

HIGHLIGHTS:

Complete Rehabilitation of the Gazela Bridge

Winter service – excellent 5

Milenko Caković, M.Sc.

Modernization of Toll Collection System

Zoran Pešivić, B.Sc.(T.E.)

Efficient Road Network Management

The PR “Roads of Serbia” has successfully passed the first phase of quality system certification test

Belgrade Bypass

New Website Appearance

Road Builders – flywheel of Serbian economy

Since the traffic and construction of road infrastructure represent national priority to our country, the PE “Roads of Serbia” will, as the Employer, continue to further improve and construct road network of Serbia in 2012, as well. Road economy is one of the key factors for further accelerated development of our country. The Republic of Serbia has, over the last few years, invested huge funds in strategic projects, because the traffic sets economy in motion and represents the flywheel with which Serbia goes to European future.

During this year our enterprise will intensify works on Belgrade Bypass, which represents the part of international road Corridor 10. It will intensively work on further modernization of Toll Collection System and efficient Road Network Management, as well as on construction and modernization of road network throughout Serbia.

In the beginning of April, we completed successfully all the rehabilitation works on the Gazela Bridge, which now looks better than ever, and we would like to commend our enterprise for being able this year, and on great satisfaction of all citizens of Serbia and those who are in transit through our country, to successfully complete all the tasks and enable undisturbed traffic flow, despite extremely adverse weather conditions.

Interview:

Milenko Caković, M.Sc.Ec.

Director of the Sector for Toll Collection
Modernization of Toll Collection System

In the Sector for Toll Collection activities of tolling, video surveillance, analytics and control, transport and security of money and structures, as well as administrative and technical and other activities related to the operations of this Sector, are being performed, says for the Newsletter **Mr. Milenko Caković, M.Sc.Ec, Director of the Sector.**

Sector for Toll Collection is organized through activities of the following departments:

Department for Operative Tolling

Department for Tolling Supervision

Department for Joint Affairs of the Sector

Total number of vehicles on the toll roads in 2011 was 34.051.042 vehicles, which is 544.212 vehicles, i.e. +1.62% more than in 2010, which resulted in total toll collection revenue of RSD 14.410.829.059. It is RSD 369 million, i.e. +2.63% more compared to 2010, highlights Director Caković. Trend of constant growth in total number of vehicles continues like in previous years. The largest number of vehicles is reported on Belgrade-Niš section, the smallest number on Novi Sad-Subotica section, whereas the greatest increase in vehicle number (+4.54%) is reported on Belgrade-Novı Sad section. When the number of vehicles is analyzed according to their category, the greatest percentage of increase compared to the previous year is reported for the vehicles belonging to fourth category (so called tow trucks) and it is +4.89%. Namely, in 2011 157.219 more tow trucks were levied than in 2010.

Modernization of Toll Collection System

Director Milenko Caković notices that there is a modernization of the toll collection system, which beside modernization of closed systems on Belgrade-Niš and Belgrade-Šid routes, includes modernization of open toll collection systems Doljevac, Stara Pazova and Sirig, as well. Main point of engagement in 2012 will be completion of Toll Collection System modernization on the motorway Belgrade-Niš, i.e. modernization of toll stations Belgrade, Niš, Pojate, Vrčin and Tranšped. Installation and putting into operation of modernized Toll Collection System on toll stations Beška, Inđija and Horgoš are planned, as well as establishing of closed toll collection system which will include four toll stations in funnel system: Inđija, Beška, Maradik and Kovilj, as well as two two-sided toll stations Novi Sad South and Novi Sad North, on the motorway Belgrade-Novı Sad-Sirig, i.e. on the route from toll station Stara Pazova till the toll station Sirig.

Connection of toll stations by means of optical cable

By connection of toll stations with optical cable one hundred percent chargeability will be provided when it comes to ticket exchange, as well as prevention of malpractice among traffic participants on that basis, which will enable annual revenue increase for more than EUR 1.500.000 indicating monthly income from tolling for more than EUR

120.000. By connection of toll stations with optical cable, the Sector for Toll Collection will in every moment be provided with the following:

realized income by every toll booth operator, booth, as well as total revenue from separate and all sections together

total number of vehicles according to categories

number of levied vehicles and vehicles present on the road

traffic intensity and flow at toll stations

way of working when it comes to toll collection and number of open channels

information on each individual user, along with control of ticket validity

Connection will enable:

Division for Video Surveillance to obtain instant snapshot, which implies surveillance in real time, as well as information on disk availability in toll stations

Division for Analytics to instantly obtain data from toll stations, which implies controlling data on collection in real time

Department for Operative Tolling for remote management of working regime and changeable traffic signing

Instant act upon the MIA`s request and remote insight in events on every toll station

Sector for Traffic Control Information Systems to get data on toll collection distributed directly to data center without site visit

Director Caković says for the Newsletter that, beside the activities mentioned above, following is planned: construction of 13 structures for stay of toll booth operators and work performance of managers, construction of canopies on toll stations Vrčin and Tranšped (two-sided toll stations with 4 booths in total), Novi Sad South, Novi Sad North and Horgoš with 21 booth in total, construction of footbridge at toll station Novi Sad and installation of laser counters – independent mechanisms for toll collection control.

Systematization alteration

By Rulebook on organization and job systematization on December 1st, 2011 the assignments that include takeover of employees from other Sectors and redeployment of employees within Sector to new work tasks were taken over, in order to perform those tasks more efficiently in the Sector for Toll Collection, when it comes to the assignments on processing toll payment refusal of traffic participants, runaway from toll station and electronic tolling, explains for the Newsletter Director Caković. By above

mentioned Rulebook within the Sector for Toll Collection the new department has been formed - **Department for Joint Affairs**, which comprises four divisions, namely Division for Communication with Road Users, which is responsible for electronic toll collection, selling and recharging of TAGs, and communication with end users, and **Division for Subsequent Toll Collection**, which is responsible for processing toll payment refusals of traffic participants and runaway from toll stations, and initiation of proceedings for indemnification on those grounds. **Division for Transport and Security of Money and Structures**, taken over from the Department for Tolling Supervision, which is responsible for physical and technical security of enterprise's property and persons, and **Division for Technical Operations**, taken over from Department for Operative Tolling, which is responsible for equipment and structure maintenance within the PE "Roads of Serbia". By its engagement in the activities on vehicles maintenance, maintenance costs decreased in 2011 compared to 2010 for RSD 6.141.413,07, i.e. by 23.11%. The plan for newly formed Division for Subsequent Tolling is to process 30.315 runaways from past two years and 111.122 statements from past four years, and submit to legal service within 6 months. On these grounds, unscrupulous drivers have damaged the Budget of the Republic of Serbia for RSD 256.551.687,35. Until the systematization has been altered, the Sector for Toll Collection was responsible for submission of Statements from toll stations to the Department for Automatic Data Processing within the Sector for Traffic Control Information Systems in strictly defined deadlines, which were complied with without exemption. After the alternation of systematization, and beside submission of Statements, activities related to preparation of material for subsequent tolling, i.e. court procedure, along with its forwarding for book entry, are taken over, too.

Chargeability of 99.63%

On every section under tolling in 2011, of total number of entered vehicles, the following has been recorded:

- **99.63% of levied vehicles**
- **0.11% of registered runaway vehicles** on toll stations (vehicles that ran away from the station, but they are reported and are going to be charged before court).
- **0.16% vehicles that refused to pay toll, by giving the statement** (vehicles, i.e. persons that gave their personal information instead of paying the toll and that are going to be charged before court)
- **0.09% of total unmatched, i.e. "missing" vehicles**

Unmatching 0,09%

Comparative analysis of the official data on unmatchig (percentage of unpaid "missing" vehicles of total number of entered vehicles) shows that in 2011 the trend of small percentage of unmatching, i.e. "missing" vehicles continues, and it is 0.09% per annum, points out Director Caković. Such a small unmatching percentage indicates that almost one hundred percent of chargeability was reached.

Increased Electronic Toll Collection by means of TAG

In total revenue in 2011, which was RSD 14.41 billion, electronic toll collection participated with 3.70%, i.e. its usage increased by +162.83% or 384.259 passages

more with TAG device. The biggest increase has been recorded on the section Niš-Leskovac (t.s. Doljevac) +507.38%, as well as on the section Belgrade-Niš, where the increase by +411.44% has been recorded.

“Missing” vehicles (2005 - 2011)

period/year	2005.	2006.	2007.	2008.	2009.	2010.	2011.
unmatched	222.495	243.978	121.982	29.278	40.570	26.345	31.112
% “missing” vehicles	0,81%	0,81%	0,38%	0,09%	0,12%	0,08%	0,09%

The percentage of 0,09% of “missing” vehicles comprises the vehicles that, avoiding tolling, left the motorway in an irregular way (by dismantling safety fence along the motorway) through so called “illegal exits”.

Cooperation with the Ministry of Interior Affairs` authorities

The Sector for Toll Collection has achieved significant cooperation with Economic crime Department within MIA`s Criminal Force Directorate of the Republic of Serbia. Based on collected evidence by Division for Analytics, the following is processed: 36 traffic participants (tow trucks drivers) who performed ticket exchange in order to pay less toll fees, i.e. to pay for shorter distance than the real one; 7 traffic participants (drivers employed in towing service) who avoided tolling by using the “illegal exits”; 2 traffic participants (tow truck drivers) who, by damaging magnetic and graphical record, enabled defining the real distance passed on the motorway, which altogether damaged the enterprise for nearly RSD 6.700.000,00.

On the toll station Doljevac the concrete buffer stops are placed between traffic lanes, in the length of 100 meters, which precludes frequent turning of trucks and avoidance of paying the toll. This action has prevented financial loss of the enterprise of about RSD 7 million per annum.

In the second half of 2011 on toll stations Niš, Aleksinac and Aleksinački Rudnici the actions on inhibiting the truck drivers from misuse of tickets and resulting illegal mitigation of toll amounts were conducted.

A number of meetings were held with Traffic Police representatives from substation for M-22 road in order to inhibit U-turns of IV category vehicles in the zone of toll station Sirig from Subotica direction.

The total number of submitted Notices on violation of working obligations in 2011 is 44 (forty-four), which represents minimal decrease compared to 2010, and number of imposed measures of Decision on Employment Termination Contract, as one of the results of submitted Notices, is 10 (ten) in 2011, which is 50% less compared to 2010.

GAZELA BRIDGE “REACHED THE FINISH LINE” – MORE BEAUTIFUL THAN EVER

After opening all six lanes on the Gazela Bridge on November 12th, 2011, all of them who were fully engaged in one way or another to make this bridge look more beautiful than ever, have achieved the mutual goal – successful completion of works on rehabilitation of this bridge, which was officially completed on April 4th, 2012.

The symbolic presentation of completion of main works on rehabilitation of the Gazela Bridge with access roads is related to installation of permanent traffic signalization and removal of provisional one in accordance with the Law on Traffic Safety, as well as speed increase up to 80 km/h.

Previous works on the Gazela Bridge with access roads commenced on May 4th, 2010 with “zero inspection”, prospecting of occurred damages and comparison with projected damage condition.

The works on rehabilitation of the Gazela Bridge officially commenced on July 1st, 2010.

In the period from July 1st, 2010 until November 12th, 2011, the working activities went on for every single element of the Gazela complex, on constructions, within end below constructions. During this period all the works were carried out under full traffic. Average daily flow was about 150.00 vehicles. Activity fronts and work position performance were defined by program led traffic management. During work performance, undisturbed traffic flow on the lane was secured, i.e. on the main route. Even though more than 85.000.000 vehicles passed through construction site, the absence of heavy incidents and injuries related to traffic management was reported.

The rehabilitation of the Gazela Bridge is extremely complicated construction procedure, since every peculiarity of working activities based on traffic demands had to be foreseen. Additional burden was dictated by completeness of various working processes on the entire complex of the main route and access roads.

In the night between 12 and 13 November, 2011, complete traffic profile on the main route (3+3) with undisturbed and safe traffic flow was opened. The work performance continued within and below bridge construction.

Dynamics of construction works was sustained. With April 4th, 2012 all major works on bridge rehabilitation were completed.

In the period in question on the Gazela complex rehabilitation app. 3.500 m³ concrete, more than 700 t of reinforcement bars and app. 2.500 t of steel on reinforcements of the steel part of the structure were installed (about 800 t of damaged structure was dismantled).

On steel structure about 110 km of fillets was applied (both shop welds and mounting welds).

Approximately 27 km of prestressing tendons was placed in concrete structures, while structures were secured by more than 9.000 m² of special carbon fibers. Approximately 7 km of fissures in concrete tissue and large surface area of damaged concrete structures was repaired.

Approximately 55.000 m² of asphalt base and wearing course (hard poured asphalt + SMA wearing course). On the stated surface area MMA waterproofing was previously placed.

New life is given the old and dilapidated Gazela by modern and high quality materials and procedures for the next few decades. The greatest enemy of the complex, water in all states, is accommodated by drainage system, collected, drained, treated and returned to its natural flow. Drainage system consists of pipe system app. 5.5 km long with associated and suitable mounting pieces, and it is conducted to the closed system of aquifers in the ground. Rainwater sewerage works are being performed outside the Gazela Bridge and their completion is expected in the third week of April.

Bridge steel structure, as well as steel in concrete structures, is protected by anti corrosion coating (app. 150.000 m²).

By the work completion traffic participants were directed through Gazela complex by specified construction signs, which provided all traffic and technical conditions for safe traffic flow on the one hand, and on the other it secured workers for further performance of working activities (on the structure, within and below).

Particularity in realization of the Gazela Bridge is forming of information management center for traffic control and management.

Namely, in addition to 10 cameras (camera locations are: Ambulance, left and right side of the Gazela Bridge, Sava center, intersection of Vladimir and Milentije Popović Street, Staro Sajmište, Faculty of Economics, Branko`s Bridge on the left coast, Donjosavska Street, intersection of Crnogorska and Karađorđeva Street), which control and supervise traffic, 8 cameras are installed for traffic counting and license plates reading for all traffic lanes of the Gazela Bridge and Old Sava Bridge.

The center is connected with 2 weather stations (location: Ambulance and Dobanovci Interchange) and 5 panels – BMC (locations: Bujanj potok, Dušanovac, Bežanijska kosa, Novi Sad road T6, Interchange Dobanovci), with changeable traffic signs and informative messages in case of necessary changes in traffic control.

Interview

Zoran Pešović, B.Sc. (T.E.)
Director of the Sector for Traffic Control Information Systems

Efficient road network management

The Sector for Traffic Control Information System through its Departments (ITS Department, Database Department, Department for Automatic Control and Department for Information System Maintenance) performs activities on database managing, which represents the basis for efficient road network management and sustainable financing, on development and implementation of intelligent transport and electronic systems within traffic field, information technologies and automatic data processing, explains for the Newsletter Director of the Sector, Mr. Zoran Pesovic, B.Sc.(T.E).

The Sector maintenances databases, which will, by implementation, enable monitoring of investments in road network of the Republic of Serbia. The Sector is in charge for databases: on roads, traffic (AADT), rail crossing, dangerous spots, bridges, tunnels and landslides, commercial structures and traffic signalization.

Technology of Intelligent Transport Systems is applied on the part of road network by introducing RWIS System (Road Weather In-formation System) as a new technology within Winter Road Maintenance. In order to apply this system on the whole road network, the process of thermal road mapping is performed (90% up to now), as well as defining key sections for installation of weather stations. This system contributes to increase of service level for road users, by means of significant savings in material and financial resources and traffic safety increase.

By completion of Gazela reconstruction, construction of Belgrade Bypass and opening to traffic the newly constructed tunnels (Lipak, Železnik, Stara Straževica and Straževica), the sector for TCIS will perform key activities on traffic control and management on these locations through installed ITS equipment and formed center in a new building near the Gazela Bridge, highlights Director Pešović.

Establishing of new reference system of state roads

The Government of the Republic of Serbia has issued the Decision on Road Network Classification (Official Gazette of the Republic of Serbia No. 14, dated February 27th, 2012) which has proclaimed cessation of road classification on main (Decision of the SFRY 39/1984, 4/1987) and regional roads (Decision of the RS 20/1976, 14/1997 and 35/1991).

In accordance with Decision of the Government of the Republic of Serbia on classification of state roads and issuing of new Rulebook on Reference System for State Roads of the Republic of Serbia the foundation for establishing the new reference system for state roads is created, explains **Director of the Sector, Mr. Zoran Pešović.**

Subsequent to enactment of the Law on Public Roads (Official Gazette of the Republic of Serbia, No. 101/2005) drafting of necessary documents related to classification of the road network has been undertaken. The documents are: Technical manual for functional road classification and Criteria for classification of the road network of Serbia (Decision on Criteria for classification of state roads (Official Gazette of the Republic of Serbia, No. 17/2009).

Director Pešović states that the basis for issuing the new Rulebook on Reference System for the State Roads of the Republic of Serbia is the Decision on Classification of State Roads. The Rulebook shall define objectives, assignments, responsibilities and rules for forming the reference system for state roads of the Republic of Serbia. The objective of defining and establishing the reference system for state roads of the Republic of Serbia is to enable keeping records on state road network inventory and operative use in order to determine location in relation to familiar reference point.

The PE “Roads of Serbia”, as state roads administrator, is responsible for defining, road designation and for many other amendments to the reference system based on unique classification of state roads, argues Director Pešović. By preparation of Elaborate Study on “Reference System for State Roads of the Republic of Serbia” all the elements for defining the reference system and its road designation will be obtained. “Transparent map on reference system” as addendum to the Elaborate Study is being prepared in digital form and it is defined in a state coordinate system.

The elements of the newly established reference system for state roads of the Republic of Serbia will be recorded and kept in databases on roads under responsibility of state road administrator (PE “Roads of Serbia” – Sector for Traffic Control Information System).

Marking of primary and secondary traffic nodes and sections of the reference system will be marked. Marking will be performed by steel wedges and boards. Reference system for state roads of the Republic of Serbia should be established within a year from the day the Rulebook comes into force. The marking of the reference system for state roads of the Republic of Serbia on the site should be conducted within a year, as well.

Director Zoran Pešović points out that the Sector for Traffic Control Information System has defined the activity plan related to establishment of new Reference system for State Roads of the Republic of Serbia, as well as activity plan related to development of existing databases and establishment of integral system. The plan essentially represents development from databases through migration and integration of single platform to information integrated geospatial business management system, illustrated by the following graphics:

Decision of the Government of the Republic of Serbia on Classification of State Roads and issuance of new Rulebook on Reference System for State Roads of the Republic of Serbia, imposes a series of important assignments upon the PE “Roads of Serbia”, such as: audit of existing management organization and state road maintenance with

necessary improvement of greater efficiency and rationality, rearrangement of database on roads in accordance with new classification with necessary accuracy authentication and data updating.

ISO 9001:2008

The PE "Roads of Serbia" has successfully passed the first phase of quality system certification audit, which confirmed the readiness for certification and business performance according to the highest international standards.

After two-year process of introducing the Quality Management System compliant to ISO 9001:2008 in the PE "Roads of Serbia", more than 50 Quality Board Sessions, successfully conducted internal control and reexamination done by Head Office, **the first phase of certification audit compliant to ISO 9001:2008 was held early in March**. The renowned certification company TUV SUD Serbia will conduct the first phase, as well as certification audit, which are expected in the beginning of April. Successful pre-audit is the evidence on readiness of the system to obtain the certificate and find its place among the best companies that perform their business activities in accordance with requirements of ISO 9901:2008.

QMS in the PE "Roads of Serbia" is established through full engagement of management; mission, vision and quality policy are defined, all key processes are identified and described, parameters on key processes are specified, objectives are defined and all necessary documentation is prepared.

Through successful establishment and adaption of QMS, along with integration into strategy, practice and culture in organization, the long-termed and better business process management, improvement of resources and overall performances, care for users, staff and other interested parties and establishment of new business culture are expected within the PE "Roads of Serbia".

Winter service - excellent 5

According to common practice and before winter officially began according to the calendar year, all road construction companies were ready to once more responsibly perform activities related to this season. During very successful season that lasted from November 15th, 2011 until March 31st, 2012, 570 trucks with attachments were engaged, as well as 206 wheel loaders, 76 graders, 30 special Unimog vehicles, 25 bulldozers, 1212 road workers, and 62.000 tons of salt and 180.000 tons of aggregate were spent. Despite all weather difficulties, road workers were completely ready for unforeseen circumstances related to maintenance of state roads of I and II category. Vlasina, Trgovište, Bosilegrad, Kopaonik, Sjenica and Novi Pazar met the day before Christmas under great snow. Due to heavy snowfall and low temperature emergency situation was declared on February 5th, in the whole country, while the traffic moved undisturbed, except on the sections subordinated to the laws of nature, such as: Brzeće/Kopaonik, Duga poljana – Sjenica, Kaona – Divčibare, which were impassable.

Thanks to engagement of road workers these sections became passable in a very short period of time. Full mobility of all road construction companies, even those with financial problems in previous period, has successfully done its job. Road workers who performed hard work on the site, information center that collected information and Department for Public Relations, which opportunely informed the public in the Republic of Serbia on road network conditions, represented well coordinated team. Beside adverse weather conditions that are over, only observation remains: Performance of winter service is excellent 5!

Belgrade Bypass

Sector B5, section Orlovača – Avala Road

On the sector B5, section from Orlovača to Avala Road in the length of 5.4km, there are ongoing works on construction of bridges "13", "14" and "15". Remedial works on landslides, all excavations and a part of embankment have been completed on the route. On the bridge "13", over Kiev stream, 6 spans 35 m long have been completed, and on the bridge "14" all pillars have been constructed, while on the bridge "15" over Topčider dale, 6 spans 45 m long have been completed, and connection of that bridge is expected.

On the tunnel Straževica complete protection of tunnel lining and SOS refuge (structure where full-scale performance of equipment in and out of tunnel is consolidated) have been completed, 10 kW cable for equipment power supply has been installed inside and outside of tunnel, and there are ongoing installation works of the rest of the equipment in the tunnel.

Batajnica Interchange

Earthworks, preparation works for construction of pillars with geodetic marking of piles` positions, construction (boring, reinforcing and concreting) of piles Ø1200, reinforcing and concreting of carrying beams, poles and main bridge structures has been performed.

Stripping of topsoil, excavation and notching of existing embankment, slope staking of subsoil, placing of geotextile, construction of sand embankments, etc, have been performed.

According to the project documentation for Batajnica Interchange following amounts of material are foreseen: app. 186.000 m³ dredged sand, app. 55.000 m³ gravel, app. 33.000 m³ crashed stone and 35.000 tons of asphalt.

Dobanovci Interchange

Works on three bridges within Dobanovci interchange are completed, including bridge deck and sidewalk, and pedestrian guard rail has been placed and crossing slabs on the side of Ostružnica have been constructed, whereas there is ongoing construction of crossing slabs from direction of Batajnica.

Final works on bridges have commenced during March – placing of waterproofing, curbs, asphaltting, and application of protective coating and placing of elastic safety fence.

The works have also been completed on structures on the bridges, in a road base, (two bridges) as well as on the bridges on local roads (also two) concluding with bridge deck (including sidewalk). Crossing slabs have been constructed, and finishing works are going to commence – placing of waterproofing and curbs, asphaltting, application of protective coating and placing of elastic safety fence. Piles for three overpasses have been constructed, as well as carrying beams and poles, and there is ongoing manufacturing of mounting hardwares on production stand on construction site, as well as works on concreting the final pillar on the overpass across the railroad.

New website design

Following trends in website design during 2011 the Department for Public Relations was inspired to initiate the project on alternation of existing website appearance of the PE “Roads of Serbia” and creation of new, up-to-date look, which has been in function since February 6th, 2012 with the same address – www.putevi-srbije.rs.

At the same time, with the change of appearance, we have employed new version of Content management System (CMS), Joomla, in order to improve performances and safety of the website.

We have designed new appearance and chosen information which will appear on home page based on analysis of number of visitors to the certain parts of the existing website, and we put in foreground contents with the largest number of visitors, which are therefore most significant. We were also led by “State Administration Guidelines for web presentation development” issued by The National Information Technology and Internet Agency.

Website of the PE “Roads of Serbia” with its scope of content, type, speed, updating frequency and used technologies represents positive example of usage of contemporary communication techniques and increased transparency on public enterprises` performances through regular informing of public on activities in our enterprise.

Let us mention that on the website there are interactive winter service maps and status of road works that are updated on daily basis and they represent data in a real time.

By further development of website and switching to a new platform, better support for mobile devices and smart telephones has been enabled.