

**CiViTAS**  
Cleaner and better transport in cities

**MIMOSA**

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## Measure Evaluation Results

### GDA 5.1 Safety and Security – Anti Vandalism

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## Executive Summary

The measure ‘Safety and Security – Anti Vandalism’ aimed at enhancing the image of safe and friendly transport infrastructure in the city of Gdansk. The specific objectives are to increase citizens’ acceptance for public transport, to decrease the vandalism rate in vehicles and at public transport stops and to increase therefore the feeling of security of public transport users. The main assumption adopted for the measure is the stimulation of public transport development by continual improvement of public safety and tighter security measures in vehicles and at stops.

Promotional activities were organized by the mean of social tools to enhance public awareness and aimed at increasing passengers' satisfaction with public transport services. The promotional activities organized in the urban space were designed to involve inhabitants of the city and present new solutions, such as installing advert boards at selected PT stops and shelters in a pilot area in context of “Clean Stops” campaign. In July 2011 the last phase of CCTV (monitoring system) installation at key locations of transport infrastructure was completed: Cameras were installed in an underpass and at PT stops. As part of the project funding, a total of 50 cameras were installed in the target area of the downtown and other sensitive locations of the city (Gdansk-Wrzeszcz district).

The measure was implemented in three main stages:

**Stage 1: Monitoring system CCTV** (June 2010 – June 2011) A monitoring system was purchased and installed in the city centre and in the district Gdansk Wrzeszcz identified both as key locations. The system is composed of 45 cameras installed in PT tunnels and at PT stations.

**Stage 2: Data collection of vandalism act** (2010-2012) During this stage, data were collected through the monitoring system. The data (recordings of acts of vandalism) were then used to prepare a number of interesting case studies, to be used during training workshops for instructors, drivers and dispatchers.

**Stage 3: Promotional events** (September 2010 – September 2012) The third, most important phase comprised the implementation of “Clean PT Stops” campaign, “Training for trainers” workshops for PT drivers and Educational activities addressed to schoolchildren.

The evaluation was mainly based on data collected from institutions related to vandalism prevention and settlements (Police, City Guard, Road and Greenery Authority, Crisis Management and Civil Protection Department in the City Hall of Gdansk). The evaluators also decided to carry out their own survey concerning “Clean Stops” as one flagship action of this measure. Three surveys using the "Clean Stops" questionnaire were conducted within one year. The study included a control sample taken outside the area covered by the project, and creation of an online version of the questionnaire (2011 and 2012). Three measurements were also performed using the Sustainable Transport Survey questionnaire in the field and its on-line versions (2010-2012). The above-mentioned phases were reflected in the evaluation approach which, in addition to questionnaire surveys (on-site and on-line), contained the economic evaluation component (CBA). Two questionnaires specifically designed for the project were used in data gathering. In the studies concerning the impact on the sphere of awareness, three soft indicators were taken into consideration together with data on vandalism rates collected from public institutions. Since this measure had been deemed appropriate to conduct a Cost-Benefits Analysis, it was selected as focused measure.

Some key-results came out from the evaluation. The overall number of acts of vandalism decreased by more than 20% as compared to 2009 (this fact is associated with the development of the monitoring system). The indicator related to the sense of security increased by nearly 25% (in the basic sample) compared to the first measurement conducted by the MIMOSA team in September 2011. An increased frequency of PT (bus and tram) trips was declared by 10-18% of residents in 2012, and only 6-7% announced their intention to limit the use of these means of transport. Unfortunately, the direct costs of vandalism including costs of repairing the damage caused by vandalism doubled compared with 2008 costs. NPV is highly negative and equals the costs, because it was impossible to monetize the level of citizens' satisfaction, feeling safe and secure. Some of the benefits will be also evident in upcoming years.

**One of the main barriers** encountered during the process was the difficulty to collect data from public institutions involved in anti-vandalism activities (Police, City Guard, Road and Greenery management, Crisis Management and Civil Protection Department of the City Hall of Gdansk) and costs invested in repairing the damage caused by vandalism. This affected the process of conducting the CBA.

The "Clean Stops" action was one of the greatest successes of MIMOSA measures in Gdansk and the positive experiences to involve members of the public is the best way to achieve results **a driver for this measure**, which shows that.

Visible effects of the measure were the cleanness of the PT vehicles and stops and the intense use of the special boards installed as information transfer tool. Residents used the facilities to communicate. This success highlighted that citizens appreciated the measure and are ready to participate actively in the enhancement of public space.

The relevance of collecting data from an early stage became very clear in this measure and constitutes **a main lesson learnt**. Without significant data there is no possibility to check any results of activities and trends in the city.

**Creating a civil society platform** which supports the action is recommended because it makes obtaining extraordinary results possible, and actively involving citizens into the action at the same time. Clean Stop action is recommended to other cities because as a result of this action, PT stops in Gdansk are clean, and leaflets and other advertisements are placed on special boards, which also affects the sense of security as researchers claim. The Gdansk City Council decided to continue the action in the next years, because "Clean Stops" action proved to be one of the greatest achievements of CIVITAS MIMOSA project in Gdansk.

## A Introduction

### A1 Objectives

The Measure objectives are:

#### High level objectives:

- Reduction of transport-related CO2.
- Increase of modal split towards sustainable modes.

#### Strategic level objective

- Mobility Management, Marketing, Communication and Education.
- Enhancement and promotion of Public Transport use by overcoming the barriers resulting from real and perceived danger.

#### Specific Measure objectives

**Objective 1** Increasing acceptance for the use of sustainable transport options

**Objective 2** Decrease in the rate of vandalism at bus stops and in PT vehicles

**Objective 3** Increased sense of security among PT users

### A2 Description

The main assumption of measure 5.1 was stimulating use of public transport through increasing of sense of safety and security among the passengers.

The CIVITAS MIMOSA project assumed an increase in both quantitative (number of monitored objects – PT Stops) and qualitative system of public security, centrally managed video surveillance and linking it with the quick intervention of the relevant services. In 2010, under the framework of Measure 5.1, 45 visual CCTV sets were purchased and installed. In 2011 another 5 CCTV sets were purchased. The concept encompassed 50 (bus & tram) stops from the target area in the Main Town. Their implementation was a prerequisite for the commencement of ensuing ‘soft’ measures of the CIVITAS MIMOSA project (social campaign). Integrated activities in the area aimed at improving sense of safety of PT users in order to influence the reduction of acts of vandalism and their costs. Between July and September 2011, the information and promotional campaign was intensified in the local media (radio, regional TV stations and Internet portals). In September 2011 and 2012, a number of actions and events took place, promoting anti-vandalism attitudes at bus and tram stops in the framework of the social campaign titled "We Change Your City: Clean Stops". In July 2012, training workshops for public transport drivers, concerning the methods of coping with problem passengers, were organized. In 2011-2012, two measurements were carried out, including a control group measurement, also with the use of an Internet evaluation study tool, i.e. the "Clean Stops" questionnaire. The study covered the respondents' willingness to change their mobility behaviour, their attitude to public transport, the PT passengers' satisfaction levels and their sense of security.

## B Measure Implementation

### B1 Innovative Aspects

Select one or more innovative aspects from the list below (see Guidance notes for further explanation), then describe each in more detail with a few sentences:

- **Innovative aspect 1 - new conceptual approach**

In view of the poor recognition rates of CIVITAS MIMOSA brand and project among Gdańsk residents, the MIMOSA team developed a promotional strategy, introducing a memorable catchword: *We Change Your City*, under which actions such as *Clean Stops* are carried out. Through the use of new promotion tools (happenings, festivals, actions involving the cleaning of PT stops together with city residents and the media), the campaign has become more visible in the public space. Involving the public in the care of stop shelters as part of the *Clean Stops* campaign was intended to awake the sense of shared responsibility for the cleanliness of stop shelters. The campaign was directed against placing illegal adverts on the bus shelters. The main idea behind this action was to increase sense of safety and security among the PT users through increasing the aesthetics of public space. One of Gdańsk trams was entirely covered in a banner advertising the Project and informing the public of current actions. City-light billboards were also installed in selected stop shelters (Photo 2). Furthermore, in the city centre area covered by the pilot action, advert boards were put up at 12 tram stops and 6 bus stops, where advertisements could be legally placed.

**FIGURE B1.1: City-light billboards and advertising graphics and logos CIVITAS MIMOSA placed on a tram**



- **Innovative aspect 2 - use of new technology/ITS**

As a part of a measure the CCTV sets were purchased and installed at the bus and tram stops. The monitoring sets were also connected with the control centre. The modernized PT fleet was already equipped with monitoring surveillance.

- **Innovative aspect 3 - new organizational arrangements or relationships**

There were a new approach applied to implantation of measure`s tasks. In order to receive possible best results the MIMOSA team decided to involve a number of entities (i.e. NGO`s, institutions, organizations) specializing in the fields related to measure scope. Thanks to this

approach a civil society platform was created which supported organization of “Clean Stops” campaign and organization of training for PR drivers.

## B2 Research and Technology Development

Some of the most interesting studies concerning CCTV surveillance and the effectiveness of this method have been conducted recently in the area of Warsaw by P. Waszkiewicz Ph. D from the Crime Science Department of the University of Warsaw. These studies are the only ones devoted to the functioning of CCTV in Poland. No corresponding studies have been carried out in Gdańsk so far, even though it ranks third in Poland among the cities with the greatest numbers of surveillance cameras. The research conducted at the University of Gdańsk in 2009 focused on estimating the changing dynamics in different aspects of the city's development, as seen by its inhabitants. The inhabitants mentioned the development of the public transport system as the third most important aspect of development, out of 15 options available. As many as 45% of the respondents observed an improvement in the operation of public transport services, while only 11% stated that it had become worse. The development of road infrastructure and modernization of tram tracks were considered to be the greatest achievement of city authorities (out of 8 categories) by 41% of the respondents. At the same time, the facts mentioned as failures of the city authorities were the transport difficulties (congestion and bad condition of roads in the city), ranked second on the list of 8 problems, as perceived by 31% of Gdańsk residents. The quoted data clearly show the importance of public transport and road infrastructure in the residents' perception. The project contributes to policy planning at the local level, but also to the development of so-called “good practices” in technological or social innovation.

The centralized video monitoring system creates the possibility of connecting further locations related to mobility like cycle paths or pedestrian areas. It is a significant step towards creating grounds for social policy in the field of public safety. The social nature of the innovation is also exemplified by the advert boards at bus/tram stops. This implementation requires further observation and research.

Materials from monitoring were useful when MIMOSA Team organized e.g. “Training for Trainers” action or any other workshops.

## B3 Situation before CIVITAS

In the Long-Term Investment Plan for Gdańsk for 2009-2013, divided into a dozen or so programs, the greatest amount (ca. PLN 3.3 bn) is allocated for the program called "Gdańsk Szerokiej Drogi" (Have a Good Journey), aimed at improving the condition and quality of roads and also developing the cycle path network and other public transport solutions. One of the major transport system investments was Phase III of Gdańsk Public Transport Project involving the construction of two new tram lines (from the Chełm terminus to the Świętokrzyska Street terminus) and the creation of the City Centre transport hub. Another priority of the Program was the development of public transport, especially the Park&Ride system. There were plans to build several dozen car parks e.g. near the SKM city train stops and tram termini. Such rapid development of the transport system is giving rise to new challenges and requires new solutions with respect to mobility management. One of the main objectives is to improve sense of safety and security among the passengers. To reduce the rate of vandalism and various kinds of crime, an integrated monitoring system is being

developed. The CCTV surveillance also operates in the public transport system (in trams and buses). The year 2009 marked the completion of Phase I of the Direct Surveillance Control Centre managed by the Duty Officer and the Staff of the Police Headquarters in Gdańsk. Seven local surveillance centres as well as a main surveillance centre were set up, and the mobile monitoring centre was modernized. The acts of vandalism and their effects on the sphere of public transport are the responsibility of many entities of both public and economic sectors. These entities consist mainly of the partners and stakeholders of the MIMOSA CIVITAS Project, namely the Public Transport Operator, Public Transport Management, Municipal Police Headquarters, Municipal Fire Department, Road and Greenery Management, The City Hall of Gdańsk (Department of Emergency Management and Civil Protection). Before the implementation of the project, the renewed bus and tram fleet was equipped with internal monitoring cameras but nowhere within the bus shelters did the video monitoring function in a way enabling it to record incidents at public transport stops. In 2009 there were about 100 CCTV cameras operating in Gdańsk (before the beginning of the project). At the end of 2011 there were 218 cameras in all public areas in the whole city. The additional issue related to the measure was fact of neglected PT stops. The majority of shelters were covered with illegal adverts and leaflets what significantly decreased the aesthetics of PT stops and lowered perceived sense of safety and security of the passengers. To counteract this situation and stimulate use of public transport the “Clean Stops’ action was undertaken.

## B4 Actual Implementation of the Measure

The Measure was implemented in the following stages:

**Stage 1 - 2011 - 2 phase of preparation of legal documentation** and technical infrastructure for the installation of CCTV monitoring system:

- drawing up tender documentation,
- construction of underground telecommunications cable ducting along the target streets,
- installation of fibre optic cable along the target streets,
- construction of 2 fibre optic trunk lines,
- construction of a cable chamber for a fibre optic loop,
- purchase and installation of cameras on selected bus/tram stops.

Prior to the implementation of visual monitoring on PT stops, a consultation body had been established for the spots of devices installation to be selected. The decisions were made after consultations and considerations among representatives of different public institutions (Police, City Guards), under supervision of the Department of Safety and Crisis Management. Department of Emergency Management and Civil Protection was responsible for supervision over the monitoring in the city.

After the public procurement procedures had been completed, the CCTV monitoring system at stops and in the urban space was purchased and installed in places where is the biggest rush:

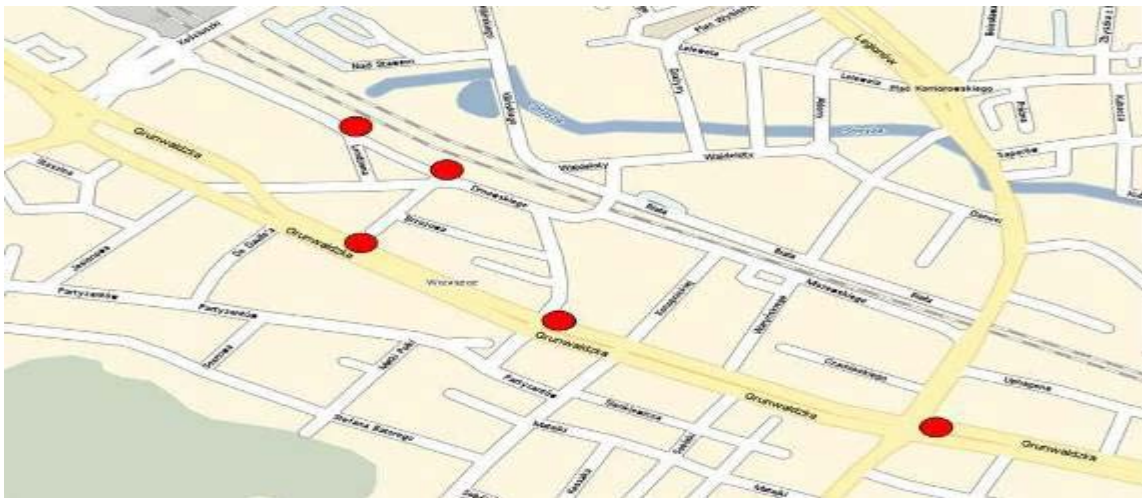
- 45 cameras in 2010 (within the Main Town),
- 5 in 2011 (in the Gdańsk-Wrzeszcz district).

In cooperation with the Crisis Management and Civil Protection Department, the team drew up a specification for the tender procedure and finalized the public procurement procedures for the purchase of monitoring sets, together with identifying sites where cameras were to be

mounted. The first part (in 2010) of monitoring sets was installed at the tram and bus stops, transport hubs and an underpass. The team also prepared the specification for the second tender for the purchase and installation of 5 monitoring sets in a new designated area. The completion of the investment part of the Measure was a pre-requirement for starting "soft" educational and promotional activities.

The installation of each new CCTV camera and their connection to the Control Centre were accompanied by numerous reports in the local press and on Internet portals.

**FIGURE B4.1: Map with the locations of 5 rotating cameras in Gdańsk- Wrzeszcz (one of the areas where the security cameras were installed, 45 other cameras have been installed in downtown).**



**Stage 2:** — Developing promotion strategies and tools in connection with the new advertising catchword "We Change Your City".

In view of the poor recognition rates of the CIVITAS MIMOSA brand among the residents of Gdańsk, the MIMOSA team modified its promotion strategy and implemented a more memorable leading catchword for the project.

- Developing promotion strategies and tools to promote the catchword: "We Change Your City", including the preparation of the "Clean Stops" action. An assumption is made in this approach that the quality and safety of public transport has a positive impact on the residents' willingness to use this way of travelling. The 'Clean Stops' campaign is an excellent example of the new approach to the promotion of means of PT. The MIMOSA team has modified the promotional strategy to ensure effective promotion of public transport through raising inhabitants' awareness.

**FIGURE B4.2: Advertisement on the side of a tram promoting the catchword: "We Change Your City" and the events of the campaign - European Mobility Week 2011.**





- from 15/08/2011 - placing banners promoting MIMOSA's actions on trams. Initially, banners informed citizens about the MIMOSA Mobility Week and Clean PT Stops. On 24.09.2011, one tram was provided with an advertisement posted on the entire surface of the vehicle; the ad is blue and contains the inscription: "WE CHANGE YOUR CITY". "Clean Stops" billboards were placed at selected tram/bus stops included in the action (20 locations).

### Stage 3: Promotional events (September 2010 – September 2012)

The "Clean Stops" campaign (from 26 June 2011 to 3 July 2012) was born from the desire of increasing the feeling of safety and security of passengers through the improvement of the aesthetics of urban space in PT vehicles and at bus/tram stops and elimination of illegal forms of advertisements (leaflets, posters and other unsightly forms of advertising). The "Clean Stops" 2011 campaign actions became part of the European Mobility Week held in 16–22 September. campaign was run on the initiative and with participation of the Deputy Mayor of Gdańsk, Maciej Lisicki. Over the period of a ca. 8 weeks preceding the European Mobility Week, special teams walked from stop to stop, cleaning the shelters, removing illegal posters and ads and encouraging the waiting passengers to join in the activities. These activities were accompanied by a widespread media campaign under the slogan "Tear it off — it's no shame", encouraging city residents to remove illegal advertisements. By involving the residents in removing advertisements from stops several goals were achieved: promoting desirable behaviour, improving the cleanliness and discouraging the advertisers.

The main event of the "Clean Stops" campaign was held in front of Gdańsk railway station on 16/09/2011 at 1 p.m. Members of the MIMOSA team led by Deputy Mayor Lisicki, with the assistance of Gdańsk inhabitants, were removing illegal advertisements and notices defacing the nearby PT shelters. The organizers were wearing distinctive blue jackets with the action logo. Additionally the advertisements removed from shelters and taken to the MIMOSA MOBILITY WEEK event on Targ Węglowy on 18 September were exchanged for sweets as prizes.

The institutions involved in the 2011 action included: Gdańsk City Guard, Gdańsk Police Headquarters, ZDiZ (Road and Greenery Authority), ZTM (Public Transport Authority) in Gdańsk, ZKM (Public Transport Company) in Gdańsk, PSSTM (Pomeranian Association of Public Transport Fans), FRAG (Gdańsk Conurbation Development Forum) and the Internet magazine "Na przystanku" ("At the stop"). The media sponsorship partners of the MIMOSA team were: Radio Gdańsk, Dziennik Bałtycki daily and the local portal www.trojmiasto.pl.

**FIGURE B4.3: Deputy Mayor of the city and project manager of CIVITAS MIMOSA launching and promoting the "Clean Stops" campaign 2012.**



The "Clean Stops" campaign also involved the following activities:

- placing a spot on the Internet, promoting the follow-up to last year's Clean Stops action, 4 months before the beginning of the action (June 2012).
- organizing a small event near City Forum (a strategic location in terms of passenger flows) on 2 July. The Deputy Mayor was accompanied by MIMOSA team members, City Guard and Police officers and representatives of Pomeranian Association of Public Transport Fans, equipped with banners and posters bearing the campaign logo and name, informing of the project's achievements.
- Consultations with passengers in the framework of the *Clean Stops 2012* campaign. The 2012 continuation of the campaign was expanded to include consultations with city residents. On the days of the action (2 and 3 July) CIVITAS MIMOSA team visited 6 key locations in the city (area of project impact), making enquiries among the residents about their ideas for counteracting vandalism at PT stops and in PT vehicles. The passengers had the opportunity to express their views verbally or in writing. The suggestions collected from city inhabitants will be presented to Gdańsk authorities and may be used in further action against vandalism.

**FIGURE B4.4: Advertisements on the tram for the campaign 2012 "Clean stops" with the catchwords: "Stops without leaflets" and "Take care of stops".**



#### Advert boards at stops – 2011 and 2012

To increase the chances of the "Clean Stops" action, in 2011 permanent advert boards were installed at selected stops on the route between Brama Wyżynna and the Main Railway Station. 12 bus and tram stop shelters – situated near the Main Railway Station were included in the pilot action. The pilot edition of this undertaking brought very good results, as evidenced by year-long monitoring in the relevant area in the centre of Gdańsk. The stop shelters have not been defaced since the introduction of separate advert boards where notices and ads can be placed by city inhabitants. This year's action (2012) featured the installation of **another 60 boards** during the "Clean Stops" campaign in July (a total of 70 boards have been installed in the city centre and in the district of Wrzeszcz).

#### "Training for trainers" workshops for PT drivers

On 02/07/2011 a 6-hour "training for trainers" workshop was organized for 30 tram and bus drivers, providing instructions on how to deal with undesirable behaviour of public transport passengers, especially those committing acts of vandalism, entitled "How to deal with misbehaviour in PT and problematic passengers". The workshop's attendees were equipped with educational materials in order to provide training to colleagues at work. The workshop agenda, prepared together with specialists from the Police Headquarters, psychologists and

sociologists, was focused on the practical aspects of coping with challenging situations by vehicle drivers.

**FIGURE B4.5: Drivers participating in the workshop in counteracting vandalism. A camera for monitoring stops.**



#### Educational activities addressed to schoolchildren

- In 2010, about 300 children from primary schools in Gdańsk took part in an art competition entitled "Smart Transport — Better Life", organized by the Department of Development Projects of Gdańsk City Council.
- On 25 September 2010, during a family event "MIMOSA Mobility Weekend" was held. There was an award ceremony and exhibition of works of art for winners of this competition.
- In 2011, as a follow-up to the previous year, an art competition was announced, aimed at a similar target group, entitled "STOP Vandalism". The subject of the competition was designing a sign discouraging vandalism. During the Mobility Week, the winners of the competition were presented and the exhibition of the awarded works was held.

Improving visibility and safety of PT stops – the action initiated by CIVITAS MIMOSA was taken up by Road and Greenery Management in autumn 2012. This activity was necessary to improve the colour visibility of tram stops in order to enhance the safety of passengers.

**FIGURE B4.6: Yellow stripes for the safety of PT passengers**



## **B5 Inter-Relationships with Other Measures**

The measure is related to the following measures:

**Measure GDA 4.1 Marketing Tram** – Measure 5.1 is to improve safety in vehicles (including trams) and at the tram and bus stops. The undertakings within the measure are supposed to

affect the growth of a sense of security among the passengers, and help to promote tram lines and increase the number of users.

**Measure GDA 4.3** Mobility Management – Mobility Week – our Activities 5.1 (influencing the upswing of PT use through the increase of sense of security of PT passengers through combating vandalism by developing the monitoring system) are linked to the activities of the Mobility Week (Measure 4.3). Some of competitions, quizzes and educational actions are under development (e.g. competition for primary schools to design a “ STOP Vandalism” sign, the rewards for picking the illegal advertising materials from the shelters (slogan: “Do not be ashamed to tear off”).

**Measure GDA 4.2** Mobility Management - Education – the actions undertaken within measure 5.1 like competition entitled “STOP Vandalism” were directed to school children and carried out in cooperation with 4.2 measure leader.

## C Impact Evaluation Findings

### C1 Measurement Methodology

The study under the framework of the “Clean Stops” campaign was conducted on three occasions by means of the face-to-face questionnaire method (in 2011 and 2012).

#### Sample specification:

- sample selection: purposive (4 districts selected - 2 districts covered by the impact of the MIMOSA project and 2 districts from areas not affected by that impact),
- subject of questionnaire: passengers of city tram transport,
- sample unit: district (4 districts),
- spatial range: city conurbation – the City of Gdańsk;
- time and place of questionnaire: 09.2011- 12.2011 - 07.2012 - 4 selected districts of Gdansk, separately for research (basic sample) and control sample.

**TABLE C1.1: Characteristics of the research samples - “Clean Stops” questionnaire study**

Number of basic or control group (used for graphs)	Realisation time time	SAMPLE N=min. 100	
		basic	control
1	09. 2011 N total = 318	183	135
2	12. 2011-1.2012 N total = 286	114	172
3	07.2012 N total = 434	303	131

Each time both the basic group (from the area impacted by the project) and the control group (from the area not impacted by the project) were taken into consideration. The measurement was made for 6 samples altogether (2 samples per each study). Each research cycle was conducted in a parallel fashion (at the same time but in different districts). The sample volumes vary due to different conditions of the survey performed by pollster`s at stops and inside trams. Waiting or travelling passengers are not always willing to talk to a researcher. Besides, in the context of road traffic, the flow of passengers tends to be highly dynamic. The following research design was implemented accordingly:

In each of the three measurements (in 2011 and 2012) the same interview questionnaire was applied. This makes it possible to test average differences in responses given by persons from both the basic as well as the control group. With regard to subsequent years, it was possible to study differences in the replies of respondents from the basic group of 2011 as compared to that of 2012, and, by analogy, differences among the persons coming from the control groups from the two years. The statistical significance of the differences between

averages in answers was studied with the Student t-test, with the significance level equaling  $\alpha=0.05$ .

The tables below present overall data concerning the age, gender structure and the status of socio-professional of respondents, in respect of each type of sample.

**TABLE C1.2: Characteristics of the sample due to gender - “Clean Stops” questionnaire study.**

SAMPLE N:	type of sample	female	male	Total
595	3 measurements for basic samples - together	53,3%	46,7%	100,0%
434	3 measurements for control samples - together	67,1%	32,9%	100,0%
<b>1030</b>	<b>Total</b>	<b>59,1%</b>	<b>40,9%</b>	<b>100,0%</b>

In the study using the “Clean stops” questionnaire, the gender structure of the respondents shows a predominance of women (ca.18% more than men). This situation showed that women in general used PT more frequently.

**TABLE C1.3: Overall structure of respondents' age ( together)- “Clean Stops” questionnaire study.**

SAMPLE N:	type of sample	to the age of 24 years	25-34	35-44	45-54	55-64	over 65	Total
595	3 measurements for basic samples - together	49,6%	20,9%	9,3%	8,3%	6,3%	5,7%	100,1%
434	3 measurements for control samples-together	31,9%	20,6%	7,2%	10,4%	12,2%	17,8%	100,1%
<b>1030</b>	<b>Total</b>	<b>42,1%</b>	<b>20,8%</b>	<b>8,4%</b>	<b>9,2%</b>	<b>8,8%</b>	<b>10,8%</b>	<b>100,1%</b>

As the table nr 3 shows, a majority of the respondents are young - to the age of 24 years, constituting ca. 42% of the surveyed persons. About 20% are persons aged 25-34. In the study of the “Clean Stops” questionnaire, the predominant group of respondents are young people up to 34 years of age.

**TABLE C1.4: Socio-professional status of the respondents - “Clean Stops” questionnaire study.**

SAMPLE N:	type of sample	employed	learner	unemployed	retired	Total
595	3 measurements for basic samples - together	47,9%	38,1%	4,8%	9,3%	100,1%
434	3 measurements for control samples-together	44,3%	26,9%	2,2%	26,6%	100,0%
<b>1030</b>	<b>Total</b>	<b>46,4%</b>	<b>33,4%</b>	<b>3,7%</b>	<b>16,5%</b>	<b>100,0%</b>

For all respondents (Clean Stops questionnaire studies) the groups most strongly represented in terms of their social-professional status, are employees (46,4%) and learners (34,7%). pensioners are represented at the level of 16,5%.

For the questionnaire on Sustainable Transport there were 5 measurements made altogether in the period in question, i.e. from 2010 till 2012), each year in September (European Mobility Week). The studies were carried out by means of an online questionnaire (with the questionnaire-oriented website Survey Monkey being used) and a paper questionnaire (PAPI). The exceptional situation occurred in 2010, when only online studies were conducted. The respondents of the questionnaire were Gdańsk inhabitants, who were acquired for the study during the Mobility Week (passers-by and participants of the event). They filled the questionnaire by themselves, without a pollster's presence. In the online study Internet users of the city's websites participated, including persons visiting the website of the CIVITAS MIMOSA project. This way was used each time in 3 subsequent years 2010-2012. The questionnaire on Sustainable Transport was applied 5 times with large samples. In the case of all the samples a section with particulars was applied) showing the respondents' age, gender, social-professional status).

#### Sample specification:

- sample selection: purposive (participants of the Mobility Week, Internet users)
- subject of questionnaire: inhabitants of Gdansk, including Internet users
- sample unit: participants in the Mobility Week/users of the city's websites related to transportation systems activity
- spatial range: city agglomeration – the City of Gdańsk;
- time and place of questionnaire: the European Mobility Week, each time – September 2010-2012.

Each research cycle was executed in a parallel fashion (in the same week of September). The samples sizes differ due to unpredictable activity on the part of Internet users. The minimum sample volume adopted was at the level N=200

The following research design was implemented accordingly:

**TABLE C1.5: Characteristics of the research samples - Sustainable Transport questionnaire study.**

delivery time	SAMPLE N=minim 200	
	on-line	PAPI questionare
<b>09.2010</b>	N=1 176	-
<b>09.2011</b>	N=353	N=185
<b>09.2012</b>	N=220	N=248

In each of the 5 measurements (in 2011 and 2012) the same questionnaire was applied. A tool constructed in 2010, with numerous methodological defects, was used. After being improved, the tool remained consistent with the initial version, with some details being different from the original version. This fact rendered comparability of selected questionnaire items impossible. The data included in the section on particulars, concerning the characteristics of respondents, was collected and analyzed in a routine fashion, and also subjected to deep inference and interpretation.

The tables below present overall data concerning the age, gender structure and the status of socio-professional of respondents, for the 2 survey versions together - for the PAPI and on-line version for the period of one year.

**TABLE C1.6: Questionnaire on Sustainable Transport - overall structure of respondents' gender (PAPI and on-line together).**

sample	gender		total
	female	male	
2010	47.00%	53.00%	100%
2011	49.20%	50.80%	100%
2012	53.70%	46.30%	100%
<b>total</b>	<b>48.3%</b>	<b>51.7%</b>	<b>100%</b>

**TABLE C1.7: Questionnaire on Sustainable Transport - overall structure of respondents' age (PAPI and on-line together).**

sample	age							total
	under 15	15-20	21-30	31-40	41-50	51-65	over 65	
2010	2.70%	21.20%	49.30%	17.20%	5.10%	4.00%	0.40%	100%
2011	3.80%	8.30%	14.20%	23.80%	17.90%	26.70%	5.40%	100%
2012	6.00%	12.90%	30.20%	23.40%	11.70%	10.10%	5.60%	100%
<b>total</b>	<b>3.3%</b>	<b>18.2%</b>	<b>41.5%</b>	<b>19.0%</b>	<b>7.9%</b>	<b>8.2%</b>	<b>1.9%</b>	<b>100%</b>

As the table shows, a majority of the respondents are young, aged 21-30, constituting ca. 40% of the surveyed persons. Nearly a quarter are persons aged 15-20 and 31-40. In the study using the Sustainable Transport questionnaire the gender structure of the respondents was fully symmetrical.

**TABLE C1.8: Questionnaire on Sustainable Transport - overall socio-professional structure of respondents' PAPI and on-line together).**

sample	social and employment status							total
	learner	full-time employee	part-time employee	unemployed	self-employed	Unfit to work	retired	
2010	40,60%	46,10%	5,50%	1,90%	4,20%	0,30%	1,30%	100%
2011	14,90%	42,30%	9,50%	7,50%	11,20%	2,10%	19,10%	100%
2012	25,90%	43,30%	3,20%	7,70%	8,50%	0,00%	11,30%	100%
<b>total</b>	<b>34,7%</b>	<b>45,1%</b>	<b>4,8%</b>	<b>3,6%</b>	<b>5,8%</b>	<b>0,5%</b>	<b>5,4%</b>	<b>100%</b>

In the comprehensive annual presentation for all studies made with the questionnaire on Sustainable Transport, the groups most strongly represented in terms of their social-professional status are full-time employees (45.1%) and (secondary and tertiary level) students (34.7%). Self-employed people and pensioners are comparably represented at the level of circa 5%.



## C1.1 Impacts and Indicators

**TABLE C1.1.1: Table of indicators**

Evaluation area	Evaluation category	Impact	Number and name of indicator	Source of data	Indicators of success
<b>Economy</b>	2.Costs	<b>Direct costs</b>	<b>1. Capital costs</b> total: monitoring system (related with CBA)	project provider	
		<b>Direct costs</b>	<b>2. Direct costs of prevention</b> campaigns and preventive measures: promotion, training, advert boards (related with CBA)	PT providers	
		<b>Direct costs</b>	<b>3. The cost of vandalism:</b> costs of repairing the damage caused by vandalism (related with CBA)	PT providers	Direct Cost of vandalism decreased by <b>20%</b>
	1. Benefits	<b>Reduce the cost of vandalism</b>	<b>4. Rate of vandalism:</b> - number of acts of vandalism (related with CBA)	PT providers	Number of acts of vandalism decreased by <b>20%</b>
<b>Society</b>	<b>19</b> Quality of PT service	<b>Quality of PT service</b>	<b>5. 1</b> - perception of the level of cleanliness of public transport stops ,	Own research survey and comparative analysis	Increased perceptions of safety by <b>20%</b>
	<b>19</b> Quality of PT service	<b>Safety and security</b>	<b>5.2</b> level of security experienced by PT users	own research-survey and comparative analysis	-
	<b>19</b> Quality of PT service	<b>Acceptance</b>	<b>5.3</b> level of acceptance for sustainable options of transport	own research-survey and comparative analysis	-

The impact indicators are adequate to the selected 3 specific objectives (limited in comparison with those assumed in LEP and DoW documents). The reasons for reducing the list of impact indicators were:

- limiting the activities within the framework of Measure 5.1 to awareness-raising social campaigns and to activities aimed at developing the CCTV monitoring system,
- limited access to base line data (or absence of adequate data),
- difficulty in conducting a comparative analysis of research results on the basis of previously developed defective tools (Sustainable Transport questionnaire of 2010),
- the inferior quality of databases created due to the absence of a uniform system / standard of data base created by various institutions — project stakeholders.

In view of the absence of system solutions with respect to data collection by key institutions, the databases acquired in the course of the evaluation are not sufficient to the research inquiries made. There were difficulties in obtaining the data, particularly those concerning the costs of maintenance of stop shelters. The companies providing maintenance services were

unwilling to reveal information on the costs of these services. The above-mentioned circumstances gave rise to serious difficulties in the preparation of the CBA.

## Economy area

### Indicator 1 - Capital costs:

Project implementer's own data concerning the expenditures on the components of the CCTV monitoring system — the overall costs of the purchase and installation of cameras in the second half of project lifespan.

**Indicator 2 - Direct costs of prevention:** Project implementer's own data concerning the expenditure on the activities involving promotion, training workshops for tram drivers and the purchase of advert boards for PT stops within the lifespan of the project.

### Indicator 3 - Costs of vandalism:

Costs of repairing the damage caused by vandalism – the indicator concerns the costs of vandalism and criminal damage, recorded by the Police and City Guard (for the period 2008-2011). Similar figures were obtained from the owners of transport fleet and infrastructure (ZKM and ZDiZ).

### Indicator 4 - Rate of vandalism:

The indicator corresponds to the number of acts of vandalism in vehicles and at stops - recorded by the Police and City Guard. The data on crimes and minor offences (for 2008–2011) involving vandalism and criminal damage were also obtained from the owners of transport fleet and infrastructure (ZKM and ZDiZ). Indicator associated with the specific objective nr 2.

## Society area

**Indicator 5.1 Quality of PT service** - perception of the level of cleanliness of public transport stops - based on a comparative analysis of own field studies (using the "Clean Stops" questionnaire) with the use of a control group in 2011-2012. Indicator associated with the specific objective nr 1. It was assumed that an improvement in PT services quality, including the cleanliness of transport infrastructure, has an influence on the level of acceptance of the use of PT options. The measurement of PT passengers' perception of cleanliness also enables evaluation of the impact of "Clean Stops" campaign actions.

**Indicator 5.2 Safety and security** - level of security experienced by PT users - based on a comparative analysis of our own field studies (using the "Clean Stops" questionnaire) with the use of a control group in 2011-2012. Indicator associated with the specific objective nr 3. It was assumed that an increased sense of security in PT vehicles results in an increased level of acceptance of the use of sustainable options.

**Indicator 5.3 Acceptance** - level of acceptance for sustainable options of transport - based on a comparative analysis of our own field studies (using the "Clean Stops" questionnaire) with the use of a control group in 2011-2012. Indicator associated with the specific objective

nr 1. It was assumed that the declared willingness to change the frequency of use of PT (tram and bus) expresses the change in the level of acceptance for making choices in favour of sustainable options

## C1.2 Establishing a Baseline

The data for Measure 5.1 come from our own research – on-going evaluation of the CIVITAS MIMOSA project from 2010 -2012, from 1 external questionnaire, made on-line in 2010, as well as from external sources (desk-research). It used the results of studies (2011-2012) based on three field surveys with the use of the "Clean Stops" questionnaire, including control samples. The results of three measurements (2010-2012) using the Sustainable Transport Questionnaire, carried out in September of each year in the on-line and on-site version (PAPI) during the European Mobility Week celebration. Obtaining the base-line data for the study area related to "soft" results (society area) was very difficult, since no detailed studies concerning the security and quality of PT services had been conducted in Gdańsk before MIMOSA. One exception is a single external survey conducted on-line in 2010 on a representative sample, commissioned by the City of Gdańsk.

The purpose of desk-research analysis was to obtain databases from entities managing the transport resources and from contractors providing services to these entities in Gdańsk. The process of data collection encountered numerous obstacles, especially with respect to acquiring data from contractors providing cleaning services at PT stops. Both the quality of data obtained and the lack of data continuity make it impossible to conduct the CBA analysis fully and reliably. It should be kept in mind that since 2008 there has been a qualitative and quantitative development in elements of the city's transport network (also those connected with UEFA Championship EURO 2012). This prolonged process of reconstruction generated an image of changes that is difficult to attribute to individual variables. Hence, investigation of the impact of the CIVITAS MIMOSA project had to allow for many factors modifying the data obtained.

### **C1.3 Building the Business-As-Usual Scenario**

<b>Name of survey / study type (target group)</b>	<b>Characteristics of studies carried out in 2010</b>	<b>Characteristics of studies carried out in 2011</b>	<b>Characteristics of studies carried out in 2012</b>
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**TABLE C1.3.1: Sources of the data**

<b>1. Desk-research</b> <b>a/ The costs of vandalism</b> <b>b/ Costs of preventing vandalism</b> <b>c/ number of vandalism cases</b>	–	database reports. statistics reports and records violations	ZKM- Department of Public Transport, ZDiZ –Road and Greenery Management, Police, City Guard The City of Gdansk
<b>2. On-line survey</b>  <b>(sense of security at PT stops)</b>	<b>2010, N=1070</b>  study commissioned by the City of Gdansk	–	–
<b>3. Clean Stops-</b> face to face survey  (PT users)	–	<b>N = 318 09.2011,</b> N= 183 (basic sample) N=135(control sample),  <b>N=286 12.2011</b> N= 114 (basic sample N= 172 (control sample)	<b>N= 434, 2012 VII.2012</b>  N= 303 (basic sample) N= 131 (control sample)
<b>4. Survey of Sustainable Transport-</b> <b>a/ questionnaire survey</b>	–	<b>a/ PAPI questionnaire (N=288) 09.2011</b>	PAPI questionnaire <b>=255</b> 09.2012
	<b>b/ on-line survey - surveymonkey.com</b>  (citizens)	<b>b/ N = 1176 09-10.2010</b>	<b>b/ N = 385 09.10.2011</b> surveymonkey.com
<b>5. Probe from portal</b> <a href="http://www.trojmiasto.pl">www.trojmiasto.pl</a>			<b>N=669 10.2012</b>

BAU analysis provided data which suggest that the planned result indicators have not been achieved in relation to the so-called "hard" success indicators. The reasons for this may be as follows (assuming correct approach in the methodology of indicator estimates):

1/ The rapid development of the monitoring system infrastructure since 2009 (in terms of technical and human resources) generated a dramatic increase in costs. The benefits of this investment will become visible in the long run.

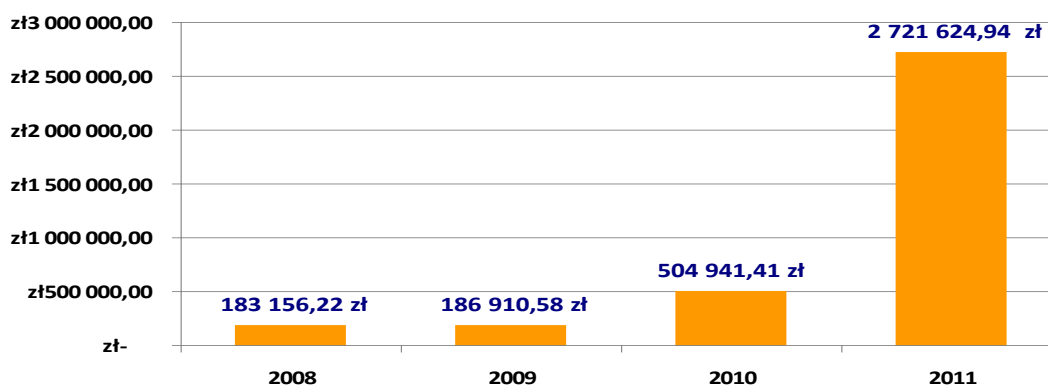
2/ Because of the greater share of recorded cases of criminal damage and vandalism in vehicles and at stops, the increase in terms of the numbers and costs of acts of vandalism is in this case a statistical effect.

**TABLE C1.3.2: BAU assumptions for each indicator**

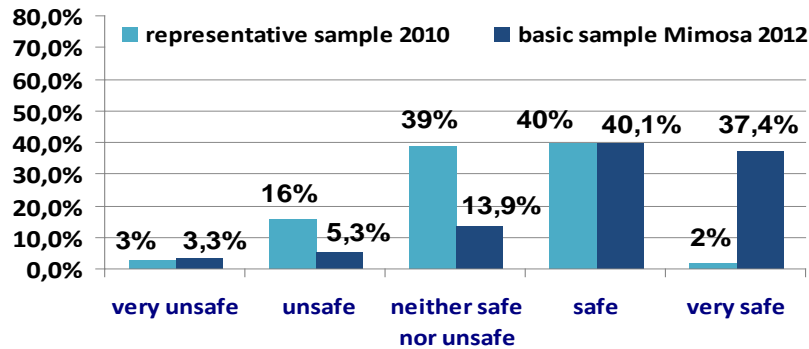
Indicator	BAU assumptions
<b>1 - Capital costs:</b>	It's possible to assume that business as usual will be significantly higher than the base-line. The intensive development of the CCTV monitoring system in the last years and the need to increase security before the

Indicator	BAU assumptions
	organization of Euro 2012 in Gdansk caused increase of the cost and investments related to safety and security.
<b>2. Direct costs of prevention</b> – "soft actions" + costs of installation of advert boards at stops	-
<b>3. The cost of vandalism: costs of repairing the damage caused by vandalism</b>	It's possible to assume that business as usual is very similar or slightly higher than the baseline. The level of vandalism was rather constant, but the number of PT vehicles and PT shelters was growing during the reporting period.
<b>4. Number of acts of vandalism</b> (in vehicles and at stops)	It's possible to assume that business as usual will be significantly higher than the base-line. The development of the prevention system (centrally controlled CCTV monitoring system covering most districts of Gdańsk) contributes to the increase in the rate of detection and intervention with respect to crimes/minor offences. The increased awareness is also conducive to greater sensitivity of residents to any signs of vandalism. This effect contributes to a greater number of notifications/registration of cases of vandalism.
<b>5. 1 Quality of PT service</b> - perception of the level of cleanliness of public transport stops	It's possible to assume that business as usual is the same or very similar to baseline. There are no data for the time before the baseline.
<b>5. 2 Safety and security</b> - level of security experienced by PT users	It's possible to assume that business as usual is very similar or slightly higher than the baseline.
<b>5.3 Acceptance</b> - level of acceptance for sustainable options of transport	It's possible to assume that business as usual is the same or very similar to baseline. There are no data for the time before the baseline.

**FIGURE C1.3.1: Overall direct costs of counteracting vandalism in the individual years, including the share of CIVITAS MIMOSA funds (PLN).**



**FIGURE C1.3.2: Comparative analysis - an on-line survey in 2010, N=1070 (sense of security at PT stops), and a similar own study (basic sample 2012) using the "Clean Stops" questionnaire N=303.**



The indicator measurements presented in Graph 2 are good examples for BAU. The comparative analysis was conducted on 2 measurements carried out at an interval of two years (2010, 2012). One of these was an on-line study investigating the opinions of Gdańsk residents on the quality of services in means of public transport, commissioned by Gdańsk City Council and conducted on a representative sample of 1070 respondents. The results were compared with the team's own 2012 study on the basic sample with the use of the "Clean Stops" questionnaire. Both studies included the selective indicator of passengers' sense of security at PT stops in the city.

A very favourable trend was observed with regard to the "very safe" option, demonstrating a more than 35% increase in the sense of security at PT stops over the period of 2 years.

A considerable decrease was observed in the case of the neutral rating (by ca. 27%) in favour of 2012. The results for the "unsafe" rating are also satisfactory, since ca. 10% fewer respondents described PT stops as unsafe. Because of the 2-year interval between the measurements, the positive trend in the security of PT users in the city was demonstrated more distinctly. The above results lead to the conclusion that the adopted project assumptions were correct, stating that preventive measures against vandalism translate into an increase in the sense of security.

## C2 Measure Results

The results are presented under sub-headings corresponding to the areas used for indicators – economy, energy, environment, society and transport.

### C2.1 Economy

**Indicator 1 - Capital costs:** The capital costs related to the equipment and incorporation of the CCTV monitoring in the existing system were incurred in 2010/2011 and consist of the costs of purchase and installation a total of 50 cameras.

**TABLE C2.1.1: Capital costs - monitoring equipment and implementation.**

Overall costs of CCTV monitoring equipment and implementation	2008	2009	2010 - 2011
Costs of CCTV monitoring in the framework of MIMOSA	- EUR	- EUR	88 814,97

Costs of monitoring system (2010 - 45 pcs + 2011- 5 pcs) in the framework of CIVITAS MIMOSA amounted to **EUR 88 814,97**

**Indicator 2 - Direct costs of prevention:** According to the data from the project implementer, the overall expenditure on measures counteracting vandalism were allocated for implementation of tasks such as promotion, training workshops for tram drivers and the purchase of 70 advert boards installed at PT stops in the area of MIMOSA project impact.

**TABLE C2.1.2: Direct costs of prevention incurred by the MIMOSA project.**

Overall costs of measures counteracting vandalism	2008	2009	2010	2011-2012
Promotion and advertising	- EUR	- EUR	- EUR	EUR 9 185,25
Costs of installation of advert boards at stops	- EUR	- EUR	- EUR	EUR 52 250,00
Training of tram drivers	- EUR	- EUR	- EUR	EUR 7 000,00
<b>Total</b>	-	-	-	<b>EUR 68 435,25</b>

Direct costs of prevention - total expenditures on counteracting vandalism, within the framework of the MIMOSA project by means of the so-called soft methods amounted to **EUR 68 435,25**



**Indicator 3 - The cost of vandalism:****TABLE C2.1.3: Costs of repairing the damage caused by vandalism. Costs of covering the effects of vandalism**

Costs of vandalism	2008	2009	2010	2011
Costs of acts of vandalism (according to Police and City Guard data)	EUR 1 007,03	EUR 3 554,92	EUR 7 239,50	EUR 6 700,00
Costs of vehicle damage by vandalism (ZKM)	EUR 6 230,00	EUR 3 112,72	EUR 380,17	EUR 3 889,90
Unit costs of vehicle damage by vandalism (ZKM)	EUR 19,25	EUR 9,50	EUR 1,25	EUR 11,25
Costs of shelter damage by vandalism (ZDiZ)	EUR 45,00	-	-	-
Costs of shelter damage by vandalism (ZDiZ)	EUR 1 007,03	EUR 1 247,50	EUR 4 110,00	EUR 5 542,50
Costs of shelter damage by vandalism per one shelter (ZDiZ)	no data available	EUR 46,25	EUR 7,00	EUR 76,00
<b>Overall costs of vandalism</b>	EUR 8 308,31	EUR 7 970,89	EUR 11 737,92	EUR 16 219,65

Costs of repairing the damage caused by vandalism – the indicator concerns the costs of offences involving vandalism and criminal damage, recorded by the Police and City Guard (in the period 2008-2011). Similar figures were obtained from the owners of transport fleet and infrastructure (ZKM and ZDiZ).

**Conclusion:**

Costs of repairing the damage incurred by the Road and Greenery Management caused by vandalism have nearly doubled in comparison with 2008.

**TABLE C2.1.4: Percentage rate of change in the level of expenditures on preventing vandalism in the following years.**

Costs in individual years	Direct costs of vandalism EUR	Change relative to 2008 %
2008	8 308,31	0,00%
2009	7 970,89	- 4,50%
2010	11 737,92	41,50%
2011	16 219,65	94,6%
2012	no data available	no data available

**Conclusion:** The direct costs of vandalism doubled as compared with 2008. This is caused by the growing number of new vehicles and new PT shelters installed during the reporting period. Most of the trams, buses and shelters nowadays are new (70%) and constructed using new technologies, which increased the repair costs. Due to Mimosa ideas and

investments, local authorities started to use a new standards to improve safety and security and the cost grown. there may be several reasons for this situation:

- an increase in the "average" costs of repairing the damage caused by an act of vandalism;
- higher standards of cleanliness and safety connected with the repair of damage caused by the recorded acts of vandalism.
- changes in the number of acts of vandalism;

#### Indicator 4 - Rate of vandalism:

The indicator corresponds to the number of acts of vandalism in vehicles and at stops - recorded by the Police and City Guard. The data on crimes and minor offences (for 2008–2011) involving vandalism and criminal damage were also obtained from the owners of transport fleet and infrastructure (ZKM and ZDiZ).

**TABLE C2.1.5: Number of acts of vandalism.**

Number of acts of vandalism,	2008	2009	2010	2011	2012
Number of interventions (City Guard and Police) - vandalism and criminal damage	110	164	98	84	no data
Number of interventions (City Guard and Police) — placement of advertisements	80	159	180	200	no data
Number of cases of vehicle damage by vandalism (ZKM)	81	107	71	83	no data
Number of cases of shelter damage by vandalism (ZDiZ)	1	0	0	0	no data
<b>Total</b>	<b>272</b>	<b>430</b>	<b>349</b>	<b>367</b>	no data
<b>Change relative to 2008</b>	<b>0,0%</b>	<b>58,1%</b>	<b>28,3%</b>	<b>34,9%</b>	no data

#### Conclusions:

The overall number of acts of vandalism increased by more than 23% as compared with 2009.

The most considerable increase in the number of acts of vandalism occurred in 2008-2009 — before the implementation of MIMOSA project measures. In subsequent years (after the launch of the project) this indicator showed a downward trend. Due to character of signed contracts for investments, there was a problem to separate some costs for each years.

## C2.2 Energy

Not applicable

## C2.3 Environment

Not applicable

## C2.4 Transport

Not applicable

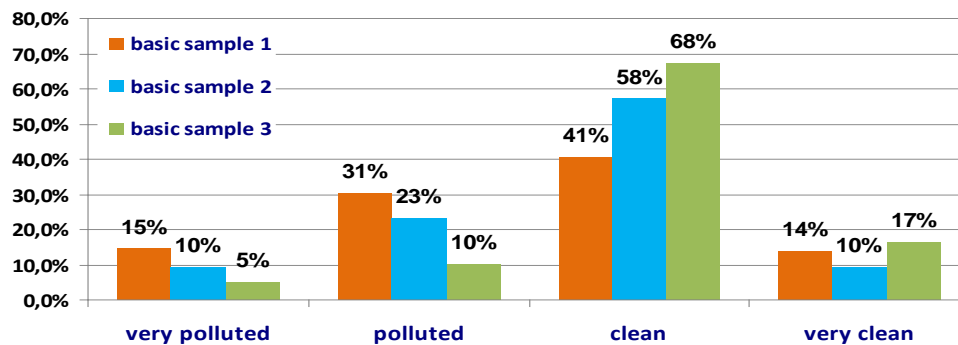
## C2.5 Society

### Indicator 5.1 Quality of PT service - perception of the level of cleanliness of PT stops

The following data were obtained during 3 research shares by Mimosa team, conducted towards in September and the end of 2011 and in July 2012. Interview questionnaire "Clean stops" was used in each study, having regard a control group (outside MIMOSA impact area).

In order to present the evaluation results more clearly, the neutral option (neither polluted nor clean) on the scale used to evaluate PT users' perception of cleanliness of PT stops was eliminated. A similar procedure was used for the measurement of the sense of security experienced at PT stops, by eliminating the middle point on the scale (neither safe nor dangerous).

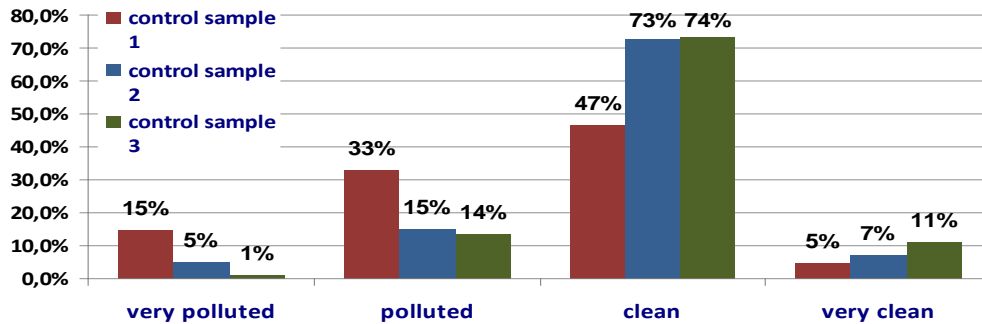
**FIGURE C2.5.1: PT stops cleanliness rating – comparative analysis of the data obtained during 3 studies, only for basic samples: before the "Clean Stops" action (September 2011, N=183), (December 2011, N= 114), (July 2012, N= 303).**



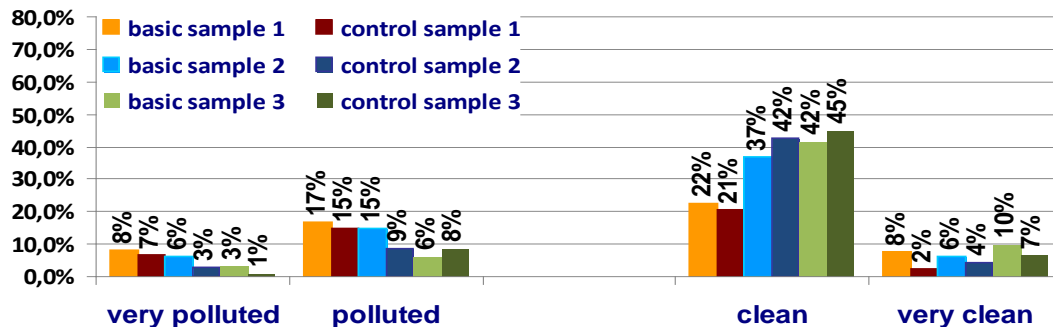
A comparative analysis of surveys (basic sample) in consecutive years reveals a favorable upward trend in the measurements of the perception of cleanliness and aesthetic appearance of PT stops. There is a marked increase in the indicator corresponding to the "clean" category, with a 27% difference between the 1<sup>st</sup> and the 3<sup>rd</sup> measurement in the basic sample. Another favorable fact is the decreasing trend in the percentage of negative ratings. Over the 2 last years of the project, the indicator relating to the "very polluted" rating fell by 10%, while that relating to the "polluted" rating decreased by no less than 21%.

Between 2011 and 2012 the assessment of stops as being clean by persons from the basic samples rose (mean 3.19 vs. 3.49); statistically significant difference:  $t=-2.687$ ,  $p=0.008$ .

**FIGURE C2.5.2: PT cleanliness ratings given by PT passengers - comparative analysis of the data obtained during 3 studies, only for control samples: before the "Clean Stops" action (September 2011, N=135), (December 2011, N= 172), (July 2012, N= 131).**



**FIGURE C2.5.3: PT cleanliness ratings given by PT passengers - comparative analysis of the data obtained during 3 studies - for a total of 6 samples in the term 2011-2012.**



Assessment for "clean" option shows a significant increase in between the first and the third measurement (20-23% the difference between the basic and control samples by Clean stops questionnaire.

**Indicator 5.2 Safety and security - level of security experienced by PT users**

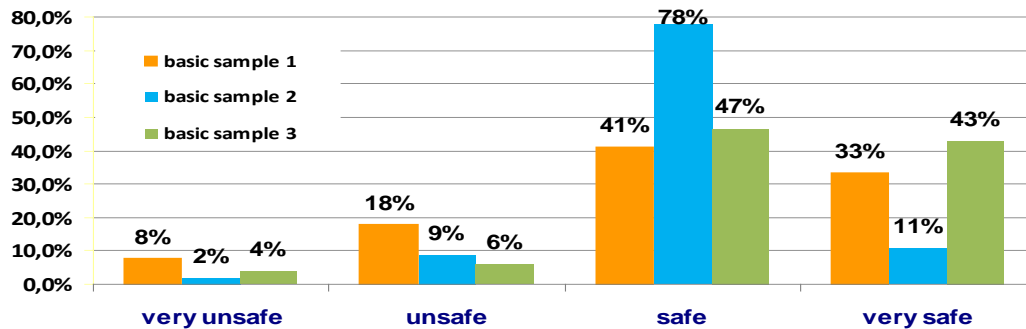
Notable data came from a study on-line conducted by a local portal *trojmiasto.pl* in 2011, after the "Clean Stops" action. 666 people responded to the sounding question:

*Was the installation of boards at tram/ bus stops a good idea?* The responses were as follows:

- 61% - yes, the persons putting up the leaflets finally stopped vandalizing bus shelters
- 13% - yes, but only where the monitoring system exists
- 9% - no, the shelters are still full of illegal advertisements
- 15% - no, because the City Guard do not take no interventions against advertising & promotion companies which pay for sticking those leaflets.

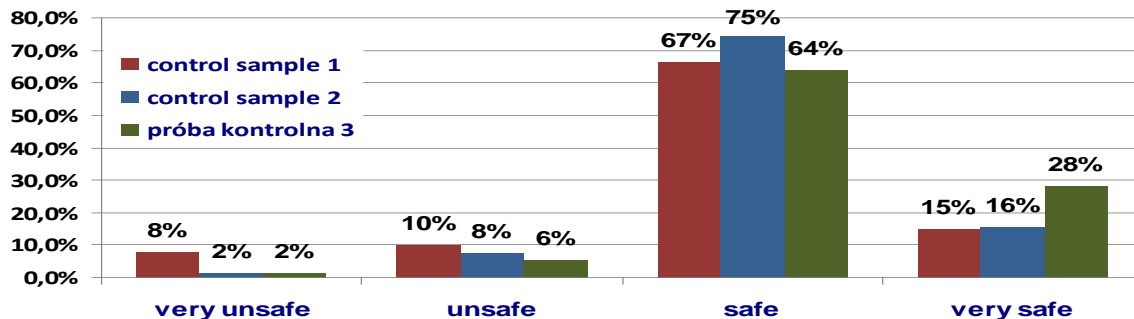
The results presented above showed that "Clean Stops" campaign can be considered a success in the citizens' perception.

**FIGURE C2.5.4: Comparative analysis for a sense of security at PT stops by passengers from the basic samples in 2011 N=183, N=114 and 2012 N=303 ("Clean Stops" questionnaire)**



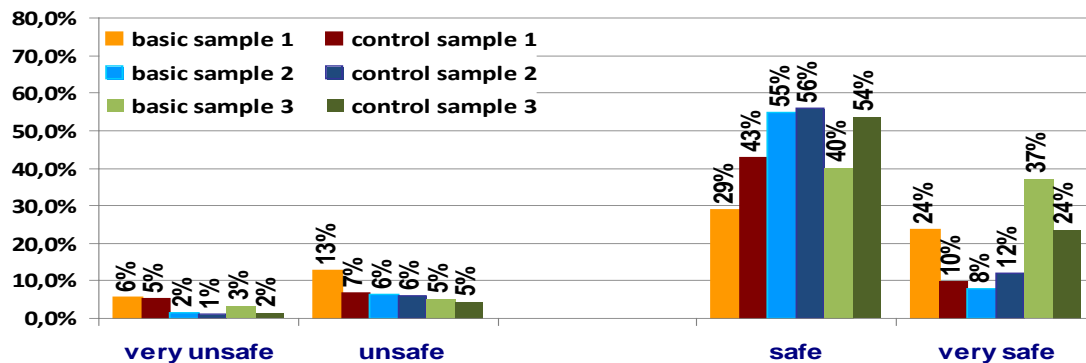
The trend in the perception of security at PT stops is inconsistent for the basic sample. In the 2<sup>nd</sup> measurement (2011), there was a dramatic increase in the number of respondents choosing the "safe" option — by 37.5% compared to the 1<sup>st</sup> measurement. However, in 2012 the indicator of the sense of security returned to the initial 2011 level (with a 6% difference in favor of the later survey). In the case of negative ratings, the differences between the individual surveys are of small significance, but produce a favorable decreasing trend.

**FIGURE C2.5.5: Comparative analysis for a sense of security at PT stops by passengers from the control samples in 2011 N=135, N=172 and 2012 N=131 ("Clean Stops" questionnaire).**



The control samples, the ratings of safety at PT stops show only slight differences between the research samples in 2011-2012. Measurement for 3 consecutive studies fail to demonstrate a change, with the exception of "very safe" on safety assessment scale.

**FIGURE C2.5.6: Comparative analysis for a sense of security at PT stops by passengers - the data obtained during 3 studies - for a total of 6 samples in the term 2011-2012.**



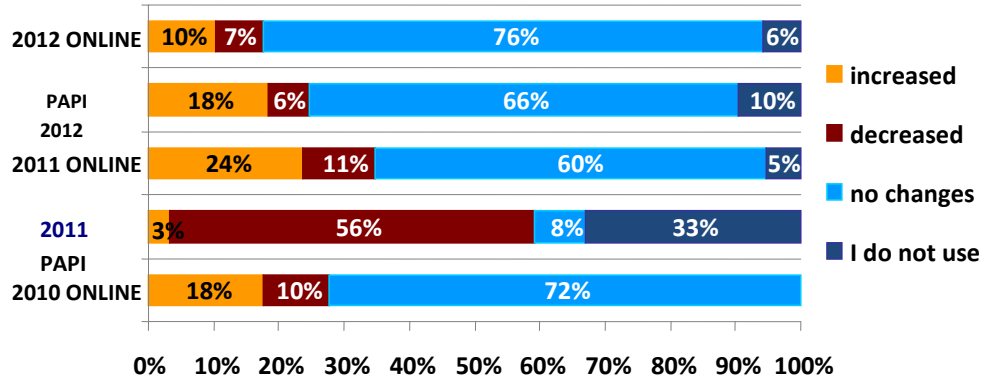
Differences between indicators for option “safe” oscillate between 26% for basic sample and 13 for control sample. The largest increase is seen in the second measurement (compare with the first measurement) for the assessment of "safe" option. Also for “very safe” option the progress in third measurement is seen for basic sample from 2012 where increase about 13 % were noticed. The same value of the indicator – 13% concern the difference between basic and control sample in 2012.

Between 2011 and 2012 the sense of security on stops by persons from the basic samples rose (mean 3.47 in 2011 vs. 4.03 in 2012; statistically significant difference:  $t = -3.815$ ,  $p = 0.000$ ), and from control groups (mean 3.57 in 2011 vs. 3.94 in 2012; statistically significant difference:  $t = -2.304$ ,  $p = 0.025$ ).

### **Indicator 5.3 Acceptance - level of acceptance for Sustainable Transport options**

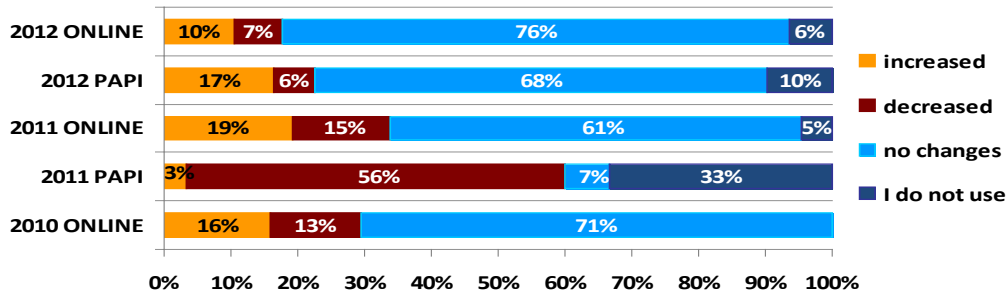
Both figures below (C2.5.7 / C2.5.8), clearly illustrate a very similar forecast concerning the use of PT modes (tram, bus) over the coming year. All measurements display a similar trend in the proportion of the individual results. The most interesting trend can be observed in the case of 2011 measurement, where the greatest number of respondents declared the intention to decrease the frequency of both tram and bus trips — 56% users. The year 2011 may have been the most challenging for PT passengers in the city (external factors, modernization). At the same time, in 2011 the smallest percentage of passengers (ca. 3%) declared the intention to increase the frequency of their bus and tram trips.

**FIGURE C2.5.7: For Tram – willingness to change the frequency of tram trips within the next year – comparative analysis for 5 measurements conducted in 2010 - 2012; MIMOSA team’s own studies using the Sustainable Transport questionnaire. On-line 2010 N=1208, on-line 2011 N=385, PAPI 2011 N=288, on-line 2012 N=233, PAPI 2012 N=249**



An increased frequency of PT (bus and tram) trips was declared by 10-18% of Gdańsk residents in 2012, and only 6-7% announce the intention to limit the use of these means of transport. The current rate of growth, indicating acceptance for sustainable resources, remains at a similar level as compared with 2010.

**FIGURE C2.5.8: For Bus – willingness to change the frequency of bus trips within the next year – comparative analysis for 5 measurements; MIMOSA team’s own studies from 2010-2012, using the Sustainable Transport questionnaire (field survey – PAPI, on-line survey Survey Monkey).**



## C2.6 Cost-Benefit Analysis

**TABLE C2.6.1: Summary of cost-benefit analysis – CBA.**

Variant I	WITH COSTS MIMOSA PROJECT	2011 in €
<b>DIRECT COSTS</b>	CCTV - overall costs of equipment and implementation	€ 88 814,97
	Costs of covering the effects of vandalism in 2011	€ 16 219,65
	Installation of advert boards at stops	€ 52 250,00
	Tram-drivers Training	€ 7 000,00
<b>INDIRECT COSTS</b>	Promotion and advertising	€ 9 185,25
	Evaluation of the MIMOSA project (2011 + 2012) *	€ 16 000,00
	Other (e.g. employees salary)	-
<b>TOTAL</b>		<b>€ 189469,87</b>
<b>BENEFITS</b>	Reduce costs to cover damage/ the effects of devastation	N/A
	Increase of safety & security	N/A
	Increase of citizens satisfaction	N/A
	improvements of esthetic and cleanliness on stops	N/A
	Decrease costs of cleaning stops	N/A
	Increase of PT services Quality	N/A
<b>TOTAL</b>		<b>-</b>
<b>NET CASH FLOW</b>		<b>€ 189469,87</b>
<b>DISCOUNT RATE</b>		<b>3,50%</b>
<b>NET VALUE PRESENT</b>		<b>-€ 182 838,42</b>

\*costs provided for evaluation of the MIMOSA project, were incurred mainly through Measure 5.1 (there was no cost-sharing by year).

50% of 50 cameras covered with by the MIMOSA project = € 88 814,97

100%= €177 629,94

Cost of 1 camera = 3 553,00



Variant II	WITHOUT COSTS MIMOSA PROJECT	2011
DIRECT COSTS	CCTV - overall costs of equipment and implementation	€ 161 643,25
	Costs of covering the effects of vandalism	€ 9 000,49
	Installation of advert boards at stops	-
	Tram-drivers Training	-
INDIRECT COSTS	Promotion and advertising	-
	Evaluation	-
	Other (e.g. employees salary)	-
<b>TOTAL</b>		<b>€ 170 643,74</b>
BENEFITS	Reduce costs to cover damage/ the effects of devastation	N/A
	Increase of safety & security	N/A
	Increase of citizens satisfaction	N/A
	improvements of esthetic and cleanliness on stops	N/A
	Decrease costs of cleaning stops	N/A
	Increase of PT services Quality	N/A
<b>TOTAL</b>		<b>-</b>
<b>NET CASH FLOW</b>		<b>- 170 643,74</b>
<b>DISCOUNT RATE</b>		<b>3,50%</b>

€ 161643,25

<b>NET VALUE PRESENT</b>	<b>- 164 873,17</b>
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cost of 45 cameras – (10% amortization) + cost of 5 cameras

The following assumptions were adopted:

- We have taken as a basis exchange rate 4.1 PLN=1 EUR (Avg. Exchange Rate for 2011 sanctioned by Polish Central Bank :
- (Source: NBP, [http://www.nbp.pl/home.aspx?f=/kursy/kursy\\_archiwum.html](http://www.nbp.pl/home.aspx?f=/kursy/kursy_archiwum.html))
- We have chosen standard discount rate 3.5% because it is the most universal value for the project evaluation and further comparison. This discount rate was also taken into account in the extended table.
- It was purchased a total of 50 cameras (2010 - 45 pcs + 2011- 5 pcs). The yearly amortization rate for cameras equals 10%, with them being funded from the budget at the level of 50% of the purchase. This is why it can be said that the project covered only the amortization part of the purchase.
- Costs included in the CBA, related to installation of monitoring system - are limited to those incurred under the project CIVITAS MIMOSA.
- We have prepared a new table so that everything is more transparent - we divided the costs into direct ones (spent by project to prevent vandalism or to recover the damages already caused) and indirect (costs of promotion, evaluation and employees wages - coordination).
- We need to ask about the quantifying benefits. We should put them in the same money unit, however feeling safe & secure by citizens does not easily come in the monetary measure. That is why we decided not to quantify it, because there is no real financial benchmark.

## Conclusion

1. It is evident that there was a sharp increase in the direct costs of vandalism after 2009 (repairing the damage). Being aware of the incomplete and unsystematic nature of the data used in the report (the data for the individual years come from different sources and may have been obtained by different methods), we cannot determine exactly whether the reported cost increase reflects the actual situation or arises from the absence of data for the period 2008 -2009.

2. Even if the reported increase in direct costs of vandalism is a reflection of actual facts, there may be several reasons for this situation:

- an increase in the number of acts of vandalism;
- an increase in the costs of repairing the damage caused by an "average" act of vandalism;
- higher standards of cleanliness and safety connected with the repair of damage caused by the recorded acts of vandalism.

As for the first theory, the data for 2008-2011 obtained from ZKM (Public Transport Company) show that the number of cases of PT vehicle damage due to vandalism is not increasing. The data revealed by the police indicate that the number of interventions related to vandalism and criminal damage has been falling since 2009, but there are more and more interventions relating to illegal placement of advertisements. The second hypothesis concerning the rising costs of repairing the damage caused by an "average" act of vandalism is difficult to interpret in the light of the data collected. ZKM estimates with regard to the average costs of removing the vehicle damage caused by vandalism vary from year to year. Since the data are incomplete, no conclusions can be drawn on their basis. On the other hand, the data concerning the average costs of repairing vandalized stop shelters (made available by ZDiZ – Road and Greenery Management) show a considerable increase in these costs between 2009 and 2010. However, this trend did not continue between 2010 and 2011. The third hypothesis concerning the improvement in cleanliness and security standards by removing the damage caused by vandalism suggests a possible link to the City's preparations for hosting UEFA Euro 2012.

3. A comparison of the direct and base-line costs of vandalism (net profit) indicates that despite the measures taken, the actual costs are higher than base-line costs. There may be two possible explanations: 1) the actual costs were affected by a certain external factor, which should also have been considered in the base-line costs; 2) the base-line costs were estimated in an oversimplified way or based on incomplete data and therefore do not reflect the actual situation.

4. The disproportion between the costs of vandalism (both direct and base-line costs) and the expenditures on measures counteracting vandalism is connected with the nature of the measures taken. These consisted mostly of expenditures on infrastructure, which are characterized by a high unit cost of installation and delayed effects. As a result, full effects of the measures taken will probably become apparent in the long term, after the termination of the project funding.

There is a distinct rapid increase in the direct costs of vandalism and costs of counteracting it - by social campaigns, education, implementation and maintenance of the monitoring system. The choice of this strategy was due to:

- the abundant flow of external funds (EU) to be utilised for improving the security in means of PT and, consequently, improving the chances of a greater demand for PT services,
- the need to tighten security measures in connection with Euro 2012, which entailed increased expenditure,
- increased expenditure on infrastructure and improvement of service quality and security, considered to be an investment to bring profits in the long run,
- such significant increase in expenditure in 2011 is associated with the systematic approach to the issues of security (centrally controlled monitoring system).

**5. NPV** is highly negative and equals the costs, because it is impossible to measure in financial way the level of citizens satisfaction, feeling safe and secure. Some of the benefits will be also evident in upcoming years. It is a continuous process of changing society's behavior, habits and way of thinking. Indicators of the success are mainly social, and not economical, so quantitative data, at this point, is unavailable. Furthermore, we cannot consider the high Vandalism Damage Recovery cost as a negative sign (higher than in "without a project" calculation. It does not mean that the project does not fulfill its purpose - it means that the project helped to deal with already existing damages. Thanks CIVITAS project, capital and "soft" expenditures were incurred at the same time. This will result in lower spending on improve the clean on the PT stops and maintain of higher safety standards, in the long term. That is a way for a lower cost, but it can be seen in the next years.

### **C3 Achievement of Quantifiable Targets and Objectives**

The Description of Work (DoW) specified two more results in the list of indicators:

- Reduction of vandalism by 40 %
- Increased safeguarding (by 10%) at vulnerable times of the day

The first indicator was omitted as unrealistic in its assumptions, considering the complexity of vandalism as a social phenomenon and possible dynamics of changes in it. In the time span of the project, a rapid development of CCTV surveillance system took place (2010–2012), facilitating measures taken against vandalism. However, this was not a sufficient reason to plan such an optimistic result indicator. The second indicator was omitted as it was unclearly formulated and incomprehensible. The other indicators were evaluated with the use of questionnaire surveys and BAU analysis.

No.	Target	Rating
1	Increased perceptions of safety by 20%	**
2	Number of acts of vandalism decreased by 20%	**
3	Direct cost of vandalism decreased by 20%.	0
4	Indirect cost of vandalism decreased by 10%	NA
<b>NA = Not Available    O = Not Achieved    * = Substantially achieved (at least 50%)</b> <b>** = Achieved in full            *** = Exceeded</b>		

Ad. 1 Perception of safety rating increased by 18% (from 22% to 40% of responses). The current upward trend of the indicator since 2010 should be considered very favourable.

Ad. 2 The overall number of acts of vandalism increased by more than 23% as compared with 2009. The most considerable increase in the number of acts of vandalism occurred in 2008-2009 — before the implementation of MIMOSA project measures. In subsequent years (after the launch of the project) this indicator showed a downward trend.

Ad. 3 The project time-frame was insufficient to achieve this result. The assumed indicator is not very realistic considering the increased number of stop shelters and fleet vehicles generating higher costs of repair due to the new technologies applied.

Ad. 4 Unavailability of indirect cost figures.

## C4 Up-Scaling of Results

There are very favourable circumstances for achieving effective project results and the so-called up-scaling effect. They include the rapid development of transport infrastructure in Gdansk taking place since 2008 due to the allocation of ample EU funds for the upgrading of vehicle fleet, replacement and modernization of tram tracks, roads and public transport stops. The CCTV monitoring system installed at stops and in the urban space is constantly subsidized from Gdańsk City Council funds. Meanwhile, over the past 5 years the tram and bus fleet has been systematically replaced with new vehicles equipped with surveillance systems. Under the framework of Measure 5.1, the City provided funds for the installation of cameras for 50 public transport stops (in addition to 50% of the cost for this purpose covered by the CIVITAS MIMOSA project). For example, before 2008 only 8% of the total of 200 city buses were equipped with surveillance cameras. In 2008, 45 buses were purchased, all provided with a monitoring system (at the end of 2008, 22% of the vehicles had surveillance cameras). The older buses will also be provided with cameras so that by 2012 100% of the fleet will be equipped with a full monitoring system. In 2011, ZKM (Public Transport Company) had one of the most modern fleets in Poland (the oldest buses are 8 years old). In March 2011, 14 modern low-floor buses were purchased, and in August they were followed by another 8 low-floor vehicles equipped with a monitoring system (the present ZKM bus fleet consists of 218 vehicles). There has also been much progress as regards the tram fleet. In 2008, a third of all trams were provided with CCTV monitoring systems. By the end of 2012, the entire fleet will have been replaced with new vehicles, all equipped with cameras. This means a quantum leap in terms of quantity and quality towards the improvement of public transport services, especially the protection and security of passengers.

The biggest success on the up-scaling field was related to the “soft” activities. Following the success of “Clean PT Stops”, the Oliwa district council decided to buy boards which in the

nearest future will be placed at the PT stops – next to the shelter. This proves that “Clean Stops” was a very good idea from the perspective of the whole city.

## C5 Appraisal of Evaluation Approach

The activities in the framework of Measure 5.1 were carried out in two different spheres simultaneously, involving the development of technical infrastructure resources (the purchase of CCTV cameras and advertisement boards installed at tram and bus stops), as well as social campaigns and educational activities. This is reflected in the evaluation approach which, in addition to questionnaire surveys (on-site and on-line), contains the economic evaluation component (CBA). Two MIMOSA team's own tools (questionnaires) were used in the preparation of data for Measure 5.1. In the case of the “Clean Stops” questionnaire, a control group study was carried out at stops outside the area of project impact. In the studies concerning impact in the sphere of awareness, 3 indicators were taken into consideration. To investigate the project impact with regard to the effectiveness of CCTV monitoring, a CBA was prepared based on data obtained from third-party entities, unrelated to the project implementer.

The competences of the project implementer did not include stimulating “alternative” legislative solutions in order to stimulate socially desirable behaviour. These ideas were replaced with much more effective social innovations involving the installation of advert boards that gave the residents the opportunity to put up advertisements in authorized places.

1. The studies carried out for the purpose of the CBA analysis cover two areas:

- costs related to vandalism,
- costs of the implementation of CCTV monitoring (as a preventive measure against vandalism).

2. The data were sourced from the following institutions:

- - Zakład Komunikacji Miejskiej (Public Transport Company),
- Zarząd Dróg i Zieleni (Road and Greenery Management),
- Police Headquarters in Gdańsk,
- Department of Crisis Management and Civil Protection of Gdańsk City Council.
- Financial Department of the City Council.

3. Nature and quality of data obtained

In view of the numerous limitations and barriers in obtaining complete data, the evaluators decided to base their evaluation exclusively on the direct costs associated with vandalism and its prevention. The indirect costs of vandalism have not been presented, chiefly due to methodological difficulties. The indirect costs, e.g. of CCTV system operation, are difficult to isolate and estimate, since the system is centrally controlled (costs of salaries of the Control Centre staff, running costs of equipment, or the personnel costs arising from the interventions).

4. Indicators for the preparation of CBA:

In the area of economic evaluation, the direct cost indicators have been taken into consideration, namely:

- the number of acts of vandalism,
- the cost of vandalism in vehicles and at PT stops (costs of covering the losses),
- the number of interventions by the Police and the City Guard (for reported cases of vandalism).

#### 5. The assumptions and methodology of CBA analysis:

In general, the costs of vandalism were determined by accruing the costs specified by the Police, City Guard, Public Transport Company and Road and Greenery Management (managing the PT fleet and infrastructure). The actual costs of vandalism were calculated for each individual year between 2008 and 2011. For BAU, the inflation rate was included in the costs of vandalism in 2008.

To simplify the analysis, the costs of campaigns were uniformly spread over the individual years. The costs of training for tram drivers were added to the costs of campaigns. The table useful in CBA analysis utilises the method proposed by the evaluation supervisor.

6. The Civitas Mimosa evaluation did not include investigation or analysis of the data characterizing target groups. From the point of view of evaluation, such an investigation went beyond the approved scope and character of evaluation study (different from professional social studies). In-depth analysis in this respect was also impossible in view of the limited size of MRT reports. The data included was the basic information on the type of study, time of study and sample size. Including full information and interpretation would have required additional work.

## C6 Summary of Evaluation Results

The key results are as follows:

### Key result 1 Capital costs - monitoring equipment and its installation

Costs of monitoring system within the framework of CIVITAS MIMOSA amounted to EUR **88 814,97** (it is a relatively large cost, but it also shows the priorities for the City).

### Key result 2 - Direct costs of prevention

Overall expenditures on counteracting vandalism within the framework of CIVITAS MIMOSA by means of the so-called soft activities and the investment component (advertising boards on the PT stops) amounted to **EUR 68 435,25**.

### Key result 3 - The cost of vandalism

The direct costs of vandalism including costs of repairing the damage caused by vandalism doubled as compared with 2008.

These costs amounted to EUR 8,086.88 in 2008, and EUR 15,738.92 in 2011.

### Specific conclusions for CBA:

1. The number of Police and City Guard interventions in response to monitored incidents is increasing year by year. This is probably due to the so-called statistical effect, being a simple consequence of the development of the monitoring system. The more cameras, the greater

part of the city under surveillance, which leads to a higher number of recorded offences. A decrease in the rate of vandalism since 2009, as a result of increasingly effective operation of the services, is likely to be observed in the next phase (in the long term).

2. It is noteworthy that the number of recorded acts of vandalism is systematically decreasing. The benefits of the monitoring system are likely to be more visible in case of acts of vandalism, since these offences are prosecuted and punished more severely than illegal poster placing. The awareness of the presence of cameras may discourage potential perpetrators.

3. The number of interventions related to illegal advertising is on the increase. It is worth considering to what extent the "Clean Stops" campaign has stimulated the services and the public to pay more attention to illegally placed advertisements. Greater alertness among the residents leads to more reports.

4. According to ZKM (Public Transport Company) data, the costs resulting from vehicle vandalising fell markedly after 2008, both in terms of the overall costs and the costs per each PT vehicle. The number of cases of damage resulting from vandalism remained unchanged, which suggests that the damage caused is on average less severe (less costly to repair). These figures should be approached with caution because of the great diversification of data (perhaps due to their incompleteness).

5. Since 2010, the costs related to the vandalised stop shelters maintained by ZDiZ (Road and Greenery Management) have risen significantly. This applies both to overall costs and the maintenance cost per single shelter. This may be due to the higher standards of cleanliness and greater expenditure on meeting these standards (e.g. by more frequent cleaning).

#### **Key result 4 - Number of acts of vandalism**

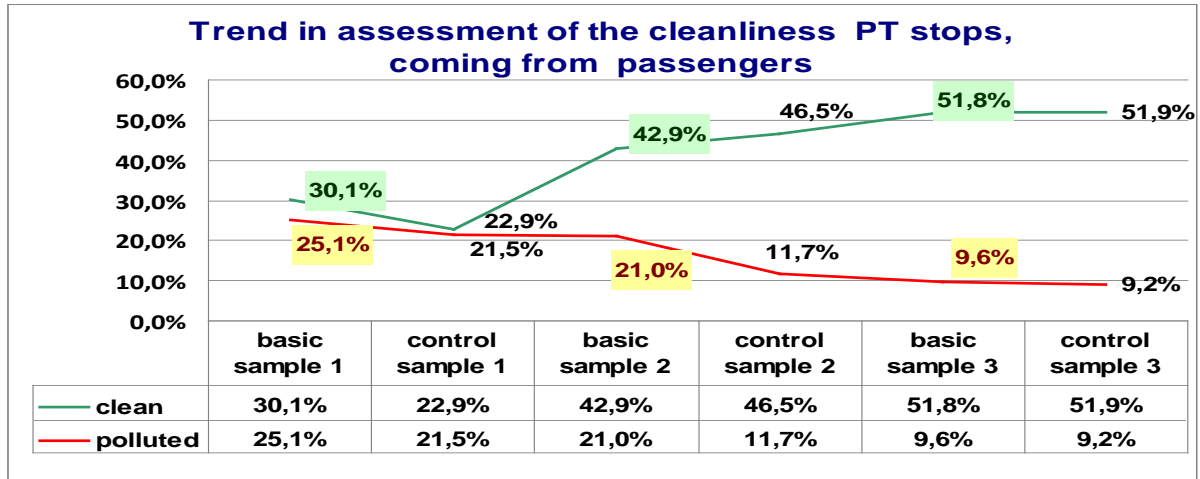
The overall number of acts of vandalism decreased by more than 20% as compared with 2009 (this fact is associated with the development of the monitoring system).

#### **Key result 5.1 - Quality of PT service - perception of the level of cleanliness of PT stops**

In order to present the evaluation results more clearly, the neutral option (neither polluted nor clean) on the scale used to evaluate PT users' perception of cleanliness of PT stops was eliminated. Furthermore, the 2 extreme points on the scale were aggregated (clean + very clean) and (polluted + very polluted).

A similar procedure was used for the measurement of the sense of security experienced at PT stops, by eliminating the middle point on the scale (neither safe nor dangerous) and combining the two extreme options on the scale (very safe + safe) and (dangerous + very dangerous).

**FIGURE C6.1: Trends 2011-2012 - a sense of cleanliness PT passengers at PT stops - "Clean Stops" questionnaire - comparison of 3 measurements between the research sample and control sample.**

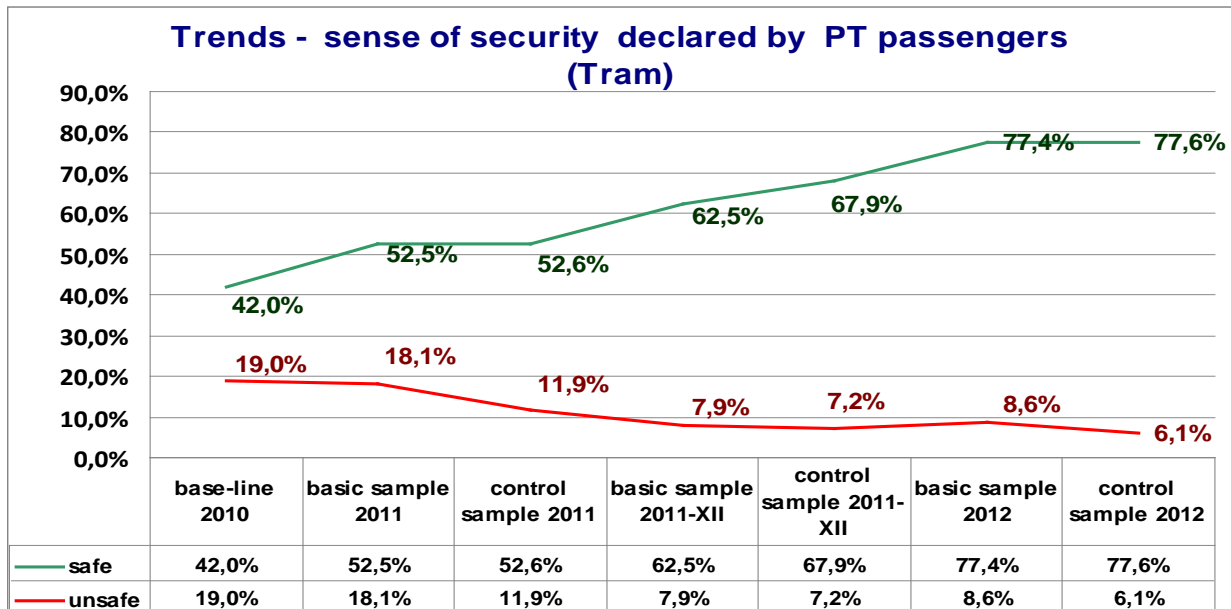


Indicators designating the trend for the "clean" option show similar values for the research sample and the control sample. The perceived cleanliness of PT stops has been improving steadily since 2011 for the target sample (basic group). After the downturn with respect to the control group in 2011, in 2012 both lines show an upward trend again. Towards the end of the project, a 21.7% increase in the number of indications for "clean-stops" ratings for the basic sample and a 29% increase in the case of the control sample were recorded. In comparison with the results of the earliest own survey concerning the level of cleanliness of the stops, there is a significant progress of the indicator for the period 2011-2012. In the case of the "clean" rating, the indicator was increasing steadily in 3 consecutive measurements from 30,1%, through c.a 43% up to nearly 52% in the basic sample. After the downturn of trend with respect to the control group in 2011, in 2012 both lines show an upward trend again. There is also a favourable downward trend in the percentage of respondents indicating "polluted" option (basic sample). This negative evaluation indicator fell by 15.5% in the last study compared to the first measurement. PT users' perception of cleanliness has shown a statistically significant change in the final phase of the project. (graph 11).



## Key result 5.2 - Safety and security - level of security experienced by PT users

**FIGURE C6.2: Trends 2011-2012 - sense of security declared by PT passengers (tram) - "Clean Stops" questionnaire - comparison of 3 measurements between the research sample and control sample.**



Compared with the results of the first base-line survey concerning the sense of security experienced at PT stops, there was a progress in the indicator in the period of 2011-2012. The indicator related to the sense of security increased by nearly 25% (in the basic sample) compared to the first measurement conducted by the Mimosa team in September 2011. Indicator of sense of security coming from the respondents (both types of samples), indicates a convergent trend and growth rate. The share of PT passengers indicating a lack of sense of security has decreased significantly to the same extent in both study groups.

The results of the 2011-2012 evaluation was compared against the results of the base-line external research from 2010, (commissioned by Gdańsk City Council and conducted on a representative sample of N=1070 — see graph 12).

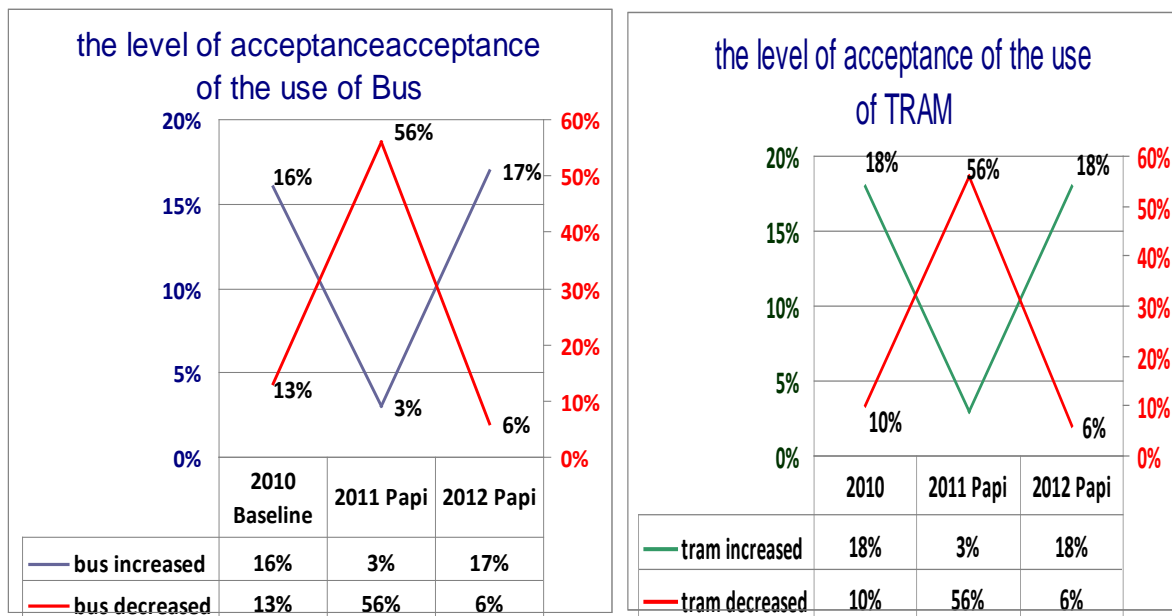
In 2010 ca. 40% of passengers declared that they felt safe or very safe at PT stops. The indicator related to the sense of security increased by 12.5% between base-line from 2010 and the first Mimosa measurement - made in 2011. In 2012 the sense of security increased about 37.4 compared to the external research results (base-line).

At the same time, the number of respondents assessing the conditions at PT stops as dangerous and very dangerous, fell by 9.5%. Compared to the results of an external study from 2010, the indicator the "dangerous" option on the scale, decreased by ca. 10% (from 16% to 6.1%). In the light of the quoted results, we can observe a favorable change over the past 3 years with respect to the sense of security experienced by passengers waiting at PT stops.

**Key result 5.3 - Acceptance - willingness to change the frequency of use of sustainable transport modes**

An increased frequency of PT (bus and tram) trips was declared by 10-18% of Gdańsk residents in 2012, and only 6-7% declare the intention to limit the use of these means of transport. The current rate of growth, indicating acceptance for sustainable resources, remains at a similar level as compared with 2010.

**FIGURE C6.3: willingness to change the frequency of BUS TRAM trips within the next year – comparative analysis for 3 measurements conducted in 2010-2012; the Sustainable Transport questionnaire.**



An interesting trend was observed in the declared increase in the use of trams and buses. The forecast is very similar for the two means of transport. Compared to the base-line, there was initially a very considerable (ca. 45%) decrease in the willingness to use both means of PT. In the last year of the project the trend reversed and the indicator returned to its initial 2010 value. A similar reversal of trend appeared with respect to the respondents planning to reduce the use of PT. Such a dramatic trend collapse may be attributed to external factors, namely, the upgrading works on the transport system, seriously interfering with normal commuting. To sum up, the demand for PT services is at a similar level as in 2010.

**C7 Future Activities Relating to the Measure**

More advert boards are going to be installed at PT stops in the coming years. The Oliwa District Council decided to buy additional boards at their own expense because they were impressed by the effects of MIMOSA GDA 5.1 Measure.

## D Process Evaluation Findings

### D0 Focused Measure

No focused measure
Most important reason
Second most important reason
Third most important reason

1. The measure fits into the city policy towards sustainable urban transport and/or towards sustainability in general
2. The measure fits into the EU policy towards clean urban transport (five pillars of the EU Green Paper)
3. The high level of innovativeness of the measure with respect to technique, consortium, process, learning etc.

### D1 Deviations from the Original Plan

The deviations from the original plan comprised:

**1. Delays** – Since the start of the MIMOSA project in Gdansk was delayed, the installation of the monitoring system was postponed for about a year (1 step-in 2010). The project started a year later than planned, which led to delay in organization and establishing the MIMOSA Team.

**2. Changes introduced to the original assumptions in the LEP and DoW** (Local Evaluation Plan and Description of Work) result from some unrealistic measures of specific objectives and quantifiable targets, e.g. reduction of vandalism by 40%. To make the report clear, the evaluation team decided to make adjustments in defining specific objectives to make them achievable in the current situation. The team decided to cross out some objectives, e.g.: “To develop a new strategy for ongoing liaison systems between PT Driver, Police and Operating Company/City Hall (actual actors to be determined)“, or “Development of 'Alternative' punishment systems in order to affect behaviours”. These two objectives were not included in the evaluation, as they were not the focus of the project measures. Developing cooperation strategies and system solutions to promote safety in public transport by the main PT actors does not constitute an individual project measure. Thanks to the development of the partnership between the above-said actors, resulting from the implementation of CIVITAS MIMOSA, there has been a qualitative and quantitative improvement in the public transport services.

**3. Lack of good quality financial results/data** – The Gdańsk CIVITAS MIMOSA team did not receive complete data regarding the cost of vandalism. The problems with obtaining the data were mainly due to the lack of access to the financial information from private companies. Companies providing cleaning services at PT stops are reluctant to disclose business information. Another obstacle to making financial evaluation was that public

companies responsible for installation and maintenance of the monitoring system refused the access to necessary data.

## D2 Barriers and Drivers

### D2.1 Barriers

All the barriers were of an on-going nature and caused problems during the preparatory, implementation and operational stages.

- **Barrier 1 - OVERALL BARRIER:** Impeding administrative structures, procedures and routines, impeding laws, rules, regulations and their application, hierarchical structure of local government organisation (The City Hall of Gdańsk) – all these time-consuming factors caused delays in initiating the measure implementation.  
There were some organisational problems related to long and demanding employment procedures in the City Hall of Gdansk that caused some difficulties in the implementation of the initial tasks. This resulted in further delays.
- **Barrier 2 - FINANCIAL BARRIER:** Insufficient funds for the action "Clean Stops" force implementers to limit the scope of the campaign. This will probably have a negative impact on the effects of this action. In addition, the financial resources necessary to ensure the safety of users are insufficient to satisfy all needs of passengers concerning their security and safety in PT. This fact may impede the use of public urban transport.
- **Barrier 3 - COMMUNICATION BARRIER: INVOLVEMENT OF MEDIA** Lack of information about the effects and costs of vandalism in the mass media. Mass media underestimate the importance of information about the costs of vandalism in PT. As a result, the lack of information on the effects of vandalism causes underestimation of the problem by the politicians and decision-makers. Acts of vandalism discourage passengers from using PT.
- **Barrier 4 - COMMUNICATION BARRIER: INVOLVEMENT OF COMPETENT BODIES** Lack of information exchange and cooperation between competent departments and bodies and the society concerning the use of information from video surveillance showing acts of vandalism committed on bus stops and in public transport. The increased vandalism rate in PT makes buses and trams less attractive for the inhabitants of the city. Lack of involvement from the inhabitants/passengers causes a situation in which the cost of vandalism is very high.
- **Barrier 5 - COMMUNICATION BARRIER: INVOLVEMENT OF RESIDENTS** Lack of citizens' awareness of the existence of the monitoring system in Gdansk as well as utilisation of the recordings. The increased awareness of the CCTV system and its 24 hours use by the adequate services would contribute to promotion of desired behaviours and reactions on misbehaviours.
- **Barrier 6 - COMMUNICATION BARRIER: INVOLVEMENT OF MONITORING STAFF** Problems with the cameras/analysis of the data. The problem is related to the absence of monitoring staff observing the real time image from the cameras. Numerous acts of vandalism were not registered because most of the cameras are working with a delay (meaning that the material from the system is examined after the event). This is one of the greatest problems for the evaluators because it is very hard to establish the real number of acts of vandalism.

## D2.2 Drivers

- **Driver 1 - POLITICAL/STRATEGIC DRIVER:** Measure 5.1 is part of the City development strategic plan for the promotion of sustainable transport options and the city policy towards safety and security in the urban transport system. The fact that the measure fits into the City's policy is important, because it enables quicker and more efficient execution of tasks. In addition, there is a relevant department within the City Hall of Gdansk dealing with the preparation and implementation of this type of action. This contributes to better implementation of the Measure and offers a chance to implement the tasks of the MIMOSA project efficiently and without delay.
- **Driver 2 - ORGANIZATIONAL DRIVER:** The possibility of using educational activities for children, youth and PT drivers, intended to improve security at bus/tram stops, helped to involve different reliable and important partners like schools and police and city guard officers in the realisation of the Measure. Educational activities among children and young people might have an impact on reducing the number of acts of vandalism in the PT. The success of the educational activities may have a long term impact on the success of the whole Measure.
- **Driver 3 - ORGANIZATIONAL DRIVER:** The need for interaction with the society through a marketing campaign for rising awareness of users, encouraging them to report acts of vandalism in PT and at the bus/tram stops to the relevant bodies. The introduction of various forms of social communication and interaction tools into the process of implementation of the Measure contributed to its greater effectiveness. The development of social communication with residents (campaigns, events, competitions) was a key to successful Measure implementation.
- **Driver 4 - INVOLVMENT, COMMUNICATION:** The idea to encourage citizens to participate in activities was a new conceptual approach. Involvement the inhabitants into measures undertakings (cleaning PT stops) was a key issue for the measures success.
- **Driver 5 - ORGANIZATIONAL:** Better cooperation between public entities, PT authorities and NGOs. This is especially effective in the case of “soft” activities. The cooperation of many actors and stakeholders such as schools, NGOs, entrepreneurs, specialists and experts builds a platform for multi-institutional cooperation.

## D2.3 Activities

### Preparatory Stage

**Activities 1 – management activities** - the establishment of a project implementation team and the division of tasks and roles constituted the organisational structure necessary to deploy the measures, to designate new measure leaders, to establish cooperation with relevant departments of the Gdańsk City Hall, and collect relevant data.

**Activities 2 – POSITIONAL** - Identifying problems and key actions to be undertaken under Measure 5.1. These activities were taken in order to ensure better environment for the Measure implementation.

## **Implementation Stage**

**Activities 1 – PROCEDURAL** (preparation of documentation) In cooperation with the Crisis Management and Civil Protection Department, the team drew up a specification for the tender procedure and finalized the public procurement procedures for the purchase of monitoring sets, together with identifying sites where cameras were to be mounted. The team also prepared the specification for the second tender for the purchase and installation of the remaining monitoring sets in a Gdansk Wrzeszcz. These actions were taken in order to carry out the tasks defined by Measure 5.1. The completion of the investment part of the Measure was a pre-requirement for starting “soft” educational and promotional activities.

**Activities 2 - TECHNOLOGICAL** The first part of monitoring sets (45) was installed at the tram and bus stops, transport hubs and an underpass (2010). The second part consisting of 5 monitoring sets was installed in Gdansk Wrzeszcz in order to provide surveillance on PT stops.

## **Operational Stage**

**Activities 1 – POSITIONAL** Training courses for tram and bus drivers on dealing with misbehaviour and vandalism in public transport vehicles. During the innovative workshop the specially trained staff demonstrated how to cope with problem passengers, vandalism and public disorder. PT drivers were given computer tablets with special presentations and video recordings from surveillance cameras. The trainees were asked to share their newly-acquired knowledge by showing the presentations and instructing their colleagues.

**Activities 2 –POSITIONAL** “Clean PT Stops” action involving a number of local organizations, institutions and citizens was promoting desired behaviour of passengers as well as overall improvement of PT quality.

**Activities 3 – POSITIONAL** Painting competition for the “Soto Vandalism” sign. Schoolchildren were given a task of creating the sign during their art classes at schools. The winner of the competition was announced during the MIMOSA Mobility Week.

## **D3 Participation**

### **D3.1 Measure Partners**

- **Measure partner 1** – City Hall of Gdansk – project leader and beneficiary;
- **Measure partner 2** – ZTM Public Transport Management/ Public Transport Authority – principle participant;
- **Measure partner 3** – ZKM PT provider/ Public Transport Company – principal participant
- **Measure partner 4** – Voivodeship (Regional) Police – principal participant
- **Measure partner 5** – City Guard - principal participant
- **Measure partner 6** – PSSTM – local NGO – principal participant
- **Measure partner 7** – FRAG – local NGO – principal participant

- **Measure partner 8** – ZDiZ – Road and Greenery Management - principal participant

## D3.2 Stakeholders

- Stakeholder 1 – The Public Transport Provider and Public Transport Authority; as a result of the Measure, with an increased sense of security the number of passengers rises, thus bearing a positive impact on the income of transport provider companies
- Stakeholder 2 – NGOs dealing with public transport issues; Measure GDA 5.1 provided the opportunity to implement some of the ideas put forward by NGOs.
- Stakeholder 3 – Police and City Guard; due to measure GDA 5.1 enforced with CCTV recordings what contributed to taking the problems of vandalism under control.
- Stakeholder 4 – Road and Greenery Management; thanks to Measure GDA 5.1 this city-own company in the long term may lower the operating costs due to cleaner PT stops and decreased ratio of vandalism.
- Stakeholder 5 – Relevant departments of the City Hall – Education, Crisis Management

## D4 Recommendations

### D4.1 Recommendations: Measure Replication

- **Recommendation 1** – Creating a civil society platform which supports the action makes it possible to obtain extraordinary results and actively involving citizens into action at the same time. Researchers claim that clean environment affects our sense of security, and this proves to be true. As a result of this action, PT stops in Gdansk are clean, and leaflets and other advertisements are placed on special boards. The Gdansk City Council decided to continue the action in the next years, because “Clean Stops” action proved to be one of the greatest achievements of CIVITAS MIMOSA project in Gdansk.
- **Recommendation 2** – The concept of “Training for Trainers” constitutes a good recommendation for an inexpensive and efficient method of acknowledging a wide target group with certain information. The aim of the action was to train PT drives on how to deal with misbehaviour in PT and problematic passengers. The trainees were equipped with tanning materials on tables in order to provide the same tanning for colleagues at work.

### D4.2 Recommendations: Process (Related to Barrier-, Driver- and Action Fields)

- **Recommendation 1** – Before start of any activities related with measure implementation it is highly recommended to check the possibility of obtaining relevant data. It is very important especially for focused measure, because it gives chance to gain some data by own hand at the beginning of the project – before implementation. Without obtaining data, data related with finances and baseline data, it is very difficult to create a CBA of good quality.
- **Recommendation 2** – Residents involvement in the project campaigns. It is very important because when the citizens will be part of a campaign or they are creators of a campaign, there is a high probability to finish the activities successfully.

- **Recommendation 3** – Organization of social campaigns and promotional actions is always related to the problem of limited resources and skills. The best way to overcome those barriers is to create a civil society platform (consisting of NGOs, services, and further organizations and institutions) which will support the undertakings. The synergies obtained thanks to cooperating in a network of experienced partners lead to obtaining extraordinary outputs.