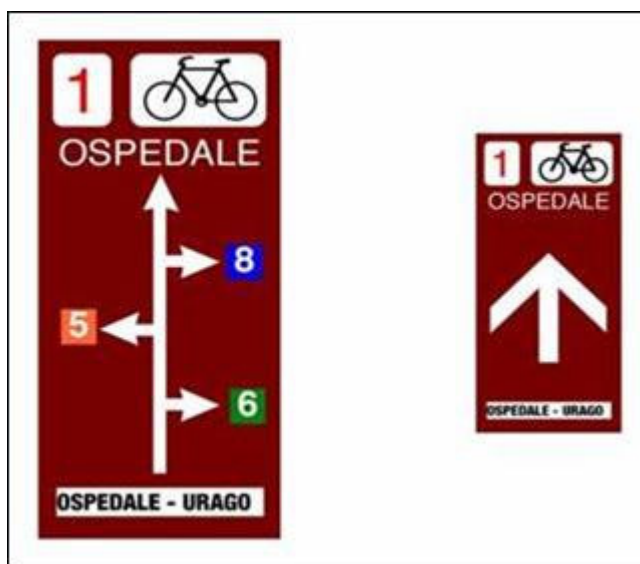
The diagram below gives one example of technical work undertaken by the Municipality to install space for cyclists.



Bicycle parking – improvements for parking at the train station and major bus stops. Integration of parking with historical areas.

Road safety – safer road layouts, black spot treatment (e.g. traffic calming and 30km/h zones), integrated safety management. A database is currently used to plot accident data on GIS maps.

Directional signage and cycle maps – planned in a closely co-ordinated process. The Municipality have carried out a project which aims to provide dedicated signage for cyclists according to FIAB (Italian Federation of Bicycle Friends). A cycle map (1:15,000) is also being produced which provides information on routes, repair shops and cyclist associations.



Information and campaigns – communication strategies for cycle training (e.g. teaching the health benefits of cycling, promotional days, cycle training for children). A CD-ROM has been produced which gives details of cycle network characteristics, the health benefits of cycling and recommendations for improving safety. This training tool is aimed at school children (aged 3 to 14 years) as part of their education on these issues.

Presentation on METROBUS and LAM

The groups were told about two major infrastructure projects taking place in the city. The first is called 'METROBUS' and is a 635 million Euro project to install a driverless 'light metro line' in the city. The project is due to open in 2011 and will include 13.1km of track and 17 stations. Much of the track will be located underground due to gradients in the area.

The technology is similar to the one operating in Copenhagen. It is hoped that the METROBUS will increase public transport passengers by 20-25% (there were 35 million public transport users in 2004).

The second project presented was called 'LAM', which is a rapid transit bus network due to be operational by 2006. Initially, two lines (LAM 1 and 2) will be built and will incorporate dedicated road space and traffic light priority in order to increase the commercial speed of the service. Other innovations include an integrated fare system with regional bus lines and real-time information at bus stops. It is hoped that LAM will increase public transport patronage by about 6%. The dedicated lanes for the LAM will also be available for cyclists to use and the network is being designed alongside the regeneration of ten urban areas in Brescia, which were previously dominated

by traffic. Plans for the future include an extension to the network (LAM 3) as well as feasibility studies that consider freight movement and more facilities for pedestrians.

The High Mobility Lines were observed on several occasions during the cycle tour of the city and some images of the sites visited, some of which are still under construction:



Cycle Tour of Brescia

The two working groups were taken on a bicycle tour of Brescia led by the Deputy Mayor. This allowed participants to gain a better understanding of the layout of the city, as well as observe a number of infrastructure features designed for cycling and walking. Some of these are detailed below.

The participants were able to undertake the tour using bicycles owned by the Municipality.



A bicycle storage facility was demonstrated which uses a key-card locking system for security.



Participants were taken to an area where children are involved in a scheme called 'Pedibus'. This is a walking bus initiative designed to co-ordinate safe and healthy travel to school. Markings are made on the path to display the route they take and signage promotes the concept.



Brescia has a variety of cycle route types, for example:

- One-way segregated cycle space next to the carriage way
- One-way segregated cycle space on-road
- Two-way cycle path in historic park area next to the carriage way

The pictures below demonstrate a city-bound route with good segregation (left) and also markings across junctions to encourage driver awareness of cycle routes (right).



3.3 Bologna, May 12th and 13th 2005

The final site visit of the Behavioural and Social Issues in Public Transport working group was organised by the representatives from the Emilia Romagna Region's Public Transport Agency and was held in the city of Bologna. The working group first received a presentation from Gustavo Minguzzi, before visiting the following sites of interest:

- The camera controlled bus access through Piazza Maggiore in the historic centre of Bologna
- Access control measures implemented in the city to enforce pedestrianised historic areas of the city
- Car sharing and preferential parking in the historic city centre of Bologna
- The gas-powered car fleet for use by Emilia Romagna Region employees
- Computer controlled traffic management and driver information services

Background Information –The Emilia Romagna Region's Transport Policies

The Emilia Romagna Regional Transport Agency is responsible for coordinating the public transport services in all of the nine provinces in the region. Each of the local mobility agencies in the provinces have to tender to the Emilia Romagna Regional authority in order to agree upon the public transport offer which will be provided during the tendering period (from 3 to 9 years), in accordance with the transport programme ("Accordi di Programma") established for the region. The region's bus and rail services are provided in this manner by 9 public operators and 46 private operators.

Since 2000 the train and bus modal share for trips in the region has shown a moderate increase, as have cycling-related trips, while the proportion of regional walking trips has significantly decreased. There has also been a small increase in the proportion of private car drivers and a much larger increase in the proportion of car passengers during the same period. Data collected at the regional level suggests that typically public transport users are students, housewives and retired people.

In order to encourage a more sustainable travel culture in the Emilia Romagna Region the regional authority has established "Operazione Liberiamo l'Aria" which is an air quality agreement signed by the 9 provinces and main cities. As part of this agreement measures such as the use of odd/even numbered licence plates to limit access on certain days of the week, a wide reaching mobility management policy and "Ecological Sundays" at least once a month where the use of public transport and sustainable modes.....?. In addition each household in the region has received an information booklet about how citizens can limit car use. The high levels of car ownership evident in the region (613 cars per 1000 population) partially explain why air quality and air pollution are major issues. The vast majority of citizens in the region (94%) recognise that smog and air pollution are a major concern for concern, but are quite reluctant to take ownership of the problems in their locality. The effect of the air quality agreement has been reductions in air pollution across the region and in some of the principal cities as well as increased use of public transport and decreased car use on the traffic restriction days (via the odd/even numbered licence plates).

The current measures being implemented across the region are; the widespread renewal of the public transport fleets, the development of a regional journey planner and the implementation of a contactless smart card system STIMER. As a result of these measures the average bus fleet age is

now 9 years and 40% of the fleet uses low emissions technology. An additional 27 multiple rail units have also been ordered to improve the regional rail vehicle fleet. The regional journey planner has enabled the rail timetables for the whole region and bus timetables for 5 provinces to be integrated and those for the remaining 4 provinces are due to be added during 2005. The journey planner performs multiple tasks since it allows the creation of timetables and is used by staff at the region's travel information call centre as well as the internet site: www.ferroviaer.it/travelplanner/index.php. STIMER will significantly simplify the fare offer for the users of public transport in the Emilia Romagna Region by presenting a choice of 3 fares for all public transport operators across 310 zones in the region, and the cost of public transport use will be directly related. The system is due to be rolled out across the region in June 2005 and has been used in a trial version in Modena since 1994.

The aim of the combination of demand management and public transport measures being implemented in the Emilia Romagna Region at the present time is to generate a long term virtuous cycle of public transport use in the region with consequent reductions in car use and improvements in air quality and health.

Camera Controlled Bus Access to the Piazza Maggiore, Bologna

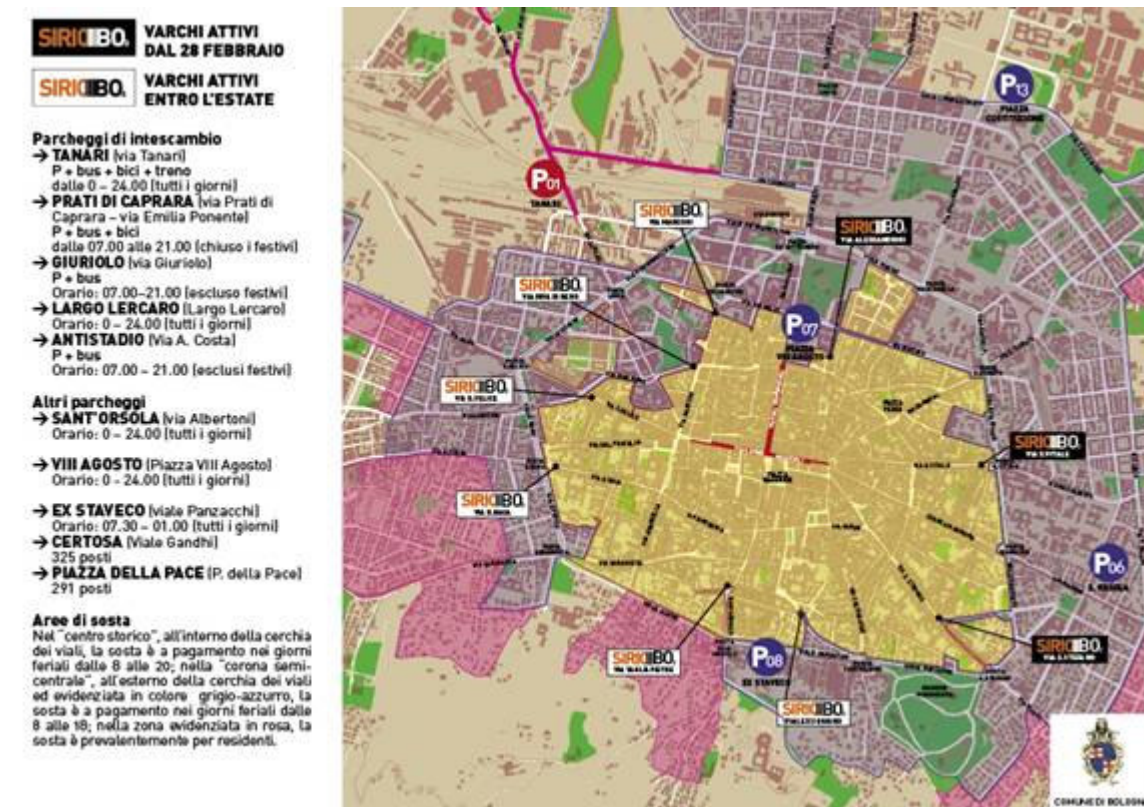
The first site of interest visited in Bologna was the Piazza Maggiore, which is located at the centre of the city's historic core. Until relatively recently the main square and a nearby "T-shaped" area of the city centre were open to all vehicular traffic, which created a significant problem with many cars weaving through the square as a short-cut across the city centre. The Piazza Maggiore was pedestrianised and a camera controlled bus priority scheme, operating 24 hours a day, was introduced to prevent vehicles other than specific buses from using the short-cut. The buses which operate the routes through the square have been specifically chosen as short wheelbase, natural gas powered vehicles which are less intrusive to the area and less damaging to the historic cobbled piazza and surrounding architecture.



The camera system is linked to the city's access control system "Sirio" which is described below and the introduction of the system has enabled the cross city bus service reliability to be greatly improved, as well as opened up the Piazza Maggiore to pedestrians to make it a pleasant, traffic free location. Vehicles passing through the square without the required electronic tag (detected by sensors beneath the road surface) are photographed by the cameras and subjected to a fine. The T-shaped area directly to the North of the Piazza Maggiore is also monitored by the 24 hour cameras which cover the Piazza in order that the main public transport intersection in the city centre is as free-flowing as possible.

Access control measures to protect pedestrianised areas of Bologna city centre

Complementing the bus priority scheme in the Piazza Maggiore, the historic centre of Bologna has also been designated a limited traffic zone to restrict private car access to the city centre to a limited number of permit holders. A total of 10 camera sites operate on key access routes to the historic centre which has created a cordon area designed to move private car traffic away from the central area of the city towards the inner ring road.



Approximately 600,000 permits have been granted in order to restrict access inside Bologna's historic city walls to public transport vehicles, residents and some employees. The limited traffic zone has been established in response to the high levels of private car use for urban trips in the city of Bologna, and an automated camera system, similar to that employed in the Piazza Maggiore, automatically cross-checks the licence plates of vehicles entering the city against the electronic database of permit holders. Those drivers entering the historic centre without a permit are automatically issued a fine by the system. There are currently plans to widen the area of the cordon by doubling the number of camera sites from 10 to 20 around the historic centre of Bologna in order to enable the development of a greater number of fully pedestrianised zones (the next target area being the university district).



A number of part-time access control measures are already in place (with more due to added) in the form of rising bollards which serve to widen the pedestrianised areas in the proximity of the Piazza Maggiore. Many of these areas are fully accessible (for deliveries etc) for two 1.5 hour periods per day, one in the morning and one in the afternoon. As with car access to the limited traffic zone the residents inside areas with rising bollards receive permits which can be used to gain entry into the zones.

Car Sharing and preferential parking in the historic centre of Bologna

The city of Bologna has also been able to exploit the limited traffic zone in favour of car sharing. The restrictions on access to the city centre mean that it is possible to provide free parking facilities solely designated for the use of cars in the car sharing scheme. These are located in prime areas of the city in order to incentivise the use of the scheme. Car Sharers in the city are issued with a Smartcard, a personal code and a PIN number, which they use when booking a car through the dedicated call centre. Once booked the car is activated for use by the individual's PIN number which is entered into the digital verification equipment inside the cars. Travelling in a car sharing car also provides vehicular access to the city centre, because all of the car sharing cars are permitted within the limited traffic zone.



There are currently 20 cars in the “Guido Car Sharing” fleet in the city and a total of 565 people (up to September 2004) had registered to use the service. The uptake in the service has mostly been by freelance and self employed people who only need to use a car occasionally, so this service appears to suit their lifestyles.

Gas powered car-fleet for Emilia Romagna Region Employees

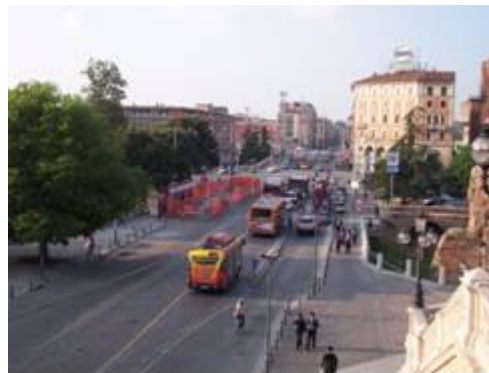
In addition to the car sharing scheme which is open to citizens of Bologna the Emilia Romagna Regional Authority operates an experimental fleet of 10 Fiat Panda cars which run on LPG. This fleet of cars also benefits from advantageously located parking facilities in the city centre and has been established in order to encourage civil servants making work related trips to use a pool car, rather than their own vehicles, which are likely to be bigger and more polluting.



Computer controlled traffic management and driver information services in Bologna

The final aspect of the working group site visit was a tour of the computer control centre for the city's advanced traffic management system and a presentation of the range of computer facilities which are present in the city. A total of 3 systems were demonstrated and these included:

- Automated traffic control and light sequencing
- Real time traffic system monitoring and evaluation
- Computer controlled driver information system



The three systems are presently mutually exclusive and operate in isolation in order to; automatically sequence one third of the city's traffic light clusters at the optimum intervals based on traffic levels on the road network; provide real time video and data feedback relating to the performance of traffic junctions in Bologna; and provide driver information through the use of roadside Variable Message Signs. The automated traffic light management system is also designed to sequence the lights in order to give priority to bus services, particularly when they are operating behind schedule.

The latest project for the Bologna traffic management team is the full integration of these three systems in order that the monitoring, management and driver information services can be fully

automated. This way traffic disruption can be minimised and any congestion can be reported with the minimum of input from the traffic management team, while also feeding back real time information to drivers on the streets.