

CROATIA NATIONAL REPORT ON MOTORWAYS 2015

I Current State of the Network

As on 31 December 2015, the total length of the motorway network in Croatia amounted to **1,313.8 km**. Motorways are operated by 4 companies:

- Hrvatske autoceste d.o.o. (operates motorways A1, A3, A4, A5, A10, A11 and Sv.Ilija tunnel),
- BINA-ISTRA d.d. (it operates the so called Istrian Y - A8 and A9),
- Autocesta Rijeka - Zagreb d.d. (operates motorways A6, A7, part of A1, and the Krk Bridge) and
- Autocesta Zagreb - Macelj d.o.o. (operates motorway A2).

	Company	2014 Total network	2015 Total network	Total network plan for 2016
1.	HAC d.o.o.*	901.43	925.80	925.80
2.	ARZ d.d.*	187.03	187.03	187.03
3.	BINA-ISTRA d.d.	141.00	141.00	141.00
4.	AZM d.o.o.	60.00	60.00	60.00
TOTAL		1,289.43	1,313.83	1,313.83

**revised km according to km of network in service*

OPENING OF NEW MOTORWAY SECTIONS IN 2015

There were 24.4 km of new motorways opened to traffic in 2015 therefore total completed network increased by 1.9 %.

In 2015, the following motorway stretches were open to traffic:

NEW SECTIONS OPENED IN 2015			
Motorway	Section	Km	Date of opening to traffic
A5 Beli Manastir - Osijek -B&H border	Sredanci-B&H border	3.2	On the 2 nd of March 2015
A11 Zagreb - Sisak	Jakuševac-V. Gorica south	10.0	On the 3 rd of November 2015
A11 Zagreb - Sisak	Buševac - Lekenik	11.2	On the 22 nd of April 2015

Tunnels and Bridges on the Network

Company	Km of Tunnels	Km of Bridges	Total Tunnels and Bridges
HAC	31.63	8.51	40.14
ARZ	12.88	13.10	25.98
BINA ISTRRA	5.31	9.36	14.67
AZM	5.90	7.87	13.77
TOTAL	55.72	38.84	94.56

II Works in Progress

On 31 December 2015, the works were in progress on:

- 6.3 km of motorways
- 23.1 km of fast roads,
- 1.2 km of link roads

WORKS IN PROGRESS ON 31 DECEMBER 2015

Motorway	Section	Km	Description
A5 Beli Manastir - Osijek -B&H border	Bridge Drava	2.5	Construction work and supervision
	Osijek Interch. - Bridge Drava	3.8	
Fast road: DC10 Podravina Y	Gradec-Križevci	12.5*	Construction work and supervision
Fast road: DC12 Podravina Y	Vrbovec - Farkaševac	10.6*	Construction work and supervision
Link road Karamatići - Port of Ploče	Entry to the Port of Ploče	1.2*	Construction work and supervision

In 2016, road works will be completed on the total of:

- 23.1 km of fast roads,
- 1.2 km of link roads

THE FOLLOWING SECTIONS WILL BE OPENED TO TRAFFIC IN 2016

Motorway	Section	Km	Opening to traffic scheduled
Fast road: DC10 Podravina Y	Gradec-Križevci	12.5*	By the end of 2016
Fast road: DC12 Podravina Y	Vrbovec - Farkaševac	10.6*	By the end of 2016
Link road Karamatići - Port of Ploče	Entry to the Port of Ploče	1.2*	By the end of 2016

**these are the sections of state roads therefore will not be integrated in motorway network of HAC but after the completion of works done by HAC they will be handed over to HC (Croatian Roads Authority)*

In addition to the continuation of work from the previous year, the following **new work** will start in 2016:

- 1.7 km of new motorways
- 10.68 km of widening to full profile

START OF NEW WORK IN 2016.			
Motorway	Section	Km	Description
A3 Bregana-Zagreb-Lipovac	Lipovljani Interchange	1.0	Construction work and supervision
A5 Beli Manastir - Osijek - B&H	Sava Bridge	0.7	Construction work and supervision
A8 Kanfanar - Matulji	Rogovići - Cerovlje *	10.68*	Widening to full profile

*plan

III Cost of Investment and Financing

The total of HRK 349.07 million (€ 45.87 million) was invested in the construction of new motorways in 2015, while HRK 136.26 million (€ 17.91 million) was invested into sections under traffic.

- in mio HRK

Company	Investments in 2015		Plan for 2016	
	Into new sections	Into existing sections	Into new sections	Into existing sections
HAC	349,07	75,29	296,57	185,99
ARZ*	0,00	17,13	0,00	64,85
BINA ISTRA	0,00	24,04	195,48	24,49
AZM	0,00	19,80	0,00	10,70
TOTAL	349,07	136,26	492,05	286,03
TOTAL INVESTMENTS	485,33		778,08	

- in mio EUR, 1 EUR** = 7,61

Company	Investments in 2015		Plan for 2016	
	Into new sections	Into existing sections	Into new sections	Into existing sections
HAC***	45.87	9.89	38.97	24.44
ARZ*	0.00	2.25	0.00	8.52
BINA ISTRA	0.00	3.16	25.69	3.22
AZM	0.00	2.60	0.00	1.41
TOTAL	45.87	17.91	64.66	37.59
TOTAL INVESTMENTS	63.78		102.24	

The investment amounts are based on the temporary report for 2015

*ARZ – Betterment and reconstruction of the road network

**1 EUR=7.61 HRK (Annual average exchange rate in 2015, Source: Croatian National Bank)

***Remarque HAC: Investment amount for the year 2015 is based on temporary report and for the year 2016 is based on Draft Plan of construction and maintenance approved on the 23rd December 2015 by the Supervisory Board of the Company and submitted to Ministry of the Sea, Transport and Infrastructure for final approval by the Croatian Government .

In 2015 investments were financed as follows:

-75.2 % through benefits from excise taxes

-21.6% through loans from development banks

- 3.2% through EU funds for project of construction of entry to the Port of Ploče

Sources of financing in 2015

Source of financing (%)	HAC	ARZ	BINA ISTR	AZM
Loans	58.5	0	0	0
proper resources	1.7	0	0	0
Revenues from tolls and other revenues	30.0	93.1	52.8	70
Revenues from fuel HRK 0.20/l i.e. EUR 0.026/l	9.5	0	0	0
Reimbursable and non-reimbursable state funding	0	0	47.2	30
EU funds	0.3*	6.9	0	0
TOTAL	100	100	100	100

*non-reimbursable funds

IV Traffic

In 2015 all motorway companies experienced increase in traffic when compared to the previous year. The total traffic of all vehicles increased by 7.21 % in comparison with the previous year.

- number of vehicles in toll collection zones

Company	2014		2015				Total (15/14)
	Light vehicles (IA+I+II)	Heavy Vehicles (III+IV)	Light vehicles (IA+I+II)	% (15/14)	Heavy Vehicles (III+IV)	% (15/14)	
HAC	28.322.655	4.323.984	30.971.249	9.35	4.593.990	6.24	8.94
ARZ	16.905.622	1.832.433	17.904.051	5.91	1.991.560	8.68	6.18
BINA ISTR	7.449.854	651.036	7.810.914	4.85	682.081	4.77	4.84
AZM	5.448.753	720.778	5.721.187	5.00	716.557	-0.59	4.35
TOTAL	58.126.884	7.528.231	62.407.401	7.36	7.984.188	6.06	7.21
TOTAL TRAFFIC	65.655.115		70.391.589				7.21

GDP 2014/2013 (%)	Traffic 2014/2013 (%)	GDP 2015/2014 (%)	Traffic 2015/2014 (%)
-0.5	0.56	1.6*	7.21

* Flash estimate (source: Central Bureau of Statistics)

V Toll Rates

The closed toll collection system, with several entrance and exit points, is predominantly operated in the Republic of Croatia. The open toll collection system is less used (e.g. on Bregana - Zagreb Motorway, on the Krk Bridge, on Rupa-Rijeka and on the St. Ilija Tunnel).

1 EUR = 7.61 HRK

AVERAGE TOLL RATE PER KM (with VAT)		
Existing systems	Light vehicles (Category I)	
	HRK/km	€/km
Closed system	0.497	0.063
Open system	0.480	0.065
Ratio categories I : IV closed tolling system	1 : 4.25	
	Trucks (Category IV)	
	HRK/km	€/km
Closed system	2.172	0.287
Open system	1.785	0.235
Ratio categories I : IV open tolling system	1 : 3.70	

Motorcycles (category IA) pay 60% of the toll charged for category I vehicles.

On all motorways, toll can be paid in cash (HRK and €), by credit and debit cards, by INA card, by SMART cards. Electronic toll collection (ETC) system is available on all motorways except on the Zagreb-Macelj Motorway (A2).

VAT on tolls is 25%.

TECHNOLOGY OF ELECTRONIC TOLL COLLECTION SYSTEM IN USE

The toll collection systems of HAC, ARZ and BINA ISTRAN network has a stop and go system that integrates electronic toll collection (ETC).

The technology of electronic toll collection is in accordance with the legal provisions: DSRC 5.8 GHz

Communication standards: Physical Layer ENV 12795 and ENV 12253

Data Link Layer ENV 12834 and ENV 13372

Application standards: Application Layer ISO14906 EFC

Transaction models: PISTA and TIS are in use, with openness to other transactional models in accordance with relevant standards.

In 2016 HAC plans to upgrade its exit lanes by setting up automatic vehicle pre-classification and adding more automated exit lanes without presence of toll collectors.

Future ARZ projects are focused on the need to increase the flow of toll stations by introducing more fast toll lanes without stopping (currently there are two) and to introduce new products based on electronic tags and ANPR modules.

AUTOCESTA RIJEKA-ZAGREB D.D. (ARZ)

In 2015 the toll rates did not change. Decision of the Management Board of the Company, number 01-100-01-759/15 dated 28 April 2015, stipulated that deadline for obligatory personalization of all anonymous ETC commercial devices and ETC packages issued by the Autocesta Rijeka-Zagreb Motorway Company was extended to the 12th May 2015 at the latest. As of 13th May 2015 anonymous devices became invalid until their registration as personalized OBUs.

HRVATSKE AUTOCESTE D.O.O. (HAC)

In 2015 HAC did not change its toll rates nor has it introduced new products for users.

BINA-ISTRA d.d.

New toll tariffs have been applied as from 1.1.2015., adjusted for inflation rate for last 12 months, which represented average increase of toll tariffs on the Istrian Y by 2.2%.

Also, in 2015 the summer tariffs have been applied for the first time on Istrian Y (from 1.6.-30.9.2015.) This special tariff was approved by the Ministry of Transport and represents full toll tariff increased by 10%. For subscribers and local population using ETC device tolls remain unchanged. Since last summer BINA ISTRA has proposed to its users a new ETC package called EASY, offering a general discount of 10% without time limit.

In order to improve services for its users, in 2015 the company launched a number of projects whose implementation is expected in 2016.

AUTOCESTA ZAGREB-MACELJ D.O.O. (AZM)

In 2015 toll rates did not change. For prepaid toll payments via SMART card the discount of 25% is calculated for categories I and II and 13% for categories III and IV (for amounts in excess of HRK 2,000.00). In addition to SMART card, payments can also be made via debit and credit cards, and by INA card.

VI Toll Revenues (without VAT)

In 2015, the total toll revenues amounted to **EUR 317,254.203** which represents an increase of toll revenues by **6.50 percent** when compared to the previous year.

1 EUR = 7,61 HRK

Company		2014		2015		% (15/14)
		HRK	€	HRK	€	
1.	HAC	1,401,753.852	184,198.929	1,484,986.671	195,136.225	5.94
2.	ARZ	505,273.019	66,395.929	539,732.914	70,924.167	6.82
3.	BINA-ISTRA	164,568.435	21,625.287	186,318.178	24,483.335	13.22
4.	AZM	195,313.803	25,665.414	203,266.719	26,710.476	4.07
TOTAL		2,266,909.109	297,885.560	2,414,304.482	317,254.203	6.50

Toll revenues are based on the temporary reports for 2014

VII Traffic Safety

The total of 2,286 traffic accidents, with 19 fatalities and 307 accidents with injuries was registered in 2015. The total number of all traffic accidents registered in 2015 increased by 5 % but total number of fatalities decreased by 24 %, when compared to the previous year.

Number of traffic accidents	2014					2015					% (15/14)
	HAC* 888 km	BINA ISTRA 141 km	ARZ 187 km	AZM 60 km	CROATIA 1271 km	HAC* 902 km	BINA ISTRA 141 km	ARZ 187 km	AZM 60 km	CROATIA 1290 km	
- with fatalities	16	2	3	0	21	12	2	4	0	18	-14.29
- with injured	188	11	68	26	293	212	9	70	16	307	4.78
- with material damage	1,436	62	240	125	1,863	1,546	64	241	110	1,961	5.26
Total number of traffic accidents	1,640	75	311	151	2,177	1,770	75	315	126	2,286	5.01
Total number of fatalities	19	2	4	0	25	13	2	4	0	19	-24.00

* km of the network maintained used for calculating the safety figures

Main safety ratios

	10 ⁹ vehicles/km in 2015					change 2015/2014 in %				
	HAC* 902 km	BINA ISTRA 141 km	ARZ** 187 km	AZM 60 km	CROATIA 1290 km	HAC* 902* km	BINA ISTRA 141 km	ARZ** 187 km	AZM 60 km	CROATIA 1290 km
Personal injury rate	50.42	7.51	55.64	44.32	44.03	5.72	-21.93	1.40	-41.36	-1.77
Fatal accident rate	2.85	1.67	1.99	0	2.58	-29.80	-4.57	-37.22	-100.00	-19.65
Rate of dead	3.09	1.67	1.99	0	2.72	-35.89	-4.57	-52.84	-100.00	-28.81

****** ARZ safety ratios refer to A1 and A6 motorways i.e. to 146,5 km, while table with traffic accidents include the total ARZ network i.e. 187,03 km

VIII Long and Medium Term Development Program

According to the Roads Act, the construction and maintenance of motorways is planned:

- In the long term, through the public road development strategy
- In the medium term, through four-year Public Road Construction and Maintenance Programmes passed by the Government of the Republic of Croatia based on the proposal of the Ministry of Sea, Transport and Infrastructure,
- Annually, through construction and maintenance plans defined by individual motorway operating companies.

In 2014 the Government of the Republic of Croatia adopted a new Strategy of Transport Development of the Republic of Croatia for the period 2014-2030. The Government of the Republic of Croatia adopted in total four four-year Public Road Construction and Maintenance Programs (2001-2004, 2005-2008, 2009-2012, 2013-2016).

The level of roads and motorways development achieved in the last decade imposed new approach to development policy in this field. Instead of continuing with the intensive and rapid road development as it was case in the previous period, Croatia needs to apply a moderate, sustainable road development policy in order to maximally rationalise further processes of construction and road management. This does not imply that further construction will be stopped. Croatia will finish realisation of defined strategic goals (attainment of planned regular maintenance of roads, ensuring that the total core road network matches the up to date transport standards and completion of the necessary planned motorway and fast roads network).

According to the latest Public Road Construction and Maintenance Program 2013-2016 the following motorways and express roads are to be completed and opened to traffic:

A5 Beli Manastir - Osijek - B&H Border Section

- Bridge over the Drava River
- Osijek-Beli Manastir Section
- Sava Bridge

A7 Rupa - Rijeka - Žuta Lokva

- Grobničko Polje (Konje) - Mali Svib - Križišće Section

A8 Kanfanar - Matulji Motorway

- Rogovići - Vranja - widening to the full motorway profile

Link road TS Karamatići- Port of Ploče

- Entry to the Port of Ploče

DC 10 Podravina Y (Koprivnica)

- Gradec - Križevci Section

DC 12 Podravina Y (Bjelovar)

- Vrbovec 2 - Farkaševac Section

In addition to the above said, remaining works to be also initiated according to Program 2013-2016 are the following: upgrade of Zagreb-Karlovac section to 6 lanes motorway, construction of the Novigrad - Lišnica approach road, construction of Lipovljani Interchange on the Motorway A3 Bregana - Zagreb - Lipovac, construction of the "Ranžirni" Overpass on the A11 Motorway Zagreb - Sisak and construction of sections on the New Zagreb Bypass.

IX Significant activities in 2015 and plans for 2016

HRVATSKE AUTOCESTE D.O.O.

In 2015 the company was focused on:

Finalizing the construction and opening to traffic the additional 24.4 km of motorways as follows:

1. Opening to traffic of the Sredanci section - B&H border on the Vc corridor, A5 Motorway Beli Manastir-Osijek- B&H border.
2. Construction of the Drava Bridge and the Drava Bridge-Osijek Interchange section on Vc corridor (Motorway A5).
3. Completion of construction and opening to traffic of the Jakuševac-Velika Gorica section and Buševac-Lekenik subsection on A11 Motorway Zagreb-Sisak.
4. Continuation of construction of fast roads DC 10 Vrbovec 2 - Koprivnica - Hungarian border (First Construction Phase of the Gradec-Križevci section) and DC 12 Vrbovec 2 - Bjelovar - Hungarian border (First Construction Phase of the Vrbovec 2-Farkaševac section)

In 2016 the company has set the following goals:

1. Start of works on construction of Lipovljani Interchange on A3 Motorway Bregana - Zagreb - Lipovac.
2. Continuation of construction of the Vc corridor; Osijek Interch.- Drava Bridge, completion of the Drava Bridge and start of construction of the Sava Bridge.
3. Preparation activities (designing) for the Ranžirni overpass on the A11 Motorway Zagreb - Sisak.
4. Completion of construction of fast roads DC 10 Vrbovec 2 - Koprivnica - Hungarian border (First Construction Phase of the Gradec-Križevci section) and DC 12 Vrbovec 2 - Bjelovar - Hungarian border (first construction phase of the Vrbovec 2-Farkaševac section)
5. Completion of construction of the Entry to the Port of Ploče.

In addition to the investments under its own responsibility, Hrvatske autoceste motorway company acts on behalf of the Ministry of Finances and manages the construction of 40 border crossing points defined by the Schengen Action Plan of the Government of the Republic of Croatia.

AUTOCESTA RIJEKA-ZAGREB D.D.

Activities set by the company for the year 2015 continue also in 2016 as follows:

- investments relating to the rehabilitation and maintenance of existing facilities on the motorway and of the motorway itself
- maintenance of equipment as well as
- investments into heavy maintenance.

Here are some of major projects of the company:

- a) **Master plan for development of the motorway Zagreb-Karlovac**, project is co-financed with 85 % of EU Regional Development Fund through Operational Programme for Transport 2007-2013. Company Autocesta Rijeka- Zagreb d.d. participate with 15 % together with partners such as Zagrebačka županija, Grad Karlovac, Grad Jastrebarsko, Općina Klinča Sela i Općina Stupnik.
- b) **Feasibility Study Diversion of state road D6, from Interchange Novigrad to Lišnice**, project is co-financed 85 % of contracted amount by EU fund for regional development through Operational program Transport 2007.-2013 and 15 % are covered by Autocesta Rijeka- Zagreb d.d.
- c) **LIFE DINALP BEAR project** „Population level management and conservation of brown bears in northern Dinaric Mountains and the Alps“. Project is financed by EU funds in the framework of EU programme LIFE+. Goals of the project which are under responsibility of Autocesta Rijeka-Zagreb are mainly to increase road safety and improvement of motorway impact on nature.
- d) **Designing of noise protection walls along the concession area of the Autocesta Rijeka Zagreb motorway**
- e) **ITS CROCODILE II** - Autocesta Rijeka-Zagreb, in the scope of CROCODILE II will implement: modernization and optimization of traffic counters, modernization of VMS and optimization of communication of information to users via the aforesaid devices (motorways A1 and A6 - core network), modernization of systems of video surveillance and video detection, modernization and upgrade of equipment and systems in TMCC and implementation of Datex II protocol as well as matrice programmable displays on A7 motorway and implementation of cross-border traffic management plans. Project is in the pipeline for call for tender launched by EU programme - Connecting Europe Facility (CEF) and its implementation is expected for the period 2017-2020.
- f) **Construction of the Interchange Trinajstići** - The interchange planned is located between the interchange Jurdani on Rijeka - Rupa motorway, at approximate distance of 3,5 km and the interchange Matulji which is situated at approximate distance of 1,0 km from the aforesaid interchange. Project is currently in the phase of preparing the project documents and obtaining the construction permit.
- g) **Reconstruction of the Interchange Matulji** - Project is related to reconstruction of the inter-regional interchange Matulji on the A7 motorway. This project is part of the project lead by Hrvatske ceste (State Roads Authority) and whole intervention is split in two parts. Project is currently in the phase of preparing the project documents and obtaining the construction permit.

BINA -ISTRA d.d.

In 2015 the company's activities were focused on:

In the course of 2015 Bina Istra has launched new ETC subscription model offering users unlimited duration of funds available on their accounts and 10% discount on toll price.

In the following period Bina Istra intends to present application for mobile phones offering to users gathered information about weather forecast, conditions on Istrian Y motorway, road assistance including

automatic localisation on the motorway, possibility for ETC users to access to their personal accounts and about general organizing travel information.

In addition, Bina Istra aims to provide to its users an efficient post-sale service through independent Client Service available for any kind of queries that users of Istrian Y might have. Client Service will have its free info phone 0800 600 601, where calls will be accepted and processed 24 hours a day.

Bina Istra will continue with project of achieving the full interoperability of ETC system which is planned to be implemented in 2 phases:

- interoperability of ETC devices among all motorway companies in Croatia
- interoperability of ETC on EU level

For the year 2016 the company has set following objectives:

Company plans to achieve financial closing of the phase 2B1 and to launch works on widening the Rogovići-Cerovlje section to full motorway profile (10.68 km).

In the long term Bina Istra plans the construction of widening to full motorway profile of the section Pazin- Učka Tunnel (phase 2B1) i.e. completion of the Istrian Y motorway. The construction of the second tube of Učka tunnel is also envisaged as well as company's debt refinancing.

AUTOCESTA ZAGREB-MACELJ D.O.O.

The short term objectives of the company include:

Regular and periodic maintenance, lowering the number of traffic accidents, energy savings, environmental protection.

The company has set the following long term objectives:

The upgrade of the Krapina-Đurmanec Section of the total length of 3,7 km to the full motorway profile and introduction of ETC toll payment.

KEY DATA FOR 2015

CROATIA	2015
The total length of network according to concession agreement, in km, as on 31/12/2015	1.313,8
2 x 1 lanes not including the stopping lane	72.5
2 x 2 lanes not including the stopping lane	1.220,6

2 x 3 lanes not including the stopping lane	20.8
2 x 4 lanes not including the stopping lane	0
Number of km opened to traffic in 2015	
MOTORWAYS	24,4
SEMI-MOTORWAYS	0
WIDENING TO FULL MOTORWAY PROFILE	0
Number of km under construction as on 31/12/2015	
MOTORWAYS	6.3
SEMI-MOTORWAYS/FAST ROADS	23.1
LINK ROADS	1.2
WIDENING TO FULL MOTORWAY PROFILE	0
Planned opening of new sections in 2016, in km	
MOTORWAYS	0
SEMI-MOTORWAYS/FAST ROADS	23.1
LINK ROADS	1.2
WIDENING TO FULL MOTORWAY PROFILE	
Annual toll collection revenues in 2015, in EUR	317.254.203
Full time employees	3.473
AADT LIGHT VEHICLES	12.990
AADT TRUCKS	1.819
AADT LV + HV	14.809
Total number of accidents	2.286
Number of accidents with injuries	307
Number of fatalities	19
Number of kilometres travelled (10 ⁶ x km)	6.973,20
Number of toll stations	109
Number of toll collection lanes	726
Number of ETC lanes*	497*
Number of ETC subscribers	273.855
Number of roadside rest areas (with filling stations)	76
Number of rest areas	128
Number of restaurants	20
Number of hotels	9

* The Autocesta Zagreb-Macelj d.o.o. has not as yet introduced the ETC