



ELAN BRNO - GENT - LJUBLJANA - PORTO - ZAGREB

Implementation status report on the improvements for public transport and cycling in Savska cesta and Buzin railway station

ELAN Deliverable No. 2.5 - D1

Project acronym: ELAN

Project full title: Mobilising citizens for vital cities

Grant Agreement No.: ELAN TREN/FP7TR/218954/"ELAN"

Workpackage: WP 2

Measure: 2.5-ZAG Intermodal high-quality mobili-

ty corridor

Author: Stjepan Kelčec-Suhovec

Co-authors: Tihana Damjanović, Iva Ćurković,

Branko Mikinac, Marko Matulin

Final Version

13th January 2012



THE CIVITAS INITIATIVE IS CO-FINANCED BY THE EUROPEAN UNION



ELAN Deliverable no.	2.5-D1
Date / Version	13.01.2012 / final
Dissemination level	Public
Work Package	2
Author	Stjepan Kelčec-Suhovec
Co-authors	Tihana Damjanović, Iva Ćurković, Branko Mikinac, Marko Matulin
File Name	2.5 - D1 - Implementation status report on the improvements for public transport and cycling.doc

Keywords

General

Work	package	links
***	pachage	111111

х	CIVITAS		x	WP1 Alternative fuels & clean vehicles		WP7 Energy-efficient freight logistics
х	ELAN Project		x	WP2 Collective transport & intermodal integration	х	WP8 Transport telematics
				WP3 Demand manage- ment		WP9 Project coordination
			X	WP4 Influencing travel behaviour		WP10 Project management
				WP5 Safety, security & health		WP11 Research and Technological Development
				WP6 Innovative mobility services		WP12 Impact and process evaluation
						WP13 Dissemination, citizens' engagement, training and knowledge transfer

Document history

Date	Person	Action	Status 1	Circulation ²
20.12.11	Stjepan Kelčec-Suhovec, Tihana Dam- janović, Iva Ćurković, Branko Mikinac	Preparation of first draft version	Draft	SC
28.12.11	Ivan Zajec	Comments	Draft	PM
03.01.12	Marcel Braun	Comments	Draft	SC
13.01.12	Stjepan Kelčec-Suhovec	Preparation of final version	Final	PC

¹ Status: Draft, Final, Approved, Submitted

_

² Circulation: PC = Project Coordinator; PM = Project Manager; SC = Site Coordinators; EM = Evaluation Manager; DM = Dissemination Manager; SEM = Site Evaluation Managers; SDM = Site Dissemination Managers; SCo = Scientific Coordinator, P = partners, ML = Measure Leaders

TABLE OF CONTENTS

1. 8	SUMMARY	4
	INTRODUCTION	
2.1 2.2		RRIDOR 5
	.2.2 Cycling	
3. S	SITUATION IN SAVSKA AND BUZIN BEFORE CIVI	TAS .7
3.1	TRAM SERVICE	
3.3		
4. S	SITUATION IN SAVSKA AND BUZIN AFTER CIVITA	رS9
4.1	Tram service	9
4.2	CYCLING	10
4.3	Buzin	12
5. M	IEDIA COVERAGE	13
5.2	PUBLIC EVENTS	14
6. P	RELIMINARY EVALUATION RESULTS	18
7. C	ONCLUSION	19

1. SUMMARY

Zagreb is the capital and the cultural, scientific, economic and governmental centre of the Republic of Croatia. According to the recent census (2011), the city's population was 792,875 inhabitants within the City of Zagreb administrative area (641 km²). The motorisation rate in Zagreb has doubled since the transition process started in the early nineties of the 20th century. At the end of 2010, the motorisation reached 420 cars per 1,000 inhabitants.

Public passengers' transportation in the City of Zagreb consists of tram, bus, railway, taxi and funicular services. Tram service is the basic type of public transport in Zagreb. The tram network consists of 58 km of double tracks and 256 stops. Today, there are approximately 190 km of bicycle lanes and tracks in Zagreb. The lanes and tracks are not adequately interconnected, so the cycling network is presently both too short and inadequately linked. The availability of bicycle racks is insufficient.

Significant improvements regarding the tram service during the CIVITAS-ELAN project lifetime were the:

- introduction of 70 energy-efficient and low-floor trams. New trams contributed to a decrease in electricity consumption by returning power into the power grid while braking.
- introduction of the Real Time Passenger Information (RTPI) displays at tram stops which inform users about the arrival time of each tram line. Currently (December 2011) there are 82 displays on tram stops in the City of Zagreb, of which 18 at tram stops in Savska street.
- introduction of e-ticketing and mobile ticketing.

These activities contributed to the improvement of the quality, accessibility and attractiveness of tram service along the Savska corridor and on the entire public transport network in Zagreb.

Within the CIVITAS-ELAN project also the main design was developed and the building permit obtained for the new railway station at Buzin, situated on the extended corridor on the southern bank of the Sava River. The documentation for the public procurement for the construction of the Buzin Railway Station (tender documentation) is in preparation. The executive project was completed in December 2011.

During the lifetime of the CIVITAS-ELAN project, 100 bicycle racks were installed on Savska street. Many presentations, public debates and round tables on the advantages of cycling and safety took place from 2009 to 2011. Due to the promotional activities and more bicycle racks cycling is becoming more popular in the city of Zagreb and the number of cyclists is constantly increasing. The number of cyclist is varying significantly depending on weather conditions.



2. INTRODUCTION

2.1 Measure 2.5-ZAG Intermodal High-Quality Mobility Corridor

The main objectives of this measure are to define a high-quality mobility corridor going from the historic city centre towards and across the river, where public transport, bicycle lanes and pedestrians will have priority over motorised traffic and to conduct a traffic and design study for the new SAVA-NORTH intermodal passenger terminal. The terminal will be located within the demonstration corridor, north of the Sava river, and it should create conditions for safe and simple transfer from/ to different modes of travel (tram, bus, railway, bicycle and taxi). Also, the objective is to obtain the building permit for the new railway station Buzin, the first among several new public transportation stations to be constructed along the demonstration corridor.

There are further ELAN measure which have are closely connected to measure 2.5-ZAG: 1.3-ZAG Energetic recovery system for trams, 2.6-ZAG Promotion of electronic PT tariff system, 4.8-ZAG Improving cycling conditions and 8.2-ZAG Public transport priority and traveller information.

The Measure Leader is the City of Zagreb and partners are the Zagreb Municipal Transport Company (ZET), the Croatian Railways Infrastructure (HZ), the Faculty of Traffic Sciences (ZFOT) and non governmental organizations ODRAZ (Sustainable Community Development) and BICIKL (Bicycle).

2.2 Transport in Zagreb

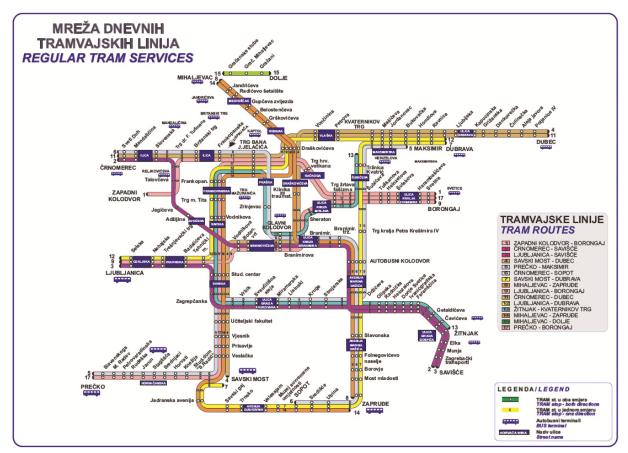
The motorisation in Zagreb has doubled since the transition process started in the early nineties of 20th century. At the end of 2010, the motorisation reached 420 cars per 1,000 inhabitants.

Public passengers' transportation in the City of Zagreb consists of tram, bus, railway, taxi and funicular services. Railway service is provided by the Croatian Railways company owned by the Croatian Government. The Zagreb Municipal Transport Company (ZET) provides tram, bus and funicular service and special transportation for people with disabilities. The company is owned by the City of Zagreb.

2.2.1 Tram service

Tram service is the basic type of public transport in Zagreb. The tram network consists of 58 km of double tracks and 256 stops.





Zagreb's tram service network

2.2.2 Cycling

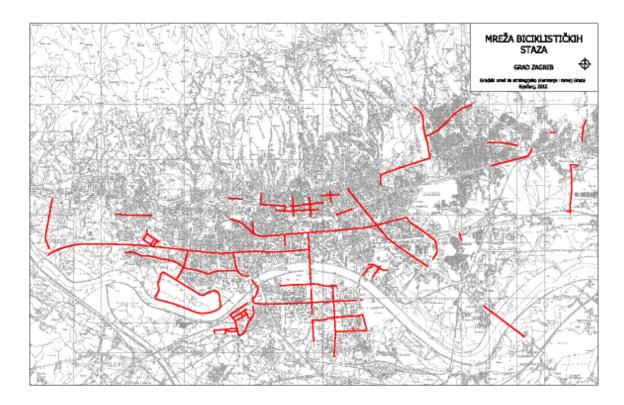
Cycling as a means of transport has been neglected in the City of Zagreb for a long time. Since the automobile age which started in Zagreb in the 1960s cycling was pushed out and the automobile-oriented infrastructure was built up without a single bicycle lane or track. The first step in establishing the cycling network was taken in 1990s. It was mainly done by separating the pavements by yellow lines into pedestrian and cycling lanes.

Today, there are approximately 190 km of bicycle lanes and tracks. The lanes and tracks are not adequately interconnected, so the cycling network is presently both too short and inadequately linked. The availability of bicycle racks is insufficient.

Cyclists very often ride on pavements disturbing pedestrians, which creates a bad image of cycle-users among the population of non-cyclists.







Cycling network in Zagreb

3. SITUATION IN SAVSKA AND BUZIN BEFORE CIVITAS

3.1. Tram service

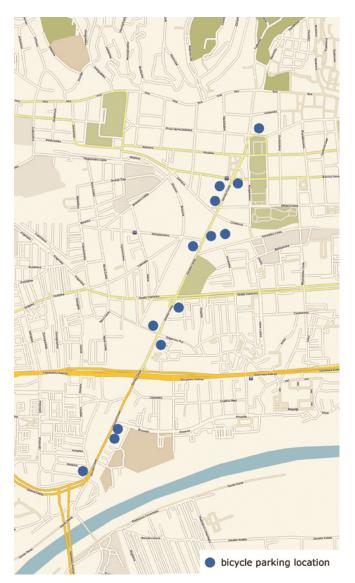
ZET's tram fleet has consisted of several tram types produced by different manufacturers. In 2008, the tram fleet had 288 lead motor cars (among them 70 low-floor trams) and 114 trailers. There is a tram double track railway-line built in carriageway and altogether 30 stops along Savska street. The regular tram service on Savska street operates 8 tram lines including all types of tram vehicles.

The implementation of the RTPI displays at tram stops started in 2008, but the information system was still not in operation. E-ticketing did not exist at the time.

3.2. Cycling

Bicycle racks on Savska street were mostly installed by companies, shopkeepers and institutions. Just one bicycle rack lot was equipped by the City of Zagreb administration. In 2008 altogether 113 bicycle rack lots existed at 13 locations.











Bicycle racks before CIVITAS

3.3 Buzin

Intensive construction of commercial, residential and shopping facilities in the Buzin area during the last 20 years has increased transport demand. The Buzin zone is situated in the southern part of the city, along the road connecting the city with the Zagreb Airport and the City of Velika Gorica. The road network between Buzin and the city centre is congested with traffic. The Zagreb-Sisak railway, which runs through Buzin, is organised for suburban transport, but there is no station in Buzin. Construction of a Buzin railway station would enable for a portion of passengers to switch from the congested roads to faster and environmentally more suitable railway transport.

4. SITUATION IN SAVSKA AND BUZIN AFTER CIVITAS

In 2009 partners of measure 2.5-ZAG have jointly prepared a "Draft Study on New Intermodal Passenger Terminal Sava-North" and presented it to citizens and stakeholders. Stakeholders' and citizens' attitudes, remarks and suggestions have been incorporated in the Final Study which was published in 2010 (2.5-WD1). In accordance with findings from the New Intermodal Passenger Terminal Study, the process of amending the existing Savska - Šarengradska jug detail plan was initiated in 2010 (Milestone 1). The terms of reference for the urban architecture design competition for the New Intermodal Passenger Terminal Sava-North were prepared in 2011 (Milestone 3). A public debate on the redistribution of motorised traffic between Savska and Šarengradska took place in 2011 (Milestones 4 and 5).

4.1 Tram service

In the period 2008-2010, 70 new low-floor energy-efficient trams were included in Zagreb's public transport system. The new trams are contributing to a decrease in electricity consumption by returning power into the power grid while braking. The low-floor trams are increasing the accessibility of tram transport and improved security through the use of CCTV in tram cars. The innovative components in these trams were co-funded by the CIVITAS-ELAN project in measure 1.3-ZAG Energetic recovery for trams.

At the end of 2011, the ZET tram fleet had 297 lead motor cars (among them 142 low-floor energy-efficient vehicles) and 82 trailers.

An electronic public transport tariff system was introduced in tram and bus services in Zagreb in measure 2.6-ZAG Promotion of electronic PT tariff system. Contactless validators were installed in all trams and buses by September 2009. Today, the electronic tickets and e-purse tickets are fully introduced.

The introduction of e-ticketing was paralleled by mobile ticketing. By sending an SMS "ZG" by mobile phone to the number 8585, a passenger buys a single ticket for a bus or tram ride.

A significant improvement in passenger information was the introduction of the Real Time Passenger Information (RTPI) displays at tram stops which inform users about the arrival time of each tram (measure 8.2-ZAG Public transport priority and traveller information). Currently (December 2011) there are 82 displays on tram stops in the city of Zagreb, of which 18 are located at tram stops along Savska street. The RTPI displays were introduced and put into operation in the time period 2008 - 2011, and funded by the ZET company.





RTPI display in Savska street

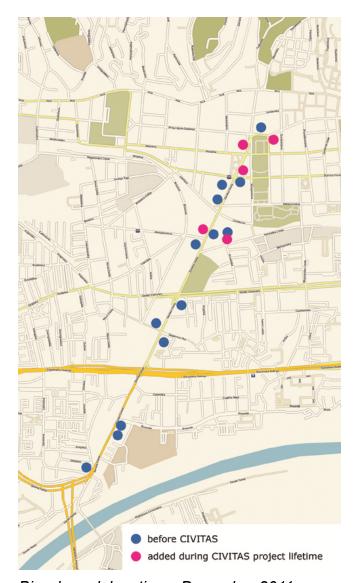
4.2 Cycling

Improvements regarding the amount of bicycle racks along Savska street during the lifetime of the CIVITAS-ELAN project:

- In 2010, 20 bicycle racks were installed in front of the CIVITAS-ELAN information point, in cooperation with the City's Transport Department and funded from the city budget (Milestone 7),
- 80 bicycle racks were installed at four locations in 2011 in cooperation with the City's Transport Department and funded from the city budget.

Many presentations, public debates and round tables on the advantages of cycling and safety took place in the period 2009 - 2011.











Bicycle rack locations, December 2011

In 2010 and 2011 the 2.5-ZAG measure team conducted an analysis of the average hourly number of cyclists along Savska street. The sum (both directions) is shown in the comparative diagramme for 2010 - 2011 below (counted on Savska street at the Technical Museum).



Comparing the figures from 2010 and 2011 reveals that the number of cyclists on Savska street slightly increased in the period from January to April and in the period from June to August. Significant increase appeared in the May (from 173 cyclists in 2010 to 241 cyclists in 2011), in September (from 185 to 243) and in October (from 108 cyclists in 2010 to 191 cyclist in 2011).

4.3 Buzin

For the new railway station at Buzin the main design was developed and the building permit obtained by the Croatian Railways Infrastructure (Milestone 2). The new railway station at Buzin will be situated on the extended corridor on the southern bank of the Sava River. A leaflet on the Buzin Railway Station was printed and distributed to citizens. The documentation for the public procurement for the construction of the Buzin Railway Station (tender documentation) is in preparation. The executive project was completed in December of 2011.



Leaflet on the Buzin railway station

5. MEDIA COVERAGE

Media coverage related to measure 2.5-ZAG covers the following areas of interest: Buzin Railway/ Train Station, Intermodal Passenger Terminal, low-floor trams and cycling. Media coverage covers all project years.

5.1. Media

DATE	PRESS	ARTICLE - TITLE	SIZE	TARGET GROUP
23.5.2009	Vjesnik	Savska cesta bit će rezervirana za javni promet i pješake	128 cm ²	local
4.6.2009	Vjesnik	Potkraj godine počinje gradnja stajališta u Buzinu	224 cm ²	local
12.6.2009	Zagreb. hr	Parkiraj pa na vlak	1/3 of a page	national
12.6.2009	Vjesnik	Savska bez vozila moguća samo uz sa- građenu Šarengradsku i nova željeznička stajališta	1 ½ of a page	local
24.9.2009	Metropola	Savsku biciklistima i pješacima	1 page	local
30.12.2009	Vjesnik	Od Jadranskog mosta do Šarengradske – nadvožnjakom!	1 ½ page	local
20.1. 2010	Večernji list	Savska bez automobila bit će oaza pješaka i biciklista	½ page	local
February 2010	info	Intermodalni putnički terminal Sava-Sjever	6 pages	local
2.3.2010	Zagreb.hr	Intermodalni putnički terminal	1 page	local
11.3.2011	Vjesnik	Gradit će se terminal s garažama za automobile i bicikle	2/3 page	local
3.4.2010	Večernji list	Terminal za autobus, vlak, tramvaj i taksi s podzemnom garažom	½ page	local
December 2010	Željeznice 21	Intermodalni putnički terminal Sava - Sjever	5 pages	national
DATE	TELEVISION	TITLE	LENGTH	TARGET GROUP
10.3.2010	HTV	Intermodalni putnički terminal Sava - Sjever	1:45 min	local/ na- tional
21.4.2011	HTV	Putevima EU fondova	5:00 min	local/ na- tional
DATE	WEBSITE	TITLE	SIZE	
2.1.2008	Jutarnji list; http://www.jutarnji.hr/t emplate/article/article- print.jsp?id=237575	Savska postaje zona za pješake i bicikliste	173 cm ²	local
21.2.2008	Vjesnik; http://www.vjesnik.hr/ html/2008/02/21/Clan ak.asp?r=zag&c=3	Zagrebu prijeti još veći prometni kaos u Savskoj	1 page	national
30.12.2009	http://www.vjesnik.hr/ html/2009/12/30/Clan ak.asp?r=zag&c=2	Od Jadranskog mosta do Šarengradske - nadvožnjakom!	2 pages	national
3.1.2010	http://www.zagrebanci ja.com/hr- aktualnosti/dok-se-ne- prosiri-sarengradska- savska-je-u- kolapsu 288490	Dok se ne proširi Šarengradska Savska je u kolapsu	2 pages	local





31.1.2010	http://www.zagrebanci ja.com/hr- aktualnosti/zeljeznica- buducnosti-povezat- ce-zagreb-i- zupaniju 291508	Željeznica budućnosti povezat će Zagreb i Županiju	1 page	local
11.3.2010	http://www.vjesnik.hr/ html/2010/03/11/Clan ak.asp?r=zag&c=4	Gradit će se terminal s garažama za automobile i bicikle	2 pages	national
3.4.2010	http://danas.net.hr/hrv atska/page/2010/04/0 3/0062006.html	U planu <i>make-over</i> okretišta na Savskom mostu	2 pages	national
8.4.2010	http://metro- por- tal.hr/vijesti/zagreb/ba ndic-otvorio-izlozbu- studija-intermodalnog- putnickog-terminala- sava-sjever	Bandić otvorio izložbu "Studija intermodal- nog putničkog terminala Sava-sjever"	1 page	local
8.4.2010	http://www.zagrebanci ja.com/hr- aktualnosti/otvorena- izlozba-u-tramvaju-o- putnickom- terminalu 301194	Otvorena izložba u tramvaju o putničkom terminalu	1 page	local
26.5.2010	http://mojzagreb.info/z agreb/hrvatska/urbani zamcivitas- radionica-i-izlozba- radova-na-temu- savske-ceste/	CIVITAS radionica i izložba radova na temu Savske ulice	1 page	local
6.7.2011	http://www.online- zagreb.hr/zg- vodic/dogadjaji/preda vanje-novi-vlakovi-za- gradski-i-prigradski- promet/	Novi vlakovi za gradski i prigradski promet	1 page	local
12.9.2011	http://www.h- al- ter.org/vijesti/pritisak- odozdo/srijedom-u- tramvaju-biciklisticke- staze-na-savskoj- cesti#news_view	Srijedom u tramvaju: Biciklističke staze na Savskoj cesti	1/3 of a page	local

5.2 Public events

A number of public events has been organised within this measure. A discussion was organised at the CIVITAS-ELAN Info Point ("Intermodal High-Mobility Terminal Sava - North") on 20 March 2010 (22 participants attended the event), a discussion on the Buzin Railway Station was organised on 30 March 2011, as well as a debate on the new low-floor train in city transport and on planned bicycle routes in Savska street.

Another event related to this topic took place at the CIVITAS-ELAN Info Point from 8 April 2010 to 22 May 2010. An exhibition was set up featuring images/ projections of





future intermodal passenger terminal Sava-North. The exhibition was organised by the City of Zagreb and had approximately 1,680 visitors.

Other events combined (debates at the CIVITAS-ELAN Info Point on the intermodal terminal, Buzin railway station, low floor train and bicycle routes) had 67 participants. Also, the media was present at almost all events as a result of e-mail invitations and Press Releases organised and sent by ODRAZ.

A CIVITAS info service with news of respective events was sent by ODRAZ to a CIVITAS mailing list (containing round 270 contacts).

a. "Wednesdays in tram"

Date	Theme
10 March 2010	Presentation: "Intermodal passenger terminal Sava-North" (Stjepan Kelčec-Suhovec, City of Zagreb)



Picture 1 – Presentation at CIVITAS-ELAN info point

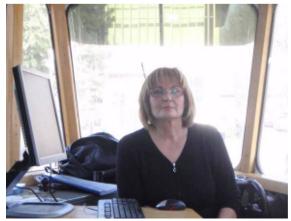


Picture 2 – Presentation at CIVITAS-ELAN info point



Picture 3 – Event poster

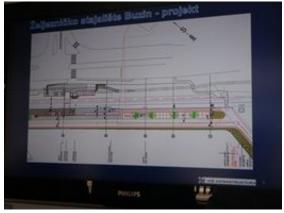
Date	Theme
30 March 2011	Presentation: "Train station Buzin" (Silvana Tantegl, Croatian Railways)



Picture 4 – Presentation at CIVITAS-ELAN info point, Silvana Tantegl



Picture 5 – Presentation at CIVITAS-ELAN info point, visitors



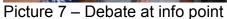
Picture 6 – Trail station Buzin - project

CIVITAS ELAN web site link – event announcement:

http://www.civitaszagreb.hr/novosti/srijedom-u-tramvaju-prezentacijazeljeznicko-stajaliste-buzin/

Date	Theme
6 July 2011	Presentation: "New trains" (Mario Šimić, Croatian Railways)







Picture 8 – Debate at info point



Picture 9 - New train

CIVITAS ELAN web site link – event announcement:

http://www.civitaszagreb.hr/novosti/srijedom-u-tramvaju-novi-vlakovi-zagradski-i-prigradski-promet/

Date	Theme
14 September 2011	Presentation: "Bicycle routes in Savska road" (Alan Ordulj; City of Zagreb, City Office for Physical Planning, Construction of the City, Utility Services and Transport)



Picture 10 – Alan Ordulj, holding presentation



Picture 11 - Debate

CIVITAS ELAN web site link – event announcement:

http://www.civitaszagreb.hr/novosti/srijedom-u-tramvaju-biciklisticke-staze-nasavskoj-cesti/

17

b. Exhibition

Exhibition featuring images/ projections of future intermodal passenger terminal.



Picture 12 – Mayor of Zagreb, Milan Bandić, opens exhibition

An added value of the event was certainly the fact that the Mayor of Zagreb opened the exhibition on the Intermodal Passenger Terminal Sava - North. The exhibition was set up at the CIVITAS-ELAN info point. It opened on 4 April 2010 and closed on 22 May 2010.

6. PRELIMINARY EVALUATION RESULTS

The evaluation of the measure is still on-going. However, a few preliminary evaluation results are already available. The main evaluation results are:

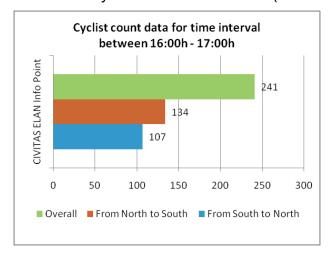
Key result 1 – Parking for 20 bicycles was built within the CIVITAS-ELAN corridor,

Key result 2 - Study for new intermodal passenger terminal was done and

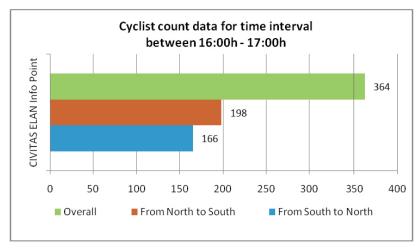
Key result 3 – Building permit for new railway station Buzin, on extended corridor, was obtained.

Data for before – after evaluation of public transport users are not available yet, but will be presented in ELAN's final evaluation report.

Number of cyclists on Savska street ("before" data, Tuesday, 6th October 2008):



Number of cyclists on Savska street ("after" data, Tuesday, 4th October2011:



7. CONCLUSION

Due to the promotional activities and more bicycle racks installed along the Savska street and in the entire city, cycling is becoming more popular in the City of Zagreb, and the number of cyclists is constantly increasing. In the Savska street within the lifetime of the ELAN project it has already increased from 185 hourly average cyclists in September 2010 to 243 in September 2011. The number of cyclist is varying significantly depending on weather conditions.

Significant improvements in the tram service were the:

- introduction of 70 energy-efficient and low-floor trams,
- introduction of RTPI displays at tram stops which inform users about the arrival time of each tram, and
- introduction of e-ticketing and mobile ticketing.

These activities contributed to an improvement of the quality, accessibility and attractiveness of tram service along the Savska corridor and on the entire public transport network in Zagreb.

For the new railway station at Buzin the main design was developed and the building permit obtained. The new railway station at Buzin will be situated on the extended corridor on the southern bank of the Sava River. The documentation for the public procurement for the construction of Buzin Railway Station (tender documentation) is in preparation. The executive project was completed in December 2011.