

Measure title: Sustainable city-traffic development plan for Debrecen

City: **Debrecen**

Project: **MOBILIS**

Measure number: 11.5.D

A Introduction

A1 Objectives

The objective of the measure is to launch regular discussion about city traffic and transport for stakeholders and to involve citizen's participation through the elaboration and implementation of a transport development plan with particular attention to sustainable mobility. The ultimate objective is to maintain the current modal shift in order to prevent the city and the environment from the heavy, motorized traffic.

A2 Description

The latest transport development plan has been elaborated several years ago, thus it does not fulfil the requirements and challenges of the recent decade's changes, such as the increased motorisation, the increasing needs for sustainable mobility from the side of the citizens, the changing city structure and the European and national guidelines and recommendations.

The measure consists of two important parts. As a real professional advisory group did not exist in the field of traffic and transportation, an important milestone was to integrate the local experts and decision makers into a mobility workgroup. As a result, the first part of the measure was to set up the mobility workgroup in sustainable urban mobility. The members of the team are the stakeholders and experts in the field of city transportation. The members of the group are variable according to the subject of the actual topic to be discussed.

The second part of the measure was the elaboration of the sustainable city traffic development plan for Debrecen under the supervision of the mobility workgroup. The plan consists of three working documents:

- Analysis of the present traffic system of the city
 - Development strategy of the traffic system
 - Proposal of priority measures, implementation of strategy
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B Measure implementation

B1 Innovative aspects

The sustainable development plan itself /which focuses on city traffic and transport/ and the process of elaboration is completely new in Hungary, so the politicians in Debrecen were breaking new ground by doing the project.

The innovative aspect of the measure is the **new conceptual approach**.

The politicians realized that it was important to draw up a strategic, long term sustainable transport plan and to involve the different stakeholders in the process to be able to address the challenges ahead regarding transportation in Debrecen. The involvement and the operation of a mobility workgroup is a completely new conceptual approach in the city.

B2 Situation before CIVITAS

The key characteristics of the Downtown city structure are as follows:

- **Public services** are strongly **centralised**, focused to the city centre.
- **Economical and trade areas** are mainly in the western part of the town and its traffic generating impact affects the downtown traffic as well.
- Due to the growing attractiveness of the city the **agglomeration of the city is expanding** which causes increased load of the traffic system of the city.

SWOT analysis of the transport system of Debrecen:

Strengths	Weaknesses
<ul style="list-style-type: none"> • regional centre, road and rail hub • international airport • good public transport network • central traffic control system is under introduction • less air pollution 	<ul style="list-style-type: none"> • missing road elements, existing sections are overloaded • condition of road surface is getting worse • traffic control system does not adapt to changing traffic situations • high share of individual traffic in the modal split • traffic and parking problems in the downtown • missing bicycle infrastructure

Opportunities	Threats
<ul style="list-style-type: none"> • development of bypass roads around the city • as regional centre qualified for EU grants • subsidies for infrastructure development • establishing a regional transport association 	<ul style="list-style-type: none"> • increasing traffic due to regional role • delaying or cancelling of planned motorway and road developments around Debrecen • further shift of modal split from public transport to individual traffic • increasing environmental load caused by traffic • change in financing of public transport

Source: Sustainable transport development plan of Debrecen, working document

Before the MOBILIS project, as the city of Debrecen did not have an up-to-date transport plan, sustainability was not taken into consideration when decisions regarding transport were made. The planning was ad hoc and there was no political tradition of involving or hearing stakeholders or experts during the decision making process. **As there was no tradition of involving the different transportation stakeholders in the political decision making process, there was also no tradition of communication or collaboration neither amongst the transportation stakeholders themselves nor with them and the city.** This is also due to the fact that the different public transport companies are run by the City of Debrecen or the state/government of Hungary and these organisations have been in political opposition to each other for a long time.

To understand this opposition, one have to take into account that since the regime change in 1989, studies concerning the country's modern political structure point that a process towards polarisation and over-politisation occurs and strengthens year by year among citizens and also in the institutional area. The obvious result of this polarisation – process is that a left-wing party and a right-wing one are concurring for leadership at the national as well as at the local level. Thus, there are municipalities belonging to the left and ones belonging to the right wing. Debrecen has been led by a right wing Mayor for more then ten years, therefore some municipal-operated institutions can well be in opposition to the state-led, left-wing institutions. **As presented later, the establishment of cooperation and increasingly intensive communication of all stakeholders and representatives of the related institutions regarding public transportation is an outstanding result not only on local, but also at national level, and hopefully will serve as a model for other areas of regulation and societal issues as well.**

The distribution of the transport modes and the share of public transportation is described in the “establishing a baseline” section.

B3 Actual implementation of the measure

The measure was implemented in the following stages:

1. **Public procurement procedure.** The municipality conducted a public procurement procedure for the elaboration of the sustainable city traffic development plan, according to the national legal environment. The call for tender was based on the original measure description of the work in harmony with the directions of the Public Procurement Committee of the City Council. The call for tender was published 14th September 2005.
2. **Contracting.** The mayor of Debrecen signed the contract with the winner enterprise /COWI Hungary Ltd./ 25th November 2005.
3. **Set up of a mobility expert group.** In line with the envisaged measure realisation path, as a basis of the development, a mobility expert workgroup had been established by the invitation of the Mayor. The contractor /COWI/ was engaged to facilitate the process and to draw up the actual document

based on the input from the mobility workgroup. The first meeting took place on 22nd March 2006.

It is important to highlight that role of the workgroup is not just to discuss the several issues during the meetings in a “conceptual” way but to form professional written opinion or advices as well. As a result of this, the members are allowed and able to work in the background with the help of their consultants. This can eventuate a much more effective work, as the organization of the meetings raises difficulties. The workgroup was involved in the elaboration of the plan continuously by asking the members’ opinions and advices regularly.

4. **Elaboration of working documents.** Under the supervision of the mobility workgroup the three working documents had been elaborated by the contractor and submitted to the General Assembly in order to get validation. The General Assembly accepted the Plan /date: 5th July 2007; Decision number: 179/2007. (VII.5.) Ö.h./.
5. **Continuous presence of the advisor group.** The mobility workgroup still exists and is now considered by the politicians as an expert adviser group.
6. **As the sustainable city traffic development plan is a long term concept, the implementation cannot be realized within one or two years but its directions are regularly taken into consideration when decisions regarding city planning and city development made.**

B4 Deviations from the original plan

The measure was accomplished according to the envisaged measure realisation path, no deviations from the original plan occurred concerning the technical implementation of the measure. The deviations in evaluation /compared to the evaluation plan/ are described below.

B5 Inter-relationships with other measures

The measure is related to other measures as follows:

No.	Measure title	Relation
5.3.D	Operation of bio-diesel and CNG vehicles	sustainable transport modes
6.5.D	Access and parking management for the city centre	alternative mobility modes
6.6.D	Accessibility scheme for the conference centre and pedestrian zone	alternative mobility modes
8.4.D	Safety and security training for public transport drivers	PT promotion
9.3.D	Car-pooling service for students	alternative mobility modes
11.6.D	Integrated and extended cycling network	alternative mobility modes
12.4.D	Tramway priority scheme and real-time passenger information system	PT promotion

6.3.T	Implementation of the Urban Mobility Plan in the Blagnac area	mobility plan
11.1.T	Awareness raising campaign for changing mobility behaviour in Toulouse	sustainable transport
11.7.L	Participatory planning and promotion of sustainable mobility in Ljubljana with emphasis on safe and increased bicycle use	sustainable transport

C Evaluation – methodology and results

C1 Measurement methodology

According to the evaluation plan two types of evaluation were planned. In the frame of impact evaluation a data analysis concerning the number of PT users was planned to be carried out with a post-analysis as well. Within the evaluation of acceptability a questionnaire among the stakeholders was planned to be used. The direct impact was also planned to be examined by the number of decisions made upon the content of the study. Though these plans have not been realised in the framework of the project, the steps will be made at a later stage of the implementation.

Unfortunately, the evaluation could not be accomplished in the planned method due to some circumstances that became clear just after the technical implementation of the measure. The number of public transport users and the share of PT in the city transportation were measured in the frame of the elaboration of the sustainable city traffic development plan itself. The 1st working document /analysis of the current situation/ deals with the existing circumstances in the field of transportation.

The development plan is a long-term concept for upgrading the city transportation in a “green” way. Changes in the number and rate of PT users cannot be observed within a short period. The situation is the same for measuring the number of decisions based on the Plan. As the plan is valid for a long period the counting of decisions based on the plan is beyond reason.

The acceptability of the stakeholders concerning the sustainable city traffic development plan is also not measurable by evaluation tools as the whole elaboration process is based on the political and stakeholder support. After the approval of the mobility workgroup the plan had to be submitted to the city’s leadership first and then to the political committees of the city council. Finally, the plan was submitted to the General Assembly in order to get validation. As all these organisms accepted it without “blackball”, it is clearly seen that the perception of acceptability is 100% without using evaluation questionnaires.

An in-depth process evaluation has been performed for the measure.

C1.1 Impacts and Indicators

Table of Indicators.

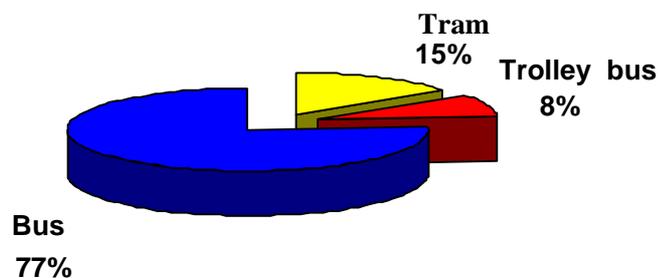
No.	Impact	Indicator	Used	Etc..
1	Exploitation of PT usage	Number of PT users before/after	X (just before)	
2	Acceptability	Perception	X	
		Number of decisions based on the Plan	n/a	

Detailed description of the indicator methodologies:

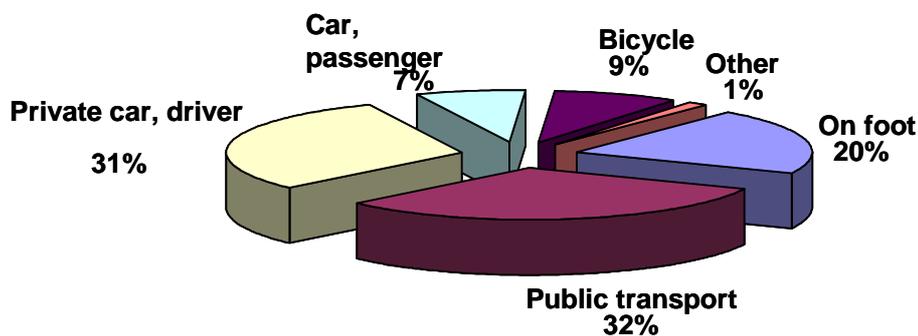
- **Number of public transport users** – Based on passenger circulation counting the number and rate of public transport users was analysed within the first working document of the sustainable city traffic development plan. Passengers at high traffic PT stops and on board have been checked, only before the implementation of the plan.
- **Perception** – The rate of acceptability among stakeholders concerning the sustainable city traffic development plan have been come to know.
- **Number of decisions based on the Plan** – The indicator was not used for evaluation.

C1.2 Establishing a baseline

According to the counting of passenger circulation the number of travelling by a public transport vehicle was 290.000 per day. The share of the public transport modes are the following:



There are 42.000 passengers travelling by tram day by day while the passenger-kilometre performance of this PT mode is around 94.000. The number of passengers travelling by trolley buses is 23.000 per day. The daily operation of bus transportation is the most valuable with its 223.000 passengers. The share of the different transport modes can be seen on the following chart:



The above indicated data is derived from the sustainable city traffic development plan /working document: analysis of the current situation; 2006/.

C1.3 Building the business-as-usual scenario

It is declarable that without the implementation of a long term sustainable city traffic development plan the rate of public transport usage and the current modal shift could not be maintained.

Taking into account the fast increase of individual car usage, the experts say that the number of PT users might decrease with a rate of 8-10% in the next few years, while the number of car-users might increase the same rate in case the city is not making efforts to stop this process.

While the public operators' annual revenues are decreasing /because of the decreasing tickets sales trend/, it is foreseeable that the rate of public transport passengers would be lower year by year. Unfortunately, the effect of a long-term sustainable city traffic development plan can be measured just after a 2-3 years period as the number of PT passengers is not changing in the short term. Unfortunately no quantitative estimations are available regarding the number of PT users of the business-as-usual scenario.

C2 Measure results

In line with the envisaged measure realisation path, as a basis of the development, a mobility expert workgroup had been established. Besides the establishment of the mobility workgroup, the contractor /COWI/ was engaged to facilitate the process and to draw up the actual document based on the input from the mobility workgroup.

The study aims primarily the reduction of environmental load caused by traffic, the sustainability and the long-term operation of the city.

The plan consists of the following three working documents that can be considered as the phases of the elaboration procedure.

The first, basic element of the plan is the **analysis of the actual status** of the traffic.

To get acquainted with the present traffic demands on one hand the contractor used the former road traffic counts and public transport surveys (which were made partly by the city/operator and themselves), on the other hand new traffic counts were also made. Statistical data of population, motorization and parking customs was used for establishing a base. Two household surveys were made (all citizen / drivers only) and a questionnaire survey was performed about the parking customs. For the evaluation conclusions of the analysis of the data sources, the opinion of the members of the mobility workgroup, and observations have also been used.

The second part of the plan was the **sustainable transport and traffic development strategy** which states that the typical urban problems have appeared in Debrecen and its further strengthening is to be expected. The motorisation rate and the mobility needs will increase, individual traffic will gain ground, and environmental load caused by traffic will result further traffic problems – primarily in the downtown area.

According to the situation the city has two options to manage the problems:

1. the traffic needs of citizens could be fulfilled by the increase of **road capacities and continuous adjust of supply to actual demands** (“pull” strategy) OR
2. traffic demands could be influenced by **the refashioning and deliberate management of the transport system** (“push” strategy). Implementation of “push” traffic policy which forms the traffic demands is the key of long term sustainability of traffic system and environment.

Considering the current status, the conception of regional planning and development, the European Union and national transport strategies the general aim of urban traffic development is the introduction of a sustainable traffic system. The most important targets of the development strategy are:

- a) Elaboration of traffic system which protects the downtown area.
- b) Transforming road traffic network to decrease environmental load.
- c) Promoting low emission traffic modes, hindering further increase of individual car use, primarily in the downtown area.
- d) Providing adequate transport modes to the function of the area.
- e) Improving the accessibility of the concentrated commercial and industrial areas.

The planned modifications in the traffic system were analyzed by computer models. The long term impacts of recently finished road developments and the expected traffic impacts have been analysed.

Based on the above interpreted strategic solutions, the contractor elaborated a **proposed development program with the priorities**. This program can be the basis of the coming planning and investment programs. The conclusions of this working document are presented in the “*Future activities related to the measure*” section.

The process of the above described phases of the planning was supervised by the mobility workgroup.

The mobility group has been part of the entire process and all the different stakeholders supported the final plan. The city council has since adopted the plan and it is now being implemented according to the action plan. **Because of the project, city transport planning in Debrecen is no longer ad hoc, but is carried out systematically and with clear goals within the framework of the sustainable urban transport plan. The mobility workgroup is still active and is now used by the politicians as an expert adviser group.**

Thus we can conclude that even though this kind of planning was completely new to all participants, it was developed on time and supported by all the different stakeholders.

The reason for success is that all the politicians realized that it was necessary to draw up a sustainable urban transport plan and that they need experts to help to do so. To make that kind of statement and try out a completely different approach in an

important challenge like city transportation took political courage, but is also paved the way for change. Secondly the transport operators were willing to pick up the glove and work together and compromise in the name of the common goal

C3 Achievement of quantifiable targets

No.	Target	Rating
1	Launch regular discussion about city traffic and transport for stakeholders	**
2	Involve citizen's participation	**
3	Implementation of a transport development plan with particular attention to sustainable mobility	**
0 = Not Achieved * = Substantially achieved ** = Achieved in full *** = Exceeded		

C4 Up-scaling of results

The direct result of the measure is the sustainable city traffic development plan and the mobility workgroup. As the plan itself is already validated by the General Assembly it cannot be up-scaled, but the plan includes a study which defines the fields of the present transport system that have to be developed and measures which have to be carried out in order to develop the whole transportation system of the city. These conclusions are described in the "Future activities related to the measure".

C5 Appraisal of evaluation approach

A real, deep evaluation concerning the measure could not be performed due to several circumstances. The acceptance of the plan among the stakeholders is completely ensured in the highest level due to the way of involving them into the process. Their vote concerning the approval can be considered as an answer to the question which would have been asked by the originally planned questionnaire. The rate and number of PT users could not be changed since the validation of the long term plan /July 2007/ as the implementation could not be realized within 1 year. Therefore the tendency of modal shift rate could not be evaluated.

To highlight the importance of the completely new approach of decision making an in-depth process evaluation has been performed.

C6 Summary of evaluation results

The key results are as follows:

- Acceptability of stakeholders and decision makers in ensured by 100%.
- Impact on modal-split could not be measured yet.

D Lessons learned

D1 Barriers and drivers

D1.1 Barriers

- **Barrier 1.** - Since there is no tradition in Debrecen of the politicians involving stakeholders and experts in the decision making process the stakeholders in the mobility work group were really skeptical in the beginning.
- **Barrier 2.** - Another obstacle was that the different stakeholders did often have needs and wishes and suggest solutions that were in direct opposition to each other.
- **Barrier 3.** - Another issue involving the stakeholders in the mobility group was that several representatives of the mobility workgroup changed jobs during the process. This delayed the process, since the new members had to familiarize themselves with the work already done and some discussions had to be reopened.

D1.2 Drivers

- **Driver 1** – As the work progressed they were convinced that it was not a show trial.
- **Driver 2** – It was very important that the mobility group was facilitated by a nonbiased moderator who could suggest compromises and maintain focus on the goal
- **Driver 3** – In retrospective some of these problems could have been solved, if the representatives had signed some kind of “letter of intent” which explicitly stated that they represented their organization and were committed to work for a common solution.

D2 Participation of stakeholders

After the approval of the mobility workgroup the sustainable city traffic development plan was submitted to the city’s leadership first and then to the political committees of the city council. Finally, the plan was submitted to the General Assembly in order to get validation. All these organisms accepted it, therefore it is clearly seen that the acceptability and involvement of stakeholders was ensured.

Depending on the subject, the mobility workgroup usually consists of the experts and leaders of the following organizations:

- Hajdú Volán Transportation Public Limited Company (bus transport operator),

- DKV Transportation Public Limited Company (tram, trolley bus operator),
- State Road Maintenance Company,
- Supervisor Company of Public Premises of Debrecen,
- Debrecen Directorate of Railroad Transport and
- Mayor’s Office Main Department of City Development.
- The Cycling Civil Society and other civil societies have also often been involved to the council.

D3 Recommendations

The measure could partly be taken up by other cities. The approach of involving all the relevant experts and actors in the field of transportation into a group where the specific issues can be agreed should be applied by other cities as well. But of course, the transferability depends on the starting point. Good and bad lessons can be read from section D1 Barriers and Drivers, as the way of overcoming barriers can be considered as recommendations as well.

D4 Future activities relating to the measure

Besides the continuing development of the working group into decision making, the contractor elaborated a *proposed development program with the priorities*, which specifies the tasks in measure packages and sets up a schedule as well. This program can be the basis of later planning and investment programs.

Some program elements are successive in time however the measures can be shifted depending on the available financial sources.

- In short term, recommended measures are the ones where the city do not need significant investments and can be feasible in a short time.

TASK	IMPACT	REMARK
modification of pay parking system , new zone system and tariff policy	small reduction of traffic travelling into the downtown, major reduction of transit traffic, better traffic circumstances for drivers and pedestrians, reduction of travel times of public transport vehicles in the downtown	in progress
promoting underground car parks by emphasized advantages and improved security		
unified delivery regulation of goods with weight and time access limit		
reducing irregular parking with enforcement and physical obstacle		
ramp metering at key entry junctions of the city , public transport priority with traffic management and traffic control measures		to be implemented together

TASK	IMPACT	REMARK
increasing the capacity of circular traffic on the small and on the grand ring road with adjusting the traffic control system		
Establishing an official, regional transport association , harmonizing the public transport operators	indirect improvement of city public transport	
introducing central traffic control , review of junctions with capacity problems, e.g. Füredi street - Böszörményi street, Árpád square	reduction of traffic congestion at critical junctions	in progress

- The mid term programme (4-6 years) consists of measures which could stop negative tendencies and measures where implementation needs more time due to long preparation or financial need. Because of long design and approval process these investments should be started in time.

TASK	IMPACT	REMARK
new underground car parks in the outer area of the city	reduction of the individual traffic of the city	to be implemented together
reducing on street parking with removal of parking lanes (Hatvan str., Széchenyi str.)		
allocating public transport lanes in the streets crossing the downtown (Széchenyi street, Csapó street, Kossuth street, Piac street)		
opening up the city with the planned western bypass road		
enlarging of pedestrian zone towards Kölcsey square, in Piac street and Dósa nádor square		
public transport priority with public transport corridors, traffic control in junctions	increasing share of public transport against individual car traffic	continuously
improving Park and Ride system		linked to the public transport corridors
moving bus station and configuring a new multimodal transport hub to improve regional transport connections		

TASK	IMPACT	REMARK
extending public transport service to the new residential and commercial areas (Kertváros, Józsa, south-east areas, new industrial parks)		continuously, parallel with the developments
improving public transport service quality: - improvement of stops, transfer connections - real time passenger information (in stops, onboard) - development of vehicle fleet (reconstructing existing and purchasing new vehicles)		continuously
improving bicycle infrastructure	increasing number of cyclist	
building bypass road in north and south (road No. 4. and 47.)	reduction of transit traffic	within the competence of the government
widening of Nyíl street		partly within the competence of the government
developing connections within the city: - section István street – Gázvezeték street, - section Gázvezeték street – Leiningen street, - new outward link in the east quarter, - section Sámsoni street – Kassai street.	increasing road capacity, reduction of bottle necks and road congestion	
interchange railway crossing at Sámsoni street and Balmazújvárosi street		
preventing residential area and green space with unique traffic calming zones in the residential areas and in the Great Forest	reduction of transit traffic and good transport in the protected area	continuously
improving city traffic information with direction signs, parking guidance system	less unnecessary journey	continuously
improving the outer road and rail traffic connection of the city		within the competence of the government
improving the access to the airport with better road link and public transport connection	improved accessibility of the city	partly within the competence of the government

- The long term programme contains measures which help the long term solution of problems handled partly by short and mid term measures or whose implementation needs significant financial, technological or infrastructural investments or the drastic modification of regulations.

TASK	IMPACT	REMARK
downtown access restriction: limited traffic zones, low emission zones, introducing city logistic services	drastic reduction of the downtown traffic	
finishing bypass road network by building the east section	reduction of transit traffic	within the competence of the government
developing suburban railway	increasing share of public transport against individual car traffic	
direct connection to the north agglomeration by the lengthening of tram No. 1. on the existing industrial track		
supporting the combined use of bicycle: Bike and Ride system, enabling bicycle transport on vehicles	increased use of bicycle	
developing railway crossings – interchange crosses: Ótemető street, Kishegyesi street	reduced travel time	