Contribution of the implementation of road infrastructure measures of OPII in terms of increased time availability of district cities from/to the regional city

The evaluation of transport accessibility of the points of interest represented by district cities in the territory of regions is based on the evaluation of time availability by covering the shortest distance from districts to the regional city in individual regions with use of individual automobile transport. The spatial interaction between districts in regions was characterised by the transport time quantified as weighted sum of average speeds in partial sections of the transport link between analysed points of interest.

Bratislava self-governing region

The Bratislava region has two completed motorways D1 and D2. They are also part of international TEN-T corridors in Slovakia. The motorway D2 runs in Corridor IV (Dresden – Prague – Bratislava/Vienna – Budapest – Arad) and motorway D1 runs in Corridor Va (Bratislava – Žilina – Uzhgorod). For this reason the time availability of the regional city (Bratislava) from districts is at the level of 1st degree, which represents availability within 30 min. The implementation of road infrastructure measures of the OPII is aimed to the implementation of further infrastructure projects that will not manifest themselves in the Bratislava region.

Trnava self-governing region

The motorway D2 partially intervenes into the Trnava region, but it does not influence the improvement of time availability of the regional city from district cities. The region is also crossed by motorway D1 and express way R1. Their influence on improvement of time availability is obvious particularly in the districts through which they run. For this reason the best availability of the regional city Trnava is from the districts of Piešťany, Hlohovec, Galanta and the worst availability is from the districts of Skalica and Dunajská Streda, especially because their carrier road network is built on first and second-class roads. Projects planned for implementation from the OPII funds will not manifest themselves in the improvement of time availability in the Trnava region.

Nitra self-governing region

The present situation in the Nitra region is influenced among others by the completed express way R1 running through the northern part of the region and through the districts of Nitra and Zlaté Moravce. This express way significantly influences the average speed between these district cities and links between the other districts in the region. The worst time availability (4th degree) is in the district of Komárno. The other districts of the region have time availability of 2nd degree, i.e. within 50 minutes. Measures planned for implementation in the programming period 2014 – 2020 will not manifest themselves in the improvement of time availability in the Nitra region.

Žilina self-governing region

The Žilina region is crossed by motorways D1 and D3 and by express ways R1, R3 and R5. The time availability in the region is locally influenced by the presence of a motorway, which is confirmed by the existing motorway connection D1 and partially D3 that significantly contribute to the shortening of transport times on the relations between Bytča with other districts of the Žilina region. The motorway D1 has been completed as far as to Hričovské Podhradie and then from Ivachnová to the boundary of the region. Since 2011 the D1 motorway section Dubná Skala – Turany has been under construction. Apart from this motorway, the following sections of motorway D3 have been partially implemented: Hričovské Podhradie - Žilina, Strážov and section Oščadnica – Čadca, Bukov with tunnel Horelica. From the express way R3 bypass roads of Oravský Podzámok and Tvrdošín have been constructed in the half profile. The time availability of the regional city from the districts of this region will considerably improve, because the construction of missing sections of motorways D1 and D3 in the Žilina region is planned as part of the implementation of road infrastructure measures of the OPII. The improvement of time availability will manifest itself particularly in the districts of Tvrdošín, Ružomberok, Námestovo, Martin, Liptovský Mikuláš and Dolný Kubín.

Trenčín self-governing region

The Trenčín region is served by motorway D1 that crosses the whole region. Moreover, the construction of express ways R2 and R6 is planned. The ascertainment of interdistrict transport accessibility in the Trenčín region was significantly affected by the presence of motorway D1 that is already completed nearly in all links except for the relations in the section R2 Ruskovce - Pravotice in the direction Bánovce nad Bebravou – Prievidza. During the programming period 2014 – 2020 the construction of express way R2 is planned in the section Mníchova Lehota – Ruskovce, which will smoothly connect to the section R2 Ruskovce – Pravotice prepared for implementation from funds for the period 2007 – 2013, and the construction of R6 in the section Mestečko - Púchov. The construction of these sections will improve the time availability of the regional city from the districts of Bánovce nad Bebravou, Prievidza and Púchov.

Banská Bystrica self-governing region

The present situation in the Banská Bystrica region is most influenced by the completed express way R1 running through the district cities of Žarnovica, Žiar nad Hronom, Zvolen and Banská Bystrica. The express way R2 connecting the eastern part of the region to Banská Bystrica also has a significant contribution. In the section of the express way are completed bypass roads of the cities Figa, Ožďany and Tornala in the half profile and the sections of R2 Zvolen, East – Pstruša – Kriváň are in the final phase before launch of construction works. These measures significantly contribute to the increase of the average speed on the relations between these district cities and other districts of the Banská Bystrica region. The construction of the remaining sections of express way R2 and express way R3 Zvolen – Šahy is planned in the following periods. The best time availability in the region is in the area of the completed express way R1 and the worst in the eastern part of the region. During the planned implementation of projects in the programming period 2014 – 2020 the time availability in the region will not change.

Košice self-governing region

The transport accessibility of individual automobile transport in East Slovakia, in the Košice region, is influenced by the location of motorway D1 and express ways R4 and R2. The D1 motorway section between Prešov and Košice, marked R4 or R2, i.e. as feeder road, from Budimír, is already in operation. In fact, substantial part of the express way R4 is situated in the Prešov region and the part in the section Košice – Milhosť does not influence the time availability between districts. The construction of motorway D1 in the section Budimír – Bidovce and of the express way R2 in the sections Košice, Šaca – Košické Oľšany and Rožňava – Jablonov nad Turňou is planned as part of the implementation of road infrastructure measures of OPII 2014 – 2020. The construction of D1 in the Prešov region in the route Prešov, West – Prešov, South improved the time availability of Spišská Nová Ves. In general, measures of OPII 2014 – 2020 will manifest themselves in the improvement of availability from the districts of Rožňava and Spišská Nová Ves.

The present situation in the Prešov region is also influenced by the existing motorway D1 running through the districts of Poprad, Levoča and Prešov. This motorway significantly contributes to the reduction of average transport times on the relations between these district cities and other districts of the Prešov region. From express way R4 the bypass road of Svidník in half profile is completed. In this region the construction of D1 bypass Prešov, West – Prešov, South is planned during the 2014 – 2020 programming period, but it will not manifest itself in the improvement of time availability of interdistrict relations in the region.

Basic data on the network of roads classified by region (NUTS level 3) - as of 01 January 2013

Region	Motorways	Motorways feeders	Express ways	Express ways feeders	1st class roads	2nd class roads	3rd class roads	**TOTAL**	Region size	Inhabitants	Density of motorways and express ways
	km	km	km	km	km	km	km	**km**	km^2	number	km/thous. km^2
Bratislava Region	111,100	2,465	-	-	131,697	210,527	354,049	**809,838**	2 053	628 686	55,32
Trnava Region	67,242	-	26,254	-	264,218	529,156	1 065,508	**1 952,378**	4 147	563 081	22,55
Nitra Region	-	-	67,760	0,214	493,476	500,245	1 540,522	**2 602,217**	6 343	704 752	10,72
Trenčín Region	86,506	4,396	2,681	-	304,900	349,369	1 141,231	**1 889,083**	4 502	598 819	20,79
Žilina Region	66,947	2,587	17,584	-	506,123	328,039	1 118,239	**2 039,519**	6 809	698 274	12,79
Banská Bystrica Region	-	-	103,569	1,361	642,412	609,699	1 854,045	**3 211,086**	9 455	652 218	11,10
Prešov Region	82,087	3,830	4,534	-	626,940	523,073	1 920,813	**3 161,277**	8 974	809 443	10,08
Košice Region	5,325	-	11,430	12,862	342,400	586,540	1 420,316	**2 378,873**	6 755	780 000	4,38
Total SR	**419,207**	**13,278**	**233,812**	**14,437**	**3 312,166**	**3 636,648**	**10 414,723**	**18 044,271**	**49 036**	**5 435 273**	**13,88**

Based on data shown in the table, the equipment of individual regions by road infrastructure is uneven. The highest density of motorways and express ways is registered in the Bratislava region (55.32 km/thousand km^2). For comparison, the lowest density of roads of higher class is in the Košice region (4.38), which is 12.6-times less than in the Bratislava region. The basic transport services in the Košice region are thus provided on first, second and third-class roads. Similar problems can be observed in several regions.

As regards the development and maintenance of second and third-class roads, these roads clearly fall within competence of higher territorial units. MTCRD SR fully realises the importance of regional infrastructure for the transport system and mobility of population. In view of the scope of the second and third-class road network (more than 14 thousand km), their present technical condition and in particular possibilities offered by new or renewed infrastructure it is necessary to implement a system change and to solve the hidden debt accumulated in this area in the last years. The effective administration of regional roads should be governed by the principle of subsidiarity, which however does not mean that local authorities in self-governing regions, cities and communities are to face these challenges without the support and coordination on the part of the state. MTCRD SR therefore supports the requirement of regions that also roads with regional and local importance should receive financial support from the EU Funds. It would create conditions for an adequate, balanced and comprehensive development of road infrastructure.

Availability of the capital city of SR Bratislava from regional cities and availability of selected border crossings from/to centroids of regions

The calculation of availability is based on the situation of centroids of individual regions and the shortest route between a centroid and the capital city of SR Bratislava. The quantification of the rates of availability of regional cities takes into account centroids situated in the centres of respective territorial units of districts. In the process of determination of availability of the capital city from regional cities the position of starting nodes in network graphs representing the centres of regions was calculated on the basis of the points of gravity of territorial administrative units according to distribution of population. The average centre for seven regions was calculated on the basis of weighted mean of respective coordinates of individual district cities, including the district of the regional city, where the weights of individual cities i=(1,2,..n) were the numbers of their inhabitants.

Contribution of the implementation of road infrastructure measures of OPII in terms of increased time availability of the capital city of SR Bratislava from/to regional cities

The calculated values are largely influenced by the location of the points of gravity of settlement centres or their distance from regional cities, which is noticeable in some regions. In terms of the distance and time, the availability of the capital city of SR Bratislava copies the geographic conditions, i. e. remote regions have worse time availability. The improvement of time availability achieved by the implementation of road infrastructure measures of OPII 2014 – 2020 will manifest itself by shortening of travel time from the Prešov region to the capital city by approximately 30 minutes. This time saving will be achieved thanks to the construction of motorway D1 in the Žilina region. The other measures influence other indicators of time availability such as accessibility of regional cities from district cities or accessibility of regions and border crossings.

Contribution of the implementation of road infrastructure measures of OPII in terms of increased time availability of selected border crossings from/to centroids of regions

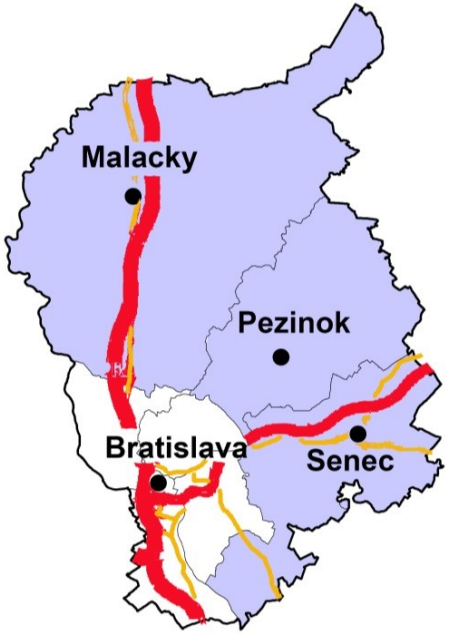
The Slovak Republic neighbours with five countries – Czech Republic, Poland, Ukraine, Hungary and Austria. The links of regions of SR to other countries is important for the development of foreign trade with neighbouring countries and mobility of population in the framework of its economic and recreational activities. The implementation of projects during the 2014 – 2020 programming period will improve the availability of border crossings in each region. The most significant savings will be achieved thanks to the construction of motorway D3 (time saving of freight vehicles from BA SGR, Trnava SGR, Nitra SGR, Trenčín SGR, B.Bystrica SGR and Žilina SGR). The improvement of availability of the border crossing Vyšné Nemecké is the result of completion of missing sections of motorway D1 and construction of some sections of the express way R2. Savings will also be achieved for the border crossings Brodské and Čunovo, but these are not as significant as in the preceding cases.

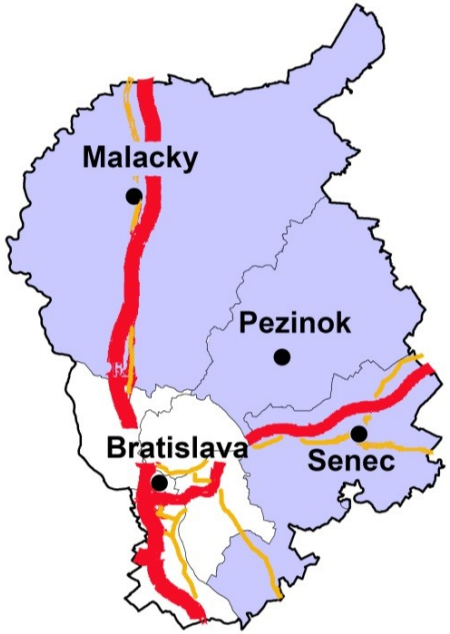
Contribution of the implementation of road infrastructure measures of OPII in terms of the increased average speed of transit freight transport from/to selected border crossings

The implementation of selected large projects will manifest itself in the increased speed and hence improved time availability virtually of all main international transit routes. The most significant improvement will be achieved by solution of the west - east transit in the form of construction of motorway D1 in the Žilina region (increase of average speed of 20.74 km/h). In East Slovakia, for north – south transit Vyšný Komárnik – Milhosť, an improvement of 29.4 km/h will be achieved by the construction of bypass roads D1 near Prešov and D1 and R2 near Košice. In West Slovakia, for the transit route Jarovce – Skalité, the construction of motorway D2 will bring the most significant increase of the average speed (of 17.76 km/h). It follows that the implementation of the OPII will manifest itself by the acceleration of transit through the territory of SR.

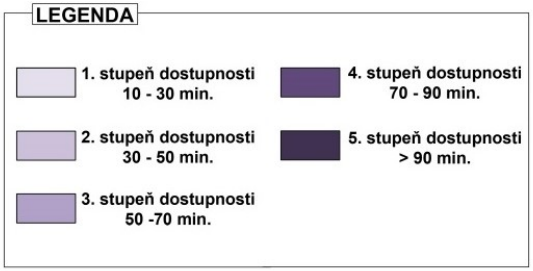
Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Bratislava Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII



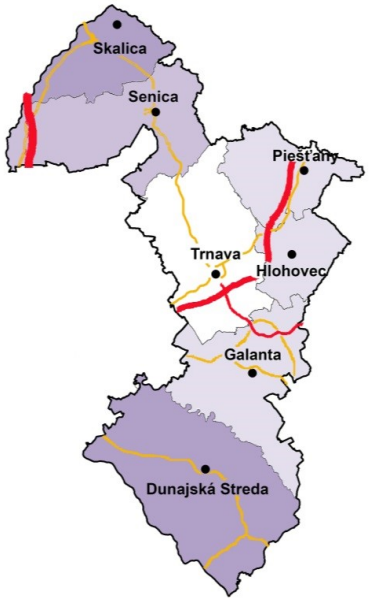
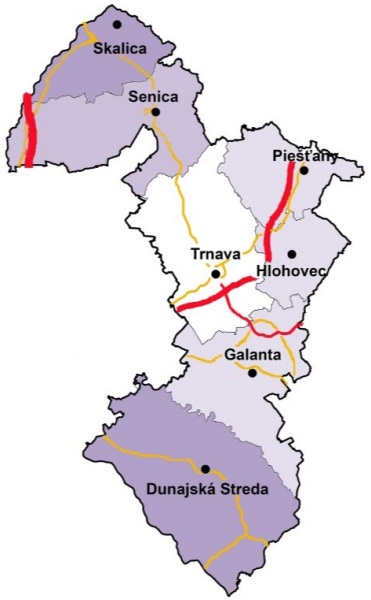


District town	Bratislava	
	Time (min.)	Degree of availability
Malacky	29	1
Pezinok	28	1
Senec	25	1

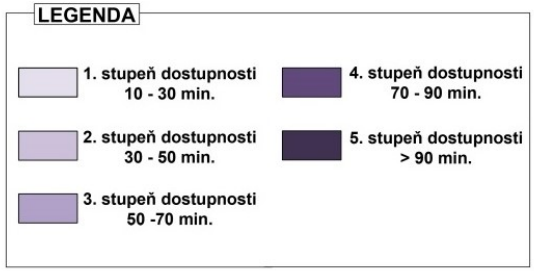


District town	Bratislava	
	Time (min.)	Degree of availability
Malacky	29	1
Pezinok	28	1
Senec	25	1

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Trnava Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII
	

Disctrict town	Trnava	
	Time (min.)	Degree of availability
Dunajská Streda	57	3
Galanta	26	2
Hlohovec	22	1
Piešťany	29	1
Senica	45	2
Skalica	68	3

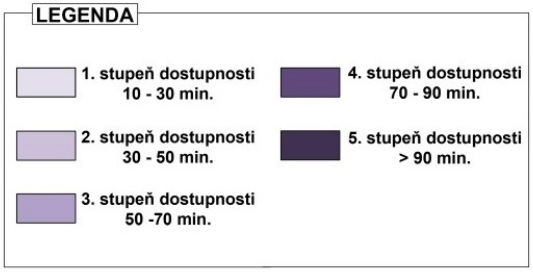


Disctrict town	Trnava	
	Time (min.)	Degree of availability
Dunajská Streda	57	3
Galanta	26	2
Hlohovec	22	1
Piešťany	29	1
Senica	45	2
Skalica	68	3

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Nitra Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII

Disctrict town	Nitra	
	Time (min.)	Degree of availability
Komárno	71	4
Levice	44	2
Nové Zámky	43	2
Šaľa	32	2
Topoľčany	38	2
Zlaté Moravce	24	1

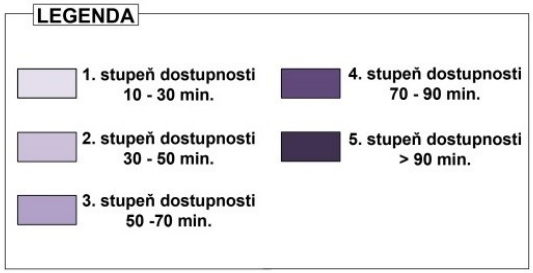


Okresné mesto	Nitra	
	Time (min.)	Degree of availability
Komárno	71	4
Levice	44	2
Nové Zámky	43	2
Šaľa	32	2
Topoľčany	38	2
Zlaté Moravce	24	1

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Žilina Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII

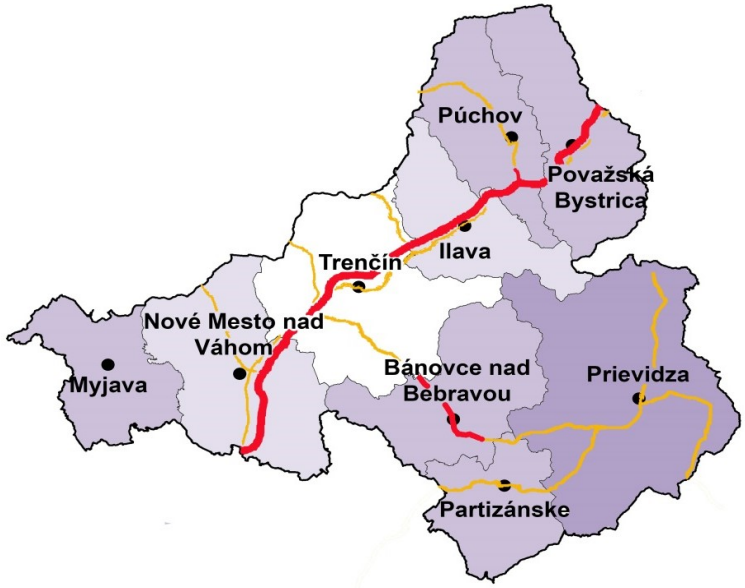
Disctrict town	Žilina	
	Čas (min.)	Degree of availability
Tvrdošín	87	4
Turč. Teplice	47	2
Ružomberok	59	3
Námestovo	80	4
Martin	31	2
Lipt. Mikuláš	78	4
Kysucké N. Mesto	16	1
Dolný Kubín	56	3
Čadca	30	1
Bytča	17	1



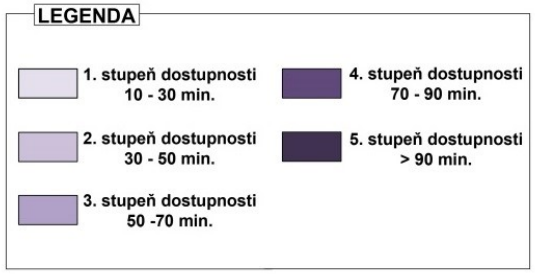
Disctrict town	Žilina	
	Čas (min.)	Degree of availability
Tvrdošín	59,60	3
Turč. Teplice	37,41	2
Ružomberok	31,48	2
Námestovo	59,97	3
Martin	19,35	1
Lipt. Mikuláš	45,31	2
Kysucké N. Mesto	11,75	1
Dolný Kubín	31,15	2
Čadca	19,96	1
Bytča	17,10	1

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Trenčín Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII



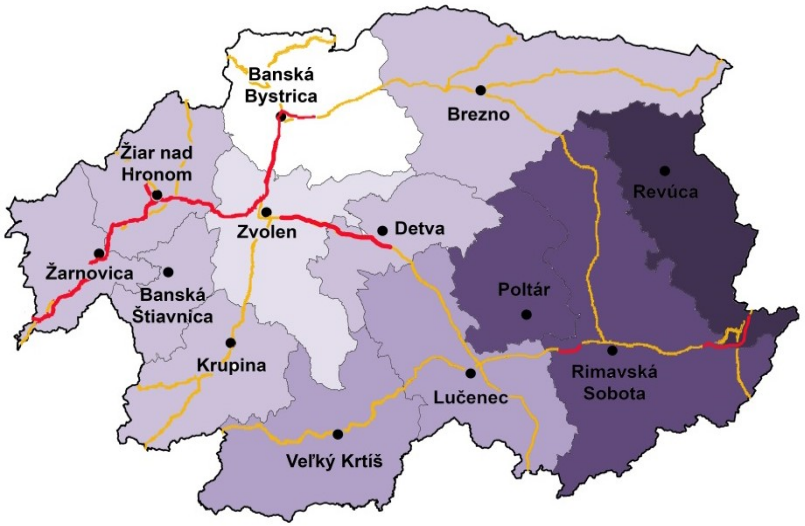
Disctrict town	Trenčín	
	Čas (min.)	Degree of availability
Bánovce nad Bebravou	31,00	2
Ilava	23,00	1
Myjava	48,00	2
Nové Mesto n/Váhom	26,00	1
Partizánske	43,80	2
Považská Bystrica	34,00	2
Prievidza	54,90	3
Púchov	33,00	2

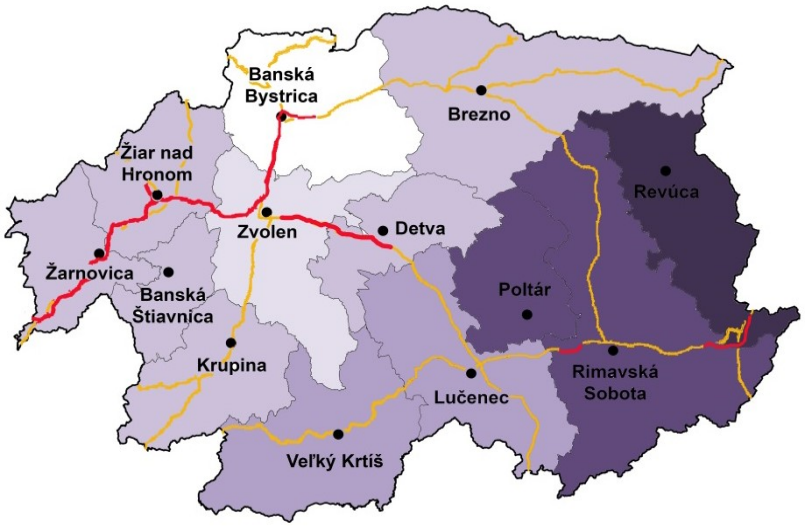


Disctrict town	Trenčín	
	Čas (min.)	Degree of availability
Bánovce nad Bebravou	19,44	1
Ilava	23,00	1
Myjava	48,00	2
Nové Mesto n/Váhom	26,00	1
Partizánske	34,34	2
Považská Bystrica	34,00	2
Prievidza	46,50	2
Púchov	30,05	1

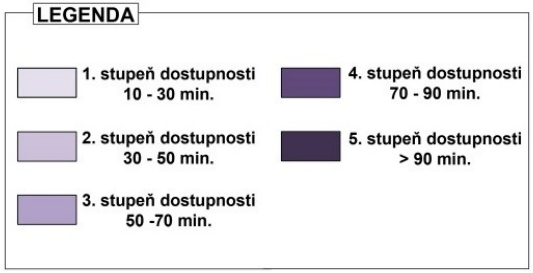
Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Banská Bystrica Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII





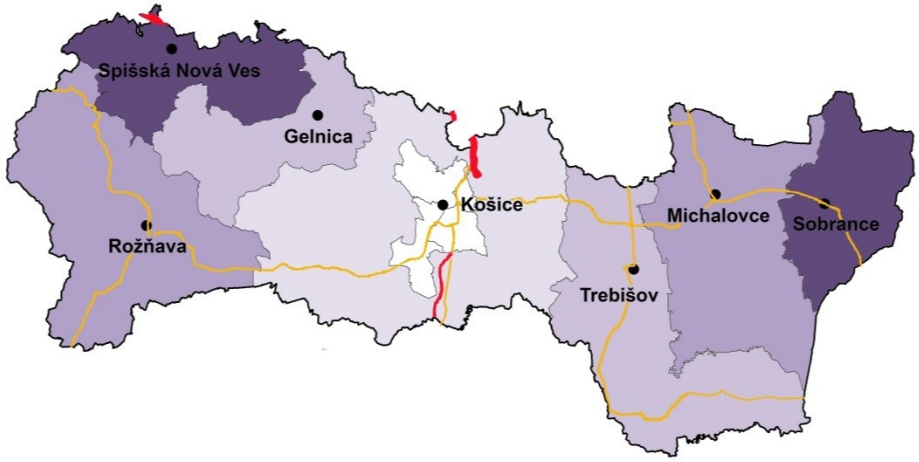
Disctrict town	Banská Bystrica	
	Čas (min.)	Degree of availability
Banská Štiavnica	38,00	2
Brezno	45,00	2
Detva	40,43	2
Krupina	43,00	2
Lučenec	61,67	3
Poltár	70,49	4
Revúca	96,00	5
Rimavská Sobota	81,34	4
Veľký Krtíš	70,00	3
Zvolen	20,00	1
Žarnovica	38,00	2
Žiar nad Hronom	31,00	2



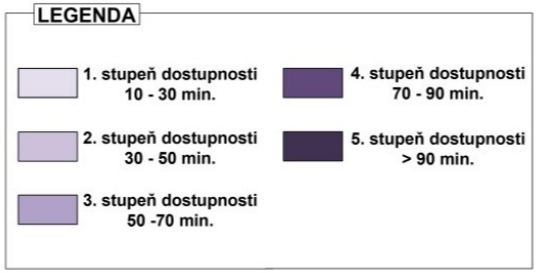
Disctrict town	Banská Bystrica	
	Čas (min.)	Degree of availability
Banská Štiavnica	38,00	2
Brezno	45,00	2
Detva	40,43	2
Krupina	43,00	2
Lučenec	61,67	3
Poltár	70,49	4
Revúca	96,00	5
Rimavská Sobota	81,34	4
Veľký Krtíš	70,00	3
Zvolen	20,00	1
Žarnovica	38,00	2
Žiar nad Hronom	31,00	2

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Košice Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII



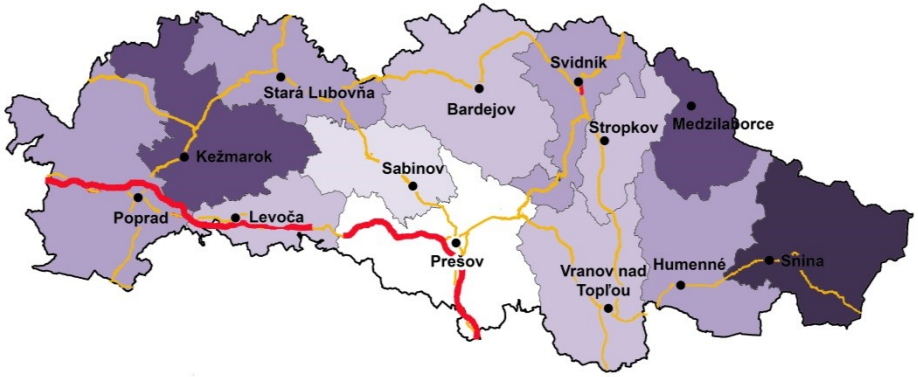
Disctrict town	Košice	
	Time (min.)	Degree of availability
Gelnica	49	2
Košice - okolie	28	1
Michalovce	63	3
Rožňava	57	3
Sobrance	79	4
Spišská Nová Ves	81	4
Trebišov	49	2



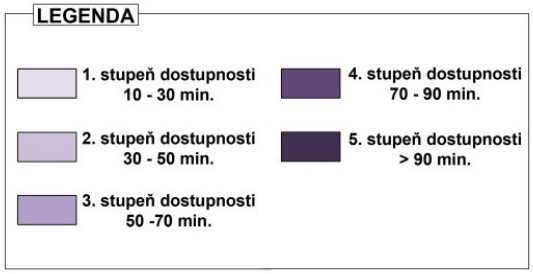
Disctrict town	Košice	
	Time (min.)	Degree of availability
Gelnica	49,00	2
Košice - okolie	28,00	1
Michalovce	63,00	3
Rožňava	36,78	2
Sobrance	79,00	4
Spišská Nová Ves	69,04	3
Trebišov	49,00	2

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time district towns to / from the regional centre – Prešov Self-Governing Region

Current state - no measures implemented	Situation after the implementation OPII



District town	Prešov	
	Time (min.)	Degree of availability
Bardejov	41	2
Humenné	69	3
Kežmarok	72	4
Levoča	45	2
Medzilaborce	85	4
Poprad	64	3
Sabinov	19	1
Snina	92	5
Stará Ľubovňa	60	3
Stropkov	49	2
Svidník	56	3
Vranov nad Topľou	46	2



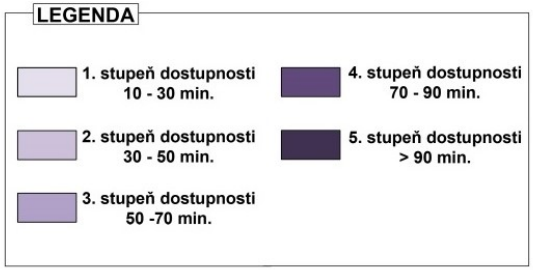
District town	Prešov	
	Time (min.)	Degree of availability
Bardejov	41	2
Humenné	69	3
Kežmarok	72	4
Levoča	45	2
Medzilaborce	85	4
Poprad	64	3
Sabinov	19	1
Snina	92	5
Stará Ľubovňa	60	3
Stropkov	49	2
Svidník	56	3
Vranov nad Topľou	46	2

Benefits resulting from road infrastructure measures OPII in terms of increased availability of Bratislava to / from district towns

Current state - no measures implemented

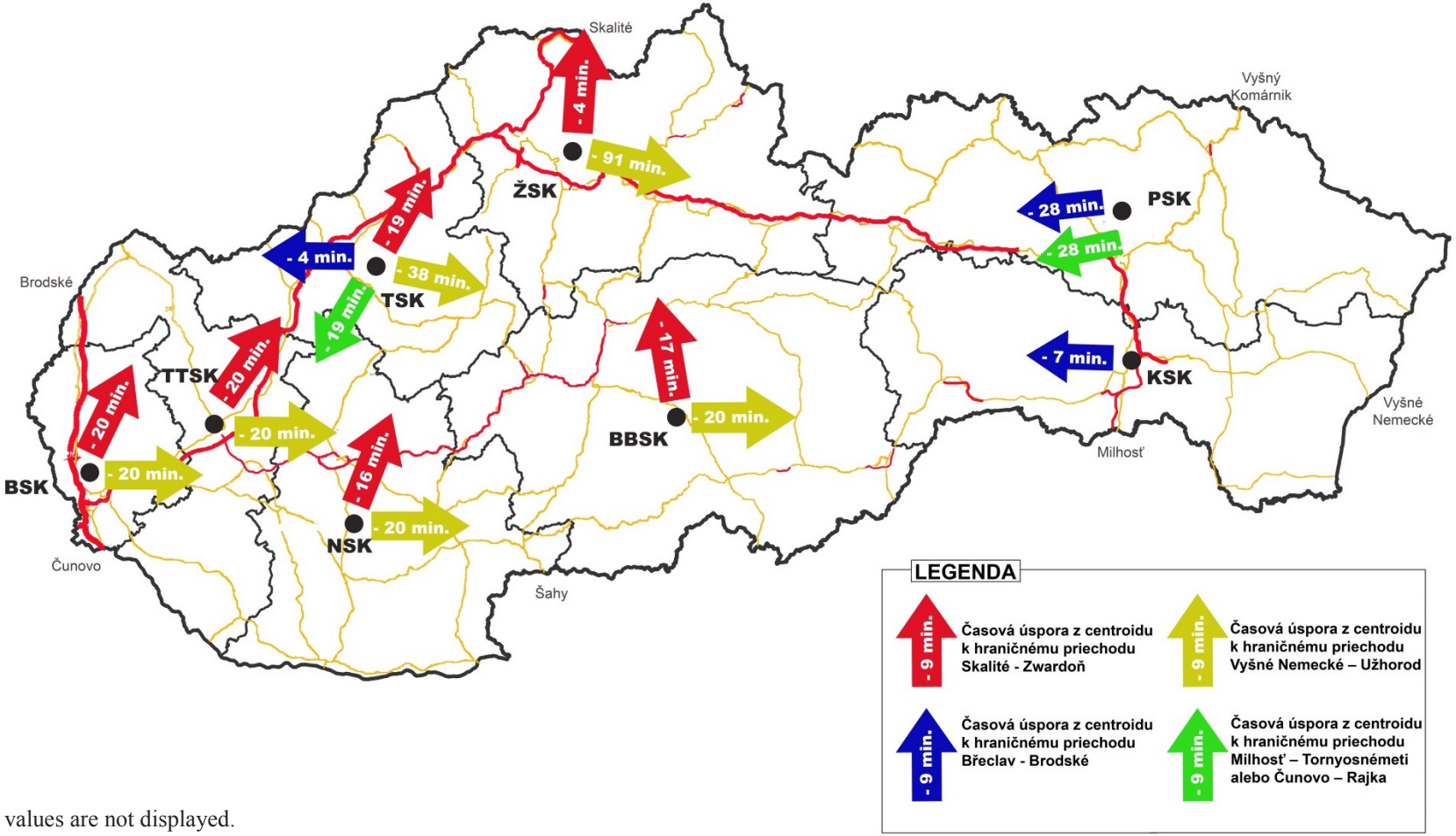
Situation after the implementation OPII

District town	Bratislava	
	Time (min.)	Degree of availability
Trnavský	35	1
Trenčiansky	95	2
Nitriansky	81	2
Žilinský	131	3
Banskobystrický	126,5	3
Prešovský	267	5
Košický	268	5



District town	Bratislava	
	Time (min.)	Degree of availability
Trnavský	35	1
Trenčiansky	95	2
Nitriansky	81	2
Žilinský	131	3
Banskobystrický	126,5	3
Prešovský	238,02	4
Košický	259,8	5

Benefits resulting from road infrastructure measures OPII in terms of increased availability of time selected border crossings to / from the centroid



NB.: Zero values are not displayed.

Benefits resulting from road infrastructure measures OPII in terms of increasing the average speed of freight transit to / from the selected border