

# CROATIA NATIONAL REPORT 2008

## I Current state of the network

At the start of 2009, the total length of the motorway network in Croatia amounted to **1.198,7 km**.

The following new roadways were opened to traffic in 2008:

- **41.5 km** of new motorways
- **36.9 km** of widening of existing road sections to the full motorway profile

At the motorway **A1: Zagreb-Split - Ploče** the Šestanovac - Zagvozd - Ravča sections (**40 km**) - were opened to traffic in full profile in 12/2008.

At the motorway **A4: Zagreb - Goričan** the section from Goričan to Hungarian border (**1,5 km**) with the bridge over the Mura River was opened to traffic in 10/2008.

At the motorway **A6: Zagreb-Rijeka** the total of **36,9 km** were widened to the full motorway profile (Phase II B)

A part of the Oštrovica - Vrata section (**12,44 km**) - in 09/2008

Vrata - Delnice section (**8,93 km**) - in 06/2008

Delnice - Kupjak section (**7,92 km**) - in 06/2008

a part of the Kupjak - Vrbovsko section (**7,59 km**) - in 06/2008

In Croatia, motorways are operated by 4 companies, i.e. by *Hrvatske autoceste d.o.o.* (operates all toll motorways except for those in concession) and by three concession companies *BINA-ISTRA d.d. Pula* (operates the so called Istrian Upsilon - A8 and A9), *Autocesta Rijeka-Zagreb d.d.* (A6 and A7) and *Autocesta Zagreb-Macelj d.o.o.* (A2).

Number of motorway kilometres -

	Company	2007. Tolled facilities total	2008. Tolled facilities total
1.	HAC d.o.o.	780,0	816,0
2.	ARZ d.d.	178,5	181,7*
3.	BINA-ISTRA d.d.	145,0	141,0**
4.	AZM d.d.	60,0	60,0
<b>TOTAL</b>		<b>1.163,5</b>	<b>1.198,7</b>

\* revision of data from previous years - all access roads has been added

\*\*revision of data from the previous years

## II Works in progress

The following works were in progress on January 1, 2009 on the total of

**70,3 km** of new motorways,  
**17,5 km** of new express roads,  
**36,5 km** widening to the full motorway profile,  
**11,46 km** left-tube construction for the Mala Kapela Tunnel and Sveti Rok Tunnel  
**4,6 km** toll station upgrade by adding new toll lanes

**Motorway A1: Zagreb - Split - Dubrovnik Split-Ploče sector** (98 km in total)  
Ravča - Ploče section ( **21 km**),  
left tube for the Mala Kapela Tunnel (**5,78 km**) and Sveti Rok Tunnel (**5,68 km**)

**Motorway A2: Zagreb-Macelj**  
Motorway connection to the SLO border crossing (**0,8 km**) and border crossing platform

**Motorway A3: Bregana-Zagreb-Lipovac**  
additional structures on the existing sections

**Motorway A5: Beli Manastir-Osijek-B&H border** (88,9 km in total)  
Osijek-Đakovo section (**33 km**)

**Motorway A6: Zagreb-Rijeka**  
rehabilitation of the approach to the Lučko toll station from the Karlovac direction (**4,56 km** in total) and construction of the new Demerje Toll Station at KM 3+025 for the cashless toll collection

**Motorway A7: Rupa-Matulji-Diračje-Orehovica**  
widening of the south-side pavement of the Rijeka bypass to the full motorway profile, Orehovica Interchange - Diračje Interchange section (**8.86 km** in total)

**Motorway A9: Umag-Pula** (widening of the existing sections to the full motorway profile, (6,8 km)  
Currently under construction:  
Kanfanar - Vodnjan South section (**20,7 km**)  
and Vodnjan South - Pula section (**6,9 km**)

**Motorway A10 : B&H border - Port of Ploče**  
continuation of the express road from Ploče to the Port of Ploče (**7,5 km**)

**Motorway A11: Zagreb-Sisak:**  
Jakuševac-Velika Gorica South section - the remaining **7,5 km** of the motorway are currently under construction  
At the Velika Gorica South - Lekenik section: the subsection until Buševac, about **8 km** in length, is currently under construction

Link (express) road and Sv. Ilija Tunnel (total **10 km**)

The following roadways will be opened to traffic in 2009:

- **51,8 km** of new motorways
- **8,9 km** of widening to the full motorway profile, and
- **11,5 km** in the second tubes of the Mala Kapela Tunnel and Sveti Rok Tunnel
- **1 km** of express road, i.e. :

**Motorway A1: Zagreb - Split - Dubrovnik, Split-Ploče sector**

Ravča-Ploče sections, Ravča-Vrgorac subsection (**about 10 km**),  
left tubes of the Mala Kapela and Sveti Rok tunnels (**11,46 km**)

**Motorway A2: Zagreb-Macelj**

road leading to the border crossing with the Republic of Slovenia (**0.8 km**),

**Motorway A5: Beli Manastir-Osijek-B&H border**

Đakovo - Osijek section (**33 km**),

**Motorway A7: Rupa-Matulji-Diračje-Orehovica**

Orehovica Interchange - Diračje Interchange section (**8,86 km** - widening to the full motorway profile)

**Motorway A10 : B&H Border - Port of Ploče**

express road from Ploče to the Port of Ploče (**1 km**),

**Motorway A11: Zagreb-Sisak:**

Velika Gorica - Buševac subsection (**8 km**),

In addition to continued work on the projects started in previous years, the following **new projects will be started in 2009:**

- **155,3 km** of motorways and
- **43,2 km** of widening of existing sections to the full motorway profile :

**Motorway A1: Zagreb-Split- Dubrovnik**

Doli -Dubrovnik Interchange Section (**30 km**)

**Motorway A5: Beli Manastir - Osijek - B&H border**

Osijek - Beli Manastir Section (**25 km**)

**Motorway A11: Zagreb - Sisak**

on the Velika Gorica South - Lekenik Section, Buševac - Lekenik Subsection (**12 km**), Lekenik -Sisak Interchange Section (**10 km**)

**Motorway A12: Podravina Upsilon**

Gradec - Reka Section (**40 km**),

Vrbovec 2 - Bjelovar Section (**27 km**)

**Motorway A6: Zagreb - Rijeka**

Donja Zdenčina Interchange at km 14+250

Novigrad Interchange with approach roads „Netretić - Novigrad Interchange -

Novigrad Interchange - Lišnica“ (11,3 km in total)

**Semi-motorway A9: Istrian Upsilon: Umag-Pula**

Buje - Kanfanar Section (43,2 km)

### III Investments and financing

The total of HRK 5,307.29 M ( € 657.64 M) was invested in new motorway construction in 2008, while the total of HRK 498.27 M ( € 66.43 M) was invested over the same period in the existing sections.

in millions of HRK (€), (1 € = 7.5 HRK)

Company	Investment in 2008		Planned investment in 2009	
	new sections	completed sections	new sections	completed sections
HAC	3,748.32 (449.78)*	432.18 (57.62)*	**	**
ARZ	1,420.82 (189.44)	27.56 (3.67)	1,291.30 (172.17)	179.10 (23.88)
BINA ISTRA	138.15 (18.42)	23.53 (3.14)	841.50 (112.20)***	25.95 ( 3.46)***
AZM	0	15.00 (2.00)	0	22.50 (3.00)
<b>TOTAL</b>	<b>5,307.29 (657.64)</b>	<b>498.27 (66.43)</b>	<b>2,132.80 (284.37)</b>	<b>227.55 (30.34)</b>

\*The data on investments made in 2008 are based on the temporary report.

\*\* The Government of the Republic of Croatia has not as yet adopted the new Public Roads Construction Plan for the 2009-2012 periods.

\*\*\*The investments (already made and planned) in new sections include construction costs only, i.e. the costs relating to development, insurance, supervision and consultancy are not included.

## IV Traffic

- Number of vehicles in toll-collection zones

Company	2007		2008			
	Passenger cars (Cat. 1 and 2)	Trucks (Cat. 3 and 4)		% (08/07)		% (08/07)
HAC	27.468.537	3.908.210	27.813.913	+ 1,26 <sup>1</sup>	4.147.348	+ 6,12 <sup>1</sup>
ARZ	12.069.014	1.893.629	16.541.162	+ 37,00 <sup>1</sup>	2.166.368	+ 14,00 <sup>1</sup>
BINA ISTRA	4.502.102	461.029	4.282.130	- 4,89 <sup>2</sup>	457.139	- 0,84 <sup>2</sup>
AZM	5.848.134	729.005	5.801.563	- 0,80 <sup>3</sup>	734.674	+ 0,78 <sup>3</sup>
<b>TOTAL</b>	<b>49.887.787</b>	<b>6.991.873</b>	<b>54.438.768</b>	<b>+ 9,12</b>	<b>7.505.529</b>	<b>+ 7,35</b>

<sup>1</sup> Compared to 2007, the difference is significant because in 9/2007 HAC handed over to ARZ the motorway A7 Rupa-Rijeka and bridge Krk. Therefore the traffic should be observed and compared together for both companies and than the raise in traffic for LV amounts to 12% and in HV 8,8%

<sup>2</sup> The traffic in 2008/2007 is lower because in 2007 the traffic was exceptionally high due to works on two alternative roads (Opatija - Lovran - Vozilići and Antenal Bridge) and traffic was re-routed to A8 and A9, this was no longer the case in 2008. In addition, the economic activity in Istria was reduced in 2008 when compared to 2007.

<sup>3</sup> The fall in traffic in 2008/2007 is due to lower traffic intensity in summer due to vignette introduction in Slovenia, and so most of tourists from north-eastern parts of Europe selected a cheaper route via Hungary.

**In 2008, the total traffic of all vehicles on all motorways increased by 8.9 percent when compared to the previous year.**

GROWTH of gross domestic product in 2007	GROWTH of traffic in 2007	GROWTH of gross domestic product in 2008	GROWTH of traffic in 2008
5,6	5,9	3,1*	8,9

\* data are based on preliminary report

In 2007, the network was extended by 92 km or 8.6 percent when compared to 2006, and in 2008 the network was additionally extended by 42 km, or 3.6 percent compared to 2007.

## V Toll rate (without the VAT)

The motorway network in Croatia is still under construction and so both the closed and open toll collection systems are now used. However, once the network is completed, the closed toll collection system will be operated on all motorways with multiple entry and exit points.

For light vehicles (category I vehicles) the toll without the VAT:  
in the closed toll collection system amounts to € 0.045 per km (HRK 0.33 per km),  
while in the open toll collection system it amounts to € 0.039 per km (HRK 0.29 per km).

The toll ratio for lightweight vehicles and trucks (category IV vehicles) is 1 : 4.2.

**The consumer basket increase amounted to 6.2 percent in 2008.**

## **HAC**

The VPR system (video-based license plate recognition system) was introduced in May 2008 with the purpose of preventing fraudulent use and manipulation with magnetic cards (exchange of magnetic cards among users so as to pay fewer tolls).

As of June 2008, the ETC package may be purchased round-the-clock at all toll stations. The ETC packages (ENC 420, ENC 610 and ENC 1000) may be used immediately after purchase for paying toll on all motorways operated by Hrvatske autoceste d.o.o. and Autocesta Rijeka - Zagreb d.d.

From January 1, 2009, the toll for vehicle categories III and IV may be purchased via credit cards based on the post-paid system, using the ETC device linked to a specific vehicle (its license plate), and a 20 percent discount is granted in the period from September 15 of the current year to the June 1 of the following year.

When toll is paid by subscription to an ETC device and SMART card, the 10 percent discount is offered throughout the year. In winter season, from November 1 to March 31, the seasonal discount of 23.5 percent is granted.

## **BINA-ISTRA**

This company did not increase toll in 2008, and it offers a whole array of discounts throughout the year. In addition to the previously introduced subscription payment via SMS, in December 2008 the company greatly modernized the toll subscription system by introducing toll payment via the Internet.

Besides payment via all major credit and debit cards, the possibility of making toll payments via the INA card was also introduced in early November. As of December 1, 2008 a forty percent discount, compared to the toll charged for the first category of vehicles, has been granted for the newly established motorcycle category (Category IA).

## **ARZ**

The toll rates were changed in 2008 as, after construction of the full motorway profile on the Rijeka - Zagreb motorway, i.e. on its section from Grobnik to Vrbovsko. The toll had to be changed to make it compliant with the decision made by the competent ministry in 2004. According to this decision the toll on the Rijeka - Zagreb motorway has to be charged at the rate of HRK 0.42 per kilometre of full profile motorway, or HRK 0.36 per kilometre of semi-motorway. The new toll rates have been in force on the mentioned sections as of November 1, 2008.

A ten percent discount is offered throughout the year for toll prepayment via Smart card. In winter season, from November 1 to March 31, a seasonal 23.5 percent discount is offered.

A ten percent discount is offered throughout the year for toll prepayment via the ETC device.

## **AZM**

This company increased its rates in 2008 in keeping with its Concession Agreement (5%).

## VI Toll Revenues (not including the VAT)

1 € = HRK 7.5

Company		2007.		2008.		% (08/07)
		HRK	€	HRK	€	
1.	HAC	1.230.509.256	164.067.901	1.238.422.017	165.122.936	+0,6
2.	ARZ	417.446.545	55.659.539	477.406.351	63.654.180	+14,4
3.	BINA-ISTRA	134.125.037	17.883.338	129.674.801	17.289.973	-3,3
4.	AZM	135.142.097	18.018.946	155.397.526	20.719.670	+15,0*
<b>TOTAL</b>		<b>1.939.190.164</b>	<b>258.558.688</b>	<b>2.000.900.695</b>	<b>266.786.759</b>	<b>+3,2</b>

\* Total revenues increased by 15 percent is due to opening to traffic of the new motorway section and to toll increase as of 1/1/2008. The number of vehicles did not increase with respect to 2007. In fact, LV traffic decreased by 0.78%. The main reason is the fall in summer traffic by about 10 percent with respect to 2007 because of expensive vignettes (€ 35) charged in the neighbouring Republic of Slovenia. This assertion is evidenced by data on the roughly ten percent traffic increase on the Zagreb - Goričan route, which shows that tourists from the north-east of Europe bypassed Slovenia and travelled through Hungary.

In 2008, the total toll revenues increased by about 3.2 percent with respect to the previous year, which is mainly due to the increase in traffic, to the opening of new motorway sections, to the introduction of new payment methods, and to price corrections operated on some motorways in Croatia.

## VII Traffic safety

Number of accidents	2007					2008				
	HAC 780 km	BINA ISTRA 141 km	ARZ 181 km	AZM 60 km	RH 1162 km	HAC 780 km	BINA ISTRA 141 km	ARZ 181 km	AZM 60 km	RH 1162 km
- fatal accidents	42	4	21	1	68	27	5	9	7	48
- accidents with injuries	266	25	101	22	414	251	22	125	22	420
- accidents with material damage	1436	132	440	125	2133	1353	132	511	76	2072
<b>Total number of traffic accidents</b>	<b>1744</b>	<b>161</b>	<b>562</b>	<b>148</b>	<b>2615</b>	<b>1631</b>	<b>159</b>	<b>645</b>	<b>105</b>	<b>2540</b>
<b>Total number of fatalities</b>	<b>51</b>	<b>4</b>	<b>27</b>	<b>1</b>	<b>83</b>	<b>47</b>	<b>6</b>	<b>11</b>	<b>8</b>	<b>72</b>

\*traffic accidents for 2008 are calculated according to the length from 2007 because new stretches of motorways were open to traffic only in late December 2008

The total of 2540 traffic accidents, with 72 fatalities, was registered in 2008. Out of this total, the number of accidents with injuries was 420. The number of all traffic accidents decreased by 2.9 percent in 2008, and the number of fatalities was lowered by 13.2 percent with respect to the previous year.

	In billion of kilometres travelled in 2008					Variation in % 2008/2007				
	HAC 780 km	BINA ISTRA 141 km	ARZ 181 km	AZM 60 km	RH 1162 km	HAC 780 km	BINA ISTRA 141 km	ARZ 181 km	AZM 60 km	RH 1162 km
Ratio of accidents with injuries	67,75	31,35	111,15	27,88	66,45	-21,62	-21,31	23,08	-49,98	-15,09
Ratio of accidents with fatalities	7,28	7,12	8,00	8,87	7,59	-46,67	24,48	-57,40	250,59	-40,93
Ratio of fatalities	12,69	8,85	9,78	10,14	11,39	-23,46	49,48	-59,49	300,79	-27,40

## VIII Medium and long term development program

According to the Strategy of Transport Development in the Republic of Croatia, as adopted by Croatian Parliament, Croatia is to have 1,365 km of motorways in 2013.

By the time of publication of this report, the Government of the Republic of Croatia has not yet passed the new four-year Program of construction and maintenance of public roads for the period from 2009 to 2012.

## IX Significant activities started or completed in 2008 and plans for 2009

### HAC

In 2008, the company has set the following objectives:

- 4 percent traffic and toll revenues increase in 2008, with respect to 2007 figures;
- higher level of services and higher proportion of cashless ETC based toll payment in the overall toll collection, i.e. an increase from 30 percent in 2008 to 35 percent in 2009;
- improvement of the current system for sale of HAC toll-related products, and orientation to motorway users;
- provision of an advanced level of serviceability in toll collection system: construction of toll lanes fully destined to ETC users;

- safety of traffic and safe work environment for toll attendants.

## **ARZ**

### **2008**

- In January, the agreement was signed for construction of the Rijeka Bypass south pavement, 8.856 km in length, for an estimated price of HRK 627.93 M (€ 83.6 M), and the work is to be completed by June 1, 2009.
- In March, the ARZ info centre became functional so that, since that time, the users can obtain information about this motorway by dialling the free number 08000 111.
- In April, the Veliki Gložac Tunnel, situated on the Rijeka - Zagreb motorway, was proclaimed as one of the four safest tunnels in Europe, in the scope of the Euro TAP program for traffic safety in tunnels.
- In July, ARZ became member of the international non-profit association Europe RAP which gathers together some thirty members from 20 countries and performs various activities aimed at improving the road traffic safety.
- Last semi-motorway sections (20.85 km) were opened to traffic as full profile sections and hence the Rijeka - Zagreb roadway has become a full-fledged motorway, thus marking completion of the entire Budapest - Rijeka corridor.
- The first ARZ sustainability and social responsibility report has been issued. In concert with UNDP and HAK, ARZ is starting the driver information and advice program which is aimed at increasing the traffic safety and enabling a more-environmentally friendly driving (via web pages, brochures, leaflets, terminals, cards, etc.)
- Environmentally-friendly actions are planned in the scope of the following programs:
  - escort of vehicles transporting hazardous substances,
  - organization of drills,
  - review of communication procedures in emergency situations.

## **BINA -ISTRA d.d.**

### **2008**

- Start of full-profile Istrian Upsilon construction on the Kanfanar to Pula section.
- The company publishes its first sustainable development report. Sustainable development still remains a high priority and a significant principle on which the company bases its operations.
- The toll subscription via Internet, and payment by INA card, is introduced.
- Lower toll rate for motorcycles, regarded as a separate vehicle category, is introduced.
- The traffic safety in Učka Tunnel has been improved significantly by introduction of the automatic incident detection system, and activities are undertaken to modernize the existing fire detection system (the work will be completed in March, 2009)

### **2009**

- The start of construction work is planned for the Buje - Kanfanar section.
- The quality of services will be increased by the end of 2009 when the ETC toll collection system is to be introduced.

## **AZM**

In 2008, the activities were focused on following issues:

- reduce traffic jams at toll collection points by promoting use of SMART cards in automatic toll collection lanes,
- provide incentives to frequent and local users,
- protect environment
- conduct periodic maintenance activities, i.e. replace damaged asphalt layers.

Key objectives for the year 2009 are :

- achieve interoperability with other concessionaires,
- protect environment,
- conduct periodic maintenance activities, i.e. replace damaged asphalt layers and upgrade lighting installations at interchanges,
- perform actions aimed at improving traffic safety.

## KEY FIGURES FOR 2008

<b>CROATIA</b>	<b>2008.</b>
The total length of network , in km, as per 31/12/2008	<b>1.198,70</b>
2 x 1 lane	<b>174,80</b>
2 x 2 lanes	<b>1.003,90</b>
2 x 3 lanes	<b>0</b>
2 x 4 lanes	
Number of km opened to traffic in 2008	
Motorways	<b>41,50</b>
Semi-motorways	<b>0</b>
Widening to full motorway profile	<b>*36,88</b>
Number of km under construction on 01/01/2009	
Motorways	<b>70,30</b>
Semi-motorways	<b>17,50</b>
Widening to full motorway profile	<b>*40,00</b>
Estimated opening of new sections in 2009, in km	
Motorways	<b>52,00</b>
Semi-motorways	<b>1,00</b>
Widening to full motorway profile	<b>*11,50</b>
Toll revenues in 2008, in €	<b>266,8</b>
Full-time employees	<b>3.732</b>
AADT LIGHT VEHICLES	<b>12.945</b>
AADT HEAVY VEHICLES	<b>1.764</b>
AADT LV + HV	<b>13.795</b>
Total number of accidents	<b>2.540</b>
Number of accidents with injuries	<b>420</b>
Number of fatalities	<b>72</b>
Number of kilometres travelled (10 <sup>6</sup> x km)	<b>5.671.527.489</b>
Number of toll stations	<b>73</b>
Number of toll lanes	<b>508</b>
Number of ETC lanes	<b>274</b>
Number of ETC subscribers**	<b>55.724 subscribers</b> <b>91.781 devices ***</b>
Number of rest areas (with filling stations)	<b>72</b>
Number of rest areas	<b>116</b>
Number of restaurants	<b>17</b>
Number of hotels	<b>7</b>

\* existing sections

\*\*HAC and ARZ have already introduced the interoperable electronic toll collection (DSRC 5.8 GHz), while ETC has not as yet been introduced on motorways operated by BINA-ISTRRA and AZM

\*\*\*one subscriber may have several ETC devices