



THE CROATIAN ASSOCIATION OF TOLL
MOTORWAYS CONCESSIONAIRES



2018



AUTOCESTA RIJEKA-ZAGREB d.d.
DRUŠTVO ZA GRAĐENJE I GOSPODARENJE AUTOCESTOM



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CURRENT STATE OF THE NETWORK

As on 31 December 2018, the total length of the motorway network in Croatia amounted to **1,306.53 km**.

Motorways are operated by 4 companies:

- **Hrvatske autoceste d.o.o.**
(operates motorways A1, A3, A4, A5, A10 and A11)
- **BINA-ISTRA d.d.** (operates the so called Istrian Y – A8 and A9)
- **Autocesta Rijeka-Zagreb d.d.**
(operates motorways A6, part of A1 and A7, the Krk Bridge and part of D6 State Road from Novigrad to Netretić)
- **Autocesta Zagreb-Macelj d.o.o.** (operates motorway A2)

Motorway and semi-motorway network (in km)

Company	Total network 2017	Total network 2018	Total network plan for 2019
HAC*	925.80	918.50**	918.80**
ARZ*	187.03	187.03	187.03
BINA-ISTRA	141.00	141.00	141.00
AZM	60.00	60.00	60.00
TOTAL	1,313.83	1,306.53	1,306.83

Opening of new stretches in 2018

In 2018 there was no opening of new stretches of motorway but new interchange Lipovljani was open for traffic on A3 motorway.

Motorway and semi-motorway network 2014 – 2018 (in km)

2019 / 2020	1,306.5
2017 / 2018	1,313.8
2015 / 2016	1,313.8

Tunnels and bridges on the network – single direction

Company	Km of tunnels	Km of bridges	Total km tunnels and bridges
HAC**	27.38**	8.51	35.89
ARZ	12.88	14.56	27.44
BINA-ISTRA	5.31	9.36	14.67
AZM	3.50	7.87	11.37
TOTAL	49.07	40.30	89.37








*Revised km according to km of network in service

**As of 1st January 2018 St. Ilija Tunnel was handed over to Croatian Roads Authority (HC) therefore HAC network will decrease in 2018 by 7.3 km

In 2018 there was no opening of new stretches of motorway but new interchange Lipovljani was open for traffic on A3 motorway.

MOTORWAYS IN THE REPUBLIC OF CROATIA

Network and companies

Company	Motorways	Status of construction	Km in service
 HRVATSKE AUTOCESTE d.o.o.	A1 A3 A4 A5 A10 A11	 IN SERVICE  IN CONSTRUCTION	918.50
 AUTOCESTA RIJEKA-ZAGREB d.d.	A1 [†] A6 A7 D102	 IN PROJECT	187.03
 BINA-ISTRA d.d.	A8 A9		141.00
 AUTOCESTA ZAGREB-MACELJ d.o.o.	A2		60.00
TOTAL in service as per 31/12/2018			1,306.53

A1[†] Part of the motorway A1 from Zagreb to Bosiljevo is operated by ARZ d.d.

A7 Part of the motorway A7 is operated by ARZ d.d.

D10 i D12 were handed over to Croatian Roads Authority



WORKS IN PROGRESS

On 31 December 2018, the works were in progress on:

- 25.30 km of motorways
- 10.60 km of fast roads,
- 1.85 widening to full motorway profile

Works in progress on 31 December 2018

Motorway/Road	Section	Km	Description
A5 Beli Manastir – Osijek – Svilaj	Subsection Beli Manastir – Halasica Bridge	17.5	Construction work and supervision
	Subsection Halasica Bridge – Drava Bridge	0.8	
	Drava Bridge	2.5	
	Drava Bridge – Osijek	3.8	
	Sava Bridge	0.7	
Fast road: D12 Podravina Y	Vrbovec 2 – Farkaševac	10.6*	Construction work and supervision
A8 Istrian Y: Kanfanar – Matulji	Subsection Rogovići – Cerovlje	1.85	Widening to full motorway profile of the existing stretch

In 2019, road works will be completed on the total of:

- 0.3 km of bridges
- 10.6 km of fast roads

The following sections will be opened to traffic in 2019

Motorway	Section	Km	Opening to traffic scheduled
A5 Beli Manastir – Osijek – Svilaj	Sava Bridge	0.3	Cross – border bridge with Bosnia & Herzegovina over the Sava river, half of the bridge is in Croatia. Opening planned end 2019
Fast road: D12 Podravina Y	Vrbovec – Farkaševac	10.6*	Opened on April 16 th , 2019

In addition to the continuation of work from the previous year, the following new works will start in 2019:

- 9.84 km of widening to full motorway profile

Start of new works in 2019

Motorway	Section	Km	Description
A8 Kanfanar – Matulji	Rogovići – Cerovlje	9.84	Widening to full motorway profile

*Sections of state roads which 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 2019 there will be open to traffic 0.3 km of motorways and 10.6 km of fast road which will be handed over to Croatian Roads Authority.

COST OF INVESTMENT AND FINANCING

The total of € 91.23 million (HRK 676.90 million) was invested in the construction of new motorways in 2018, while € 163.16 million (HRK 1,210.72 million) was invested into sections under traffic.

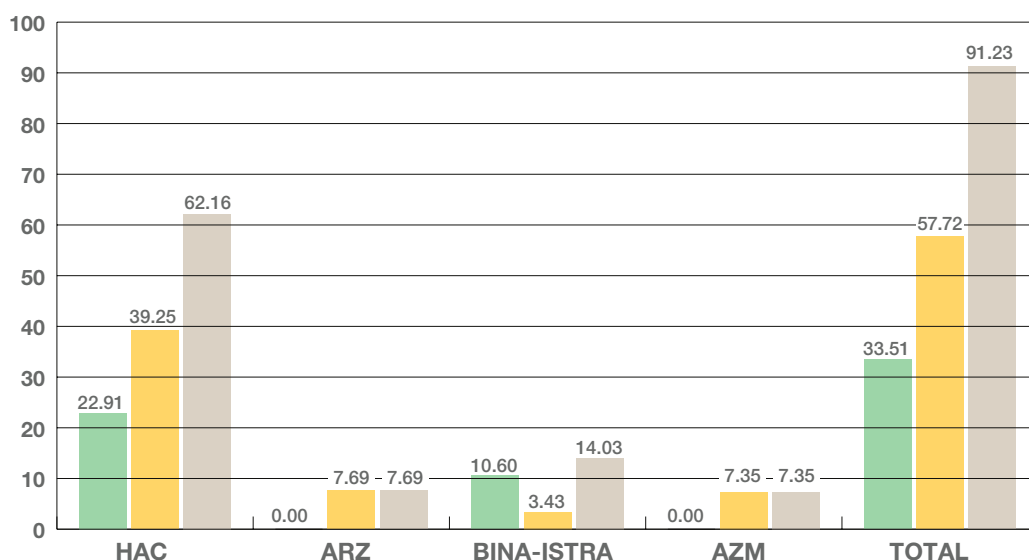
Investments in 2018 (in Mio. EUR)

/ 1 EUR* = 7.42 HRK

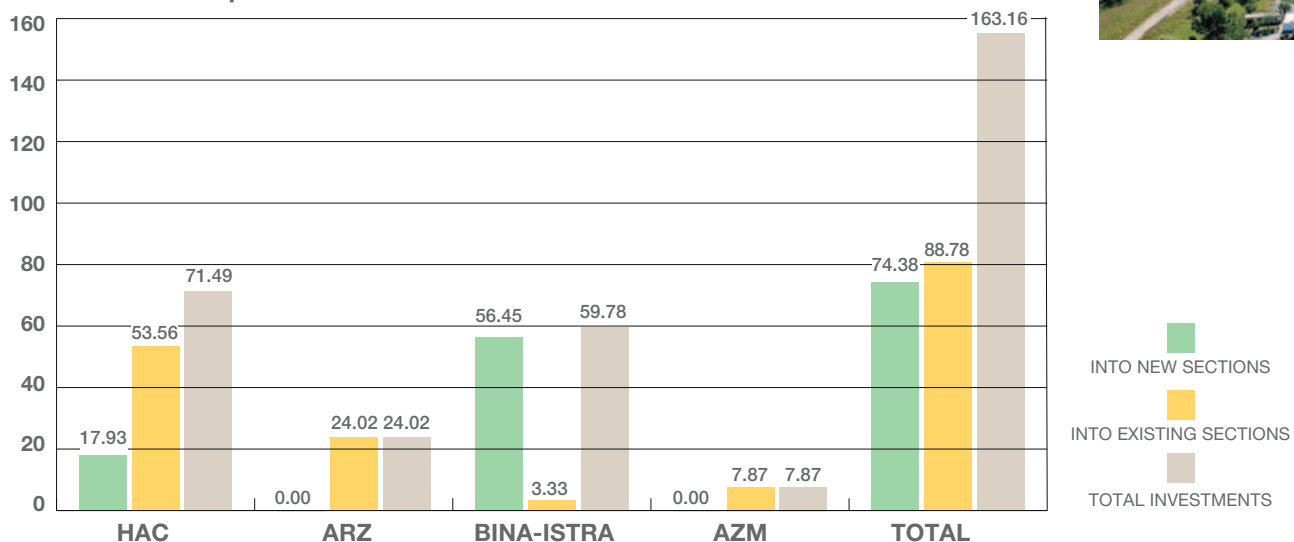
Company	Investments in 2018		Plan for 2019	
	Into new sections	Into existing sections	Into new sections	Into existing sections
HAC**	22.91	39.25	17.93	53.56
ARZ	0.00	7.69	0.00	24.02
BINA-ISTRA	10.60	3.43	56.45	3.33
AZM	0.00	7.35	0.00	7.87
TOTAL	33.51	57.72	74.38	88.78
TOTAL INVESTMENTS	91.23		163.16	

In 2018 the total of 91.23 Mio. EUR was invested both into new motorways and sections under traffic.

Investments done in 2018 (in Mio. EUR)



Investments – plan for 2019 (in Mio. EUR)

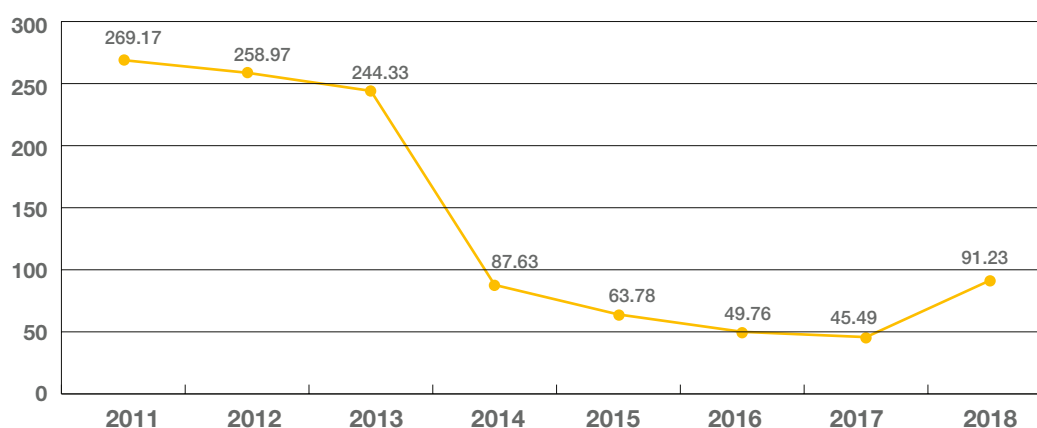




Investments in 2018 (in Mio. HRK)

Company	Investments in 2018		Plan for 2019	
	Into new sections	Into existing sections	Into new sections	Into existing sections
HAC**	170.02	291.22	133.02	397.44
ARZ	0.00	57.09	0.00	178.26
BINA-ISTRA	78.63	25.44	418.86	24.73
AZM	0.00	54.50	0.00	58.39
TOTAL	248.65	428.25	551.88	658.82
TOTAL INVESTMENTS	676.90		1,210.70	

Total investments 2011 – 2018 (in Mio. EUR)



In 2019 a total amount of 155.29 Mio. EUR is planned to be invested into new sections of motorways and sections under traffic.

Financing structure in 2018

Source of financing (%)	HAC	ARZ	BINA-ISTRA	AZM
Loans	7.87	0	0	0
Proper resources	0	0	0	0
Revenues from tolls and other revenues	0	99.59	54.0	70
Revenues from fuel HRK 0.20/l i.e. EUR 0.026/l	87.68	0	0	0
Reimbursable and non-reimbursable state funding	0	0	46.0	30
EU funds	4.45	0.41	0	0
TOTAL	100	100	100	100

Investment amounts are based on the temporary reports for 2018

*1 EUR=7.42 HRK (Exchange rate as per 31st December 2018, Source: Croatian National Bank)

**HAC: Investment amount for the year 2018 is based on temporary report and for the year 2019 is based on Draft Plan of construction and maintenance not yet approved by the Supervisory Board of the Company nor submitted to the Ministry of the Sea, Transport, and Infrastructure for final approval by the Croatian Government.



TRAFFIC

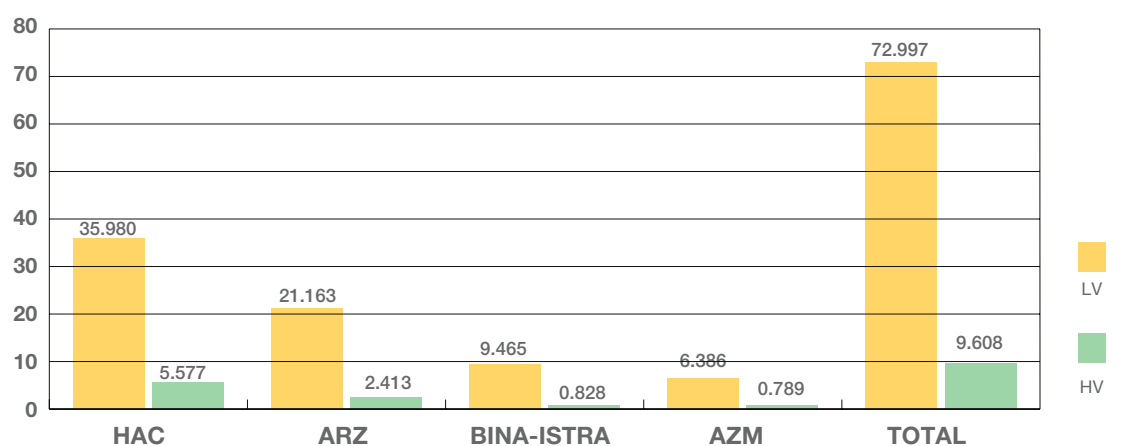
In 2018 all motorway companies experienced increase of traffic of all vehicles by 3.39 % in comparison with the previous year.

Number of vehicles in toll collection zones

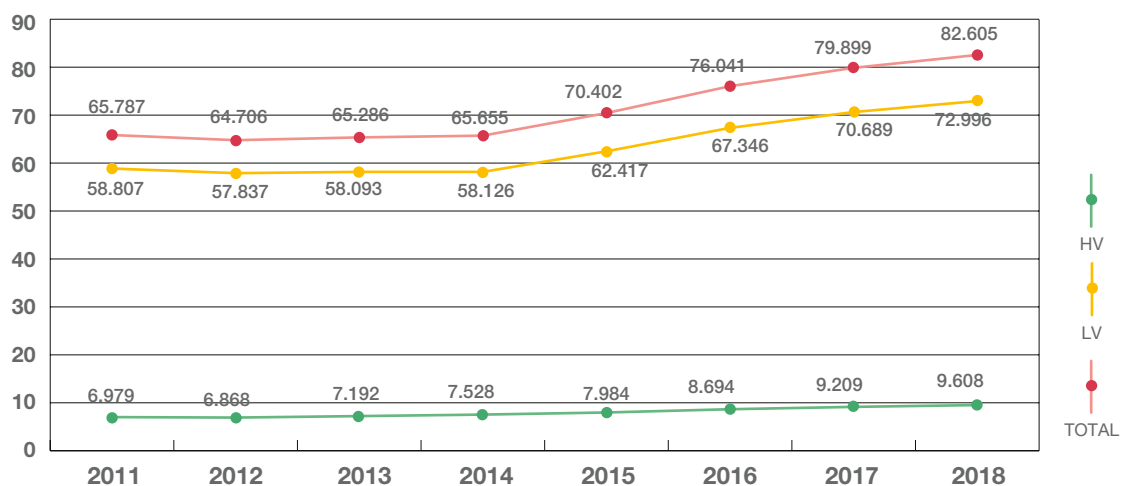
Company	2017		2018			
	Light vehicles	Heavy Vehicles	Light vehicles	%	Heavy Vehicles	%
	(IA+I+II)	(III+IV)	(IA+I+II)	(17/16)	(III+IV)	(18/17)
HAC	35.487.682	5.335.700	35.980.659	1.39	5.577.300	4.53
ARZ	20.248.065	2.340.165	21.163.407	4.52	2.413.085	3.12
BINA-ISTRA	8.828.171	768.200	9.465.911	7.22	828.756	7.88
AZM	6.125.932	765.442	6.386.607	4.26	789.786	3.18
TOTAL	70.689.850	9.209.507	72.996.584	3.26	9.608.927	4.34
TOTAL TRAFFIC	79.899.357		82.605.511		3.39	

In 2018 the total traffic of all vehicles on motorways increased by 3.39 % in comparison with the previous year.

Number of vehicles in toll collection zones 2018 (in Mio. vehicles)



Total number of vehicles in toll collection zones 2011 – 2018 (in Mio. vehicles)

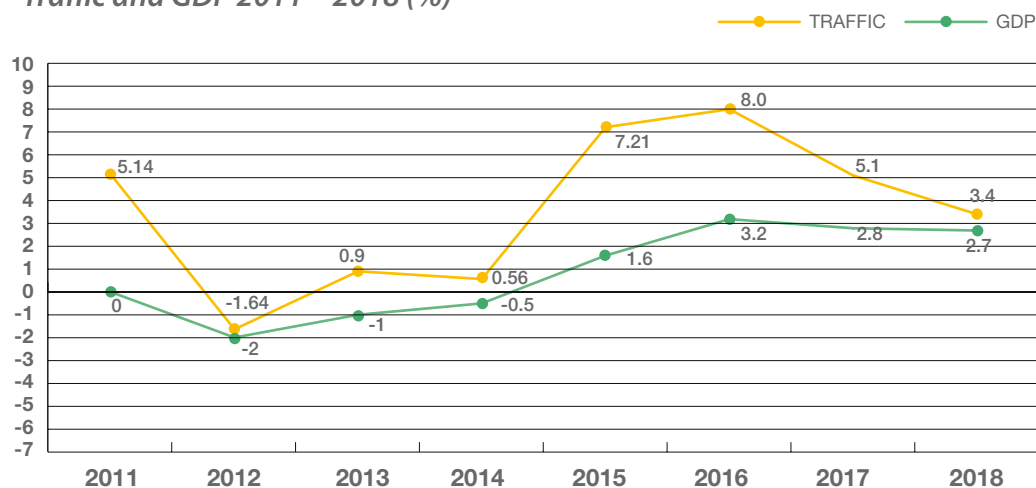


Traffic, GDP and CPI (%)

GDP 2017 / 2016	TRAFFIC 2017 / 2016	CPI 2017 / 2016	GDP 2018 / 2017	TRAFFIC 2018 / 2017	CPI 2018 / 2017
2.8	5.1	1.2	2.7*	3.4	0.8

*Flash estimate (source: Central Bureau of Statistics)

Traffic and GDP 2011 – 2018 (%)



TOLLING

The closed toll collection system, with several entrances and exit points, is predominantly operated in the Republic of Croatia. Motorway usage is charged per mileage and vehicle category. At the entrance to the motorway, the user takes an entry card (or the entry is recorded on their ETC device) and the payment is made on exit toll stations per the length of travel. The open toll collection system is used on Bregana – Zagreb Motorway, on the Krk Bridge and on Rupa – Rijeka.

On the motorway network of HAC, ARZ and BINA-ISTRA toll can be paid by ETC system.

Average toll rate per km (with VAT)

/ 1 EUR* = 7.42 HRK

Existing systems	Light vehicles (Category I)	
	HRK/km	€/km
Closed system	0.5125	0.0690
Open system	0.500	0.0674
Ratio categories I : IV – closed tolling system	1 : 4.3	
	Trucks (Category IV)	
	HRK/km	€/km
Closed system	2.190	0.295
Open system	1.990	0.268
Ratio categories I : IV – open tolling system	1 : 4.0	

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 and 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 %.

*1 EUR=7.42 HRK (Exchange rate as per 31st December 2018, Source: Croatian National Bank)

TECHNOLOGY OF ELECTRONIC TOLL COLLECTION SYSTEM IN USE

The toll collection systems of HAC, ARZ and BINA ISTRA 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.

HRVATSKE AUTOCESTE d.o.o. (HAC)

The Government of the Republic of Croatia started a process aiming to transformation of the existing tolling system on motorways into system that will enable electronic tolling without barriers, improvement of road safety and traffic flow levels, that will be acceptable and non-discriminatory for all groups of users paying the toll and will ensure to motorway operators optimum costs and revenues regarding tolling and that will be interoperable with future EETS service. New tolling system should be implemented by 2020 at the latest.

AUTOCESTA RIJEKA-ZAGREB d.d. (ARZ)

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.

BINA-ISTRA d.d. (BINA-ISTRA)

The Istrian Y network has a closed toll system. Users have at their disposal a total of 108 toll lanes, of which 45 are entry lanes and 63 are exit lanes. Payment can be made in cash in HRK and EUR (only for non-residents), with bank cards or Bina Istra ETC devices.

For users who travel frequently, Bina Istra has prepared special offers with significant discounts on toll rates depending on the package chosen. The discounts can be obtained by using the Bina Istra ETC device, which is compatible with the networks of other motorway concessionaires in Croatia – ARZ and HAC.

During low traffic intensity, toll collection at most toll stations runs in automatic mode without the presence of a toll collector.

BINA-ISTRA ETC subscribers can use the Internet or SMS subscription to see the balance of their accounts and subscription expiry time and can also obtain the listing of passes through toll stations. In addition, they can replenish their accounts and fill in and print invoices for payments via bank transfer. At BINA-ISTRA toll collection points, toll can be paid by all credit and debit cards, and by INA card and the ETC device.

Furthermore, users who already own an ETC device can additionally register devices already bought at HAC and ARZ with the BINA-ISTRA toll collection system and in this way become BINA-ISTRA subscribers (this is valid for frequent users entitled to average discount of 30 to 50 %, depending on the section used) or to register their credit cards for an ETC device (applicable to non-frequent users).

In 2018 HAC, ARZ and AZM did not change its toll tariffs, while BINA adjusted its toll rates for inflation.



TOLL RATES IN 2018.

HRVATSKE AUTOCESTE d.o.o. (HAC)

In 2018 HAC did not change its toll rates. In peak traffic period during tourist season, from 15th June to 14th September 2018, seasonal toll tariffs were applied for IA, I and II category of vehicles (regular toll tariffs increased by 10 %).

AUTOCESTA RIJEKA-ZAGREB d.d. (ARZ)

In 2018 the toll rates did not change on the motorway network under ARZ concession. However, in peak traffic period during tourist season, from 15th June to 14th September 2018, seasonal toll tariffs were applied for IA, I and II category of vehicles (regular toll tariffs increased by 10 %).



Total revenues from toll in 2018 increased by 4.76 % in comparison with the year 2017.

AUTOCESTA ZAGREB-MACELJ d.o.o. (AZM)

In 2018 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 more than HRK 2,000.00). In addition to SMART card, payments can also be made via debit and credit cards, and by INA card.

BINA-ISTRA d.d. (BINA-ISTRA)

As of 1.1.2018. new toll tariffs have been applied on the Istrian Y motorway, adjusted for inflation rate for the last 12 months, which resulted in average increase of toll rates on the Istrian Y by 1.2 %.

The seasonal tariffs were applied on Istrian Y also this summer (from 1.6.-30.9.2018.). This special tariff was approved by the Ministry of the Sea, Transport and Infrastructure and represents full regular toll tariff increased by 10 %.

For subscribers and local population using ETC device tolls remain unchanged. Since summer 2015 BINA ISTRA has proposed to its users ETC package called EASY, offering a general discount of 10% without time limit.

ETC users have the possibility to qualify for a series of discounts on the regular toll price. BINA-ISTRA ETC subscribers can use the Internet or SMS subscription to see the balance of their accounts and subscription expiry time and can also obtain the listing of passes through toll stations. In addition, they can replenish their accounts and fill in and print invoices for payments via bank transfer.

To improve services for its users, in 2018 the company launched several projects whose implementation is expected in 2019.

TOLL REVENUES

In 2018, the total toll revenues for all motorway companies amounted to **EUR 406.154.835** which represents an increase of toll revenues by **4.76 %** when compared to the previous year.

Toll revenues (without VAT)

/ 1 EUR *= 7,42 HRK

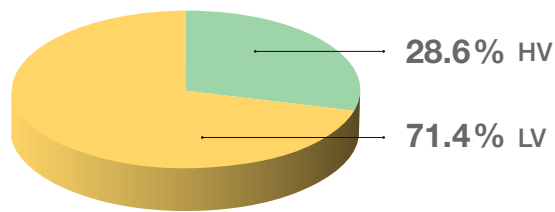
Company	2017			2018			% (18/17)
	LV	HV	TOTAL HRK	LV	HV	TOTAL HRK	
HAC	1.257.746.507	554.591.092	1.812.337.599	1.317.593.999	580.251.619	1.897.845.618	4.72
ARZ	469.458.952	161.829.848	631.288.800	493.831.597	163.419.486	657.251.083	4.11
BINA-ISTRA	172.655.545	46.461.731	219.117.276	189.175.155	50.632.559	239.807.714	9.44
AZM	145.493.757	68.369.114	213.862.871	150.160.263	68.604.199	218.764.462	2.29
TOTAL	2.045.354.761	831.251.785	2.876.606.545	2.150.761.015	862.907.862	3.013.668.877	4.76

Company	2017		2018		% (18/17)
	HRK	EUR	HRK	EUR	
HAC	1.812.337.599	241.323.249	1.897.845.618	255.774.342	4.72
ARZ	631.288.800	84.059.760	657.251.083	88.578.313	4.11
BINA-ISTRA	219.117.276	29.176.734	239.807.714	32.319.099	9.44
AZM	213.862.871	28.477.080	218.764.462	29.483.081	2.29
TOTAL	2.594.935.665	383.036.824	3.013.668.877	406.154.835	4.76

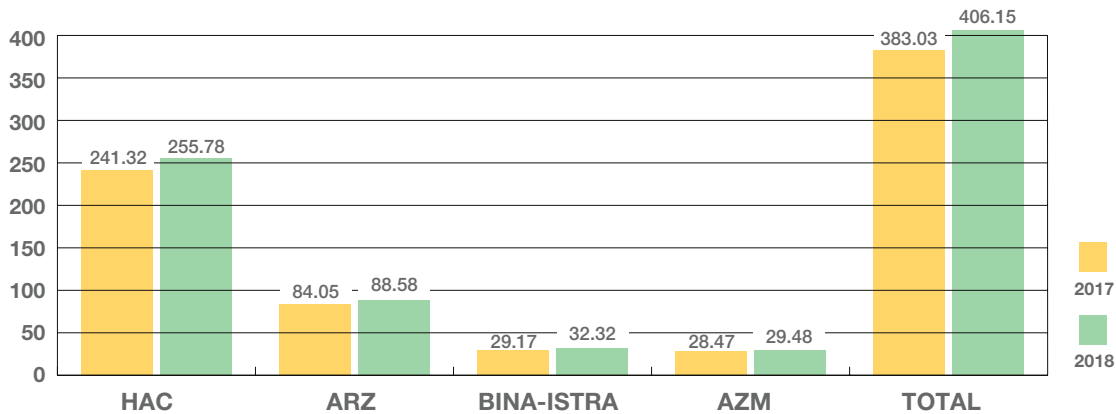
Toll revenues are based on the temporary reports for 2018

*1 EUR=7.42 HRK (Exchange rate as per 31st December 2018, Source: Croatian National Bank)

Portion of LV and HV in total toll revenues 2018

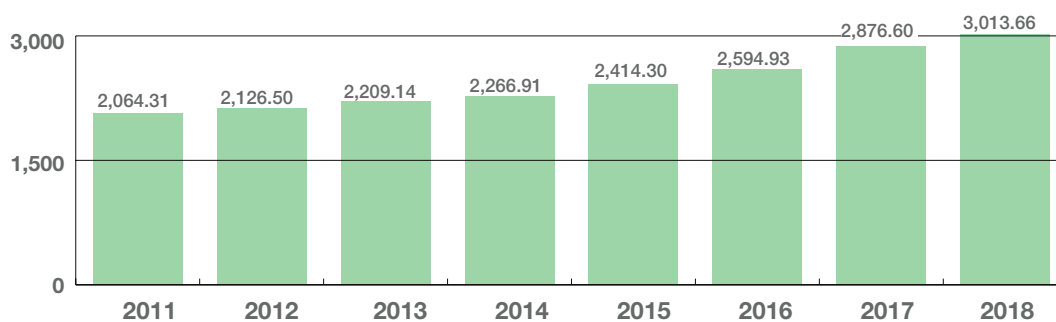


Toll revenues 2017 – 2018, without VAT (in Mio. EUR)

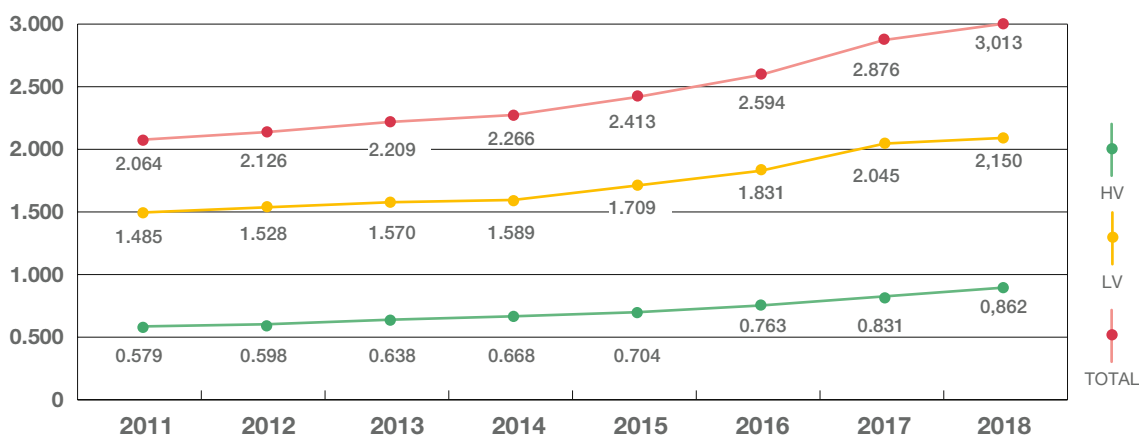


In 2018 toll revenues from light vehicles increased by 5.15 % and from heavy vehicles by 3.81 % when compared to the year 2017.

Toll revenues 2011 – 2018, without VAT (in Mio. HRK)



Toll revenues for light and heavy vehicles 2011 – 2018 without VAT, (in Bil. HRK)



Toll revenues are based on the temporary reports for 2018

1 EUR=7.42 HRK (Exchange rate as per 31st December 2018, Source: Croatian National Bank)

TRAFFIC SAFETY

The total of 2.801 traffic accidents, with 34 fatalities and 565 injuries was registered in 2018. The total number of all traffic accidents registered in 2018 increased by 13.63 % and total number of fatalities increased by 47.83 %, when compared to the previous year. Number of injured people decreased by 4.82 % when compared to the year 2017.

Traffic accidents 2017 – 2018

NUMBER OF TRAFFIC ACCIDENTS:	2017					2018					%
	HAC 925 km	BINA- ISTRA* 141 km	ARZ 187 km	AZM 60 km	TOTAL 1313 km	HAC 918 km	BINA- ISTRA* 141 km	ARZ 187 km	AZM 60 km	TOTAL 1306 km	
With fatalities	14	0	4	2	20	22	2	6	0	30	50.00
With injured	231	7	78	16	332	205	10	86	15	316	-4.82
With material damage	1.620	77	290	126	2.113	1.788	73	484	110	2.455	16.19
TOTAL number of traffic accidents	1.865	84	372	144	2.465	2.015	85	576	125	2.801	13.63
TOTAL number of injuries	382	9	135	35	561	378	23	136	28	565	0.71
TOTAL number of fatalities	16	0	5	2	23	25	2	7	0	34	47.83

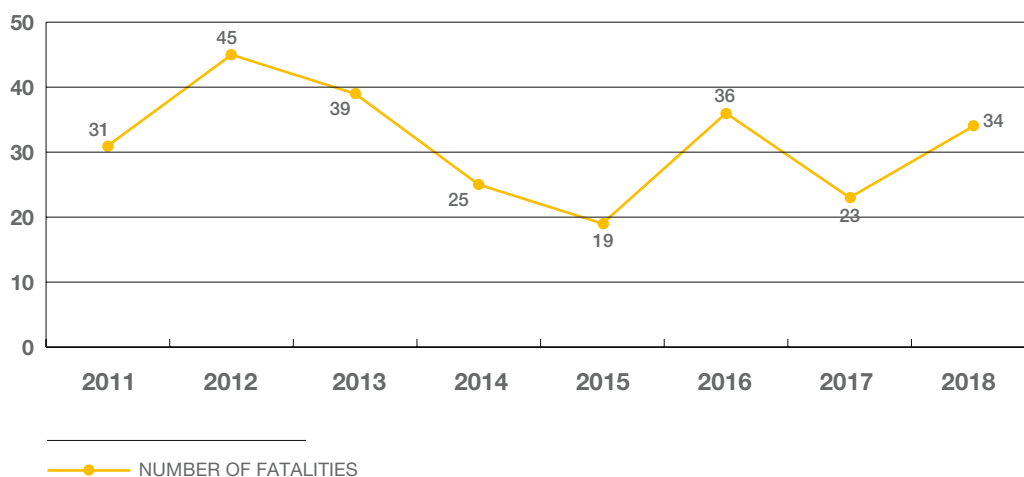
Traffic accidents are observed on the totality of the motorway network

* BINA ISTRA figures on traffic accidents are given for the total network of Istrian Y (both motorway and semi motorway) while safety ratios are given only for stretches in full motorway profile to be comparable with other concessionaires.

Traffic accidents on the entire motorway network 2011 – 2018

NUMBER OF TRAFFIC ACCIDENTS:	2011	2012	2013	2014	2015	2016	2017	2018
With fatalities	28	29	31	21	18	27	20	30
With injured	367	346	308	293	307	315	332	316
With material damage	1.971	1.839	1.823	1.863	1.961	2.055	2.113	2.455
TOTAL number of traffic accidents	2.366	2.214	2.162	2.177	2.286	2.397	2.465	2.801
TOTAL number of fatalities	31	45	39	25	19	36	23	34

Total number of fatalities 2011 – 2018



In the 2018 the total number of fatalities on all motorways decreased by 47.83 %, when compared to the year 2017.

Main safety ratios (per 10⁹ km travelled)

	2018					Change 2018 / 2017 (%)				
	HAC* 911 km	BINA- ISTRA*** 100 km	ARZ** 146 km	AZM 60 km	RH 1217 km	HAC* 911 km	BINA- ISTRA*** 100 km	ARZ** 146 km	AZM 60 km	RH 1217 km
Personal injury rate	40.36	10.97	58.18	37.85	43.40	-15.64	-15.64	2.52	-10.77	-9.49
Fatal accident rate	4.33	1.57	4.31	0	4.12	49.83	49.83	48.11	-100	42.65
Rate of dead	4.92	1.57	5.03	0	4.67	48.64	48.64	38.19	-100	40.58

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

**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

***BINA ISTRA figures on traffic accidents are given for the total network of Istrian Y (both motorway and semi motorway) while safety ratios are given only for stretches in full motorway profile to be comparable with other concessionaires.



In 2018 the total number of traffic accidents on motorways increased by 13.63 % when compared to the previous year.

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.

Strategy of Transport Development of the Republic of Croatia for the period 2017-2030, adopted in August 2017 set up following specific goals in road sector.

- SG1 – Improve road safety
- SG2 – Achieve better use of Croatian road system as to boost public transport (local, regional, and national bus lines).
- SG3 – Decrease impact of the oldest stretches of Croatian motorways to environment
- SG4 – Optimize and harmonize different tolling system in Croatia.
- SG5 – Improve technical requirements in road design by promoting more economical technical solutions, safety standards, green mobility, intramodality of transport with zero emission of CO₂.
- SG6 – Improve access to areas where the existing infrastructure capacity reached their ceilings and where alternative transport models (public rail transport, coastal traffic) are not economically justified (touristic destinations in Littoral Croatia), including introduction of sustainable public transport concept with zero emission of CO₂.
- SG7 – Improve links with neighbouring countries as to improve cooperation and territorial integration.
- SG8 – Improve access to areas where the existing infrastructure capacity reached their ceilings and where alternative road infrastructure does not exist (parallel motorways etc.). – from Zagreb towards Bjelovar and from Varaždin towards Koprivnica and Krapina.
- SG9 – Decrease road bottlenecks in agglomerations with high traffic density, respecting specific rules concerning national heritage protection.

The Government of the Republic of Croatia adopted by now five four-year Public Road Construction and Maintenance Programs (2001-2004, 2005-2008, 2009-2012, 2013-2016, 2017-2020).





In August 2017 the Croatian Parliament adopted Strategy of Transport Development of the Republic of Croatia for the period 2017-2030.

According to Public Road Construction and Maintenance Program 2017–2020 the following motorways and express roads are to be completed and opened to traffic:

A5 Beli Manastir – Osijek – B&H Border Section

- Osijek – Beli Manastir Section including Drava Bridge
- Sava Bridge

A8 Kanfanar – Matulji Motorway

- Rogovići – Cerovlje – widening to the full motorway profile

Start of construction of the “Ranžirni” Overpass on the A11 Motorway Zagreb – Sisak in 2020.

From major long-term projects of Hrvatske autoceste d.o.o. we underline the following:

- Completion of the Motorway A5 and finalizing the cross-border section from Hungarian border to Beli Manastir, the motorway A5 which is part of the Corridor Vc, will enable the development and use of the entire Corridor.
- Construction of A7 motorway, almost the half of the total length of A7 motorway going from Rupa (Slovenian border) to Križišće is already completed, while for the subsection from Križišće to Žuta Lokva projects are under development. A7 motorway is important link in Croatian motorway network, between the motorway A8 (Istrian Y), A6 motorway (Rijeka-Bosiljevo) and A1 motorway (Zagreb-Split). Furthermore, considering the international importance of motorway A7 it could become steering wheel for regional and local development of Croatian coast, its islands and Adriatic-Ionian region as well as link between Adriatic ports and cities. In the first phase the Novi Vinodolski bypass will be constructed.
- Continuation of construction of motorway A1 to Dubrovnik – further construction of stretch from Metković to Dubrovnik and integration of the Pelješac bridge by linking it to motorway network. Preparation of preliminary study documentation is under way to define possible options and feasibility of the project (construction by phases)
- Reconstruction of Zagreb bypass and enlargement of the existing structure by adding one extra traffic line to cope with traffic jams
- Optimizing the lighting by implementing LED technology along the entire motorway network under operation of Hrvatske autoceste as to decrease energy consumption and improve energy efficiency
- Renewal of rest area facilities to provide better service to users
- Upgrade and modernization of tolling system aiming to optimize managing of toll activities and improve traffic flow
- Implementation of safety fences compliant with legislation. The goal is to increase road safety by improving passive safety systems which will have direct impact on reducing the traffic accidents (reduction of fatalities and injuries). This project aims to make safety fences under HAC operation compliant with regulations, standards and EU Directive.

Joint ITS CROCODILE 2 CROATIA project

CROCODILE 2 CROATIA is joint ITS project involving state roads and motorway operators having for goal to ensure coordinated traffic management and control that will result in providing high quality information to users on one of the most important road corridors in the enlarged Europe. For the exchange of data and information on European level DATEX II protocol will be used.

DATEX II is a protocol for information exchange between TMCC centres, roads information centres, road service providers and users.

Project details

Start	End	Value	Co-funding by EU
2016	2019	10,956.000.00 EUR	9,312.600.00 EUR

Partners

Project Applicant: Ministry of the Sea, Transport and Infrastructure

Implementation Bodies: Hrvatske autoceste d.o.o.; Autocesta Rijeka-Zagreb d.d.; Autocesta Zagreb-Macelj d.o.o.; BINA-ISTRA d.d.; Hrvatske ceste d.o.o.

Joint ITS CROCODILE 3 CROATIA project

CROCODILE 3 CROATIA project is a cooperation between public authorities, road administrations and traffic information service providers as logical follow up of the previous CROCODILE project phases.

The Project is part of CROCODILE 3 corridor which includes EU-Member States from the Central European region who are working together to improve cross-border traffic and transport through implementing harmonized and synchronized ITS applications on the high-level road network in this area. The corridor involves Central European (CE) countries, thereby ensuring coordinated traffic management and control resulting in high quality travellers' information services on one of the most important road-corridors in an enlarged Europe.

For drivers, the provision of information services along the whole CROCODILE 3 corridor before and during their journey will help them to optimize their route, respond to disruptions, and avoid hazardous situations.

Project details

Start	End	Value	Co-funding by EU
2018	2020	4,896.000.00 EUR	4,161.600.00 EUR

Participants

Project coordinator: Hrvatske autoceste d.o.o.

Beneficiaries: Autocesta Rijeka-Zagreb d.d.; Autocesta Zagreb-Macelj d.o.o.; BINA-ISTRA d.d.; Hrvatske ceste d.o.o.



All motorway companies participate in joint ITS projects CROCODILE 2 and III CROATIA.

SIGNIFICANT ACTIVITIES IN 2018 AND PLANS FOR 2019

HRVATSKE AUTOCESTE d.o.o.

In 2018 the company was focused on works as follows:

- On A5 Motorway Beli Manastir – Osijek – border with Bosnia and Herzegovina, construction and equipment of full motorway subsection Osijek Interch. – Bridge Drava of total length of 3.8 km and subsection Halasica Bridge – Drava Bridge of total length of 0.8 km as well as construction works of the Drava Bridge and Sava Bridge. Works started on subsection Beli Manastir – Halasica Bridge (17.5 km) where construction started at 7 border crossings
- Construction and equipment of DC12 state road from Vrbovec 2 Interch. – Farkaševac
- On A3 Motorway Bregana – Zagreb – Lipovac construction and opening to traffic of Lipovljani Interchange
- A1 and A3 motorways – setting up of noise protection walls in accordance with the Noise Protection Action Plan.

In addition, Hrvatske autoceste carried out heavy maintenance works that included renewal and reconstruction of pavement and structures, cleaning up of; cuttings, water drainage system, road equipment and road signs, preparation of documentation for introduction of ITS in TMMC (application of ITS Directive and DATEX I protocol), upgrade of tunnels with requirements of the Directive 2004/54/EC), harmonizing of safety and protection fences with new regulation requirements, works at TMMC systems etc. as to extend the life span of assets and improve quality and safety of motorway as well as regular maintenance in compliance with regulations and standards for regular maintenance.





ARZ continues with overall plan for development of the motorway Zagreb – Karlovac.

In 2019 the main works will be as follows:

- On A5 Motorway Beli Manastir – Osijek – border with Bosnia and Herzegovina, completion of works and opening to traffic of the stretch Osijek Interch. – Drava Bridge and construction of Halasica bridge to Beli Manastir Section of total length of 17.5 km including overpasses and road crossings
- On A1 motorway Split – Dubrovnik enlargement of Dugopolje Interchange
- A4 Zagreb – Goričan – start of reconstruction of link road to Goričan border crossing
- Opening to traffic of state road D12 Vrbovec 2 Interch. – Farkaševac and hand over to Croatian Roads Authority
- Upgrade and modernising of toll collection system
- On A3 motorways – setting up of noise protection walls in accordance with the Noise Protection Action Plan.

As in the previous years regular and heavy maintenance works are also planned in 2019. In addition to the activities from the last year to be continued also during this year, in 2019 will start introduction of ITS system in TMCC centres (implementation of ITS Directive and DATEX I protocol), upgrade of tunnels with requirements of the Directive 2004/54/EC), harmonizing of safety and protection fences with new regulation requirements, revitalizing of road side facilities and optimizing of motorway lighting on HAC network in the framework of the National Energy Efficiency Action Plan.

AUTOCESTA RIJEKA-ZAGREB d.d.

Activities of the company in 2018:

- 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.

Some of major projects of the company in 2018 and to be continued also in 2019:

- Overall plan for development of the motorway Zagreb – Karlovac
- Noise Protection Walls Project
- LIFE DINALP BEAR project “Population level management and conservation of brown bears in northern Dinaric Mountains and the Alps”. Goals of the project which are under responsibility of ARZ are mainly to increase road safety, improve motorway impact on nature. Through concrete project activities protected motorway corridor becomes additionally secured/closed to enable access for animals and to set up systematic approach to handle incident situation involving animals. As a direct result of this project i.e. of implemented measures we can observe significant decrease in incidents involving animals in the protected and closed corridor of motorway and consequently increase in traffic safety. Project is co-financed by EU funds in the framework of EU programme LIFE+. Implementation period is from 1.7.2014. to 30.6.2019.
- JOINT ITS PROJECT CROCODILE 2 CROATIA AND CROCODILE 3 CROATIA – project involve state roads and motorway operators having for goal to ensure coordinated traffic management and control and to achieve harmonized ITS systems that will result in providing high quality information to users on one of the most important road corridors in Europe. For the exchange of data and information on European level DATEX II protocol will be used. DATEX II is a protocol for information exchange between TMCC centres, roads information centres, road service providers and users. Implementation period is 1.5.2016. to 30.9.2019.
- Construction of the Interchange Trinajstići

Projects undertaken by ARZ and planned for the year 2019 include improvement of service to users and of road safety level (better traffic flow, reduction of bottle necks, modernizing of traffic management system and prevention of accidents, investments in protection fences, environment protection investments in noise protection walls, reconstruction of the existing lighting system and migration to more energy efficient lighting).

In the long-term construction/diversion of the State Road D6 from Novigrad Interchange to Lišnica of total length of 4.440 m is planned.

BINA-ISTRA d.d.

In 2018 the company's activities were focused on:

For fourth year in a row Bina Istra proposes to its users new ETC subscription model with unlimited duration of funds available on their accounts and 10 % discount on toll price.

In addition, Bina Istra proposes to all its current and future ETC users the possibility to associate their ETC device with their credit card or INA fleet card account. In that way users do not need to replenish their ETC account, but their credit card or INA fleet card is charged on monthly basis for all trips made in one month. The feedback from users is positive.

Bina Istra introduced improved web page version for mobile phones offering to users better and more user-friendly experience while searching for information on ETC packages, 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 and other useful information.

In 2018 Bina Istra achieved financial closing for the Phase 2B1 and launched works on widening the Rogovići – Cerovlje section to full motorway profile (10.68 km).

For the year 2019 the company has set following objectives:

- Continuation of widening of Rogovići – Cerovlje stretch to full motorway profile (10.68 km).
- Implementation of project of interoperability of ETC systems with companies Hrvatske autoceste d.o.o. and Autocesta Rijeka-Zagreb d.d.

In the long term the Company plans as follows:

- Widening to full motorway profile on the Pazin – Učka Tunnel Section (Phase 2B1) i.e. completion of the Istrian Y project
- Construction of second tube of Učka Tunnel
- Debt refinancing

AUTOCESTA ZAGREB-MACELJ d.o.o.

The main activities of the Company in 2018 were focused on:

- Regular and periodic maintenance of the motorway and all existing systems and equipment
- Heavy maintenance (renewal of facilities and structures, pavement, bridges, viaducts, underpasses and overpasses and renewal of tolling system)
- Implementing measures for lowering the number of traffic accidents (reconstruction of wildlife protection fence)
- Energy savings (project documentation for reconstruction of motorway lighting system based on LED is prepared)
- Environmental protection
- Implementation of projects CROCODILE 2 CROATIA (DATEX II and Protocol) and CROCODILE 3 CROATIA

Long term project of AZM:

- The upgrade of the Krapina – Đurmanec Section of the total length of 3.7 km to the full motorway profile
- Introduction of ETC toll payment



Joint goal of HAC, ARZ and BINA is to implement the project of interoperability of their ETC devices.

KEY FIGURES

Figures on motorways in Croatia in 2018

The total length of network according to concession agreement, in km, as on 31/12/2018	
2 x 1 lane (not including the stopping lane)	57.1
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
TOTAL	1.306.5*
Number of km opened to traffic in 2018	
1 NEW INTERCHANGE ON MOTORWAY	
MOTORWAYS	0
SEMI-MOTORWAYS/FAST ROADS	0
Number of km under construction as on 31/12/2018	
MOTORWAYS	25.3
SEMI-MOTORWAYS/FAST ROADS	10.6**
WIDENING OF EXISTING STRETCH TO FULL MOTORWAY	1.85
Planned opening of new sections in 2019, in km	
MOTORWAYS	0,3
SEMI-MOTORWAYS/FAST ROADS	10.6**
Annual toll collection revenues in 2018, in EUR (without VAT)	406.154.835
Full time employees	3.185***
AADT	
AADT LIGHT VEHICLES	14.342
AADT TRUCKS	2.123
TOTAL	16.465
Total number of accidents	2.801
Number of accidents with injuries	316
Number of fatalities	34
Number of injuries	565
Number of kilometres travelled (10 ⁶ x km)	7.662,7
Fatality rate	4.67****
Number of toll stations	109
Number of toll collection lanes	712
Number of ETC lanes	505*****
Number of ETC subscribers	403.326
Number of ETC devices	700.012
Number of roadside rest areas (with filling stations)	75
Number of rest areas	124
Number of restaurants	26
Number of hotels	11

*As of 1st January 2018 St. Ilija Tunnel was handed over to Croatian Roads Authority (HC) therefore HAC network decreased in 2018 by 7.3 km

**Section of the State Road D12 to be handed over for operation to HC (Croatian Roads Authority) after completion is not part of motorway network

***Total number of work force in all motorway companies and their operators

****BINA-ISTRA figures on traffic accidents are given for the total network of Istrian Y (both motorway and semi motorway) while safety ratios are given only for stretches in full motorway profile to be comparable with other concessionaires.

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





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THE CROATIAN ASSOCIATION
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