

= A2 (Croatia) =

The A2 motorway (Croatian : Autocesta A2) is a motorway in the Hrvatsko Zagorje region of northern Croatia , connecting Zagreb to the Macelj border crossing and Slovenia . The A2 motorway is part of the European route E59 and the Pan @-@ European Corridor Xa . The motorway spans 59 @.@ 2 kilometres (36 @.@ 8 mi) between the Slovenian border and the Jankomir interchange within the Zagreb bypass , providing road connections to a number of cities and towns besides Zagreb , including Krapina , Zabok and Zaprežić . All sections of the motorway , except the northernmost one between the Macelj border crossing and Trakošan , and the southernmost one near Zagreb , are tolled , using a closed toll collection system .

Construction of the motorway began in 1990 , but a decade @-@ long hiatus between the mid @-@ 1990s and 2004 caused by funding issues and the setting up of a separate company to develop and operate the motorway meant it was not completed until 2007 . As of July 2011 , the entire motorway route is completed , consisting of a dual @-@ carriageway and four traffic lanes , except for a relatively short segment which is still a single carriageway road . The motorway is currently operated by Autocesta Zagreb - Macelj .

The motorway carries a considerable volume of traffic throughout the year ; however , in the summer , its peak volume is nearly double the average , as traffic intensifies because of tourists travelling to Adriatic Sea resorts and back . Furthermore , the southernmost sections of the motorway serve Zagreb 's sizeable suburban traffic .

= = Route description = =

The A2 motorway is an important north ? south motorway in Croatia , connecting the capital of the country , Zagreb , to Graz , Austria , via Maribor , Slovenia , as well as Vienna and other destinations along the Pyhrn route . The motorway follows a route through the Hrvatsko Zagorje region . Part of the road network of Croatia , the motorway is also part of European route E59 Zagreb ? Graz ? Vienna ? Prague . The motorway is of major importance to Croatia in terms of economic development , especially for tourism and as a transit transport route . The road carries significant transit and tourist traffic as it connects to the Zagreb bypass segment of the A3 motorway , which serves as a hub distributing the southbound traffic to either eastbound A3 or southbound A1 , and vice versa . As of the June 1997 Pan @-@ European Transport Conference in Helsinki , the motorway is part of the Pan @-@ European Corridor Xa .

The motorway spans 59 @.@ 2 kilometres (36 @.@ 8 mi) between the Macelj border crossing , Slovenia and the Zagreb ? Jankomir interchange on the A3 motorway . The route serves Zagreb via the 1035 at the Jankomir interchange , Zaprežić via the D225 , Zabok , Klanjec and Oroslavje via the D307 , Sveti Križ Začretje via the D35 , Krapina and Pregrada via the D206 , Turmanec via the D207 and Trakošan via the D508 . The D1 state road runs as a parallel , toll @-@ free route along the motorway , and most of the motorway exits connect to that route directly , switching to D35 , D206 , D207 and D508 shortly afterwards .

The A2 motorway has at least two traffic lanes and an emergency lane in each direction along its entire length , except in tunnels , where there are emergency bays instead . All of the interchanges are trumpet interchanges , except the Jankomir interchange , which is a cloverleaf interchange . There are a number of rest areas along the motorway providing various types of services , ranging from simple parking spaces and restrooms to filling stations , restaurants and hotels . As of July 2011 , the motorway has seven interchanges providing access to numerous towns and cities and the Croatian state road network . The motorway is operated by the Autocesta Zagreb ? Macelj company .

An automatic traffic monitoring and guidance system is in place along the motorway . It consists of measuring , control and signalling devices located in zones where driving conditions may vary , such as at interchanges , viaducts , bridges , tunnels and zones where fog and strong wind are known to occur . The system uses variable traffic signs to communicate changing driving conditions , possible restrictions and other information to motorway users . The A2 motorway mainly runs through the

plains and rolling hills of Hrvatsko Zagorje region , although the northernmost sections of the route traverse rugged terrain , requiring a number of viaducts and long tunnels along the route .

= = Toll = =

The A2 is a tolled motorway , based on the vehicle classification in Croatia , using a closed toll system . As of July 2011 , the toll charged along the A2 route between the Zaprežić and Trakošćan mainline toll plazas varies depending on the length of route travelled , ranging from 11 @. @ 00 kuna (1 @. @ 44 euros) to 42 @. @ 00 kuna (5 @. @ 48 euros) for passenger cars and 47 @. @ 00 kuna (6 @. @ 13 euro) to 187 @. @ 00 kuna (24 @. @ 40 euro) for semi @- @ trailer trucks . The toll is payable in either Croatian kuna or euros and by major credit and debit cards . A prepaid toll collection system is also used . The A2 is the only motorway in Croatia which does not provide for use of the ENC ? an electronic toll collection (ETC) system shared by most motorways in Croatia that provides drivers with discounted toll rates for dedicated lanes at toll plazas . In addition to the vehicle classification in Croatia , the motorway operator maintains an additional vehicle category for motorbikes , which are charged from 7 @. @ 00 kuna (0 @. @ 91 euros) to 25 @. @ 00 kuna (3 @. @ 26 euros) toll . The southernmost Jankomir ? Zaprežić section of the motorway is not tolled , as it is part of the Zagreb bypass .

The toll collected by Autocesta Zagreb ? Macelj from the A2 motorway in the first quarter of 2011 amounted to 27 @. @ 7 million kuna (3 @. @ 61 million euros) ; however , this period does not include the significantly increased tourist traffic during the summer . In 2010 , Autocesta Zagreb ? Macelj collected 166 @. @ 9 million kuna (22 @. @ 4 million euros) from A2 tolls .

= = Notable structures = =

The southernmost section of the motorway , between the Jankomir and Zaprežić interchanges , forms part of the Zagreb bypass and entails a number of viaducts spanning roads and railways , including a 373 @- @ metre (1 @, @ 224 ft) viaduct across the Zagreb ? Ljubljana railway . Furthermore , the section comprises the Sava River Bridge , spanning 1 @, @ 072 metres (3 @, @ 517 ft) . All the structures along the section are executed as dual structures with four traffic lanes .

The northernmost segment between the Krapina interchange and the Macelj border crossing traverses rugged terrain , requiring further viaducts and tunnels . Among those , the most notable ones are the 579 @- @ metre (1 @, @ 900 ft) Krapinčica Viaduct and the 1 @, @ 740 @- @ metre (5 @, @ 710 ft) Sveta Tri Kralja Tunnel . The tunnel is part of a sequence of two tunnels and three viaducts in a 3 @. @ 7 @- @ kilometre (2 @. @ 3 mi) segment between Krapina and ?urmanec . Generally , the Krapina ? Macelj border crossing segment of the A2 motorway required numerous expensive engineering works , including six tunnels and nine viaducts , which caused the construction cost to be over 235 million euros .

= = History = =

In the 1960s , various levels of government in the Socialist Republic of Croatia initiated planning processes aimed at development of road transport infrastructure of the then constituent republic of Yugoslavia . The first proposal of a motorway link in Croatia was made by Josip Roglić , a member of the Croatian Academy of Sciences and Arts at the time . He proposed the motorway to be built between Zagreb and Split . In 1962 , a formal proposal was made by local authorities in Split , resulting in Croatian government adopting a framework motorway development plan in 1966 . Designs were commissioned in 1967 , extending the route north to Maribor , Slovenia for the first time . The extension largely used the same corridor as an existing Zagreb ? Maribor road ? Zagorje Highway ? a congested and insufficiently safe two @- @ lane road with at @- @ grade intersections , connecting numerous towns and villages between Zagreb and Maribor . The road itself represented yet another upgrade of a transport route recorded along Zagreb ? Maribor corridor since Middle Ages . The plan was shelved because of political pressures following suppression of Croatian Spring

only to be reinstated upon Croatian independence from Yugoslavia .

The first section of the present A2 motorway was completed as a single @-@ carriageway limited @-@ access road between the Jankomir and Zapre?i? interchanges , forming the westernmost section of Zagreb bypass , in 1990 . The section included a number of bridges and viaducts , spanning the Sava River and numerous roads and railroads , making construction of a dual @-@ carriageway prohibitively expensive at the time . In 1991 , the 7 @.@ 4 @-@ kilometre (4 @.@ 6 mi) section was extended by 17 kilometres (11 mi) of dual @-@ carriage motorway to Zabok . Lack of funding greatly slowed further construction , and the following 16 @.@ 2 @-@ kilometre (10 @.@ 1 mi) section to Velika Ves , south of Krapina , was only completed in 1996 . Further construction was suspended due to lack of available funding .

In 1997 , the governments of the Republic of Croatia and the German state of Bavaria made a joint declaration regarding their future transport infrastructure development cooperation . The cooperation primarily dealt with the construction of the remaining A2 motorway sections and the Franjo Tu?man Bridge , and the two issues were formally settled between the Croatian government and Walter Bau AG . In 2003 , the Autocesta Zagreb ? Macelj company was established by the Croatian government and was awarded a concession contract to operate the motorway . Furthermore , a joint investment agreement with Walter Bau AG was signed by the government , effectively securing the financial assets required to resume construction . In 2004 , Strabag replaced Walter Bau AG as a contract partner and construction finally resumed . In 2006 , the section between Jankomir and Zapre?i? was upgraded to dual @-@ carriage motorway , and the motorway was extended to Krapina itself . In 2007 , after 33 months of construction defined by the contracts , the motorway was completed along its entire length , except for a short segment near Krapina which , as of July 2011 , is still a single @-@ carriageway road . The total cost of the motorway was approximately 372 million euros . The largest portion of the total pertains to the northernmost 20 @-@ kilometre (12 mi) section between Krapina and Macelj , which was reported to cost 235 million euros .

= = Further construction = =

As of 2012 , the 3 @.@ 7 @-@ kilometre (2 @.@ 3 mi) segment of the motorway between Krapina and ?urmanec is still missing the second carriageway . The upgrading of this segment is planned , as the Croatian government reportedly concluded talks regarding the matter with the motorway operator in 2010 . The upgrade is expected to take one year and cost 50 million euros .

= = Traffic volume = =

Traffic is regularly counted and reported by Autocesta Zagreb ? Macelj , the operator of the motorway , and is published by Hrvatske Ceste . As the motorway traffic volume is measured through an analysis of toll ticket sales , the southernmost section of the motorway , Jankomir - Zapre?i? , is not included in this report , as it is not tolled . However , since the section is a part of Zagreb bypass , it is considered to carry heavier traffic than any other section of the A2 motorway . In 2006 , it carried more than 22 @,@ 000 vehicles per day , and its traffic volume grew considerably since the completion of the motorway in 2007 .

Variations between AADT and average summer daily traffic (ASDT) traffic volumes are attributed to the fact that the motorway carries substantial tourist traffic to the Adriatic Sea resorts during the summer . On average , the tolled section of the A2 motorway carries 90 % more ASDT than AADT . The largest increase , 125 % , of the ASDT relative to the AADT is observed on the ?urmanec ? Trako??an section .

= = Rest areas = =

As of July 2011 , there are three rest areas along the A2 motorway . Legislation identifies four types of rest areas designated as types A through D : A @-@ type rest areas comprise a full range of amenities , including a filling station , a restaurant and a hotel or motel ; B @-@ type rest areas

have no lodging ; C @-@ type rest areas are very common and include a filling station and a café , but no restaurants or accommodations ; D @-@ type rest areas only offer parking spaces , possibly picnicking tables and benches and restrooms . Most rest areas along the A2 motorway generally follow this ranking system , although some offer extra services . Many filling stations have small convenience stores , and some offer LPG fuel .

The primary motorway operator , Hrvatske autoceste (HAC) , leases the A , B and C type rest areas to various operators through public tenders . As of July 2011 , there are two such rest area operators on the A2 motorway : INA and OMV . The rest area operators are not permitted to sub @-@ lease the fuel operations . The A2 motorway rest areas are accessible from both directions of the motorway and operate 24 hours a day , 7 days a week .

= = Exit list = =