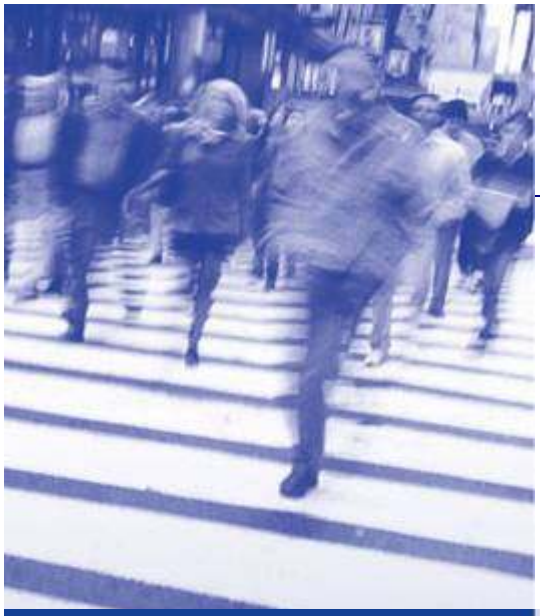

CiViTAS
Cleaner and better transport in cities

ARCHIMEDES
AALBORG • BRIGHTON & HOVE • DONOSTIA - SAN SEBASTIÁN • IAŞI • MONZA • ÚSTÍ NAD LABEM

D11.4 – Researching Travel Behaviour and Modal Choice

December 2011

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1. Introduction

1.1 Background CIVITAS

CIVITAS - cleaner and better transport in cities - stands for CIty-VITAlity-Sustainability. With the CIVITAS Initiative, the EC aims to generate a decisive breakthrough by supporting and evaluating the implementation of ambitious integrated sustainable urban transport strategies that should make a real difference for the welfare of the European citizen.

CIVITAS I started in early 2002 (within the 5th Framework Research Programme);
CIVITAS II started in early 2005 (within the 6th Framework Research Programme) and
CIVITAS PLUS started in late 2008 (within the 7th Framework Research Programme).

The objective of CIVITAS-Plus is to test and increase the understanding of the frameworks, processes and packaging required to successfully introduce bold, integrated and innovative strategies for clean and sustainable urban transport that address concerns related to energy-efficiency, transport policy and road safety, alternative fuels and the environment.

Within CIVITAS I (2002-2006) there were 19 cities clustered in 4 demonstration projects, within CIVITAS II (2005-2009) 17 cities in 4 demonstration projects, whilst within CIVITAS PLUS (2008-2012) 25 cities in 5 demonstration projects are taking part. These demonstration cities all over Europe are funded by the European Commission.

Objectives:

- to promote and implement sustainable, clean and (energy) efficient urban transport measures
- to implement integrated packages of technology and policy measures in the field of energy and transport in 8 categories of measures
- to build up critical mass and markets for innovation

Horizontal projects support the CIVITAS demonstration projects & cities by :

- Cross-site evaluation and Europe wide dissemination in co-operation with the demonstration projects
- The organisation of the annual meeting of CIVITAS Forum members
- Providing the Secretariat for the Political Advisory Committee (PAC)
- Development of policy recommendations for a long-term multiplier effect of CIVITAS

Key elements of CIVITAS

- CIVITAS is co-ordinated by cities: it is a programme “of cities for cities”
- Cities are in the heart of local public private partnerships
- Political commitment is a basic requirement
- Cities are living ‘Laboratories' for learning and evaluating

1.2 Background ARCHIMEDES

ARCHIMEDES is an integrating project, bringing together 6 European cities to address problems and opportunities for creating environmentally sustainable, safe and energy efficient transport systems in medium sized urban areas.

The objective of ARCHIMEDES is to introduce innovative, integrated and ambitious strategies for clean, energy-efficient, sustainable urban transport to achieve significant impacts in the policy fields of energy, transport, and environmental sustainability. An ambitious blend of policy tools and measures will increase energy-efficiency in transport, provide safer and more convenient travel for all, using a higher share of clean engine technology and fuels, resulting in an enhanced urban environment (including reduced noise and air pollution). Visible and measurable impacts will result from significantly sized measures in specific innovation areas. Demonstrations of innovative transport technologies, policy measures and partnership working, combined with targeted research, will verify the best frameworks, processes and packaging required to successfully transfer the strategies to other cities.

2 Participant Cities

The ARCHIMEDES project focuses on activities in specific innovation areas of each city, known as the ARCHIMEDES corridor or zone (depending on shape and geography). These innovation areas extend to the peri-urban fringe and the administrative boundaries of regional authorities and neighbouring administrations.

The two Learning cities, to which experience and best-practice will be transferred, are Monza (Italy) and Ústí nad Labem (Czech Republic). The strategy for the project is to ensure that the tools and measures developed have the widest application throughout Europe, tested via the Learning Cities' activities and interaction with the Lead City partners.

2.1 Leading City Innovation Areas

The four Leading cities in the ARCHIMEDES project are:

- Aalborg (Denmark);
- Brighton & Hove (UK);
- Donostia-San Sebastián (Spain); and
- Iasi (Romania).

Together the Lead Cities in ARCHIMEDES cover different geographic parts of Europe. They have the full support of the relevant political representatives for the project, and are well able to implement the innovative range of demonstration activities.

The Lead Cities are joined in their local projects by a small number of key partners that show a high level of commitment to the project objectives of energy-efficient urban transportation. In all cases the public transport company features as a partner in the proposed project.

2.2 Aalborg

The City of Aalborg, with extensive experience of European cooperation and having previously participated in CIVITAS I (VIVALDI) as a 'follower' city, is coordinating the consortium and ensures high quality management of the project. The City has the regional public transport authority (NT) as a local partner, and framework agreements with various stakeholder organisations.

Aalborg operates in a corridor implementing eight different categories of measures ranging from changing fuels in vehicles to promoting and marketing the use of soft measures. The city of Aalborg has successfully developed similar tools and measures through various initiatives, like the CIVITAS-VIVALDI and MIDAS projects. In ARCHIMEDES, Aalborg aims to build on this work, tackling innovative subjects and combining with what has been learned from other cities in Europe. The result is an increased understanding and experience, in order to then share with other Leading cities and Learning cities.

Aalborg has recently expanded its size by the inclusion of neighbouring municipalities outside the peri-urban fringe. The Municipality of Aalborg has a population of some 194,149, and the urban area a population of some 121,540. The ARCHIMEDES corridor runs from the city centre to the eastern urban areas of the municipality and forms an ideal trial area for demonstrating how to deal with traffic and mobility issues in inner urban areas and outskirts of the municipality. University faculties are situated at 3 sites in the corridor (including the main university site). The area covers about 53 square kilometres, which is approximately 5 % of the total area of the municipality of Aalborg. The innovation corridor includes different aspects of transport in the urban environment, including schools, public transport, commuting, goods distribution and traffic safety. The implementation of measures and tools fit into the framework of the urban transport Plan adopted by the Municipality.

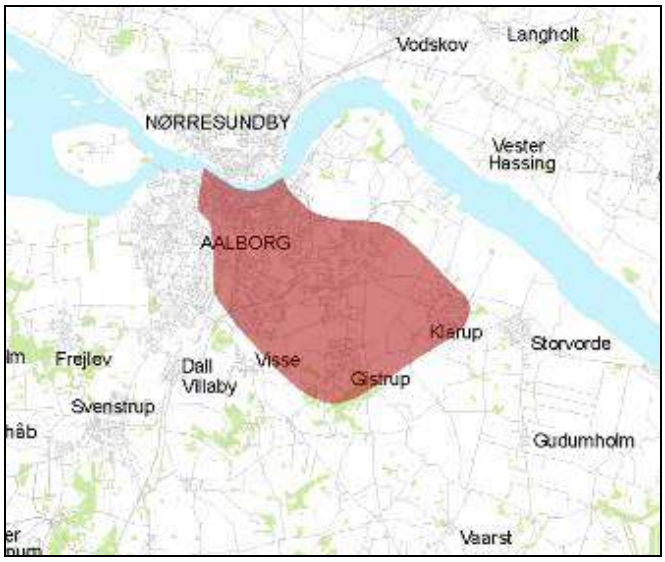

Figure 1: The Archimedes Corridor in Aalborg

2.3 Brighton & Hove

Brighton & Hove is an historic city, in the south-east of England, known internationally for its abundant Regency and Victorian architecture. It is also a seaside tourist destination, with over 11km of seafront attracting eight million visitors a year.

In addition, it is a leading European Conference destination; home to two leading universities, a major regional shopping centre, and home to some of the area's major employers. All of this, especially when set against the background of continuing economic growth, major developments across the city and a growing population, has led the city council to adopt a vision for the city as a place with a co-ordinated transport system that balances the needs of all users and minimises damage to the environment.

The sustainable transport strategy that will help deliver this vision has been developed within the framework of a Local Transport Plan, following national UK guidelines. The ARCHIMEDES measures also support the vision, which enables the city to propose innovative tools and approaches to increase the energy-efficiency and reduce the environmental impact of urban transport.

2.4 Donostia - San Sebastián

The city of Donostia -San Sebastian overlooks the sea and, with a bit more than 180,000 inhabitants, keeps a human scale. Some people consider the balanced combination of small mountains, manor buildings, and sea as the setting for one of the most beautiful cities in the world. We have a tradition in favouring pedestrians, cyclists and public transport.

For about twenty years, the city has been enforcing a strong integrated policy in favour of pedestrians, bicycles and public transport. Considering walking and cycling as modes of transport, has led to the building of a non-motorised transport network for promoting this type of mobility around the city.

Likewise, the city has extended its network of bus lanes. The city holds one of the higher bus-riding rates, with around 150 trips per person per year.

The CIVITAS project is being used as the perfect opportunity to expand Donostia -San Sebastian's Sustainable Urban Transport Strategy. With the package of CIVITAS measures Donostia-San Sebastian will:

- Increase the number of public transport users
- Decrease the number of cars entering in the city centre
- Increase the use of the bicycle as a normal mode of transport
- Maintain the high modal share of walking
- Reduce the number of fatal accidents and accidents with heavy injuries
- Reduce the use of fossil fuels in public transport.

2.5 Iasi

The City of Iasi is located in north-eastern Romania and is the second largest Romanian city, after Bucharest, with a population of 366,000 inhabitants. It is also the centre of a metropolitan area, which occupies a surface of 787.87 square kilometres, encompassing a total population of 398,000 inhabitants.

The city seeks to develop possibilities for habitation, recreation and relaxation for all citizens in the region, business opportunities and provide opportunities for more consistent investments.

The city has five universities with approximately 50,000 students, the second largest in Romania. The universities and their campuses are located in the central and semi-central area of the city. In the same area, there are also a large number of kindergartens, schools and high schools with approximately 10,000 pupils. This creates a large number of routes along the main corridor, served by the public transport service number "8" (Complex Tudor Vladimirescu - Copou) with an approximate length of 10 km. The City of Iasi will implement its integrated measures in this area to be known as the "CIVITAS+Corridor".

The city's objectives in CIVITAS - ARCHIMEDES are based on the existing plans related to transport, Local Agenda 21, approved in 2002, and the Sustainable Social-Economic

Development Strategy for City of Iasi. The CIVITAS Plus objectives will be integrated in the Strategy for metropolitan development to be finalized in May 2009.

2.6 Monza

Monza is a city on the river Lambro, a tributary of the Po, in the Lombardy region of Italy, some 15km north-northeast of Milan. It is the third-largest city of Lombardy and the most important economic, industrial and administrative centre of the Brianza area, supporting a textile industry and a publishing trade. It is best known for its Grand Prix.

The City of Monza, with approximately 121,000 inhabitants, is located 15 km north of Milan, which is the centre of the Lombardia area. This area is one of the engines of the Italian economy; the number of companies is 58,500, i.e. a company for every 13 inhabitants.

Monza is affected by a huge amount of traffic that crosses the city to reach Milan and the highways nodes located between Monza and Milan. It is also an important node in the Railways network, crossed by routes connecting Milan with Como and Switzerland, Lecco and Sondrio, Bergamo and Brianza. "Regione Lombardia", which in the new devolution framework started in 1998, has full responsibility for establishing the Local Public Transportation System (trains, coaches and buses) and has created a new approach for urban rail routes using an approach similar to the German S-Line or Paris RER.

Monza has recently become the head of the new "Monza and Brianza" province, with approximately 750,000 inhabitants, so will gain the full range of administration functions by 2009. Plan-making responsibilities and an influence over peri-urban areas will require the city to develop new competencies.

In this context, the objective of the City of Monza in participating in CIVITAS as a Learning City is to set up an Urban Mobility System where the impact of private traffic can be reduced, creating a new mobility offer, where alternative modes become increasingly significant, leading to improvements to the urban environment and a reduction in energy consumption (and concurrent pollution).

2.7 Ústí nad Labem

Ústí nad Labem is situated in the north of the Czech Republic, about 20 km from the German border. Thanks to its location in the beautiful valley of the largest Czech river Labe (Elbe) and the surrounding Central Bohemian Massive, it is sometimes called 'the Gateway to Bohemia'. Ústí is an industrial, business and cultural centre of the Ústí region.

Ústí nad Labem is an important industrial centre of north-west Bohemia. The city's population is 93,859, living in an area of 93.95km2. The city is also home to the Jan Evangelista Purkyně University with eight faculties and large student population. The city used to be a base for a large range of heavy industry, causing damage to the natural environment. This is now a major focus for improvement and care.

The Transport Master Plan, to be adopted in its first form in 2007, will be the basic transport document for the development of a new urban plan (2011), which must be developed by the City subject to the provisions of the newly adopted Building Act. This will characterise the development of transport in the city for the next 15 years, and so the opportunity to integrate Sustainable Urban Transport Planning best practices into plan development during the project means an ideal match of timing between city policy frameworks and the ARCHIMEDES project.

The projects main objective is to propose transport organisation in the city, depending on the urban form, transport intensity, development of public transport, and the need for access. The process, running until 2011, will include improving the digital model of city transport that Ústí currently has at its disposal. The plan will have to deal with the fact (and mitigate against unwanted effects that could otherwise arise), that from 2010, the city will be fully connected to the D8 motorway, running from Prague to Dresden.

3. Background to the Deliverable

This deliverable summarises the research and preparatory activities conducted in relation to workpackage 4 of the CIVITAS ARCHIMEDES project – Influencing Travel Behaviour. It also includes some of the more closely related elements of workpackage 6 – Innovative Mobility Services.

3.1 Summary Description of the Tasks

Research and preparatory activities in respect of innovative mobility service measures have been conducted in four of the ARCHIMEDES cities, namely Brighton, Donostia - San Sebastian, Monza and Usti nad Labem, as part of tasks 11.4.1, 11.4.2, 11.4.3, 11.4.4, 11.4.5, 11.4.6, 11.6.1, 11.6.3 and 11.6.4. These tasks are introduced in the following sections.

The work and findings of these tasks are reported in detail in deliverables R31.1, R33.1, R33.2, R34.1, R39.1, R41.1, R54.1, R60.1 and R61.1. This deliverable draws together the content of the individual deliverables and presents the common issues and any conclusions that can be drawn at the workpackage level.

Task 11.4.1 Personalised Travel Planning - Brighton

The objective of this task was to review and assess previous PTP interventions and theoretical concepts, and identify alternative applications of behavioural change which can be used to inform future PTP studies.

The task was conducted to complement and inform the work undertaken by the Brighton & Hove City Council (BHCC) PTP team in their efforts to personalise travel planning advice to residents throughout Brighton and Hove. This has fed into the BHCC PTP strategy document for 2009/10, which in turn was the basis for the PTP implementation within ARCHIMEDES, as documented in Deliverable T31.2.

The focus of this review was on:

- historical and recent PTP practices;
- key issues with PTP methodology;
- key criticisms from academia; and
- how current PTP projects can be enhanced through analysis of behavioural change theories and approaches in other fields.

It is worth noting that the UK Department for Transport (DfT) has published several reports in recent years on the subject which discuss the effectiveness of PTP techniques, review PTP projects and offer a guide to implementing PTP projects. The aim of this report is not to repackage this and other information published on the subject but to look at previous and emerging approaches which can inform and add value to any future UK PTP projects.

Task 11.4.2 Sustainable Mobility at Schools - San Sebastian

There are already many examples of “caminos escolares” or safe routes to school in Europe, depending on the spatial setting.

In northern Europe, campaigns such as “the safe routes to school” basically consist of identifying a number of safe routes that allow children to travel safely from home to school and back, either by bicycle or on foot, involving a large number of volunteers to monitor the children on their journeys.

However, in Mediterranean settings, greater emphasis is placed on a more community-focused concept of “caminos escolares” that encourages communities to lobby not only for safe routes but also for a more habitable city for all citizens. Examples of this are the “Citta Possibile” and “La citta dei bambini” projects, which have been taken as a reference by many Spanish cities when working on mobility in cities and their relationship with sustainability. These two projects have provided much of the inspiration behind the implementation of this project in the city of San Sebastian since 2002. There are now over twenty schools that in one way or another have taken part in the Donostia-San Sebastian Camino Escolar project. Some schools focus more on in-classroom activities and others have been more involved with questions of mobility, for example, there are two public schools in a district, where we have been able to set up stable work groups in mobility matters. Thanks to these groups other social associations and individuals have had the possibility to be included. From those groups it has worked in pilot experiences, simulations and improvement proposals in traffic safety.

As the current strategy unfolds, thanks to those responsible for coordinating it over the last five years, the Donostia-San Sebastian Camino Escolar has been strongly promoted in Spain as a benchmark for a number of Camino Escolar projects in several cities. This task seeks to consolidate this position and promote the benefits of Camino Escolar within the city of Donostia-San Sebastian itself.

It is anticipated that in adopting a Camino Escolar approach, home-school trips will take place more rationally (some parents take their children to school by car, even in very short distances, enumerating as reasons, slopes, rain…), optimising the public transport options offered by the city and improving even more with the other measures contemplated in the project, while promoting walking and cycling among school children. We also hope to free school entrances and exits of private vehicles, carrying out a broad information and awareness campaign in order to achieve a change in habits. In some cases, with the complicity of the schools managers, in others by setting up stable mobility working groups.

In order to achieve all this, research has been conducted as part of Task 11.4.2 to develop a wider programme for subsequent implementation in ARCHIMEDES.

Task 11.4.3 Mobility Management Plans for Employment Areas - San Sebastian

Business areas, industrial estates and big workplaces show unique aspects which determine their mobility characteristics. In the same way, the functional features of those places as well as their location, contribute to overdependence on the private car for those who need to move daily to their workplaces.

The main problem of this set of circumstances is not limited to the business areas themselves, but extends to the general traffic, generating congestion at certain times of the day. This determines the capacity of the adjacent transport and road network to cope with the additional pressure caused by the increase in traffic.

Donostia – San Sebastian is not exempt from this problem and its main business areas, some of them closer to city centre than others, contribute to the road traffic saturation, mainly at peak times.

A set of measures is needed to focus on reducing this particular type of congestion so that the use of private vehicles is reduced not only by the promotion of others means of transport but also by raising awareness to companies and their employees about benefits and savings which can provide the use of more sustainable means of transport.

Within measure 33, task 11.4.3 covers the research conducted by the city of Donostia – San Sebastián prior to implementation of workplace travel plans, of five main business areas. This involved analysing all aspects that comprised current mobility in order to obtain a diagnosis and propose an action plan for each of them to offer viable solutions to those problems identified. Monitoring and evaluation plans that show progress made and the effectiveness of the plan were also part of the research plan.

Task 11.4.4 Personalised Travel Planning - San Sebastian

The use of private vehicles as a means of transport and the increase of these vehicles in the city mean that different measures need to be applied with a view to reducing their use. For this purpose, the citizens need to be informed of the different means of sustainable transport - walking, cycling and public transport – by means of personalised travel plans (PTP).

Implementation of personalised travel plans will enable citizens to discover alternatives to their current means of transport, with the aim of cutting down traffic congestion in the city, reducing atmospheric emissions and promoting sustainable means of transport.

This task covers the research conducted by the city of Donostia – San Sebastián prior to implementation of personalised travel plans, leading to a plan to make at least 200 door-to-door visits to find out people's mobility habits, submitting a proposal to them for the use of sustainable means of transport and evaluating the process and impact of the measure.

Task 11.4.5 Understanding Public Transport Users - Usti nad Labem

The city of Ústí nad Labem is served by 16 bus lines and 11 trolleybus lines, 3 night bus lines and 2 cycle-buses on 251 stops. Ústí nad Labem Public Transport Company, as a sole provider of PT services in the city, operates all 66 buses and 67 trolleybuses, from which 40 buses and 9 trolleybuses are low-floor vehicles and 8 buses are partially lowered. During working days, city public transport is used by 144 649 passengers, on Saturdays by 68 385 and on Sundays by 51 860 passengers on average.

Ústí nad Labem has a target to support the use of transport modes alternative to personal vehicles, such as public transport. Understanding public transport users in their diverse needs, different purposes to travel to different destinations in various periods of time is necessary to reach any improvements in this particular area. Detailed analysis of the current state of public transport in Ústí nad Labem was undertaken to reveal:

- the deficiencies in the quality of services offered,
- lack of served areas and
- limitations in covering passenger needs.

The study was undertaken monitoring the number of people who use the public transport system in Ústí nad Labem. The aim was to identify areas where public transport is poorly used and where improvements can be made. An analysis was conducted to determine the appropriate solutions reducing mobility barriers and enabling increased use of sustainable

modes by vulnerable users. The results will serve as input material for the Ústí nad Labem Sustainable Urban Transport Plan. Based on the findings of this study, a publicity campaign will be held promoting the use of public transport, increasing the awareness of the services and initiating a modal shift towards the sustainable transport.

Task 11.4.6 Walking Bus Route - Monza

Monza is the Italian coordinator for the "I Walk to School" international organisation, since it was the first city in Italy to organize Walk to School Events in 2001. Since then, every year in Monza there is a Walk to School week, at the end of which five schools (one for each town district) are rewarded for the sustainable behaviour of their pupils in their home-school journey. In order to increase awareness about positive effects of pedestrian mobility in children, some schools in Monza have also experienced forms of sustainable mobility and particularly walking buses.

The ARCHIMEDES project involves the testing and implementation of differentiated and complex measures on the issue of mobility, one of which involves the testing of mobility initiatives on education.

In particular teachers, students and families of four primary schools throughout the municipality - Buonarroti, Citterio, Manzoni and Omero Institutes - are involved in demonstrating alternative forms of mobility on the way to school.

Specifically for these schools a 'walking bus' (or Pedibus) service will be developed. Walking Bus is structured as an accompanying service that allows small groups of students who reside in the same area of the city to reach their school premises on foot, following programmed routes and accompanied by parents and/or volunteers.

The possibility of using such a service allows us to pursue multiple objectives:

- firstly, it breaks the old habit of going to school by private cars, thus generating traffic congestion near schools at the time of entry and exit of students.
- secondly it gives students the opportunity to enjoy an important moment of independence, socialisation and growth.
- moreover taking a short walk includes field-testing of education and road rules, implementation of orientation skills and knowledge of the territory.
- last but not least, it develops a network for collective accompanying so that families attending the same school experience collective collaboration and solidarity, and contributes to the revitalisation of the neighbourhoods as well.

This task involves fundamental research into the physical possibilities for implementing walking bus routes in Monza that will subsequently be applied in the implementation phase.

Task 11.6.1 Car Sharing Scheme Improvements in Brighton & Hove

This research set out to identify the optimum locations for the Car Club demonstration that was to be implemented in the Brighton & Hove CIVITAS corridor. The CIVITAS corridor includes areas of low income, with reduced density away from the city (in contrast to current car club sites in Brighton & Hove which are in central, and generally more affluent, areas of the city). Therefore the research considered the implications of setting up a Car Club in disadvantaged or low income areas. To guide the project this research has reviewed best practice in implementation and operation of Car Clubs based on information from established Car Clubs in Europe, including Aalborg.

Task 11.6.3 Cycle Transport Improvements in Usti nad Labem

The main objective of this demonstration measure is to create facilities for cyclists and to link two existing cycle routes that have cross-regional importance (The Krušné Mountains route - Prague, Litoměřice, Ústí n. L., Děčín, Dresden cycle path) to provide an important cycle route through the city. Ústi nad Labem have undertaken a study to investigate the feasibility of linking these two important cycle routes with a view to delivering a design and implementation plan for the implementation phase.

Task 11.6.4 Car Sharing Scheme Improvements in Monza

Monza introduced a car-sharing scheme in April 2007, agreeing with the Province of Milan the commitment to introduce this new approach to urban mobility. Measure 61 is aimed at implementing a marketing strategy in order to increase the awareness of this new form of car ownership and the number of car-sharing service subscriptions in the five districts of the city. Monza has conducted a study of barriers to the use of car sharing in order to promote the extension of car sharing in the five districts of Monza.

4. Summary of Research into Travel Behaviour and Modal Choice in ARCHIMEDES

4.1 Deliverable R31.1

Study of Personalised Travel Planning in Brighton & Hove

Approach

A study into Personalised Travel Planning was conducted on behalf of Brighton & Hove City Council. The focus of the study was:

- Historical and recent PTP practices
- Key issues with PTP methodology
- Key academic criticisms
- How PTP projects can be enhanced through analysis of behavioural change theories and approaches in other fields

The UK Department for Transport (DfT) has published several reports in recent years on the subject which discuss the effectiveness of PTP techniques, review PTP projects and offer a guide to implementing PTP projects. The aim of this report is not simply to repackage this and other information published on the subject but to look at previous and emerging approaches which can inform and add value to any future PTP projects.

Research Findings

European examples and Best Practice

PTP studies began in Germany and Australia in the early 1990s, with UK initiatives beginning in the late 1990s.

The UK Department for Transport (DfT) in *Making Travel Planning Work* (2008) stated that so far 300,000 UK households have been involved in PTP initiatives, and out of the targeted population there has been an 11% reduction in car driver trips.

As previously noted, PTP interventions in the UK didn't start until the late 1990s when populations of small residential areas were targeted. In 2003-4, the DfT funded 14 local authorities to run their own PTP projects in a variety of locations which included residential populations, workplaces and schools. Following analysis of the data from these pilot studies, it was found to be possible to reduce car use by between 7% and 15% in urban areas (Sloman, 2005). Walking was found to be the main beneficiary with a mean mode share increase of 4% (Parker et al, 2007).

PTP projects are being watched with interest by local authorities and transport practitioners around the UK, mainly due to the positive outcomes that are being reported. However, this has also given rise to a number of concerns as to the authenticity of the results and a question over monitoring and evaluation. These are issues which will be explored more thoroughly later in the report.

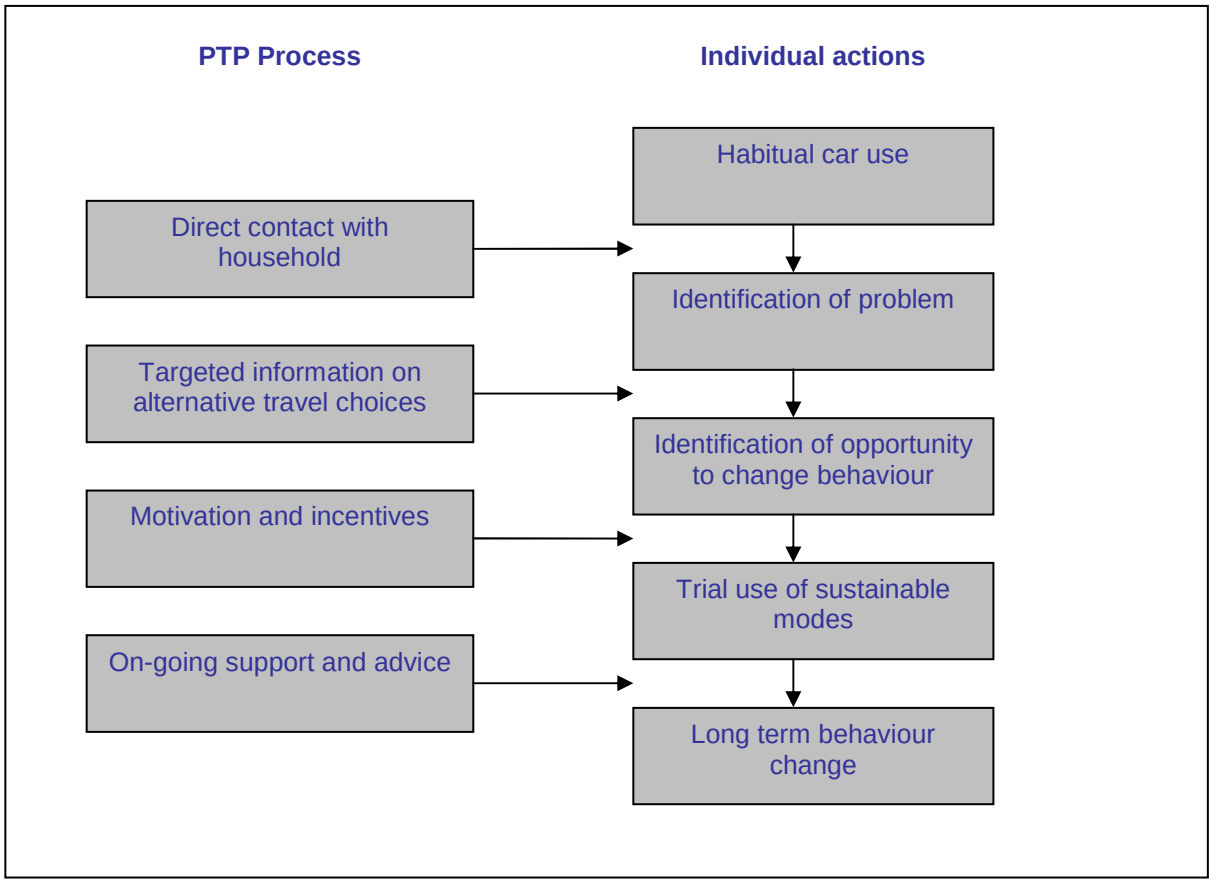

Figure 2: Parker and Wilkinson's view (reported in the UK Department for Transport Guidance 2008) on how the PTP process interacts with individuals and how their behaviour changes as a result

Across the board, projects have recorded positive outcomes of an increase in the use of sustainable transport modes and a reduction in the amount of kilometres travelled by car. However, questions have been raised relating to evaluation or implementation methodology for

some of these past projects, which have led to scepticism from transport planners, academics and other professionals.

Potential Implementation Issues for PTP Projects

Budget

In the planning stages of any PTP study it is important to know the available budget and then assess what can be done within that budget to reach the most people and achieve optimal cost effectiveness. The project cannot be properly scoped without first confirming the status of funding. Consideration needs to be given to many elements and the figure below serves to show that the budget allowed needs to be considerably in excess of that required for field officers and contact alone.

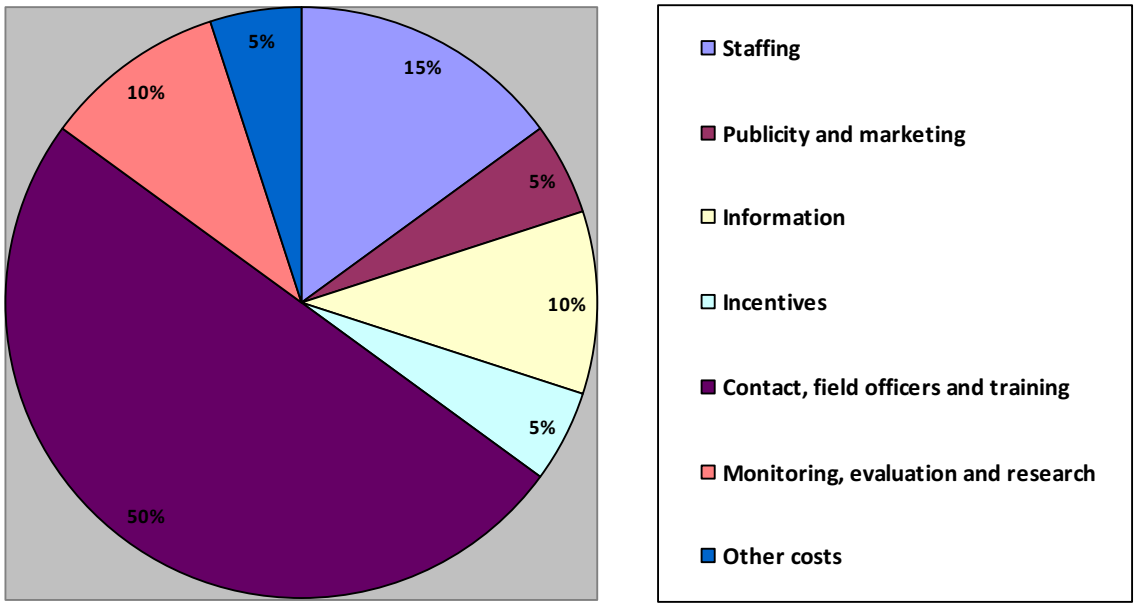

Figure 3: Indicative allocation of PTP Budget (Parker and Wilkinson, 2008)

Another key issue is the budget allocated to the evaluation of PTP. The recommended approach of before and after surveys and the use of control groups, all with statistically significant sample sizes can lead to a requirement for a sizeable evaluation budget – potentially significantly larger than that in the figure above and often more than project sponsors are willing to fund. This is undoubtedly one of the reasons behind the choice of inadequate evaluation methods which have then dogged the project results that have eventually been published, leading to an ongoing vicious circle of confidence in the implementation and evaluation methods employed.

Sample Selection and Size

In general, PTP studies have targeted areas where project teams consider they're able to make the most headway in order to make best use of available resources. Assuming all the rest of the project methodology is conducted without error, it would follow that similar results could only be expected in locations with comparable (i.e. favourable) conditions. Therefore this raises questions over the transferability of PTP interventions as less fruitful areas are targeted. Conversely, it could be expected that PTP techniques will improve over time allowing them to

effectively target those areas considered as less likely to engage with the projects (Bonsall, 2007).

Sample size is a key consideration to take into account when choosing the approach, along with what areas to assess and how to reach the target population. Small sample sizes can also have an impact on project costs as economies of scale are not achieved and larger samples mean less chance of error. Issues such as drop-out rates have to be expected and allowed for and potential target areas adjusted accordingly.

Sample selection is important when considering which areas to target, but is also a key variable when designing the approach to monitoring and follow up surveys. In particular there is a trade off as to whether one should use participants only or both participants and non-participants to measure the results? If non participants are included, there is a danger of underestimating the effectiveness of PTP. But if only participants are included they could have been strongly influenced one way or the other by the initiative and therefore their views are no longer representative of the overall population. Clearly it depends on the content of the survey but regardless, consistency in terms of establishing a comparable pre- and post- implementation survey sample is paramount if results are to be robust and these issues must be allowed for in the analysis.

Control Groups

A further issue is the inclusion of control groups within the studies. Control Groups have been utilised in some projects but not others, and the sample selection has been made using many variables. A reduction in single occupancy car use was apparent across the board; however, there was often insufficient data to test that PTP (as opposed to other transport measures) was the catalyst for change. Having a robust control group would allow project leaders to make comparisons between targeted and un-targeted populations to demonstrate the effectiveness (or otherwise) of the intervention and pick up reasons for travel behaviour change. Sample selection should be undertaken specifically with reference to the objectives of the project, and take into account the characteristics of the population being targeted.

Contact Methods

Most PTP studies have involved initial contact with households by letter or postcard advising the resident of the scheme and that a travel advisor would be contacting them shortly. Local posters and advertisements have also been used, as well as websites and other media, such as stories in local newspapers.

If the main contact is made face to face a great amount of engagement and participant satisfaction can be achieved (Parker et al, 2007); however some residents are understandably nervous of engaging with strangers on the doorstep, not least inviting them into their homes. Residents may be suspicious that the person on the doorstep is who they say they are, and even if this information is conveyed well, residents may still not be interested in being involved in the project. The person opening the door is effectively the gatekeeper and although others in the household may be interested further contact may not be made. It is important to read the situation carefully, act accordingly, and ask to speak to other members of the household if appropriate, to maximise the opportunity for engagement.

Vector Research, a leading UK-based consumer market research company, have regularly used all three of the main methods– post, telephone and face to face - for engaging with potential PTP participants and they have strong evidence based on their experience of the higher levels of participation that are possible with doorstep engagement. Typically a mailshot

will achieve 10% participation, telephone 20% and face to face 50% in general marketing interventions. This provides a rule of thumb in terms of a hierarchy of communication methods, and, given the issues mentioned above, it is therefore not surprising that face to face is the preferred approach to participants for the majority of PTP projects.

Information Technology and Marketing

Much of the marketing surrounding PTP has been based upon visual campaigns using posters, postcards, articles in papers etc. “Buzz” and “viral” marketing focuses on ideas being transmitted through groups and communities in non-traditional methods, on a one to one basis where interest is raised sufficiently to encourage the passing on of information. This type of marketing has gained momentum in Brighton & Hove via community events such as Bike Week, Take Part, and Car Free Day. However, the use of internet-based social media is now being explored to try and reach a wider and more varied audience.

The emphasis is on openness and sharing, with user generated content such as blogs, YouTube and collaborative software provide a different community ethic. Much has been made of social networks, such as Facebook and Twitter, and clearly the value given to information provided through such groups lends itself perfectly to this innovative information technology.

As the use of this technology in PTP is still in its infancy, it is relatively unknown as to what effect it may have and what role it may take in future interventions. Its usage will be carefully monitored throughout the project.

4.2 Deliverable R33.1

Study of Sustainable Mobility Strategy for schools in Donostia-San Sebastian

Approach
The city of San Sebastian has had a Camino Escolar (Way to School) project implemented since 2002. To date, over twenty centres in the city have had involvement with this project.

As part of the CIVITIAS project, research was conducted in order to develop a wider programme for subsequent implementations.

Research into good practice for Sustainable Mobility Strategies for schools, from other Spanish and European cities, was also conducted prior to any new implementation.

Further specific research was conducted at individual educational centres in order to analyse the ‘real situation’ of travelling to and from schools, and to analyse every possible existing option that school children can take between home and school.

Research Findings

After carrying out a broad information and awareness campaign in order to achieve a change in habits, implementation of this measure it is expected that school to home trips will take place more rationally, optimising the public transport options offered by the city and improving even more with the other measures contemplated, while promoting walking and cycling modes among educational communities. It is also hoped that private vehicles can be cleared from the entrances and exits of educational centres leading to better safety.

In order to achieve this, research has been conducted as part of Task 11.4.2 to develop a wider programme for subsequent implementation in ARCHIMEDES. This is laid out in three stages as follows.

1. Overall Objectives and their Realisation in Specific Objectives

A number of specific, priority objectives were developed to be kept permanently in mind during the project.

Objective 1. - Promote a model of sustainable, safe mobility that transmits values and attitudes of civic-mindedness and respect for collective urban spaces as spaces for interrelation and coexistence.	
	1.1. – Design and Implement educational activities in nearby public spaces among the school population that enhance knowledge of the environment and have a bearing on the importance of looking after common property.
	1.2. – Underline the value of the positive repercussions that the use of public transport and non-motorised means of transport for daily home-school trips have on the city.
Objective 2. – Involve residents in the implantation of this model of sustainable mobility.	
	2.1. - Attract the residents of Donostia-San Sebastián to one of the already existing channels of communication.
Objective 3. – Raise the awareness of the educational community as a whole (children, teachers and parents) and of the interested parties (neighbourhood establishments, associations) as regards the need to change attitudes and practices relating to urban travel and the benefits of sustainable mobility.	
	3.1. – Achieve changes in the daily mobility habits of the educational community – students, teachers and parents – with regard to their daily trips.
	3.2. – Spread values linked with sustainability, safety and health that result in a change in habits among the members of the community close to the educational centres.
Objective 4. – Encourage students to take part in improving their immediate environment.	
	4.1. – Involve students in those classroom activities that emphasis their closeness to and understanding of their immediate environment.
	4.2. – Involve students in activities, not necessarily in the classroom, that do however consist of spreading values related to sustainability and changing attitudes among the population.

Objective 5. – Promote greater integration of schools with their neighbourhoods and environment.	
	5.1. – With the schools as the epicentres, create around them a network of relationships with their most immediate agents (associations, equipment and non-associates) that brings them together through actions on the territory and at neighbourhood level, towards a common change in terms of mobility.
Objective 6. – Define and plot the safest and most pleasant routes from home to school.	
	6.1. – Analyse each and every one of the possible existing options between routes that schoolchildren can take from home to school.
	6.2. – From among the previously analysed options, define the safest and/or most comfortable option for these daily home-school journeys.
	6.3. – Evaluate any potential risks on the public highway that could condition the choice of one option or another.
Objective 7. – Introduce the children to the concept of sustainable mobility and increase the number of journeys made on foot and by bicycle.	
	7.1. – Work with the schoolchildren and teaching staff to transmit clearly the concept of sustainable mobility (in terms of sustainability and safety) and which mobility options best reinforce this idea, such as public transport and non-motorised modes such as walking or bicycle riding.
	7.2. - Work with the schoolchildren and teaching staff to describe all possible public transport options available in the city, with regard to routes, timetables, connections and fares.
	7.3. – Facilitate the transfer of travellers from motorised modes to non-motorised modes, basically from private vehicles to bicycles and walking.
	7.4. – Make available in the educational centres all available information on the safest routes to travel from home to school by bicycle on the network of bike lanes that the city has already facilitated.
Objective 8. – Propose structural modifications in neighbourhoods to improve the sustainable mobility of schoolchildren.	
	8.1. – Analyse the starting situation in the setting closest to the educational centres, assessing real land use and possible incompatibilities.
	8.2. – Assess different options for change, taking into account the view of the Department of Mobility itself, with regard to compatibility parameters (work under way, planned, etc).
	8.3. – Propose any necessary and compatible modifications to improve the safety of pedestrians and other road users at territorial neighbourhood level.

2. Development of the Workplan: Planning and Dissemination Stage

This stage involves analysing the real situation of the educational centres by designing **Mobility Plans for at least three of them**, so as to be able to place special emphasis on the most sustainable means of transport.

This strategy has been completed with a series of examples of **Good Practices** in this respect from other Spanish and European cities, which help to assess the situation of the project in the city, so that it can be added to the tasks established in the **CIVITAS Project**.

This strategy will be completed with an **Assessment** on different levels.

+ A continuous assessment process that will allow us to see that the project is moving in the right direction, checked by Mobility.

+ Quantative and qualitative assessments of specific actions using questionnaires completed by the participating centres.

+ Assessment of the progress made to be carried out by members of the workgroups.

After development of the plan, we will proceed to the Implementation of the ***Camino Escolar*** **project** itself. To this end, we will design the tools and mechanisms needed to increase the number of centres taking part in and involved with the project.

3. Development of the Workplan: Implementation Stage

During the **Development Stage** of the ***Camino Escolar*** project, we can define three different levels, according to the depth to which we are working at any particular time.

Level 1 – Approach Level

The first time an educational centre is contacted, it will be advised on implementing a series of **classroom activities**, starting with a **basic level** of raising the awareness of the schoolchildren and, indirectly, of the teachers and parents as well.

To this end they will be provided with the materials needed to carry out the activities required to learn about mobility on an academic level.

The activities are:

"**Analyse the street, Imagine your city" (Action 2.1.)**
"Careful, car coming!" (Action 2.2.)
"Let's all walk to school!" (Action 2.3.)

with the corresponding material designed by the Department of Mobility at San Sebastián Town Hall.

Level 2 – In-Depth Level

The second level sees the appearance of the spatial dimension, which has a very important role to play, specifically the **realisation of the project at neighbourhood level**. Either through activities such as **"Let's all walk to school!"** which involve volunteers, or by gathering

proposals for changes to the most immediate environment, the project is resized according to the reality of the territory, with the setting up of stable **work groups** for this purpose.

Level 3 – Restructuring Level

The Restructuring level comes into play when there has already been contact with the topic of mobility and certain knowledge has already been assimilated, as we are talking about the level at which we are going to try **to change daily behaviour habits**, meaning that a degree of maturity of both knowledge and involvement is necessary.

At this level of development of the project, actions such as **"Pedibus"** are important, involving adults, parents and members of neighbourhood groups in facilitating the mobility and safety of groups of children, physically leading them to school. This measure has a direct effect on the mobility habits of those carrying it out, but it also plays an important role in promoting and reproducing the behaviour in the population as a whole

4.3 Deliverable R33.2

Study of Mobility Management for employment areas in Donostia-San Sebastian

Approach
The study began with research of the 5 main business areas in Donostia-San Sebastian. This research looked into the following factors:

- Analysing all aspects of current mobility in order to obtain a diagnosis, and propose an action plan (further details below)
- Provide solutions to the problems identified
- Monitoring and evaluation plans developed to show the progress and effectiveness of the action plans.

Documents were published prior to this study that analysed existing mobility options on offer, including public transport, parking, company mobility policies, and improvement proposals.

For each company engaged in the project, preliminary studies were conducted to assess the current situation. This was followed by data collection and surveys/questionnaires of the buisness and employees in order to look at behaviour (further details below).

Research Findings

Characterisation of mobility patterns in the municipality of Donostia – San Sebastian (according to the criterion of reasons for travel) shows that the main purpose of travel is for work reasons (36.5%).

34.4% of the journeys to work originating in and destined for San Sebastián (intra-municipal journeys) were made by car, and this figure is much higher than those for other modes of travel such as walking or public transport (bus travel) - see Figure 4.

The key to addressing this high incidence of car use is to first establish the reasons why so many car journeys are made, with the aim of replacing them by other means of transport that will have more efficient environmental, social and economic repercussions. Measures need to be taken in terms of travelling to different work centres in the city such as public or private collective transport, walking or cycling. This is where the Workplace Travel Plans come into play.

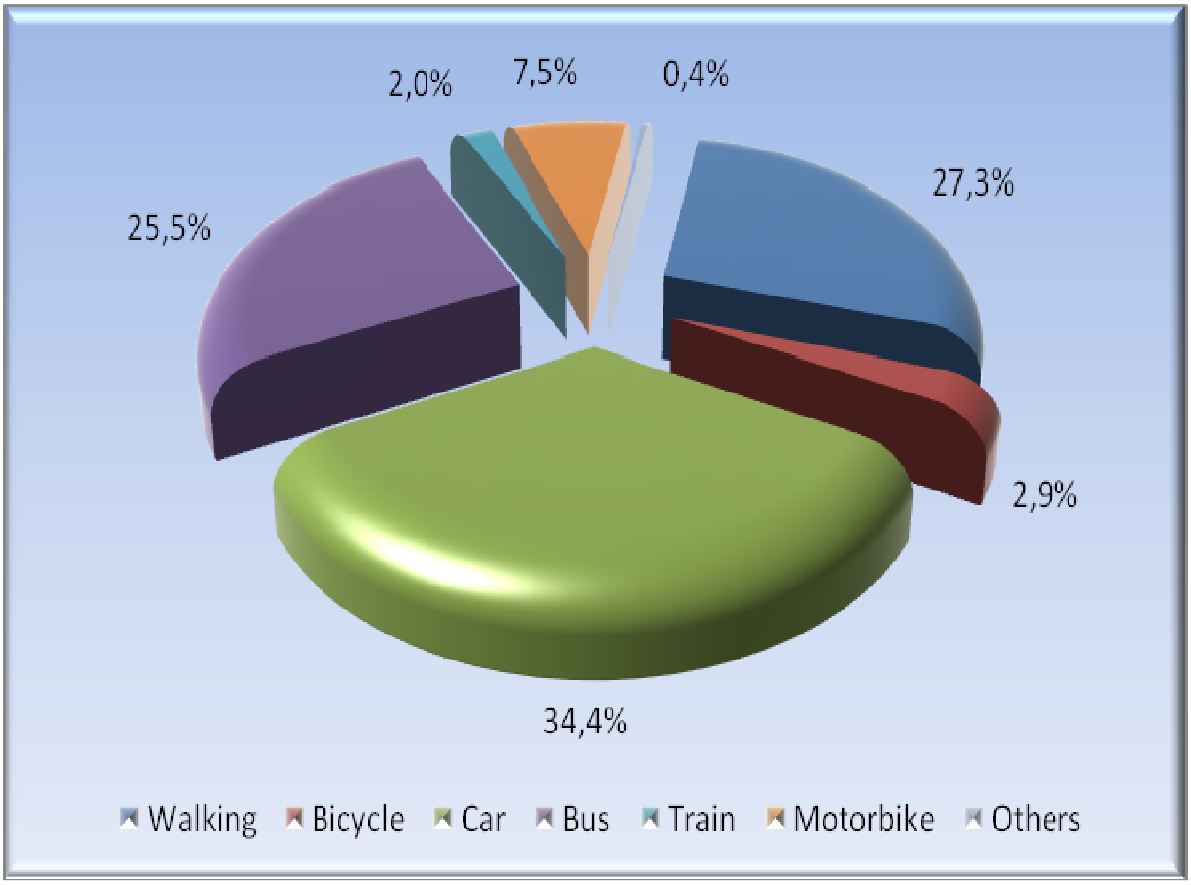

Figure 4: Modal distribution of journeys to work originating in and destined for San Sebastián by residents in the Basque Autonomous Community. Intra-municipal journeys.

General Objectives

Below is a list of the general objectives of the Workplace Travel Plans to be applied at the Igara, Belartza, Polígono 27, Miramón and Zuatzu work centres:

- To functionally characterise urban and metropolitan collective transport providing access to these industrial estates and business park, proposing measures for optimising the service and improving capture of demand.
- To analyse the intermodality of the system, concentrating particularly on metropolitan and urban public transport mode interchanges.
- To analyse the parking system at the industrial estates and business park, proposing measures for a more rational use of the existing parking spaces.
- To review the pedestrian and cycle routes, proposing new measures for extending and completing the already-existing routes and interconnecting them with the urban and inter-city public transport.
- To assess the different measures applicable in accordance with the mobility problems of each industrial estate or business park: company involvement, worker awareness-raising, reducing the number of journeys made, encouraging car-sharing, etc.
- To implement the measures proposed.
- To evaluate the effect of applying the Workplace Travel Plans as compared with the initial data.

Prior Information and Data Collection Work

On implementing a Workplace Travel plan, a series of data identifying the company's starting situation should be known beforehand, (i.e the different modes of public transport available, the employees' mobility profile and that of the visitors to the work centre).

This "preliminary study" will allow us to make a basic diagnosis of the transport requirements. For this purpose, the diagnosis study should gather information on the work centre, itemised as follows:

- Location: municipalities it is located in, surrounding environment and distances to the nearest urban centres.
- Adjacent road network: type of roads and situation as regards road access to the centre.
- Analysis of the level of traffic congestion, daily traffic density in the surrounding environment.
- Situation as regards internal traffic regulation, signage, traffic regulations, etc.
- Pedestrian and cycle accessibility of the industrial estate: distances from the municipality or from stations, safety and comfort, lighting, protection, etc.
- Public transport services on offer. Analysis of the distances from the bus stops to the companies, and the access situation, service times, frequencies, facilities (bus shelters, seats, information panels), availability of travel information (posters, leaflets), etc.
- Services complementing the business activity itself: restaurants, staff canteens, nearby kindergartens and schools, bank branches on the industrial estate, shops and supermarkets, laundry establishments, etc.

When we have gathered information on the starting situation, the next step is to run an information and awareness-raising campaign focusing on the companies based at each work centre. In turn, a planning workshop will be held with transport companies and common agents (city council and trade unions) and press releases will be published reporting about the project. A radio programme is also planned during the early stages of the project to promote this initiative among all citizens.

Part of this initial data collection stage will be geared towards surveying the employees, asking them to provide information on theit travel habits. This information gathering may take the form of a questionnaire sent by post, arranging interviews or interviewing the employees at the work centre access points. Aspects connected with the content of the interviews, duration, staff required to carry them out, etc. will need to be taken into account.

The interviews will have three objectives:

- Presentation of the project to the key agents,
- Obtaining relevant information to make the diagnosis and design the questionnaires.
- Search for cooperation from workers and other companies for the initiatives arising during the development of the project (workshops).

To complement the interviews and surveys, a count or census will need to be made of journeys by both private and public transport entering and/or leaving the work centre, car park occupancy and private vehicle occupancy. The census should be specifically divided as follows:

- Public transport counts
- Private transport counts
- Car park inventory
- Company surveys
- Worker surveys

Logically, the information to be collected will differ according to whether the surveys are geared to the companies or the workers. The process should begin with the company surveys and then be extended to the worker surveys.

The data we are interested in finding out from the companies would be as follows:

- Basic data: name, address, company classification, etc.
- Number of workers, contract types, professional category, work modality
- Working hours, shifts, flexi-time
- Auxiliary services contracts: people, hours, etc.
- Visitors: visiting system, estimated number of visits, seasonal variations
- Origin of workers' journeys: municipalities, census codes
- Availability of private parking spaces and system for use
- Whether a company transport plan exists
- Incentives for using public transport, alternative means of transport
- Willingness to participate in financing the proposals

When the company questionnaire completion period ends, we will issue the worker questionnaires. To obtain a reliable information base, there will be an initial target of the questionnaires being filled in by 3000 employees, which represents 25% of the total workers at the 5 industrial estates.

Our aim is to obtain data from the population travelling regularly to the industrial estate, including:

- Personal information: gender, age, level of education, address, etc.
- Degree of motorisation: whether they have a driving licence and own a vehicle
- Number of journeys made according to employees' departure point
- Distribution of journeys by mode of transport
- Reason for the choice of mode of transport, particularly in the case of private vehicles
- Workers' proposals, in accordance with the geographical point of departure
- Pedestrian and cyclist access barriers
- Willingness to share private vehicles

The public transport will also be exhaustively studied, with the aim of obtaining a series of data that will allow us to characterise the public transport scenario on both an individual and intermodal level for each of the industrial estates. This study should allow us to obtain information including the following:

- Road services: Regular urban and intercity bus lines.
- Rail services: Euskotren and RENFE
- Frequencies at different times of day
- Fare system

- Routes (residential areas served)
- Location of stops at the business centres (degree of coverage)
- Accessibility of facilities (stops and stations) and vehicles (buses and trains)
- Systems for user information and communication regarding facilities and vehicles
- Occupancy of transport services
- Potential for intermodal journeys (interchanges)

This information will be compared with the censuses made of passengers getting on and off the transport at the urban and intercity bus stops functionally serving the industrial estate in question.

In addition to the censuses, surveys will also be made of public transport users. The personal interview process will help us to reach the target of 3000 employee surveys.

As regards private transport, the census will consist of counting the number of private vehicles entering and leaving the various access points at each business area under study. To do this, counting personnel will be positioned at each of the entry and exit points of the business estate, including those considered secondary or less used.

The following information should be collected, at the least:

- Counting point location
- Time of entry/exit
- Vehicle occupancy
- Type of vehicle

The census will be made on non-consecutive working days throughout an observation period covering the entry and exit times of practically all of the companies based at the business estate.

This period will also be used for interviewing the workers and visitors personally to find out their mobility habits, departure points, reasons for choice of mode of transport, etc. These interviews, lasting no more than 5-10 minutes, will help us reach the minimum of 25% required.

Lastly, we will make an inventory of parking spaces, noting the occupancy of the same. The aim will be to classify and quantify the parking spaces in the business estate.

The following data will be collected:

- Parking space classification: Parallel, Perpendicular, Loading and unloading, Disabled
- Taxi
- Occupancy
- Rotation
- Illegal parking

Vehicles parked in the inventory area will be counted, including those parked in both the authorised and “prohibited” parking areas (double-parked cars, parking on yellow lines, in keep clear areas, etc.).

All the information obtained from the field campaign will be duly treated, coded and stored on computer for subsequent processing as part of the evaluation.

4.4 Deliverable R34.1

Study of Personalised Travel Plans in Donostia-San Sebastian

Approach
Research was conducted prior to the implemenation of the Personalised Travel Plan (PTP) project, in order to inform a plan for 200 door knocks. This included initial data collection to provide citizens with information on their best options for use of other sustainable means of transport.

The need to achieve a balance in the means of transport used in order to improve the quality of life is an important objective for the Donostia – San Sebastián City Council Mobility Department. As a result, over the last few years measures have been taken to promote walking, cycling and public transport as means of mobility.

Within this measure 200 personalised travel plans (PTP) will be implemented for promoting sustainable means of transport and reducing the use of private vehicles.

Research Findings
A Personalised travel plan (PTP) is a well-established method for encouraging citizens to use more sustainable forms of public transport. The main objective of the Personalised travel plans (PTP) is to achieve a reduction in the use of cars and an increase in walking, cycling and the use of public transport. This is done by means of initial data collection, providing the citizens with information on their best option for use of other sustainable means of transport as an alternative to private vehicles, combining this action with incentives such as public transport vouchers or gifts.

INTERACTION BETWEEN THE PTP AND PERSONAL DECISIONS	
PTP process	Individual action
	Habitual car user
→	
Initial data collection	
	Identification of alternative means of sustainable transport
→	
Information on alternative travel choices	
	Incentivisation and use of alternative travel choices
Data collection after 3 months (with incentives)	
→	
	Study of the variation in means of transport as a result of the PTP
Data collection after a further 3 months (without incentives)	
	Long-term study of variation of mobility habits without incentives as a result of the PTP

Importance of Personalised Travel Plans

Traffic levels and the increase in the number of vehicles imply an increase in negative effects such as accidents with injuries, traffic congestion, noise, environmental pollution, contribution

to global warming and an increase in the space occupied by vehicles. All these effects have an impact on the quality of life of the people living and working in the city or visiting it.

Both “hard” and “soft” measures can be used to reduce this effect.

“Hard” measures are those aimed at improving infrastructures or implementing taxes or new services in order to improve the service, reduce the number of vehicles and increase the use of public transport. In cities with an efficient public transport service, which is the case for Donostia - San Sebastian, implementing these “hard” policies do not necessarily result in any significant change in the use of the different means of transport on their own.

In order to improve such circumstances, “soft” measures are also important. These are measures that make use of (personalised) information, advertising or education to change people’s attitudes and habits as regards the means of transport they use.

In Donostia - San Sebastián, “hard” policies are being undertaken with the creation of new public transport lines, increasing the frequency of some lines and improving the infrastructures. As regards “soft” measures, advertising campaigns are being run to promote cycling and walking as forms of transport together with the use of public transport.

The “soft” policies include the development of personalised travel plans (PTP) to inform private vehicle users of the different modes of sustainable transport. Habitual car users often have little information on public transport or on the options available as regards cycling or walking. The need also exists to extend the information on the advantages of these modes of transport from an environmental, health or social improvement perspective.

A coordinated strategy of “soft” and “hard” policies is the best option for success, and the implementation of this new “soft” measure is therefore considered appropriate, with a view to increasing the use of sustainable means of transport.

200 Personalised travel plans (PTP) will be implemented for this purpose.

General Objectives

The general objectives of the implementation or application of Personalised travel plans in the city of Donostia – San Sebastián are as follows:

- **Transport mode change:** to reduce the number of journeys made in private vehicles and for people to use a sustainable means of transport instead: public transport, cycling or walking.
- **Traffic reduction:** to reduce the number of journeys made in private vehicles.
- **Increased road safety:** to reduce the number of accidents and increase the use made of safe, sustainable means of transport such as public transport, cycling and walking.

Other objectives will also be indirectly pursued such as health benefits due to cycling and walking, or reduction of pollution and noise.

4.5 Deliverable R39.1

Study of Public Transport Users in Usti nad Labem

Approach - Survey of the Public Opinion on the City Public Transportation

Ústí nad Labem has a target to support the use of alternative modes of transport to personal vehicles, such as public transport. Understanding public transport users in their diverse needs, different purposes to travel to different destinations in various periods of time is necessary to reach any improvements in this particular area. Detailed analysis of the current state of public transport in Ústí nad Labem was undertaken to reveal:

- the deficits in the quality of services offered,
- lack of served areas and
- limitations in covering passenger needs.

The study was undertaken monitoring the number of people who use the public transport system in Ústí nad Labem. The aim was to identify areas where public transport is poorly used and where improvements can be made. An analysis was conducted to determine the appropriate solutions reducing mobility barriers and enabling increased use of sustainable modes by vulnerable users. The results will serve as input material for the Ústí nad Labem Sustainable Urban Transport Plan. According to the findings of this study, a publicity campaign will be held promoting the use of public transport, increasing the awareness of the services and initiating a modal shift towards the sustainable transport.

Ústí nad Labem residents were surveyed on their views of the city public transport services and PT optimisation realised by the city on the 1st September 2009. The survey was carried out to identify the degree of satisfaction with the changes, to reveal problems and deficits of the public transport at present state and to propose improvements. Questionnaires were distributed to members of the public both in paper and electronic versions. Residents were incentivised to take part in the survey by having a chance to win free public transport permits for various periods of time. There was extensive media coverage in both the local press, on the radio, by posters displayed in the Information centre, on the City website and on the website of Ústí nad Labem CIVITAS ARCHIMEDES. The survey proceeded from December 2009 to February 2010. In part of the paper questionnaire there was a short introductory text about the CIVITAS ARCHIMEDES project, the measure and its goals.

Questions presented to residents included the following:

- How often do you use public transport and for what purpose?
- What would persuade you to use the public transport more often?
- Are you satisfied with the way routes of the city public transport lead through the city?
- Are you satisfied with the intensity of connections of the city public transport?
- Do you think the capacity of public transport vehicles is satisfactory?
- Do you think the public transport vehicles are clean enough?
- Do you feel safe in the public transport?
- Is it necessary for you to use low-floor vehicles?
- Do you feel the number of low-floor vehicles operating in Ústí nad Labem is sufficient?
- Are you satisfied with accessibility of public transport stations in the city?
- Do you prefer integrated tickets for all means of public transport?
- Do you use the car in combination with public transport?
- Do you use the combination bicycle with the public transport?
- What is for you the main source of information about the public transport?

- Which promotion campaign about the city public transport did you notice?
- Do you think that the public transport in the city is being promoted sufficiently?
- What extra public transport services would you appreciate?
- What is your opinion on changes to the city public transport realised on the 1st September 2009?

Research Findings - Results of the Survey

426 respondents took part at the survey, from which 371 were anonymous. 296 questionnaires were filled in electronically. From the total number of evaluated questionnaires, around two thirds of respondents were satisfied with the way the city is served by the public transport (68%). Some exceptions appeared concerning serving the outskirts and concurring of connections.

1) PT Usage
Around 88% of respondents use city public transport daily, usually to get to and from school or work (57%), for leisure activities (14%) and for shopping (11%). Charter buses and trains are used rather irregularly for occasional free time activities and for visits. Daily trips to school or work are realised by train by 12% of respondents and by charter bus by 15% of respondents.

2) Tickets
When using the city public transport, over the half of the respondents prefer to use time permits (54%), 26% use single paper tickets and 21% buy tickets via SMS, which illustrates quite a success in implementing this environmental friendly solution of a travel permit. It can be recommended to introduce SMS tickets for discounted fares for children and youth as requested by several respondents. The slight majority of respondents (about 54%) supported the establishment of an integrated transport system in city public transport, charter buses and trains (preferably with smart cards), divided according to tariff zones.

3) Serviceability of the City
Number of respondents satisfied with the daily frequency of public transport (61%) is roughly double than the number of respondents who are dissatisfied (37%). Unfortunately, satisfaction with frequency of night services is significantly lower - approximately the same number of respondents is satisfied (38%) and dissatisfied (37%). In overall, respondents expressed requirement to increase the number of connections especially around the time of the end of working hours and at night. Furthermore, the respondents often wanted better continuity of services (both within public transport and concurrence of charter buses and trains) and improved intervals between connections.

4) Cleanliness
Respondents are satisfied with cleanliness of charter buses (92%), while public transport vehicles are considered clean only by 42% and trains by 32% customers. Mostly, passengers are concerned about the overall untidiness, about dirty seats and windows, about the impedimental advertisements on windows obstructing the view and about neglected maintenance of vehicles.

5) Safety
Feeling of safety in public transport vehicles is quite high, confirmed by around two thirds of respondents (67%). At night, only 24% of respondents feel safe in buses and trolleybuses, 29% in charter buses and 32% in trains. Citizens frequently expressed their demand to ensure more strict control in public transport vehicles to avoid illegal passengers and passengers with inconvenient behaviour.

6) Accessibility
Low-floor vehicles are preferred by two thirds of respondents (68%) and 52% of them are not satisfied with the current number with regard mainly to disabled people and mothers with strollers. Citizens further noticed that public transport stations with disabled access are concentrated only in the city centre. Also, public transport drivers were criticised for not stopping the vehicle close enough to the pavement, leaving a gap between the pavement and the vehicle, therefore the disabled access of the station and low-floor bus/trolleybus have no effect and the vehicle is difficult to reach by disabled and older people.

7) Modal Split
Citizens generally do not use the combinations car - public transport. Furthermore, residents answered that most of them would not use the park and ride system in Ústí nad Labem with the necessity to park their car on the outskirts and travel to the city centre by alternative transport. Neither do respondents use the combination bicycle – public transport. In overall, bicycles are not used in the city due to safety threads on roads for cyclists, with no designated areas for cyclists, due to the lack of safe premises to store the bike in the city centre and also due to the fact that bikes are not allowed in buses and trolleybus with only few exceptions.

8) Information
Local residents complained about insufficient and outdated information provided about the public transport, primarily inside vehicles and on bus stations, where it is often completely missing. The main source of information is internet (for 62% of respondents). The official web site of Ústí nad Labem Public Transport Company is demanded to be modernised and regularly updated. Public transportation is considered to be poorly promoted, which should be changed by CIVITAS ARCHIMEDES.

9) PT Optimisation
About half of the respondents are satisfied with the changes to the public transport realised in September 2009. This result indicates, that these changes did not mean a significant improvement. On the other hand, passengers need some time to get used to new time tables.

10) Conclusion
Majority of respondents expressed their requirement to improve the existing services rather than to establish new ones. They favour purchase of new and modern low-floor buses and trolleybuses, better maintenance of vehicles and stations and improved delivery of information. Residents also prefer calming the city centre, excluding the traffic and establishing pedestrian zones (92%).

In general, residents are satisfied with public transportation but demand improvements and quality services equal to the price of the ticket. Graphs presenting the results of the survey are attached in Annex 2.

Summary
The goal of the study was to map the usage of public transportation in the city and to determine the public opinion of PT users on its services. It was based on a thorough analyses elaborated for the city in 2009 and on questioners distributed to wide public promoted by a campaign.

In total, Ústí nad Labem Public Transport Company in the city operates 16 bus lines, 11 trolleybus lines, 2 night bus lines, 2 cycle-buses and 2 ski-buses. The network consists of 251 stations. On average, 144 649 passengers are transported by the city public transport on a working day, 68 385 on Saturday and 51 860 on Sunday.

Recently, except lines 51, 52, 53, 54, 55, 56, 57, 58, 59 and 60, all the routes PT connections were optimised. The operating times were adjusted to correspond with beginning and end times of schools, opening hours of offices, businesses and services in the city, arrivals and departures of trains and working hours in factories. Intervals of individual connections were set to better correspond with each other. Some lines were cancelled or replaced. Lines 51, 54 and 60 are guaranteed to operate by low-floor trolleybuses to enable transportation of disabled passengers.

It was revealed, that several bus connections on lines number 3, 4, 5, 11, 18 and 19 and trolleybus connections on lines number 52, 54, 55, 56, 57 and 60 operate overloaded. Some lines are underutilised, mainly number 9, 15 and 19.

4.6 Deliverable R41.1

Study of Walking Bus Routes in Monza

Approach
Monza is the Italian coordinator for the “I Walk to School” international organisation, since it was the first city in Italy to organize Walk to School Events in 2001. Since then, every year in Monza there has been a Walk to School week, at the end of which five schools (one for each town district) are rewarded for the sustainable behaviour of their pupils in their home-school journey. In order to increase awareness about positive effects of pedestrian mobility in children, some schools in Monza have also experienced forms of sustainable mobility and particularly walking buses.

The ARCHIMEDES project has involved the testing and implementation of differentiated and complex measures on the issue of mobility, one of which involves the testing of mobility initiatives on education.

Specifically for these schools a ‘walking bus’ (or Pedibus) service will be developed.
Walking Bus is structured as an accompanying service that allows small groups of students who reside in the same area of the city to reach their school premises on foot, following programmed routes and accompanied by parents and/or volunteers.

Research focused on exploring the physical possibilities of implementing walking bus routes in Monza. Monza undertook research to design the scheme of pedestrian paths (“PEDIBUS”) acting just like a Public Transport Line for children to walk to school. This included definition of stops and a timetable to be agreed with the parents of the children involved and inclusion of key stakeholders such as the local police, teachers and school managers through a consultation process in order to co-ordinate the scheme with the school timetables, start and end times and also to discuss security aspects of the scheme.

The possibility of using such a service allows us to pursue multiple objectives:

- firstly, it breaks the old habit of going to school by private cars, thus generating traffic congestion near schools at the time of entry and exit of students.
- secondly it gives students the opportunity to enjoy an important moment of independence, socialisation and growth.
- moreover taking a short walk includes field-testing of education and road rules, implementation of orientation skills and knowledge of the territory.
- last but not least, it develops a network for collective accompanying so that families attending the same school experience collective collaboration and solidarity, and contributes to the revitalisation of the neighbourhoods as well.

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Research Findings
The first step in the research was to identify paths for the Walking Bus groups to use to reach the 4 target schools. This identification was based upon the distribution of students accessing the schools, and characteristics of the surrounding streets.

For each school the students were placed into four categories:

- students enrolled in the area,
- students residing in Monza,
- students living in nearby municipalities, and
- students living beyond an 800m radius of the school.

Using this information a plan of possible routes could be made up to cater for as many students as possible.

Once possible routes were formulated a safety assessment was conducted based upon;

- the width and quality of the pavements,
- the presence of good pedestrian crossings,
- the distance of the route from the school (20-25 minutes as an optimum walk duration).

The four schools identified for the research were: Manzoni School, Buonarroti School, Citterio School, and Omero School.

For each school there were 2-4 routes indentified, individually covering distances of 500-1000 metres and each servicing between 20-75 students.

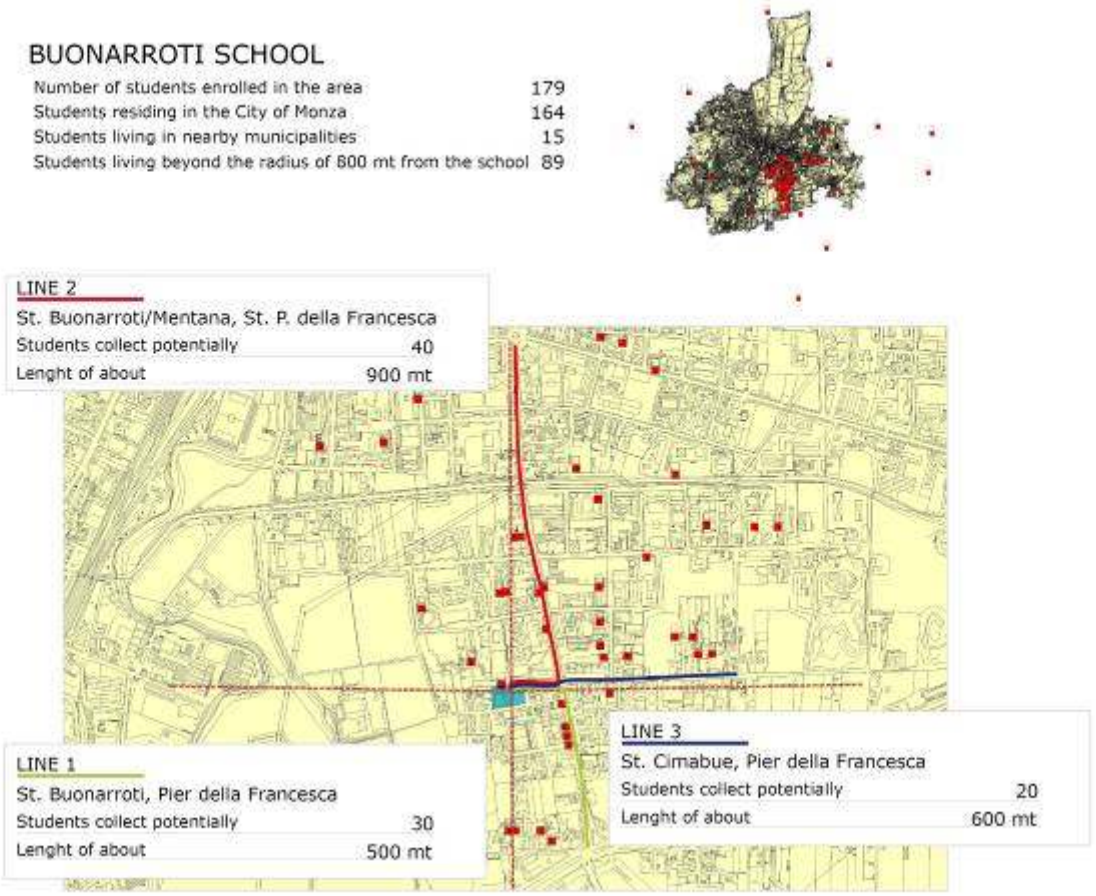

Figure 5: Example of walking bus routes for one Monza school.

4.7 Deliverable R54.1

Car Clubs Research in Brighton & Hove

Approach
Research was conducted into best practice in implementing car clubs with the intention of developing a service in less economically and socially advantaged areas of Brighton & Hove. Initial research focussed on web-based literature reviews of cars clubs in Europe with particular case studies of Germany and Switzerland.

Research into UK car clubs in partnership with other modes of transport was then conducted, followed by examining examples of car clubs in non-affluent or non-central locations in the UK. Finally research was conducted into suitable locations to site a car club in Brighton & Hove, based upon findings from the previous research.

Once all this research has taken place it was the intention to implement a new car club in Brighton & Hove, facilitating a non-affluent/non-central location in the city.

Research Findings
The initial research highlighted key features of a successful scheme involving good partnerships and the importance of reliability and convenience.

Partnerships with:

- Public transport companies
- Car rental companies
- National Government and local authorities
- Other businesses
- National and international organisation

Reliability and Convenience in:

- Booking
- Location and availability
- Range of vehicles
- Smart cards and on-board computers
- Extra equipment

Other significant factors included:

- Transparency of costs
- Good alternatives to car use
- Publicity and information
- Part of an integrated transport system

Linking car clubs in with other transport systems serves an important convenience and usability role and can be enhanced via incentives such as: joint initiatives, joint ticketing, integrated smart cards, integrated information, and joint marketing.

Research showed that joining a car club; reduces car mileage, reduces overall travel, and encourages public transport usage and walking and cycling. Therefore to some degree car clubs can act as a catalyst for more sustainable travel.

Research into partnership initiatives in the UK highlighted a series of clear benefits to both the operators and the users (examples listed detail the partnerships between car clubs and bus services):

Whizzgo – Leeds

- Free advertising space on buses
- Offering car club members a free monthly season ticket when they join
- 15% discount on annual season tickets

Bristol City Car Club

- First Bus offer 10% discount on all tickets bought in advance for car club members
- Free 3 month rover card for car club members who completely give up their private car.

Bath Car

- First Bus offer 25% discount on Bath Tens (saver strips) for car club members.

Problems experienced (German case study):

- Public transport discounts were too costly. These were reduced, resulting in some members leaving
- Lack of parking spaces
- High up-front joining fees proved a barrier to membership (to combat this the joining fee, deposit, and membership fees were waived, but the hourly rate was increased.

Car Clubs in low density/less affluent areas.

A lack of access to transport leads to a marginalisation from employment, income, social networks (such as family and friends), decision making, and adequate quality of life.

Target groups/potential users:
Lower income households who either

- run one car,
- are struggling financially to run a car,
- have no car.

Access to a car club could offer these users links to essential facilities such as health care, shops, job interviews or social activities.

Characteristics
Car clubs operating in less prosperous areas have focused generally upon:

- lower monthly membership fees,
- slightly higher charges for use (mileage and hours), recognising the difficulties that low income families have in meeting monthly payments.
- a higher number of members per car, enabling better utilisation rates to be achieved. This reflects the fact that by paying a higher rate for usage, with low monthly charges, the incentive is very much on limiting car use to essential journeys only.

Challenges

- Car ownership is higher in rural areas than in urban.
- 84% of rural households own at least one car.
- Low-income households in the least densely populated areas spend, on average, over 30% more on motoring per week than those in more densely populated areas as they have greater distances to travel.
- Limited availability of public transport
- Decline in the availability of rural services
- Low income households struggle to meet the costs of car ownership

Examples of Car Club Initiatives in non- affluent or non-central locations

<u>Swansea, City-Wheels</u>

- Specifically serves social housing residents
- Set up by Swansea Housing Association in 2001
- 30% of social housing residents are disabled, retired or not working
- Used in conjunction with ‘City Living’ – a scheme to get people to move back into the city
- Not-for-profit scheme, keeps costs down.
- Swansea Housing Association runs the club.
- The club is used by employees of the Housing Association and by residents of the social housing scheme.
- The car bays are situated in the underground car park of the social housing building.

Carplus, Rural Car Club Programme

These programmes were set up to learn if they could succeed and to collate best practice. They therefore provide important reference points for trying to implement similar schemes in rural, and specifically to Brighton & Hove, less affluent areas.

- Multiple projects set up to test the feasibility of car clubs in rural areas.
- Community co-operation is required to make car club vehicles accessible to all when population density is low.
- Community networks already in place should be utilised to support and champion the club
- Partnership with Carplus, Sustrans, and the Countryside Agency

CarPlus Rural Car programme exists in:

- Moorcar (Ashburton)
- Stroud Valley Car Club (Stroud)
- A2B Travel Club (Bradford-on-Avon)
- Clay Wheels (Cornwall)
- Our Car Your Car (W Yorkshire)
- Hour Car (W Yorkshire)
- Endeavour Car Club (N Yorkshire)
- GoCars (N Yorkshire)

It is also clear that significant barriers exist to prevent car clubs and car sharing playing a significant role in the provision of accessibility to some disadvantaged groups. Barriers include:

- Lack of understanding of the car club concept;
- Lack of reliable data on the relative costs of provision by different means;
- A concern not to further erode the market for conventional public transport;
- The difficulties likely to be experienced when attempting to introduce a car club within a deprived community (difficulty posed by annual fee, lack of commitment within the community, vandalism, insurance problems.);
- Concern among some car club organisers as to the possible negative effect on their brand image.

Some groups/communities are not just isolated by economic factors alone but have complex additional needs whereby agencies on behalf of that group become a factor. Therefore additional barriers include:

- Institutional inertia (fed by professional jealousy, lack of time to consider new modes of provision, lack of understanding of the concept of car clubs and a belief that, since the concept would not be appropriate for all clients, it is not worth considering);
- The fact that some specific groups would require delivery/pick-up arrangements;
- The fact that some specific groups would require specially adapted vehicles.

Future Activities

It had been intended that the research would inform the expansion of the car club scheme in Brighton & Hove in order to serve more socially disadvantaged and less densely populated locations than is currently the case. The intention was that the recommendations above would inform the identification and selection of suitable locations that fall within the CIVITAS corridor

and correspond with the project objectives. Precise locations would have been finalised through consultation with car club operators and relevant stakeholders.

However, it was not possible to pursue the scheme as commercial car club operators did not believe that it would be a financially viable project and there would have been a significant ongoing financial implication to Brighton & Hove City Council beyond the funds available for and the timescale of the project. This conclusion was drawn from several discussions with car club companies operating locally and nationally.

4.8 Deliverable R60.1

Improving Cycle Transport in Usti nad Labem

Approach
The two main targets of measure 60 are:

- To improve conditions for cyclists in the city,
- To create suitable facilities for them.

The actions to achieve the above targets will be:

- A long term action to link the existing cycle infrastructure to the more complex cycle network, which was the subject of a detailed study.
- To improve information about cycle transport for the local population,
- To create a web portal for cyclists,

Research Findings

Linking the existing cycle infrastructure

In order to achieve the above, a design and implementation plan for cycle transport improvements was created. This included a feasibility study of linking the two existing cycle routes in Usti; the Ore Mountains route, and the Elbe River route.

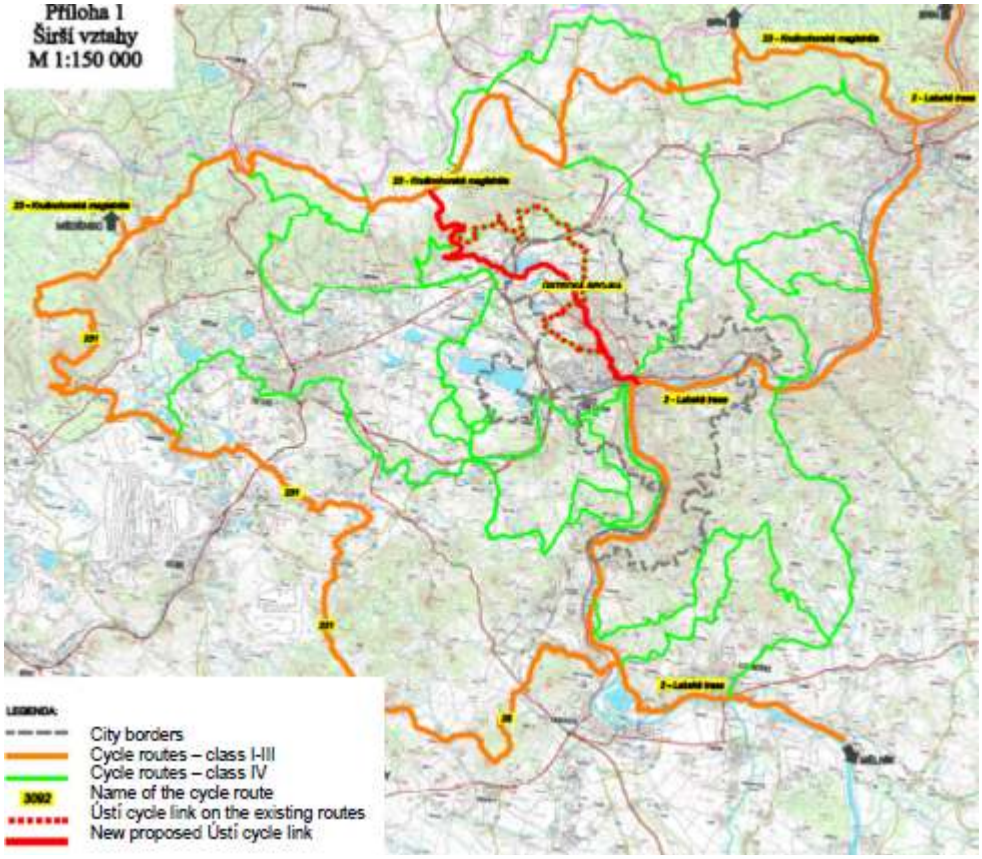

Figure 6: Route proposals and overall context for the Ústí cycle link.

The proposal of the Ústí cycle link is based on:

- Marketing Study of Cycling in Ústí Region (Varia Ltd., 2007),
- Update on the Network of the Cycle Routes in the Ústí Region (Budínský, 2009) and the route research study, Cycle Routes in the City of Ústí nad Labem (Budínský, 2001),
- Field survey

Data from these studies formed the two scenarios and compared them on a basis of:

- Vertical profiles
- Route length
- Separation from motor traffic

Two scenarios were formulated to link these existing routes:

Scenario One:

- Utilising existing cycling infrastructure
- Convenient
- Some resurfacing required

Scenario Two:

- Newly constructed cycling infrastructure
- Shorter route
- Flatter route
- Route improvements and resurfacing required

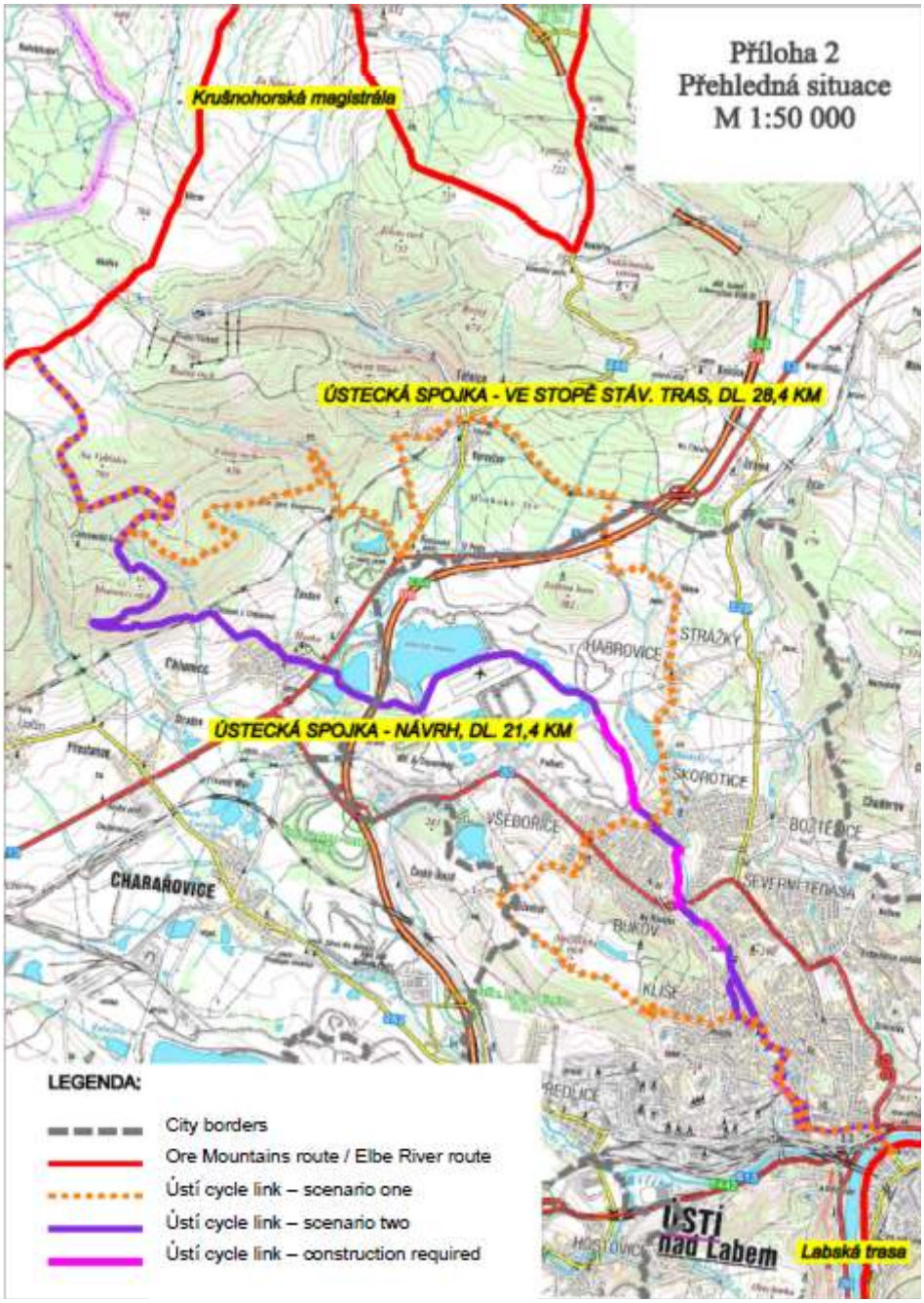

Figure 7: Route proposals in the city area for the Ústí cycle link.

Web Portal

One of the aims of this task is to inform the subsequent cycle transport improvements, the main output of which within the ARCHIMEDES project timescale is implementation of the web portal for cyclists in Ústí nad Labem as a major source of cycling information.

A cycle web portal is currently available as a trial version. Citizens have been asked to send their comments and feedback on the web page to determine where improvements can be made. It provides information about cycling opportunities, cycle services and areas of interest for tourists in the Ústí region.

The web portal includes information about:

- Cycling opportunities
- Cycle services
- Areas of interest

There will also be interactive cycle maps on the website.

Comments and feedback about the portal is currently being collected and will be used to update and improve the web page.

4.9 Deliverable R61.1

Car Sharing Scheme Improvements in Monza

Approach

Monza introduced a car-sharing scheme in April 2007, in agreement with the Province of Milan's commitment to introducing this new approach to urban mobility. Previously, there were three cars associated with the car-sharing service located in two of the five Districts of the town. There were a total of 54 private subscriptions to the car share service. (For the 44 members whose residential locations are known, 24 Monza inhabitants and 20 people living outside Monza who also use the service when in town.)

This measure is aimed at implementing a marketing strategy in order to increase the awareness of this new form of access to car use and the number of car-sharing service subscriptions in the five districts of the city.

Monza has conducted a study of barriers to the use of car sharing in order to promote the extension of car sharing in the five districts of Monza. In order to establish the current situation in Monza and to assess user needs for future planning the research methodology has been broken down into two stages:

Stage one: a precise analysis of available data about the city of Monza concerning:

- socio-economical characteristics of residents (private, commercial and enterprises);
- accessibility and urban mobility;
- organization of people's time, services and quality of life in the city .

Stage Two: Survey of user needs.

According to the results of the study, a marketing strategy has been developed in order to increase the number of subscriptions to the car sharing service in Monza. In addition, a more rational positioning of car sharing vehicles in the city has been defined, in order to locate them where accessibility is guaranteed to a higher amount of potential users.

Research Findings

Results from the data collected in Stage One of the research project showed that in Monza potential car sharing users were private (both young and mature people) and business people (enterprises and professional).

Characteristics of private users can be compared with those of European users of car sharing schemes and are confirmed by surveys carried out by Car Sharing Italia. Within

the private user target there are different typologies of users, which can be divided in two different categories:

- the mature user, usually married with children, who already own a family car but needs another one to satisfy new necessities (new job for one of the family member , children with new driving licence etc;
- and the young user, with limited assets but an active social life, who needs a solution to their mobility needs (new house, new job etc.

These two types of users have one common characteristic: both consider the choice of car sharing at the arrival point of a change in their lifestyle, when people need a new, preferably innovative, solution to their travel requirements.

Another interesting result comes from several studies dedicated to mobility and quality of life, specifically from an analysis conducted by SWG (a leading Italian society for surveys) in 2006. In this analysis, Monza is considered a city on a human scale, which has grown up in a short period of time without an adequate growth of public services. Primarily, survey respondents had a perception that the City lacked organisation in mobility, which represented the most critical problem for citizens because traffic was their hardest daily challenge. As a direct result of this perception, residents of Monza would not shift from private car to public transport at the moment, even though people declare a strong environmental sensitiveness. People also expect that the Municipality will intervene to improve and strengthen public transport and to invest in alternative modes (bicycle, car sharing…).

In focus groups held by SWG it appears that young people are more conscious than older people about the opportunity to reduce their use of private cars in order to promote more sustainable mobility. Information is a particular issue: citizens complain about inadequate information on new initiatives about mobility, which are often disseminated by word of mouth.

Other potential users of car share service are:

- businesses, which can adopt car sharing both as a substitution of part of their fleet or as a benefit for their employees or customers,
- other professionals, who can avoid buying a car by choosing car sharing. This opportunity is strongly attractive since for VAT registered professionals, owner costs for car sharing can be deducted from taxes.

Monza will issue a subcontract for specialist expertise to develop a marketing strategy to increase the awareness of this new form of access to car use and the number of car-sharing service subscriptions in the five districts of the city. Monza, will as part of ARCHIMEDES, implement the strategy.

5. Conclusions and Recommendations

5.1 Main Research Outcomes

Although the specific topics covered by the research into Travel Behaviour and Modal Choice in the ARCHIMEDES cities were quite diverse, there were some clear research outcomes spanning across all 9 measures.

In particular, it is clear that at a basic level Travel Behaviour and Modal Choice are based upon some key user considerations:

- Reliability of service/provision
- Accessibility/Convenience
- Publicity/information – 'authentic' message
- Part of an integrated transport system
- Population served/demographic characteristics
- Attractiveness

However, looking beyond these basic conclusions it is also clear that although providing a 'good' service or public transport system is a pre-requisite, it is not in itself enough to guarantee use or modal shift from the private car.

Key findings on how to change/affect users' Travel Behaviour and Modal Choice and potentially improve services focus around the following the activities:

- Best practice research
- Appraisal of current provision – good and bad points
- Education before implementation
- Word of mouth – via community participation and social media
- Community champion to promote alternatives
- Public consultation

These need to provide a framework to support promotion of sustainable transport options based on public attitudes to the various possible alternatives. The research should also be designed to be able to inform support communications and to understand which types of journeys are considered to be feasible by different modes; types of journey could be defined by location, purpose, time of day etc. So, for example, it seems that making commuter journeys by public transport to some of the targeted business park locations in San Sebastian is not currently seen to be a feasible option, whereas changing mode to park and ride for journeys to the city centre appears to be considered more feasible.

5.2 Problems Identified

Problems identified from the various research studies on Travel Behaviour and Modal Choice mainly focus around:

- The complexity and variety of different users' needs; including business employees, parents on the school run, etc.
- The willingness of the public/businesses/schools to engage in the projects and sustain any changed behaviour.
- The requirement for minimum population density to justify demand projections for collective / innovative mobility services

Some other smaller implementation problems included illegal parking blocking Walking Bus routes; and the inherent problems associated with word of mouth promotion and the use of social media: the lack of control in how a message is passed on and how the impact of social media can be measured.

Scepticism seems to exist among transport planning practitioners, who are often conservative in outlook, towards innovative mobility schemes and promotion activities that are outside traditional technical / engineering / public transport service solutions. This was found not to be helped in the cases of PTP schemes by uncertainty and inconsistency in the evaluation methods used to produce the evidence of impact that would justify investment in further schemes.

An overriding problem involved in changing Travel Behaviour and Modal Choice is the deep-seated dependence on the private car which is exacerbated both to the strong commercial marketing that has helped embed it as a core aspiration / expectation of modern lifestyles and the assumption in some urban planning decisions that private cars will be the default mechanism for providing personal mobility which creates a vicious circle.

This requires in-depth psychological research to understand the complex interaction of attitudes to different modes and the journeys made within a city. This is an area that many transport planners are not experienced in and the hard evidence that such basic research and marketing can yield quantifiable benefits is hard to come by. The concept of social marketing being implemented in Brighton is a form of parallel approach to in-depth psychological research, with a view to people passing on supportive messages in a way which they themselves can relate to.

5.3 Mitigating Activities

In general the activities to try and control/overcome the barriers listed above have concentrated on a continuous marketing/awareness raising plan. It appears that where there is a complexity of implementation or an unwillingness to engage the best course of action is to continue to educate and inform the target groups.

With the Personal Travel Planning (PTP) initiatives it is clear that very careful and skilled contact with the public is required and therefore well-trained travel advisors are essential for persuading the public to change, if only for a trial period, their travel behaviour.

The use of social media in PTP initiatives is still in its infancy and therefore with time it will be understood more fully and possibly used to greater effect. At the moment it is deemed that the benefits of social media for spreading information outweigh any downfalls or problems.

The increased level of understanding gained in recent years about the psychology of travel choice, backed up by some of the studies referenced in the ARCHIMEDES studies, has shown the need for good targeting of information and mobility campaigns in order to get best use of resources and outcomes.

Good quality evaluation methods, tailored to the specific objectives of a project implementation, are necessary to help overcome the inherent scepticism towards sustainable mobility interventions.

5.4 Common Themes in Relation to Travel Behaviour and Modal Choice

A common theme in relation to travel behaviour and modal choice is the challenge of sustaining long-term change, rather than just ‘initiative-inclusive-change’ (i.e. change in behaviour/modal choice just for the duration of or within the confines of a specific initiative e.g. a PTP

intervention). Research conducted over the various projects has identified factors which make the change in behaviour/mode more attractive. These are:

- Reliability of service/provision
- Accessibility/Convenience
- Publicity/information – 'authentic' message/travel champion
- Part of an integrated transport system
- Identifying the incentive to change through a clear personal benefit

The research conducted about school travel plans identified the difficulty in changing travel behaviour of those taking their children to and from school. Dependency on the private car appears difficult to dislodge; even if people take up sustainable modes of transport, they don't always completely replace their motor vehicle. Therefore the key is to be able to affect long-term change, and therefore in turn this must be monitored and evaluated in the long-term.

5.5 Future Plans

Future plans for all the measures focus around implementation, further study and analysis. Evaluation work on each initiative will yield a clearer understanding of the barriers and drivers surrounding travel behaviour and modal choice.

With this analysis there will inevitably come further development and broadening of scope for many of the projects. In many cases the research element was the first stage of initiative to be followed by implementation and improvement.

Future plans will also be affected by the take-up/success of each initiative. In the case of Car Sharing in Brighton & Hove the research showed any implementation to be unattainable at present, and therefore any future plans would be entirely dependent on the current situation changing.

5.6 Recommended Approach

The cities participating in ARCHIMEDES are at different levels of developing their sustainable transport services and the level of support / promotion that they provide.

For cities that are still relatively immature in this area it is clear that they need to focus primarily on system-oriented research that allows them to design the service parameters in a way that meets the primary needs of the population and its journey combinations. Without this step the risk would be that they could end up promoting a system that is not seen as credible for enough of the population for the investment to pay off.

For cities that have a more mature public transport system the way in which research is conducted and used to ensure that promotion messages are properly targeted to the transport consumers in the cities becomes more important. This is a more sophisticated approach which requires skills more commonly associated with consumer marketing than the sort of marketing that is traditionally used in public transport spheres (which generally focuses on providing information about what services exist and how to access them, assuming this to be sufficient for users to appear). If taking this approach it will be important to fully understand the motivations of the travelling public in relation to their different journey types and how this relates to their core personal aspirations and how they wish to be perceived by their peers.