CiViTAS
Cleaner and better transport in cities

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

Iasi

R66.1 Study of Efficient Goods Distribution Plan in Iasi

Iasi

December 2009

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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.

1.3 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.

1.3.1 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. 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.

Iasi is the centre of a metropolitan area, which spans a surface of 787.87 km2, with 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.

3. Background to the Deliverable

In order to enable economic growth without compromising environmental targets – particularly those for particulate matter and energy consumption - Iasi wishes to stimulate the development of a Freight Quality Partnership (FQP). This partnership will work to make city goods distribution more efficient. To support the development of the FQP Iasi wishes to prepare a strategic goods distribution plan. This plan will be the beginning of real changes in goods distribution, that has not until now been established.

These activities form the basis of ARCHIMEDES measure 66, which actually consists of two tasks:

Task 11.7.3 Strategic Goods Distribution Plan
Iasi will perform a study to develop a strategic goods distribution plan that will inform the design of the subsequent implementation task.

Task 7.5 Strategic Goods Distribution Plan - Implementation
Iasi will form a Freight Quality Partnership by September 2010, with representation from key stakeholders. The activities of the FQP will be based on the strategic goods distribution plan aiming to reduce HGV traffic and emissions in the city centre.

3.1 Summary Description of the Task

This study is intended to inform the development of a strategic goods distribution plan. The study is formed of the following parts that will form the design of the subsequent demonstration in Task 7.5:

- a detailed analysis of requirements and behaviour of the stakeholders, together with a best practice review
- results from stakeholder consultation will help formulate and agree a strategic goods distribution plan
- an impact assessment scheme on environmental factors

The result will be the creation of specific regulations to legalise the proposed access control as part of the strategic goods distribution plan.

The study also learned from the experience from other CIVITAS cities and exchange experience and study findings with other Lead Cities.

4. Study of Strategic Goods Distribution Plan in Iasi

4.1 Introduction and objectives

The objectives of this measure are:

- to increase efficiency in goods distribution traffic
- to optimize the flow of HGVs in narrow business streets by improving loading and unloading behaviour and facilities
- to increase use of clean vehicles in goods distribution traffic
- to build a strong partnership with stakeholders.

The objectives focused on establishing the necessity of a new set of times or other technical solutions for traffic decongestion and for reduction of pollutant emissions for delivery and collections in Iasi.

The study was undertaken in order to asses the following issues regarding the efficient goods distribution in Iasi:

- The profile of the companies located on the CIVITAS corridor
- What influences or is influenced by the work of supply/distribution firms neighbouring institutions
- The main features of the business of supply/ distribution in Iasi
- Availability of firms to change their supply/distribution hours
- Correlations between supply/distribution activities and the impact variables (type of business, parking facilities, distribution hours, etc

This study is also related to research studies developed by other ARCHIMEDES cities. For example, in Donostia-San Sebastián, Spain, there was undertaken a feasibility study for goods distribution in central areas of the city. In order to improve the efficiency of goods distribution, a Freight Consolidation Centre was designed and there were

investigated the volumes of goods and number of freight trips in central areas, and possible legal barriers to the implementation.

In Brighton & Hove, UK, it is anticipated that by the end of 2009 a Partnership between the city council and local freight operators will have been formed that should reduce the number of freight vehicle kilometres and increase loading rates of freight vehicles in the city centre, so that the total fuel consumption and vehicle movements can be reduced.

Our study is related to another study undertaken by Ústí nad Labem, Czech Republic, that regards the CIVITAS Plus corridor of the city which carries a high degree of freight transport. The main objective is to recommend actions to reduce noise in the most affected areas on the corridor.

4.1 Description of the Work Done

The main element of this deliverable is based around the results of a study into a present-day issue that is of interest for all cities in economic expansion: the topic of goods transportation in view of the issues surrounding energy supply and environmental impacts. The purpose of this study is to inform the development of the strategic goods distribution plan that will need to promote a participative culture among the local companies within a public partnership framework that is advantageous both for companies and the reduction of pollution from vehicles involved in goods distribution.

On one hand, the study aims to determine the development trend of the companies located on the CIVITAS corridor and to find out the goods supply and distribution schedule (*supply refers to the goods receiving by the buying company, while distribution refers to the goods sending by the selling company*) within Iasi County.

On the other hand, the study focuses on identifying the problems that companies face that are associated with supply/distribution activities and on identifying ways of improving the supply/distribution schedule in order to reduce pollution.

By our study, the actions are intended to change the hours of receiving/distributing goods by the business located on the CIVITAS corridor. They will have an important impact on the reducing of traffic congestion and therefore the reducing of pollution. The businesses located on the corridor, the neighbouring institutions, and local inhabitants will have a higher quality for their environment.

4.2 Survey Methodology

The **target population** for the study is local companies from Iasi County located on the CIVITAS corridor. Providing transport services is not the main purpose of business for these companies, but all of them are supplied with goods so that they can conduct their business or distribute goods to their customers.

The **sample size** is of 171 companies located on the Tudor Vladimirescu – Copou corridor. The sample is representative for the population of companies with supply/distribution activities from the Iasi County, on the Tudor Vladimirescu – Copou corridor. The **population size** is of 699 companies. Due to the small size of the target population, the sample size covers almost 25% of the total population. The proposed sample size was of 174 companies, while the effective sample size is of 171 companies (104 small companies, 49 medium-sized companies and 14 big companies).

The sample was drawn using a stratified random sampling method. The stratification variable is the corridor part. The corridor parts have been geographically delimited, including the main roads in Iasi located on the CIVITAS corridor (Appendix 1).

The sample structure by parts of the corridor is presented in the following table. The differences between the proposed structure of the sample and the accomplished structure are explained by the differences between the target population and the real population found out in the field.

Table 1. The population and sample structure by layers (parts of the corridor)

Corridor part	Street	No of companies Population *total*	No of companies Sample *expected*	No of companies Sample *effective*	Teams
P1	Tudor Vladimirescu	42	11	11	1
P2	Bucsinescu, Elena Doamna	16	4	3	1
P3	Cuza Voda	97	24	24	2, 3
P4	Independentei	215	54	50	4, 5, 6, 7
P5	Banu, G. Musicescu	22	6	7	7
P6	Carol I	84	21	21	8, 9
P7	Anastasie Panu	122	30	30	9, 10
P8	Stefan cel Mare	101	25	25	10
Total		699	174	171	-

Data were collected using the questionnaire (Appendix 2). The questionnaire was delivered by face to face interviews with decision-makers within the companies. 10 interview teams were formed, each with 2-3 interviewers and a field coordinator allocated to each team.

To achieve the data collection, it required training of the interviewers (understanding the importance and scope of the survey, understanding the survey questions and their possible answers) because the topic is quite specialist. The data collection was accomplished in June 2009.

The survey questionnaire was developed in accordance with the needs of this element of the project and was structured as follows:

- Q1:Q9 - questions that describe the company profile: address, type of ownership, activity, number of employees, turnover growth, proximity to schools, hospitals etc.
- Q10:Q22 - questions about the deliveries received[1] and the distribution activities of the companies (timetable, vehicles capacity, frequency, parking facilities, access roads)

[1] This is referred to as 'supply' in the survey

- Q23:Q27 - questions identifying the main problems of transport behaviour (supply/distribution) for the businesses located on the CIVITAS corridor and investigating the possibility of changing the timetable of goods distribution in order to reduce pollution and traffic congestion (incentives, problems arising, solutions etc);
- Q28:Q30 - contact data;

4.3 Main Survey Outcomes

The data was analysed as follows:

- Mapping the survey area (the corridor of interest was divided into 8 areas, each area having a corresponding number of companies) (Table 1 and Appendix 1);
- Database creation using the SPSS software and database verification;
- Data analysis with statistical software packages: SPSS and STATA.

4.3.1. The profile of the companies located on the CIVITAS corridor

The profile of the companies located on the CIVITAS corridor is important for establishing an appropriate schedule for goods distribution, according to the type of business, the size of the company, etc.

The majority of the surveyed companies have private ownership: their proportion is equal to 97.6%.

As regarding the main activity of the companies, the highest percentage in the sample corresponds to retail companies (78%). A relatively high percentage (11.2%) corresponds to public services sector (food & restaurant companies and hotels). The other companies are from construction (1.2%), business services (1.8%) and other businesses (7.7%).

Considering the number of employees, over 60% of the companies are small companies, having less than 10 employees. One-quarter of the companies have between 11 and 59 employees, and 2.4% of the companies have between 51 and 100 employees. However, 8.4% of the companies are very big companies as they each employ more than 100 persons.

For the majority of the companies that are small companies, more than three-quarters of them (81.7%) are retailers.

The majority of the companies surveyed (approximately 63%) have at most one extra working unit besides the company headquarters, which is in Iasi for 96% of these companies.

45 companies (28.5% of the total companies) have at most 4 working units. For retailers the number is even higher, around 10 working units.

For the second extra working unit, the location is in Iasi city for 76% of the companies, while 24% of the companies have the 2nd working unit in the neighbouring cities.
The 3rd working unit is located in Iasi city for 60% of the companies, while 40% of the companies have the 3rd working unit in other cities, such as Bucharest, Cluj, or closer cities as Suceava, Bacau and Piatra-Neamt.

The 4th working unit is located either in Iasi city for 46.2% of the units and elsewhere for the remainder.

4.3.2. The Analysis of the Potential Influence of Supply/Distribution Activities on Neighbouring Institutions

Approximately 73% of observed firms are located in close proximity to a bus/tram stop. Of these, less than one quarter (22%) have specially designated parking places for vehicles carrying out the supply/distribution activities. Retailers have even a smaller share of only 20% of the companies with parking facilities. With the trade activity being specific to 84% of the companies located near public transportation stations, a general lack of specially designated parking places for distribution vehicles can cause serious problems of blocking/congestion in these areas.

A considerable proportion of businesses (41% of the total) are also located close to a school. Of these only 22% have parking facilities for suppliers and distribution vehicles. ,Although retailers represent the clear majority (82% of the businesses located in the proximity of a school) only 14% have parking facilities, which is a situation that may result in traffic problems near educational establishments.

Among the firms located near hospitals (36%), only 23% have parking facilities for supply/distribution vehicles, while retailers, who are the most predominant type of business located near hospitals (80% of businesses located close to hospitals), have such facilities at a rate less than 20%.

More than half of companies surveyed (52%) were near to hotels and/or restaurants, and only 20% of these firms can avoid blocking/congestion by having special parking places designed for supply/distribution. Again, retail businesses, which comprise the clear majority of the businesses in such locations (81%), have very provision of parking for collection and delivery vehicles (13%).

4.3.3. The Main Features of the Supply/Distribution Activities

The results from questions
a) Goods receiving

- 76% of firms only receive goods (80% of them are retailers), 3% of firms have only distribution activities (all of them are retailers), and 19% of firms both receive goods and perform distribution activities (74% of them are retailers). Only 2% said they did not perform such activities at all.
- More than half of firms (93 firms, of which 80% retailers of which less than one-quarter having parking facilities) receive goods during 9:00-12:00 hours.
- For approximately 43% of the companies, the hours of receiving goods are between 12:00-18:00 (82% of them are retailers and less than one-quarter have parking facilities).
- 27% of the companies receive goods between 6:00-9:00 hours (76% of them are retailers, a quarter of them have parking facilities)
- After 18:00 hours, the flow decreases significantly: less than 20% of companies receive goods between 18:00-22:00 hours and only 2% of companies receive goods between 22:00-6:00 hours. Moreover, only 20% of retailers receive goods after 18:00 hours and only one company does this activity during the night. Receiving goods between 18.00-6.00 hours is characteristic for companies other than retailers, public services, construction, banking, finance and insurance business.

- For almost two thirds of firms that receive goods (62%), parking time of distribution vehicles is up to 0.5 hours. Unfortunately, only one-quarter of companies have specially designated parking spaces available. This quick type of receiving goods is specific to more than half of retailers and construction companies (57.6%), to over three-quarters of public service businesses (82%) and to approximately 85% of firms with other type of businesses.
- Parking time is higher than half an hour particularly for retailers: approximately 26% of them require between 0.5-1 hours for parked vehicles when receiving goods, 8% between 1-2 hours, and 3% more than 2 hours. Of these companies, less than one-quarter has parking facilities, and for the companies that parking time exceeds 2 hours, there are no such facilities.

b) Distribution

- Regarding the distribution activities, the most frequent hours are 9:00-12:00 hours, 75% of the companies perform this activity during these hours (77.8% are retailers, more than half of them providing parking facilities).
- 53% of the companies that distribute goods (of these 68.4% are retailers, and a half provide parking places) use the 12.00-18.00 hours, while 33.3% (of these half are retailers and only one-third of them have parking facilities) distribute goods between 6.00-9.00 hours.
- Only 11% of retailers distribute goods after 18:00 hours and only one retailer distribute goods during the night. The companies that distribute goods during the 18.00-6.00 hours are in other business than retail, public services, construction, banking, finance and insurance.
- The parking time of distribution vehicles for goods distribution is slightly higher than for goods receiving. More than 60% of distribution vehicles use over 0.5 hours for parking.
- Parking time is especially high for retailers. Moreover, less than half of them have parking facilities for distribution vehicles when distributing goods. Also, for almost 14% of retailers that distribute goods, the parking time of distribution vehicles exceeds 2 hours.

4.3.4. The Assessment of the Firms' Availability to Change their Supply/Distribution Hours

Only 26 (16.5%) of firms engaged in receipt of goods have expressed their willingness to do so between 18:00-6:00 hours and only 3 of them would agree to shift to the night hours. 16 of the firms willing to receive goods after 18:00 hours have parking facilities designed for this type of activity.

Regarding the option on making goods distribution during off-peak traffic hours, the number of companies willing to do so is much smaller proportion (only 8% of them), and they are only willing to do so between 18:00-22:00 hours. These three firms also receive goods and are part of the group that responded positively to the question about receiving goods between 18:00-22:00 hours.

The most preferred facility by the companies that have agreed with shifting supplying hours is exemption/reduction of fees and taxes and receiving free access to existing parking for supplying/distribution vehicles.

Other facilities would motivate businesses to shift supplying/distribution hours during off peak hours (18:00-6:00) are:

- design of parking facilities,
- exemption from paying penalties when parking in forbidden areas;
- rewarding the night-shifts.

However, most of the companies (over 60%) did not specify what facilities they would like, whilst leaving Iasi City Hall to decide on this.

120 of the firms included in the sample (70%) would not accept supply/distribution activities during 18:00-6:00 hours in exchange for incentives granted by the City Hall. However, almost 90% of them face problems related to the effectiveness of the supply/distribution. Providing solutions and facilities to help solving these problems may be an important starting point in negotiating with the firms less willing to accept changing the supply/distribution within reduced traffic hours.

Another possible measure to optimize urban traffic should aim to reduce the amount of goods transport that occurs with heavy vehicles. Such regulations regarding the freight transport should be undertaken by Iasi City Hall together with representatives of local businesses, Transport Companies and Romanian National Company of Motorways and National Roads. There are also possibilities to ensure some parking facilities within certain scheduled hours, as a result of a decision taken together with the beneficiaries.

4.3.5. Correlations Between Supply/Distribution Activities and the Impact Variables

A higher frequency of receiving goods becomes positively correlated with the fact that the company is a retailer.

- Implication: A possible measure to optimize urban traffic should be aimed particularly for this type of businesses.

The frequency of receiving goods is positively correlated with the time at which this activity occurs. Thus, the highest frequency for this activity is between 9:12 hours (a statistically significant Spearman correlation coefficient = 0.262) and between 6:00-9:00 hours (a statistically significant Spearman correlation coefficient = 0.213).

- Implication: a useful measure for urban traffic decongestion would be to give incentives (benefits) to local companies that are receiving goods before18:00 hours, in order to shift their timetable after 18 hours. It will result in an increase of the number of companies receiving goods after 18 hours by 38% from 26 to 36 (21% of all firms). Note that 81% of these companies (29 firms) do not have parking facilities for supply/distribution vehicles.
- Stipulation of benefits (incentives) is even more necessary in that there is a negative correlation between the frequency of purchasing and supply and the agreement to change these activities to after 18 hours.

In our study there are more correlations that should be considered in order to establish the implications and the necessary measures within a strategic goods distribution plan.

Such correlations occur between:

- the vehicle type and the frequency of receiving goods. There is correlation between frequency of receiving goods and the tonnage of the vehicles both for low-tonnage vehicles (up to 1.5 tonnes) or heavy vehicles (over 7.5 tonnes);

- the existence of parking facilities and restaurant/catering -type activities (positive correlation)
- the existence of parking facilities for goods vehicles and the company size (number of employees exceeding 10) (positive correlation);
- parking duration and the type of vehicle used for supply;

4.3.6. Main Conclusions of the Survey

In conclusion, a lack of parking facilities has been noted. Within the meetings with beneficiaries the Municipality has proposed parking facilities for improving traffic flow. The Municipality suggested achieving this by changing parking arrangements on one side of the corridor, in order to obtain the approval of the companies towards changing their goods distribution schedule. In other areas the Municipality is trying to construct access ramps and additional parking places

However, there is reluctance on the part of businesses to change their goods distribution schedule, possibly even if the Municipality decides to offer different facilities. This appears to be because businesses anticipate great difficulty in accommodating the change in their goods distribution schedule.

The main target group, towards which the actions of Iasi City Hall should be directed in order to optimize the supply /distribution activities and traffic flow, is represented by retail businesses, which are most numerous, representing about 78% of all firms surveyed and over 80% of firms located in the proximity of crowded places, such as transport stations, schools, hospitals, hotels, restaurants, while having the fewest parking places for vehicles that carry supply/distribution activities.

Also, special attention should be paid to companies with several working units (more than 6 working units for supplying companies, and more than 3 working units for distribution companies) that should perform the 2 types of activities during the optimal hours 18:00-6:00 hours.

The most used hours for both receiving goods and distribution, are in order as follows: 9.00-12.00, 12.00-18.00, 6.00-9.00. In the 18.00-22.00 range, less than 20% of firms have this type of activities.

In conclusion, we can state that:

- There is the need to modify supply/distribution hours in order to consider carrying out these activities during reduced traffic hours (18.00-6.00 hours);
- The firms showed availability to adopting the proposed hours (most of the firms would prefer the first period of reduced traffic, 18.00-22.00 hours);
- There are ways to stimulate companies in agreeing with the proposed hours (facilities);
- There is the possibility of negotiating with firms who initially refused, based on providing solutions to the difficulties they face;
- The main target group of companies (retailers) could be the first to address in order to optimize the supply/distribution activities.

The CIVITAS corridor is composed of the most circulated roads that cross the city centre and make the connections between the city and its suburbs. It is important also from the point of view of students living in Iasi, as the corridor is bounded by two important University campuses (Tudor-Vladimrescu for the “Gh. Asachi ” Technical University of Iasi and Copou for the “Alexandru Ioan Cuza” University of Iasi).

Therefore, the impact of a better transportation along the corridor will on the local environment will be beneficial for all inhabitants of Iasi city.

4.4 Communication Activities

Before the survey, local companies were notified about the study by Iasi City Hall.

After the survey, meetings and debates are planned on the measures to be implemented by Iasi City Hall along with companies and Public Transportation Government Business Enterprise representatives.

4.5 Problems Identified

Prior to the study, lack of data has delayed the task.

4.6 Future Plans

The research study has shown there are important issues that the strategic goods distribution plan should address, such as traffic congestion during the supply/distribution hours, especially in the proximity of crowded places such as schools, hospitals, etc., parking facilities for distribution vehicles, and supply/distribution access facilities.

The following actions are considered for implementing the strategic plan:

1. Organising round tables with both companies and Iasi City Hall representatives and with delegates from the Public Transportation Government Business Enterprise. The main purpose is to consent on the best hours for goods distribution on the corridor. Though an important percentage of firms haven't agreed at once with the supply hours, the companies showed interest in adopting the proposed distribution schedule.

2. Organising special meetings with the representatives of the companies from the corridor that have a large supply/distribution activity in order to change their distribution behaviour in favour of the 18.00-22.00 hours and even 22.00-6.00 hours.

3. Elaboration of incentives, such as exemption/reduction of fees and taxes, receiving free access to existing parking for supplying/distribution vehicles, etc., according to the local legislation. This strategy is intended for those companies that showed high reluctance towards the schedule proposed by the Plan.

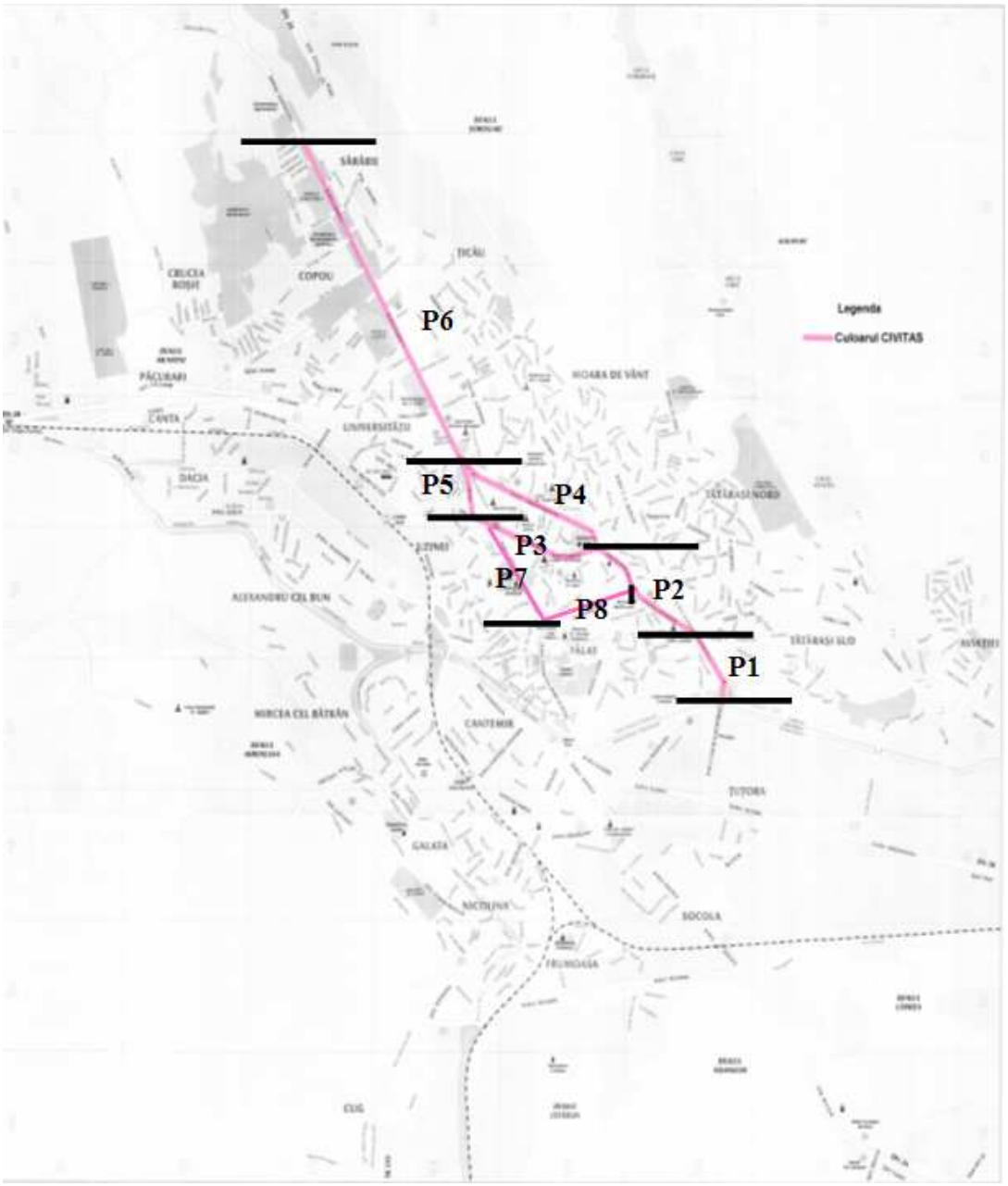
4. Elaboration of a Public-Private partnership in order to establish the main strategies for the development of the infrastructure related to the goods distribution in Iasi. One main strategy should address the parking places or the accessing roads for the companies on the corridor, so goods distribution wouldn't affect the traffic along the corridor on in the proximity of other institutions.

This will require:

- necessary consultation with other stakeholders
- specific regulations will be created in order to legalise the proposed access control measures, implemented as part of the plan
- an assessment of the scheme's impacts regarding the environmental factors.

Appendices

Appendix 1: Delimitation of the surveyed parts along the CIVITAS corridor



Appendix 2: Questionnaire

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FEAA
FACULTATEA DE ECONOMIE ŞI ADMINISTRAREA AFACERILOR
UNIVERSITATEA "AL. I. CUZA" IAŞI
Statistical Research Center

QUESTIONNAIRE

To develop a strategy to optimize supply and distribution transport on the corridor Tudor Vladimirescu - Copou, please answer the following questions (your answers are confidential and anonymous).

Company profile

Q1. Company address

……

.....

Q2. Ownership of company

☐ Public
☐ Private
☐ Mixed

Q3. The main activity of company

☐ Trade
☐ Hotel
☐ Restaurant or food facility
☐ Construction
☐ Education
☐ Banking, Finance and Insurance
☐ Other activity ... ... …

Q4. Number of employees of the company

☐ less than 10 employees
☐ between 11-50 employees
☐ between 51-100 employees
☐ over 100 employees

Q5. In the last 2 years, the turnover of the company:

☐ increased (by which percentage?) ... ...
☐ decreased (by which percentage?)... ...
☐ has remained constant

Q6. The company is located in or near a public transport stations?

☐ Yes
☐ No

Q7. The company is located near:

☐ Schools
☐ Hospitals
☐ Hotels, restaurants
☐ No such units are located nearby

Q8. How many working units the company has and what is their location?
Number of locations: ... ...
Working unit 1 ... ...
Working unit 2 ... ...
Working unit 3 ... ...
Working unit 4 ... ...

☐ There are no other working units

Q9. Do you plan, later this year or next year, to expand your business in this location?

☐ Yes
☐ Probably yes
☐ Probably not
☐ No

Q10. When you chose this location for the company, have you considered the existence of a place of access for supply distribution?

☐ Yes
☐ No

Distribution and supply

Q11. The company performs:
- ☐ Distribution activities
- ☐ Supply activities

Q12. The hours when you carry out supply activities are:
- ☐ 6.00 – 9.00
- ☐ 9.00 – 12.00
- ☐ 12.00 – 18.00
- ☐ 18.00 – 22.00
- ☐ 22.00 – 24.00
- ☐ 24.00 – 6.00
- ☐ I do not carry out supply activities

Q13. Do you agree to carry out all supply activities within the following hours:
- ☐ 18.00 – 22.00
- ☐ 22.00 – 6.00
- ☐ I do not agree with these time intervals
- ☐ I do not carry out supply activities

Q14. The hours when you carry out distribution activities are:
- ☐ 6.00 – 9.00
- ☐ 9.00 – 12.00
- ☐ 12.00 – 18.00
- ☐ 18.00 – 22.00
- ☐ 22.00 – 24.00
- ☐ 24.00 – 6.00
- ☐ I do not carry out distribution activities

Q15. Do you agree to carry out all distribution activities within the following hours:
- ☐ 18.00 – 22.00
- ☐ 22.00 – 6.00
- ☐ I do not agree with these time intervals
- ☐ I do not carry out distribution activities

Q16. What are the routes you use for distribution and/or supply?
Distribution
……..
……
……

Supply
……
……
……

Q17. What is the duration of stationary vehicles for:
- Distribution
- ☐ less than 0.5 hours
- ☐ 0.5 - 1 hours
- ☐ 1 - 2 hours
- ☐ more than 2 hours

- Supply
- ☐ less than 0.5 hours
- ☐ 0.5 - 1 hours
- ☐ 1 - 2 hours
- ☐ more than 2 hours

Q18. Characteristics of the vehicles that make supply/distribution:
- ☐ vehicles up to 1.5 tonneso
- ☐ vehicles between 1.5 to 3.5 tonnes
- ☐ vehicles between 3.6 to 7.5 tonneso
- ☐ vehicles over 7.5 tonnes

Q19. How often distribution is made?
- ☐ Several times a day. How many times?.....
- ☐ Once a day
- ☐ Several times a week. How many times? ....
- ☐ Weekly
- ☐ Other ... ...

Q20. How often supply is made?

- ☐ Several times a day. How many times?.. ....
- ☐ Once a day
- ☐ Several times a week. How many times?... .....
- ☐ Weekly
- ☐ Other …….....

Q21. Which entry is used for carrying out supply/distribution?

- ☐ Clients entry
- ☐ Backward entry

Q22. Has the company specially designated parking places for supply/distribution?

- ☐ Yes
- ☐ No

Q23. Do you agree to make supply/distribution during the interval 18.00 - 6.00 hours and receive certain privileges from Iasi City Hall?

- ☐ Yes. Please continue with **Q24**
- ☐ No. Please continue with **Q25**

Q24. What facilities would motivate you to accept making supply/distribution during 18.00 - 6.00 hours?

……

……

Q25. What are the most difficult problems you face in carrying out supply/distribution?

……

……

Q26. In your opinion, what are the causes of these problems?

……

……

Q27. What solutions you propose for solving such problems?

……

……

Optional information:

Q28. Contact person:

……..

Q29. Position in the company:

……

Q30. Phone/Fax company:

……