I/67, I/66, I/77 Rožňava – Bardejovské kúpele

Feasibility study

Summary accompanying report

E. Summary in English language

Customer

Slovenská správa ciest, Miletičová 19, 826 19 Bratislava

Prepared by

HBH Projekt spol. s r.o.

Contents

1 Identification data 4

1.1 Construction 4

1.2 Customer 4

1.3 Contractor 4

1.4 Purpose and objective of the study 5

1.5 Previous construction documentation 5

2 Study interest area 7

2.1 Short description of the project and its phases 7

2.2 Definition of the territory and proposal of variants 8

3 Background and data of variant designs 10

3.1 Socio-demographic characteristics of the relevant area 10

3.1.1 Košice self-governing region 10

3.1.2 Prešov self-governing region 11

3.2 Traffic engineering documentation 12

3.2.1 Current state of traffic situation 12

3.2.2 Rail transport 14

3.2.3 Cycling 15

4 Zero variant 18

5 Proposed variants 20

5.1 Variant 1 - reconstruction / modernization of the existing state 20

5.1.1 Description of variants 20

5.1.2 Table of sections of Variant 1 26

5.2 Variant 2 – bypasses of municipalities 28

5.2.1 Description of variants 28

5.2.2 Balance data 32

5.2.3 Table of sections of Variant 2 33

5.3 Final assessment from the technical perspective 36

5.3.1 IGHP risks identification 36

5.3.2 Variant assessment 38

6 Traffic assessment and prognosis 40

6.1 Transport service 40

6.2 Rate of traffic accidents (TA) 40

6.3 Traffic forecast 43

6.3.1 State without implementation - zero state 44

6.3.2 State with realization of investment 50

6.4 Assessment of the performance of the road network 54
6.4.1 State without implementation - zero state 54
6.4.2 State with realization 58

7 Impact and the environment. 74

7.1.1 Final assessment of territorial capacity 79

8 Economic assessment - CBA cost-benefit analysis 81

8.1 Project implementation objectives 81

9 Detailed summaries of assessment and assessment of variants and recommendations.... 85

9.1 Assessment from the technical perspective 85
9.2 Assessment from the traffic perspective 86
9.3 Assessment from the economical perspective 87
9.4 Environmental assessment 89
9.5 Final assessment of the project and recommendation of the person preparing the feasibility study 90

1 Identification data

1.1 Construction

Name: I/67, I/66, I/77 Rožňava – Bardejovské kúpele

Type of activity: New building, reconstruction

Location (district): *Rožňava, Poprad, Kežmarok, Stará Ľubovňa, Bardejov*

Region: Košice, Prešov

List of relevant municipalities and c.a. *Rožňava, Betliar, Gemerská Poloma, Henckovce, Nižná Slaná, Gočovo, Vlachovo, Dobšiná, Dedinky, Mlynky, Stratená, Vernár, Telgárt, Hranovnica, Spišské Bystré, Poprad, Veľká Lomnica, Huncovce, Kežmarok, Spišská Belá, Vysoké Tatry, Ždiar, Tatranská Javorina, Bušovce, Podhorany, Holumnica, Podolínec, Nižné Ružbachy, Forbasy, Lacková ,Hniezdne, Stará Ľubovňa, Ľubotín, Čirč, Obručné, Ruská Voľa nad Popradom, Lenartov, Malcov, Gerlachov, Tarnov, Rokytov, Mokroluh, Bardejov,*

Construction justification: Feasibility study for class I roads no. 66, 67 and 77

1.2 Customer

Name and address: Slovenská správa ciest, Miletičová 19, Bratislava represented by Investičná výstavba a správa ciest Košice, Kasárenské námestie 4, 010 01 Košice

1.3 Contractor

Name and address: HBH Projekt spol. s r.o.

Kabátníkova 216/5, 602 00 Brno, Czech Republic

Company ID (IČO): 44961944

Processing unit: HBH Projekt spol. s r.o. Organizational unit Slovakia, Ružová dolina 10, 821 09 Bratislava

Company ID (IČO): 31815332

Chief Project Engineer: Ing. Tomáš Kubačka

Responsible designer: Ing. Radoslav Christakov, Dopravoprojekt a.s. – road objects

Processing of documents and surveys:

Traffic-engineering data: Ing. Tatiana Blanárová

CBA: Ing. Michal Poláček

Environmental assessment: Ing. Marek Sekerčák

Engineering Geology assessment: DPP Žilina s r.o., Žilina

1.4 Purpose and objective of the study

The objective of the study is to assess the feasibility of the construction and the selection of the most suitable variant in terms of the proposed route through the area of interest with the possibility of technical, functional, transport, economic and environmentally most advantageous solution with required parameters and to verify the need for financial resources, or to propose separately operable sections and a schedule for the construction of individual sections of the transport corridor.

The purpose of the study is to assess the current state of the existing transport network, to identify the current capacity and to predict future capacity, to identify all transport, environmental, socio-economic and technical problems and any other congestion and their analysis for the road development concept in order to meet the main intensification goal, which includes the completion of a new capacity road that meets current and prospective demands for transport in the given area and will also serve as a basis for further stages of project documentation that will elaborate the route guidance in the selected corridor.

The feasibility study will be the basis for the European Commission in the selection of investment projects in the territory of the Slovak Republic funded through EU funding.

1.5 Previous construction documentation

The feasibility study (FS) was divided into sections with consideration to existing project documentation. The following documentation was prepared before the FS was processed:

- I/67 Gemerská Poloma – Stratená, relocation 27,124 Technical study, EIA intent
- I/67 Dobšinský mountain, landslide 4,614 Building permit documentation (DSP(DP)), notification of the construction office (SÚ) issued
- I/67 Stratená tunnel reconstruction 0,323 DSP(DP), notification of the SÚ issued
- I/67 Stratená – region border, reconstruction 8,360 Technical study, EIA intent
- I/67-041 Vernár bridge 0,280 DSP(DP), notification of the SÚ issued
- I/67 Hranovnica landslide 0,565 DSP, DP, notification of the SÚ issued
- I/67 Poprad – Kežmarok, 2nd phase 11,050 DSZ, zoning documentation (DÚR), zoning approval issued
- I/67-81 Ždiar bridge 0,100 DSP(DP), notification of the SÚ issued
- I/67-087 Lysá Poľana bridge 0,206 Technical study
- I/77 Spišská Belá – Bušovce, reconstruction 3,602 DÚR, state expertise, zoning approval issued
- I/77 Bardejov – Bardejovské kúpele, road reconstruction 5,969 DSP, DP

Planned for preparation for which project documentation has not yet been prepared:

- I/67 and I/66 Vernár – Pusté Pole cross.
- I/67-057 Veľká Lomnica bridge
- I/67-083 Podspády bridge
- I/67-085 Javorina bridge
- I/77 Podolínec – district border, landslides
- I/67-077 Ždiar bridge
- I/67-076 Tatranská Kotlina bridge
- I/77-020 Hniezdne bridge
- I/18-389 Poprad bridge
- Modernization of selected sections of class I roads - I/67 Betliar - Dobšiná
- Modernization of selected sections of class I roads - I/67 Ľadová – Popová, redevelopment of rock bed
- Modernization of selected sections of class I roads - I/66 Popová - Vernárska tiesňava

- I/67 Gemerská Poloma – Stratená, relocation, TS 10/2007, Intent 11/2007

- I/67 Dobšinský kopec, landslide DSP(DP) 02/2015
- I/67 Stratená tunnel reconstruction DSP(DP) 11/2014
- I/67 Stratená – region border, reconstruction TS 04/2008, Plan 04/2008
- I/67-041 Vernár bridge DSP(DP) 11/2014
- I/67 Hranovnica landslide DSP 05/2011, DP 07/2011
- I/67 Poprad – Kežmarok, 2nd phase DSZ 09/2014, DÚR 10/2014
- I/67-81 Ždiar bridge DSP(DP) 11/2014
- I/67-087 Lysá Poľana bridge TS 11/2007
- I/77 Spišská Belá – Bušovce reconstruction DSZ 01/2009, DÚR 11/2007
- I/77 Bardejov – Bardejovské kúpele road reconstruction DSP 08/2010, DP 01/2011
- Final EIA opinions for individual sections issued by the Ministry of Environment of the Slovak Republic; I/67 Poprad - Kezmarok, 2nd phase 10/2009 (Change of proposed activity will not be assessed 02/2015)

- Background data from territorial plans of the affected regions and municipalities;

2 Study interest area

2.1 Short description of the project and its phases

The area for the design of new roads is concentrated in the corridors of existing roads I/67 in the districts of Rožňava and Poprad, in the corridor of the road I/66 in the districts of Poprad and Kežmarok and in the corridor of road I/77 in the districts of Stará Ľubovňa and Bardejov.

The feasibility study is prepared for class I roads no. 67 Rožňava - cross. with road I/67 (cum. km 15.186 - 61.323), for the class I road no.66 Vernár, cross. with route I66 - Poprad, cross. with road III/3075 (cum. km 168.376 - 192.274), for class I road no. 66 from the end of the four-lane road near Matejovce - border crossing SR/PR Lysá Poľana (cum. km 199.632 - 246.496), for the class I road no. 77 Ľubotín – Stará Ľubovňa (cum. km 0.000 - 25.611) and Ľubotín – Bardejov, Dlhá Lúka (cum. km 32.901 - 63.223).

For a large area, the area is divided into 22 sections:

Section no.1 km 15.186 – 19.08	I/67 Rožňava - Betliar
Section no.2 km 19.08 – 36.98	I/67 Betliar - Vlachovo
Section no.3 km 36.98 – 168.376	I/67 Vlachovo - region border PSK-BBSK
Section no.4 km 168.376 – 175.88	I/66 region border PSK-BBSK – Vernár
Section no.5 km 175.88- 182.31	I/66 Vernár – Hranovnica
Section no.6 km 182.31- 192.274	I/66 Hranovnica – Poprad
Section no.7 km 199.632- 204.678	I/66 Poprad – Huncovce
Section no.8 km 204.678- 210.16	I/66 Huncovce - Kežmarok
Section no.9 km 215.744 – 229.57	I/66 and I/77 junction – Ždiar
Section no.10 km 229.57 – 235.65	I/66 Ždiar
Section no.11 km 235.65 – 240.731	I/66 Ždiar – State border SR/PL
Section no.12 km 210.16 – 1.672	I/66 and I/77 Kežmarok - Spišská Belá
Section no.13 km 1.672 – 8.49	I/77 Bušovce - Podolínec
Section no.14 km 8.49 – 11.70	I/77 Podolínec
Section no.15 km 11.70 – 23.41	I/77 Podolínec – Hniezdne
Section no.16 km 23.41 – 25.611	I/77 Hniezdne – Stará Ľubovňa
Section no.17 km 32.901 – 39.80	I/77 Ľubotín - Lenartov
Section no.18 km 39.80 – 51.29	I/77 Lenartov - Tarnov
Section no.19 km 51.29 – 55.48	I/77 Tarnov – Mokroluh
Section no.20 km 55.48 – 58.70	I/77 Mokroluh
Section no.21 km 60.693 – 63.723	I/77 Bardejov – Bardejovské kúpele
Section no.22 km 63.723 – 68.09	I/77 Bardejovské kúpele – Dlhá Lúka

The selection of the most suitable variant was realized as follows:

- For each section, variants of the technical solution were proposed, which consisted of Variant 1 (up to the minimum), which represents a solution to improve the situation at minimum investment costs, and Variant 2, which represents a full bypass of the settlement.

- Assessment of individual variants in individual sections, from which the most suitable one in the given section was chosen. In this way, the variants were assessed from a technical point of view and their environmental impacts in all sections.
- Subsequently, the individual variants were subjected to a CBA analysis on the basis of which the most advantageous variants in the given section were recommended.

The results from the feasibility study also included the recommended phase of construction of the most advantageous variants for individual road routes.

2.2 Definition of the territory and proposal of variants

State roads I/66, I/67 and I/77 form the main road corridor in the territory of Gemer, Zamagurie and Northern Šariš, as there is no network of motorways and expressways in the area.

In the corridor of the road I/67 from Rožňava to Poprad, there are 6 sections (section 1-6) proposed for modification of the existing road I/67.

In the corridor of the road I/66 from Poprad to Lysá Poľana, there are 5 sections (section 7-11) proposed for modification of the existing road I/66.

In the corridor of the road I/77 from Spišská Belá to Stará Ľubovňa, there are 5 sections (section 12-16) are proposed and in the section from Ľubotín to Bardejov, Dlhá Lúka there are 6 sections (section 17-22) proposed.

In the individual sections are 2 variants proposed:

- **Variant 1 (to a minimum)** represents a solution to improve the existing situation at minimum investment costs, such as small adjustments of directional and height lines, adding safety features in the rural area, adding elements moderating the transport in the urban area, extending the communication to min. category of C9,5 and others.
- **Variant 2** includes a full-profile bypass of the settlement, which diverts traffic away from the built-up area, thereby contributing to increased safety at the settlement, reducing travel time on Class I roads and also contributing to improving the environment of affected residents transport.

section	Variant	Name
U1	V1 - blue	I/67 Rožňava - Betliar, reconstruction
U2	V1 - blue	I/67 Betliar - Vlachovo, reconstruction
	V2 - red	I/67 Betliar - Vlachovo, relocation
U3	V1 - blue	I/67 Vlachovo - region border PSK-BBSK, reconstruction
	V2 - red	I/67 Vlachovo - region border PSK-BBSK, relocation
U4	V1 - blue	I/66 region border PSK-BBSK – Vernár, reconstruction
	V2 - red	I/66 region border PSK-BBSK – Vernár, relocation
U5	V1 - blue	I/66 Vernár - Hranovnica, reconstruction
U6	V1 - blue	I/66 Hranovnica - Poprad, reconstruction
	V2 - red	I/66 Hranovnica - Poprad, relocation
U7	V1 - blue	I/66 Poprad - Huncovce, reconstruction
	V2 - red	I/66 Poprad – Huncovce, relocation
U8	V1 - blue	I/66 Huncovce - Kežmarok, reconstruction

section	Variant	Name
	V2A - red	I/66 Huncovce - Kežmarok, relocation
	V2B - magenta	I/66 Huncovce - Kežmarok, relocation
U9	V1 - blue	I/66 a I/77 križovatka - Ždiar, reconstruction
U10	V1 - blue	I/66 Ždiar , reconstruction
U11	V1 - blue	I/66 Ždiar –State border SR/PL, reconstruction
U12	V1 - blue	I/66 and I/77 Kežmarok - Ždiar, reconstruction
	V2 - red	I/66 and I/77 Kežmarok - Ždiar, relocation
U13	V1 - blue	I/77 Spišská Belá - Podolínec, reconstruction
U14	V1 - blue	I/77 Podolínec, reconstruction
	V2 - red	I/77 Podolínec, relocation
U15	V1 - blue	I/77 Podolínec - Hniezdne, reconstruction
	V2 - red	I/77 Podolínec - Hniezdne, relocation
U16	V1 - blue	I/77 Hniezdne – Stará Ľubovňa, reconstruction
U17	V1 - blue	I/77 Ľubotín - Lenartov, reconstruction
U18	V1 - blue	I/77 Lenartov - Tarnov, reconstruction
	V2 - red	I/77 Lenartov - Tarnov, relocation
U19	V1 - blue	I/77 Tarnov - Mokroluh, reconstruction
	V2 - red	I/77 Tarnov - Mokroluh, relocation
U20	V1 - blue	I/77 Mokroluh, reconstruction
	V2 - red	I/77 Mokroluh, relocation
U21	V1 - blue	I/77 Bardejov - Bardejovské Kúpele, reconstruction
U22	V1 - blue	I/77 Bardejovské Kúpele – Dlhá Lúka, reconstruction
	V2 - red	I/77 Bardejovské kúpele – Dlhá Lúka, relocation

3 Background and data of variant designs

3.1 Socio-demographic characteristics of the relevant area

3.1.1 Košice self-governing region

Area: 6 754 km² (18% of SR)
Population: 799 217 (y. 2017)
Population density: 118,32 people/km²
Office seat of the region: Košice
Economically active population: 360 294 (45.09 %) (y.2017)
Average monthly salary: 1025 EUR (4. quarter 2017)
Unemployment rate: 8.17% (y. 2018)
Number of district towns: 11
Number of towns: 17
Number of municipalities: 423 (excluding towns)

Košice region is located in the south-eastern part of Slovakia. It is the second largest in terms of population and the fourth largest in terms of area in Slovakia. The largest city is Košice (239 thousand inhabitants), which is the second largest city in Slovakia. The region is divided into 11 districts. The region includes 440 self-governing municipalities, 17 of which have the status of a town. The population is predominantly female with 51.2 %: 48.8 % of men.

The main economic sectors in the region include industry (metallurgical, machine engineering, food, electrical, mining, construction materials, fuels and energy), construction and agriculture. Food production industry, which processes products of agricultural production is also significant. A large part of the region is occupied by agricultural land. Agricultural production is concentrated mainly in the districts of Košice - okolie, Trebišov, Michalovce and Sobrance.
The inhabitants of the region work mainly in the following sectors: industrial production, trade, education, public administration, transport and telecommunications, IT, healthcare.
Commuting is common in the region. Most workers commute to work to Košice or other larger cities. A large population of the region works in other regions of Slovakia and abroad (Czech Republic, United Kingdom, Austria, Germany, USA).
The economically active population in the region amounts to 374 000 people. There are 26 000 legal entities and 31 977 sole traders registered in the Košice Region.
The registered unemployment rate in the Košice region is relatively high at 9.94%, which represents 35 813 available job seekers.
It is the highest unemployment rate in Slovakia. The highest unemployment rate is recorded in the Rožňava District (16.23%) and the lowest in the Košice III District (3.87%).

The majority of the unemployed are persons with secondary vocational education or only with basic education who are employed mainly by occasional, auxiliary or seasonal work.
The most important employers in the Košice region are located in the city of Košice and its surroundings.

3.1.2 Prešov self-governing region

Area: 8 973 km2 (18.3 % of area of SR)
Population: 823 826 in y. 2017 (14.7% of population of SR)
Population density: 92 people/km2 (y.2017)
Economically active population: 399 025 (48.5%)
Average monthly salary: 875 EUR (4. quarter 2017)
Unemployment rate: 8.61 % (y.2018)
Average age: 38.3 years (y.2017)
Number of districts: 13
Number of towns: 23
Number of municipalities: 642
Office seat of the region: Prešov (92 786 people)

Districts: **Bardejov,** Humenné, **Kežmarok**, Levoča, Medzilaborce, **Poprad,** Prešov, Sabinov, Snina, **Stará Ľubovňa**, Stropkov, Svidník, Vranov nad Topľou

Prešov region is located in the northern part of eastern Slovakia. Its northern border is formed by a long national border with the Republic of Poland (360 km), which is formed by natural obstacles - mountains and rivers. In the east the region border Ukraine. In the south it borders the Košice region, on the west the Žilina region and Banská Bystrica region.
The territory of the Prešov Region is one of the less densely populated areas, but in terms of area it is the second largest region in Slovakia. The distribution of population in the region is considerably uneven. There are some districts with the largest population in Slovakia (Prešov, Poprad) and on the other hand, districts with the lowest population among districts (Medzilaborce, Stropkov, Levoča, Snina).
Of the total population, 54.3% live in towns (with the town Prešov accounting for 92 786 inhabitants).

The most important sector of the economy is business. Its share in the region's total revenues is 44.5%.
The region's economy is characterized primarily by industry and agriculture with developing tourism. The region belongs to average industrial areas, with a significant share of processing industry. The industry is quite diverse, with no significant focus on any manufacturing sectors. The region includes deposits of non-metallic minerals such as bentonite and zeolite, limestone and cement raw materials and building materials. There are significant deposits of rock salt in the locations of Solivar in Prešov.
Population of 823 537 as of 31.12. 2017 makes the Prešov region the most populated in the Slovak Republic. Its share in the total population of the Slovak Republic is 15.1%. Most inhabitants live in the region capital of Prešov, which is also the third largest city in Slovakia. In the age structure, the proportion of the pre-productive component is decreasing, and the working-age and post-productive age population is increasing. Even with a slight increase in the average age (38.33 years), the region's population is one of the youngest in Slovakia.

Prešov region is situated in the northeast of the Slovak Republic. With an area of 8 973 km^2 it occupies 18.3% of the country's area and is the second largest in Slovakia. The long northern border is also the national border with the Republic of Poland, with the eastern part bordering Ukraine. The region is administratively divided into 13 districts: Bardejov, Humenné, Kežmarok, Levoča, Medzilaborce, Poprad, Prešov, Sabinov, Snina, Stará Ľubovňa, Stropkov, Svidník and Vranov nad Topľou. The largest district is the district of Poprad (1 105 km^2) and the smallest district is Stropkov (389 km^2). There are 665 municipalities in the region, 23 of which have the status of a town.

Population of 823 537 as of 31.12. 2017 makes the Prešov region the most populated in the Slovak Republic. Its share in the total population of the Slovak Republic is 15.1%. Most inhabitants live in the region capital of Prešov, which is also the third largest city in Slovakia. In the age structure, the proportion of the pre-productive component is decreasing, and the working-age and post-productive age population is increasing. Even with a slight increase in the average age (38.33 years), the region's population is one of the youngest in Slovakia.

Of the total population, 403 317 are economically active. At the end of April 2018, the registered unemployment rate in the region was 9.22%, which represents 37 192 people without employment. The district with the lowest unemployment rate is Poprad with 5.62% with the highest unemployment rate recorded in Kežmarok (15.24%).

The industry in the region is quite diverse, with no significant focus on any manufacturing sectors. The metalworking, woodworking, food, electrotechnical, engineering, chemical, textile and clothing industries are heavily represented here. These are mainly concentrated in the district towns.

The business activities of the population influence the conditions and opportunities created in the region. There are more than 16 thousand profit-oriented companies and 55.5 thousand private entrepreneurs (sole traders, including natural persons doing business under Act different than the Trade Licensing Act), operating in the region.. They focus their activities mainly on the construction, trade and industrial sectors. Considering the number of employees, 95% of companies are classified as small enterprises (up to 49 employees), 1.6% as medium-sized enterprises (from 50 to 249 employees) and 0.3% as large enterprises (above 250 employees).

3.2 Traffic engineering documentation

3.2.1 Current state of traffic situation

3.2.1.1 Road network in the area

Road network in question is located in the area of two regions.

In the west-east direction the main road network includes the D1 highway Poprad - Prešov and parallel road I/18

In the north-south direction the D1 motorway and the I/18 road are intersected by roads which are part of the feasibility study:

- road I/66 from direction of Brezno, Telgárt, continuing to Poprad, Kežmarok and Tatranská Javorina
- road I/67 from Rožňava to Poprad

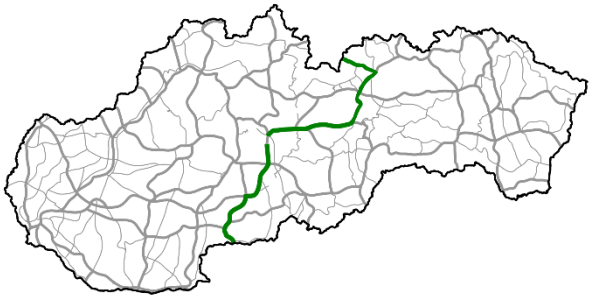
Both roads provide connection of the southern route - E58, Lučenec - Košice and the northern route, motorway D1 (I/18)

In the north-east direction, the I/77 road (including the I/68 corridor traffic section) towards Bardejov and Dlhá Lúka disconnects from the I/66 road in Spišská Belá.
From the I/77 road in the north direction, there are routes that, in addition to serving the territory, also establish connections with Poland:

- II/542 road Spišská Belá – Lysá nad Dunajcom
- II/543 road Stará Ľubovňa - Lysá nad Dunajcom
- I/68 road Stará Ľubovňa - Mníšek nad Popradom
- I/77A road Čirč – Ruská Voľa
- III/3483 road Kurov – Muszynka

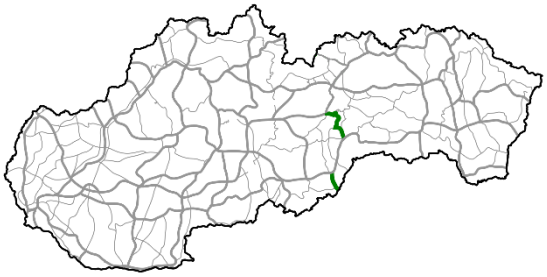
I/66 road

Class I road no. 66 is a class I road with a total length in Slovakia of 247 km. It connects the border crossing of Šahy with Zvolen and Banská Bystrica through Brezno and Vernár with Poprad and border crossing in Tatranská Javorina.
In this study, we focus on the road I/66 at cumulative stationing 168.376 to 240.731 i.e. from the cross. with road I/67 at Vernár to the border crossing.



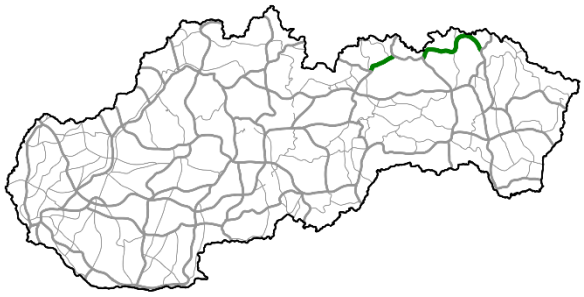
I/67 road

Class I road no. 67 (I/67) is a class I road in Slovakia in the route from (Miskolc-) Kráľ, stat. border – Tornaľa – Rožňava – Pusté Pole. The total length is 61 km.
In this study, we focus on the road I/67 at cumulative stationing of 15.186 to 61.3231 i.e. from the cross. with road II/526 in Rožňava to the cross. with road I/66 near Vernár.



Road I/77

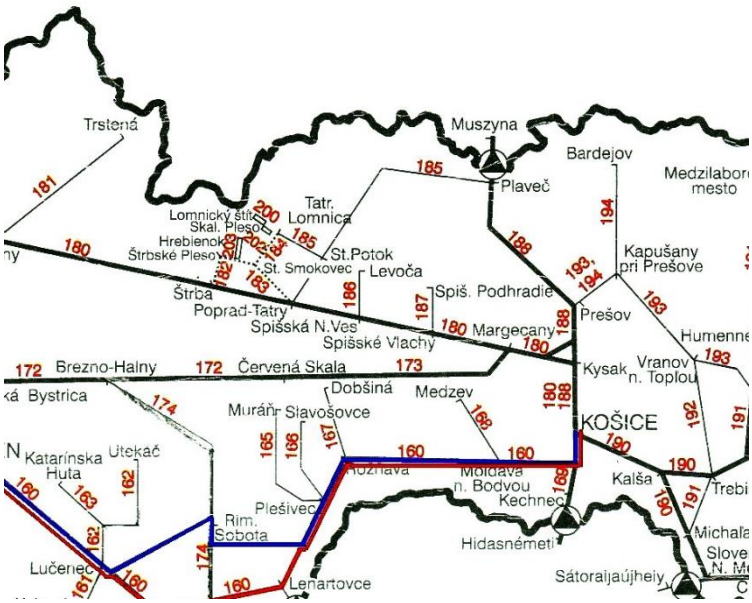
Class I road no. 77 (I/77) is a class I road in Slovakia in Prešov region. I/77 connects Spišská Belá and Svidník, with the section of the road between Čirč and Lenartov following the state border with Poland. Between Stará Ľubovňa and Ľubotín the road follows the state road I/68. The total length is 96.567 km.
In this study we focus on the road I/77 at cumulative stationing of 0.00 to 68.09 i.e. from the cross. with road I/66 in Spišská Belá to the end of the municipality of Dlhá Lúka-Bardejov.



3.2.2 Rail transport

There is the option of rail transport in the region which is already in use.
The use of existing railways as an alternative for car transport is currently limited.

Figure 1 - Identification of railway tracks in the area



3.2.2.1 Railway transport – Košice region

The area concerned includes 2 railway tracks:

<u>Railway track no. 160</u> goes south edge of the town of Rožňava . It is a single-track and in some sections double-track railway in Slovakia, which connects Zvolen and Košice and forms the southern main railway route. Length **233 km, max. speed 100 km/h.**

From Bratislava to Rožňava (via Zvolen) there are two daily express trains with some others departing from Zvolen. From Košice to Rožňava there are four daily express trains and a couple of commuter trains.

In the north direction from track no. 160 runs the track no. 167 to Dobšiná.
<u>Railway track no. 167</u> from Rožňava to Dobšiná is a single track railway in Slovakia, which connects Rožňava with Dobšiná. Length of track is 26 km, max. speed 60 km/h.
Stations and stops on the track: Rožňava – crossing with track 160 (Zvolen – Košice) = seat of the conducting dispatcher for the management of simplified train services in section Rožňava - Dobšiná
Rožňava suburb, Rožňava center, Nadabula, Betliar, Gemerská Poloma, Henckovce, Nižná Slaná village, Nižná Slaná, Gočovo, Vlachovo village, Vlachovo, Dobšiná.

The Dobšiná railway station is the last (end) station on line 167 from Rožňava.

From 2. II. 2003 the operation of public transport is stopped.

At present, there is no rail transport option in the area which would form an alternative for road passenger transport and only a minimum option as an alternative for freight transport.

3.2.2.2 Railway transport – Prešovský kraj

In the area concerned there are following routes:

Railway track 185: Railway track Poprad-Tatry – Plaveč is a single-track railway in Slovakia, which connects Poprad and Plaveč via Kežmarok.

Stations on track no. 185:

Poprad-Tatry - crossing with track 180 (Žilina – Košice) and 183 (Poprad – Štrbské Pleso), Poprad-Spišská Sobota, Matejovce pri Poprade ,Studený potok - turn to Tatranská Lomnica, Tatranská Lomnica - crossing with track 184 (Starý Smokovec – Tatranská Lomnica),Huncovce, Kežmarok, Kežmarok stop, Kežmarok pradiareň Strážky, Spišská Belá upper station (now unused station-turning before Spišská Belá stop), Spišská Belá stop, Bušovce, Podhorany pri Kežmarku, Toporec, Podolínec, Nižné Ružbachy, Forbasy, Stará Ľubovňa, Chmeľnica, Plavnica, Hromoš, Plaveč - crossing with track 188 (Košice – Muszyna).

The railway station Spišská Belá- (Spišská Belá upper railway station), situated on the route from Poprad to Podolínec and Plaveč, is further away from the city center, with the passenger transport stopped on this route for several years already. The stop is also a lay-by (without exit lights). The station has three tracks. Probably there were two traffic and one handling track before. At present, this turning is more or less considered a siding. Spišská Belá upper station itself has the status of freight station. Continuation of track no. 4 siding ACHP Levice as - Spišská Belá plant joins the route in the freight station. Border between the railway track and siding is at km 21.781.

Stará Ľubovňa railway station: Railway track from Poprad to Stará Ľubovňa runs through the town (railway track no. 185).

The Railway Company Slovakia (ZSSK) also plans to modernize the railway transport in the Košice and Prešov regions. This modernization, however, does not apply to any of the tracks which are in the area

Other railway lines are located outside the investigated area:

Railway track 188: Košice – Plaveč – Muszyna is a single-track railway in Slovakia and Poland, which connects Košice and the border town of Muszyna via Prešov and Plaveč. The track is single-track and electrified.

Railway track 194: Prešov – Bardejov is a single-track railway in Slovakia, which connects Prešov and Bardejov. Non-electrified track in the length of 45 km with max. at 60 km/h.

Stop on track - Prešov – crossing with track 188 (Košice – Plaveč) and 193 (Prešov – Humenné),Šarišské Lúky, Kapušany pri Prešove - crossing with track 193 (Prešov – Humenné), Fulianka, Tulčík, Demjata municipality, Raslavice, Vaniškovce, Bartošovce, Hertník, Šiba, Kľušov, Bardejov.

The town is the terminus for the local **railway track from Prešov to** Bardejov (**track no. 194**).

3.2.3 Cycling

There are 38 routes in the district of Rožňava with total length of 387 km.

In the surrounding area of Dobšiná there is a cycling route 2712 with a total length of 13.8 km, which runs through the following locations: Dobšiná – Tri Ruže – Námestie baníkov – Voniarky – Pod Čižmou – Dobšinská Maša –Palcmanská Maša

Cycling-tourist route Dobšiná (Depovo) – Danková – Čuntava – Pred Čuntavou (reg. no. 8729, color: blue, average gradient 5.2%) with a total length of 13.6 km is suitable for more demanding cycling tourism and for mountain biking (MTB).

https://web.vucke.sk/sk/kompetencie/cestovny-ruch/aktuality/koncepcia-budovania-dialkovej-siete-cyklistickych-tras-kosickom-kraji.html

Belianska cycle route

The Belianska cycling route is currently built and operated in the section between Spišská Belá and Tatranská Kotlina in the length of 9 kilometers, two-way with an asphalt surface width of 3.00 m. This section of the cycling route was built as part of the project **"Belianske Tatry - better together",** which was implemented by the City of Spišská Belá in cooperation with Polish gmina Bukowina Tatrańszka as part of Poland - Slovakia Cross-border Cooperation Program 2007-2013. Cycling route was commissioned on May 1, 2011.
This cycling route is designed in the direction to the state border with Poland (passing the municipality of Ždiar and through Podspády to the border crossing of Jurgow). In the future, this route should be connected in Tatranská Kotlina with the cycling route in the direction of Tatranská Lomnica (although it is possible to reach Tatranská Lomnica by bicycle on forest roads even today). From Spišská Belá, this cycling route connects through the manor house in Strážky to the town of Kežmarok.

In the district of Stará Ľubovňa, there are 260 km of marked tourist routes, which can take the tourists to Pieniny, Spišská Magura, Čergovské pohorie, Ľubovnianska vrchovina and Levočské vrchy.

Successful project of "Historical-cultural-natural road around Tatras", as part of the implementation of II. phase, which included the construction of a new 3.76 km cycling route linking the town of Stará Ľubovňa (Kaufland, Vendo park) and the municipality of Hniezdne (Kovanecký bridge), will continue in the next phase. Between 2019 and 2020, it will bring 26 km of new cycling routes, including the completion of another approximately 1 km section of the cycling route from Kovanec Bridge to Nestville Park in Hniezdne**.**
However, there will also be a new route EUROVELO 11 running through Stará Ľubovňa, which forms a connection of important European cities across the continent. Of the total length of 203 km across the region of eastern Slovakia, 157 km will be built in the Prešov Region.

There is no cycling route connection between the towns of Stará Ľubovňa and Bardejov. Cacling routes can only be found around Bardejov, where they also serve mostly recreational purposes.

Cycling route „ On the crossroads of cultures“ (Na križovatke kultúr) **-** Bardejov, nám. SNP, Sport Hall Mier- destination station border crossing with Poland**.** In the length of 24.9 km and connects the Polish cycling route "On the crossroads of cultures" (Na styku kultur) Ozenna Jasno . Total route length Bardejov Jasno is 77.0 km.

Cycling route Bardejov – Kurovské sedlo / st. border / - total length 59.4 km

Makovica cycling route - total length of 52.5 km and goes through the following municipalities**:** Bardejov, Dlhá Lúka, Regetovka, Becherov, Ondavka, Nižná Polianka, Jedlinka, Dlhá Lúka, Bardejovské Kúpele and back to Bardejov.

Pilgrim cycling route
Total length of the route is 65 km and it runs from Bardejov and further to the municipalities of Tarnov, Gaboltov, Cigeľka, Frička, Lukov and back to Bardejov.
Busovsko - Magurská cycling route
Total length of the route is 47.5 km and runs along two highest hills around Bardejov, i.e. Stebnická Magura and Busov. Goes from Bardejov and via Bardejovské Kúpele, Zlaté, Nižný Tvarožec, Vyšný Tvarožec, Cigelka, Frička, Gaboltov, Tarnov and back to Bardejov.
Čergov cycling route
Total length of the route is 35.5km and runs from Bardejov via Kružľov, Krivé, Richvald and Hervartov back to Bardejov.
Raslavice cycling route

Total length of the route of 63.5 km. Goes through Bardejov, Kobyly, Tročany, Raslavice, Abrahámovce, Marhaň, Porúbka, Kučín, Kožany, Kurima, Dubinné and back to Bardejov.

Ondava cycling route

Total length of the route of 73.5 km. Goes **through** Dlhá Lúka, Regetovka, Becherov, Ondavka, Nižná Polianka, Vyšný Mirošov, Nižný Mirošov, Roztoky, Dubová, Šarišské Čierne, Smilno, Dlhá Lúka and back to Bardejov**.**

Border cycling route

Total length of the route is 70.5 km, but you can also go via Poland which extends the length of the total route. The route runs from Bardejov via Dlhá Lúka, Stebník, Kurov, Livov, Krivé, Mihaľov and back to Bardejov.

Spa cycling route from Bardejovské Kúpele to Krynica Total length of the route is 70 km. From Bardejovské kúpeľe we go first to Bardejov towards Stará Ľubovňa along the road I/77 and after the village of Tarnov towards Kurov and after about 1.5 km we turn towards Poland. In Poland, we go through the municipalities of Muszynka and Tylicz to Krynica. This is also called Krynica Zdrój or Krynica Górska.

Carpathian cycling route from Bardejov to Prešov

Upper Zemplín cycling route from Bardejov to Medzilaborce

Šariš cycling route from Bardejov to Sabinov- total length of route is 35.0 km

Cycling route along Topľa with alength of 54 km.

Most of the routes serve cycling and the routes are placed outside of the main road corridor. These routes make use of the way through the country, which makes it possible to get to know it. Routes between different municipalities are not prioritized for regular trips. Year-round use of cycling routes in the area is not even possible, due to harsh weather conditions during the winter months. If such routes were to be implemented, they would have to be designed as separately routed outside the traffic area of vehicle traffic and maintained in winter, just like all the other roads.

Cycling routes within larger towns, which could be used for trips within the town territory, or shorter trips to the surroundings (Rožňava, Poprad, Kežmarok, Stará Ľubovňa, Bardejov) would be of greater importance.

4 Zero variant

Zero state represents the existing road network, burdened with outlook traffic load. This zero state is processed primarily as a comparative state for subsequent economic analysis. Transport investments, which will be realized by 2025, are also included in the zero state. If the individual designed constructions were not to be implemented, the transport would have to use the existing road network. However, other planned investments, which should be taken into account, would be implemented under zero state.
The planned border crossing point Mníšek nad Popradom was included as a full border crossing point in the zero state. The transfer of freight transport to that border crossing point (in line with the December 2018 meeting) was foreseen for the year of 2035.

In the case of zero state, transport would continue to use the existing network - in this case, roads included in the transport model. The road network will only be able to carry the outlook traffic intensity up to a certain period. This period will occur when its capacity is reached, or its most critical section is overloaded.

Road network in question is located in the area of two regions.

In the west-east direction, the main road network includes the D1 highway Poprad - Prešov and parallel road I/18

In the north-south direction the D1 motorway and the I/18 road are intersected by roads which are part of the feasibility study:

- road I/66 from direction of Brezno, Telgárt, continuing to Poprad, Kežmarok and Tatranská Javorina
- road I/67 from Rožňava to Poprad

Both roads provide connection of the southern route - E58, Lučenec - Košice and the northern route, motorway D1 (I/18)

In the north-east direction, the I/77 road (including the I/68 corridor traffic section) towards Bardejov and Dlhá Lúka disconnects from the I/66 road in Spišská Belá.
From the I/77 road in the north direction, there are routes that, in addition to serving the territory, also establish connections with Poland:

- II/542 road Spišská Belá – Lysá nad Dunajcom
- II/543 road Stará Ľubovňa - Lysá nad Dunajcom
- I/68 road Stará Ľubovňa - Mníšek nad Popradom
- I/77A road Čirč – Ruská Voľa
- III/3483 road Kurov – Muszynka

The outlook intensities for the zero state are specified in chapter 6.4.1 of this report.

The results of the capacity assessment are presented in chapter 6.5.1 of this report. Only sections that are unsatisfactory in terms of the quality of transport, whether in the urban area or the rural area, are listed here.

Table 1 : Critical sections of state zero - rural area

Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/66	U7	III/3093 - ZO Veľká Lomnica	E	E	F	F

Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/66		KO V.Lominca - ZO Huncovce	D	D	E	E
I/66		ZO Huncovce - III/3094	D	D	E	E
I/66		III/3094 - III/3095	C	C	D	D
I/66		III/3095 - KO Huncovce	D	D	D	E
I/66	U8	KO Huncovce - ZO Kežmarok	D	D	D	E
I/66		KO Kežmarok - OK Pradiareň	C	C	C	D
I/66	U12	OK Pradiareň - ZO Strážky	C	C	C	C
I/66		ZO Strážky - KO Strážky	C	C	D	D
I/66		KO Strážky ZO Spišská Belá	C	C	D	D

Table 2: Critical sections of state zero - built-up area

Municipality	Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
Veľká Lomnica	I/66	U7	Popradská st. Km 96.0, before crossing with II/540	F	F	F	F
Kežmarok	I/66		Huncovská st., before crossing with Tatranskou	E	F	F	F
	I/66		Toporcerova, km 102	F	F	F	F
	I/66		Michalská, before crossing III/3098	F	F	F	F
Spišská Belá	I/66	U8	I/66 SNP,ZO - cross.I/66	C	D	D	E
Bardejov	I/77	U12	I/77 SNPI/68 - III/3103	D	D	E	E
	I/77		Slovenská I/77 Dlhý rad - Kúpeľná	C	D	D	E
	I/77		Slovenská I/77 Kúpeľná - Pod Vinbargom	C	D	D	E
	I/77		Duklianska I/77 Pod Vinbargom - Ľ.Štúra	C	C	C	D
	I/77		Duklianska I/77 Ľ.Štúra-OK 3533	E	F	F	F
	I/77		Duklianska I/77 OK 3533 - turn B.Kúpele	C	C	D	D

5 Proposed variants

5.1 Variant 1 - reconstruction / modernization of the existing state

5.1.1 Description of variants

Variant V1 (reconstruction / modernization of the existing state) was proposed in these 22 sections

Section number	Section
1	I/67 Rožňava - Betliar
2	I/67 Betliar - Vlachovo
3	I/67 Vlachovo - region border PSK-BBSK
4	I/66 region border PSK-BBSK – Vernár
5	I/66 Vernár - Hranovnica
6	I/66 Hranovnica - Poprad
7	I/66 Poprad - Huncovce
8	I/66 Huncovce - Kežmarok
9	I/66 a I/77 križovatka - Ždiar
10	I/66 Ždiar
11	I/66 Ždiar - State border SR/PL
12	I/66 a I/77 Kežmarok – Spišská Belá
13	I/77 Spišská Belá - Podolínec
14	I/77 Podolínec
15	I/77 Podolínec - Hniezdne
16	I/77 Hniezdne – Stará Ľubovňa
17	I/77 Ľubotín - Lenartov
18	I/77 Lenartov - Tarnov
19	I/77 Tarnov - Mokroluh
20	I/77 Mokroluh
21	I/77 Bardejov – Bardejovské Kúpele
22	I/77 Bardejovské Kúpele - Dlhá Lúka

Section no. 1 I/67 Rožňava – Betliar km 15.136 – km 19.053 of the road I/67

The reconstruction of the section in question consists of extending the existing road to category C 11.5, improving the directional line and adjusting the elevation of the route. These proposed modifications will require the reconstruction of the bridge object at km 2.350 in the total length of 50 m. At the same time, the proposed reconstruction will require adjustment of the exits and existing connections of utility roads and field roads in the affected municipalities. The total length of modification is 3.917 km.

Section no. 2 I/67 Betliar - Vlachovo km 19.08 – km 36.963 of the road I/67

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. In the municipalities of Gočovo, Vlachovo, if the area allows for such construction, a left side pavement for pedestrians will be built along the existing road. In Henckovce and Nižná Slaná municipalities a right side pavement will be built. As part of the change of unsatisfactory directional objects, 3 supporting walls are proposed with a total length of 425 m and construction of a new level crossing in the village of Henckovce.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 12 bridge structures with a total length of 106m. The total length of modification is 17.886 km, of which 2916 m is newly constructed road.

Section no.3 I/67 Vlachovo – region border PSK-BBSK km 36.963 of the road I/67 – km 167.83 of the road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 13 pcs of retaining walls with a total length of 2463 m, 3 pcs of breast walls with a total length of 415 m and the construction of 3 bridge structures with a total length of 470 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. In the section of the road that passes through municipalities, the change in the width arrangement is not considered. The proposed modifications will require the reconstruction of 6 bridge structures with a total length of 68m. The total length of modification is 23.793 km, of which 11099 m is newly constructed road.

Section no.4 I/66 region border PSK – BBSK - Vernár km 167.83 – km 175.872 of the road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 7 pcs of retaining walls with a total length of 1677 m, 2 pcs of breast walls with a total length of 695 m and the construction of 2 bridge structures with a total length of 340 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 3 bridge structures with a total length of 19m. The total length of modification is 7.533 km, of which 5331 m is newly constructed road.

Section no.5 I/66 Vernár – Hranovnica km 175.872 – 182.313 of the road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 1 pcs of retaining walls with a total length of 140 m, 7 pcs of breast walls with a total length of 1340 m and the construction of 1 bridge structure with a total length of 50 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 2 bridge structures with a total length of 22m. The total length of modification is 6.305 km, of which 4385 m is newly constructed road.

Section no.6 I/66 Hranovnica – Poprad km 182.313 – km 193.06 of the road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 4 pcs of retaining walls with a total length of 550 m, 1 pcs of breast wall with a total length of 100 m and the construction of 1 bridge structure with a total length of 240 m and construction of a new level crossing with road III / 3069 in the village Hranovnica.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads and adjusting the intersection with road III/3075 to a light controlled intersection. The proposed modifications will require the reconstruction of 2 bridge structures with a total length of 26m. The total length of modification is 10.488 km, of which 2939 m is newly constructed road.

Section no.7 I/66 Poprad – Huncovce km 199.542 – 204.678 of the road I/66

Reconstruction of the existing section of extension of existing road to category C 9.5 and reconstruction of damaged road sections and road milling.

Part of the reconstruction also includes the modification of existing exits and existing connections of purpose-built roads and a change of traffic direction at the intersection with road II/540, where it is proposed to turn road II/540 into a one-way road (Poprad-Tatranská Lomnica direction) and also change the Jilemnického street to a one-way road (Tatranská Lomnica - Poprad direction). At the same time, the necessary turn and merge lanes would be added. The proposed modifications in the whole section will require the reconstruction of 4 bridge structures with a total length of 85m. The total length of modification is 5.136 km.

Section no.8 I/66 Huncovce – Kežmarok km 204.678 – 210.16 of the road I/66

Reconstruction of the existing section of extension of existing road to category C 9.5 and reconstruction of damaged road sections and road milling.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads and adjusting the existing level intersection with road III/3098 in the town of Kežmarok. The proposed modifications will require the reconstruction of 4 bridge structures with a total length of 70m. The total length of modification is 5.682 km.

Section no.9 /66 a I/77 križovatka - Ždiar km 214,47 – 229,584 of the road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 3 pcs of retaining walls with a total length of 680 m, 2 pcs of breast walls with a total length of 215 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 4 bridge structures with a total length of 28m. The total length of modification is 15.049 km, of which 2813 m is newly constructed road.

Section no.10 I/66 Ždiar km 229.854 – km 235.650 of the road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and

reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 3 pcs of retaining walls with a total length of 425 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 4 bridge structures with a total length of 22m. The total length of modification is 6.049 km, of which 482 m is newly constructed road.

Section no.11 I/66 Ždiar – state border SR/PL km 235.65 – km 240.731 road I/66

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections. As part of the change of unsatisfactory directional objects, the proposal includes 2 pcs of retaining walls with a total length of 335 m, 1 pcs of breast walls with a total length of 250 m and the construction of 2 bridge structure with a total length of 140 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 3 bridge structures with a total length of 42m. The total length of modification is 9.387 km, of which 4565 m is newly constructed road.

Section no.12 /66 a I/77 Kežmarok – Spišská Belá km 210.16 of the road I/66 – km 1.672 of the road I/77

Reconstruction of the existing section of extension of existing road to category C 9.5 and reconstruction of damaged road sections and road milling.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads in the town of Spišská Belá. The proposed modifications will require the reconstruction of 3 bridge structures with a total length of 23m. The total length of modification is 4.362 km on the I/66 road and 1.667 on the I/77 road of which 539 m is newly constructed road.

Section no.13 I/77 Spišská Belá – Podolínec km 1.672 – km 8.489 road I/77

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 6 bridge structures with a total length of 68m. The total length of modification is 6.805 km, of which 1279 m is newly constructed road.

Section no.14 I/77 Podolínec km 8.489 – km 11.675 of the road I/77

Reconstruction of the existing section of extension of existing road to category C 9.5 and reconstruction of damaged road sections and road milling.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads in the municipality of Bušovce. The proposed modifications will require the reconstruction of 2 bridge structures with a total length of 68m and the construction of a new protected railroad crossing. The total length of modification is 3.180 km, of which 32 m is newly constructed road.

Section no.15 I/77 Podolínec – Hniezdne km 11.675 – km 23.390 of the road I/77

Reconstruction of the existing section of extension of existing road to category C 9.5 and reconstruction of damaged road sections and road milling.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads in the town of Podolínec. The proposed modifications will require the reconstruction of 2 bridge structures with a total length of 17m. The total length of modification is 11.729 km, of which 5826 m is newly constructed road.

Section no.16 I/77 Hniezdne – Stará Ľubovňa km 23.390 – km 25.60 of the road I/77

Reconstruction of the existing section of extension of existing road to category C 9.5 and reconstruction of damaged road sections and road milling.

The proposed modifications will require the reconstruction of a bridge structure with a total length of 17m. The total length of modification is 2.208 without any newly constructed road.

Section no.17 I/77 Ľubotín – Lenartov km 25.600 – km 39.80 of the road I/77

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections and milling of existing road in municipalities. As part of the change of unsatisfactory directional objects, the proposal includes 5 pcs of retaining walls with a total length of 1010 m, 6 pcs of breast walls with a total length of 1995 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 8 bridge structures with a total length of 62m. The total length of modification is 13.164 km, of which 5364 m is newly constructed road.

Section no.18 I/77 Lenartov – Tarnov km 39.80 – km 51.29 of the road I/77

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections and milling of existing road in municipalities. As part of the change of unsatisfactory directional objects, the proposal includes a breast wall with a total length of 350 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 7 bridge structures with a total length of 106m. The total length of modification is 11.442 km, of which 2356 m is newly constructed road.

Section no.19 I/77 Tarnov – Mokroluh km 51.290 – km 55.482 of the road I/77

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections and milling of existing road in municipalities.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 3 bridge structures with a total length of 58m. The total length of modification is 4.191 km without any newly constructed road.

Section no.20 I/77 Mokroluh km 55.482 – km 57.718 of the road I/77

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 9.5 and reconstruction of damaged road sections and milling of existing road in municipalities.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 2 bridge structures with a total length of 20m. The total length of modification is 2.236 km without any newly constructed road.

Section no.21 I/77 Bardejov – Bardejovské Kúpele km 60.640 – km 63.793 of the road I/77

Reconstruction of the section in question consists of extending the existing road in the built-up area to MZ 23.25, increasing the capacity of intersections and improving and adjusting unsuitable directional curves and adjusting the height line of the existing road to category C 9.5, as well as construction and reconstruction of local roads in

the town. As part of the change of unsatisfactory directional objects, the proposal includes 2 pcs of retaining walls with a total length of 575 m.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of 2 bridge structures with a total length of 79m. The total length of modification is 3.370 km, of which 1317 m is newly constructed road.

Section no.22 I/77 Bardejovské Kúpele – Dlhá Lúka km 63.793 – km 66.400 of the road I/77

Reconstruction of this given section consists of improvements and modifications of unsuitable directional curves and modifications of the elevation of the route, extension of the existing road to category C 11.5 and reconstruction of damaged road sections.

The reconstruction also includes the modification of existing exits and existing connections of purpose-built roads. The proposed modifications will require the reconstruction of a bridge structure with a total length of 3m. The total length of modification is 2.614 km without any newly constructed road.

5.1.2 Table of sections of Variant 1

		Variant 1																					
Section		U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13	U14	U15	U16	U17	U18	U19	U20	U21	U22
Length of the route (km)		3.917		23.793	7.533	6.305	10.484	5.136	5.575	15.049	6.049	9.387	6.029	6.805	3.180	11.729	2.208	13.164	5.500	4.191	2.236	3.370	2.614
Road information system	km	3.917	17.886.	23.793	7.533	6.305	10.484	5.136	5.575	15.049	6.049	9.387	6.029	6.805	3.180	11.729	2.208	13.164	5.500	4.191	2.236	3.370	2.614
Tunnel technological equipment	km			1.520												0.270							
Railway crossing	pcs		1.000						1.000				1.000		1.000								
and other, e.g. Intersection lighting and the like	pcs	3.000	17.000				9.000	7.000	11.000	10.000	5.000	1.000	10.000	1.000	14.000	3.000	1.000	2.000	3.000	4.000	5.000	11.000	2.000
Demolition of buildings, bridges, masts, concretes, stands, disposal of old roads, etc.	m^3		2 916	11 100	5 331	4 385	2 939			2 813	482	4 566	540	1 279	32	5 826		5 364				1 318	
Milling of roads	m^2	40 499	156 133	94 347	15 105	15 974	61 166	42 831	46 670	101 948	47 118	40 391	46 380	46 346	26 647	49 521	18 543	65 616	46 233	35 097	18 828	26 546	22 194
Remediation - temporary land takes PPF and LPF, old troughs, etc.	m^2																						
Vegetation modification - roads, crossroads, other objects	m^2																						
Road: area in m2	m^2	41 714	192 359	194 356	62 234	54 845	88 734	44 116	48 070	129 637	52 752	81 575	52 496	58 934	27 724	102 013	19 099	114 550	47 620	36 150	19 392	46 344	22 859
total embankment	m^3		75 230	581 230	191 310	57 385	93 690			279 405	15 341	241 765	460	27 410		196 168		64 460				200	
Total excavation	km		20 590	519 640	200 015	181 360	85 800			137 530	6 300	295 870	4 490	5 700		112 690		325 760				1 940	
special foundation (exchange of subbase)	m^2	41 714	192 359	194 356	62 234	54 845	88 734	44 116	48 070	129 637	52 752	81 575	52 496	58 934	27 724	102 013	19 099	114 550	47 620	36 150	19 392	46 344	22 859
shoulder - soil	m^3	1 717	8 534	11 028	3 948	2 872	4 699	2 271	2 446	6 639	2 703	4 450	2 696	3 016	1 417	5 637	990	5 909	2 439	1 849	991	1 478	1 162
shoulder - gravel	m^3	555	3 021	4 053	1 610	964	1 599	746	791	2 166	883	1 567	883	983	461	2 014	328	1 946	796	602	322	498	375
Crash barriers, length in both directions	m	200	7 080	12 600	8 200	1 160	2 400	540	300	1 240	520	3 500	580	540	240	5 100	300	1 520	460	320	160	640	130
Interchange	pcs																						
Intersections																							
- four-way intersection	pcs							1															
- staggered junction	pcs																						
- three-way intersection	pcs				1			1	1													1	
- roundabout	pcs						1															2	
Bridges, area m2	m^2	702	1 251	19 348	4 530	432	3 798	1 211	1 232	2 654	365	902	435	868	190	930	298	1 035	699	745	280	2 975	41
Breast walls	m^2			8 802	5 996	9 546	682			1 374		2 563				1 916		13 928				3 882	
Retaining walls	m^2		2 150	14 396	11 633	1 039	1 892			2 352	2 678	3 015				6 962		6 513					
Noise barriers	m^2																						
Tunnels km	km			2																			
Sewerage of roads and intersections	m																						
Retention tanks	pcs		4	1																			
Oil separators	pcs							1															
Field, purpose, access roads and detours etc. (estimated 7% area)	m^2	2 920	13 465	13 605	4 356	3 839	6 211	3 088	3 365	9 075	3 693	5 710	3 675	4 125	1 941	7 141	1 337	8 019	3 333	2 530	1 357	3 244	1 600

E. Summary in English language

		Variant 1																					
Reconstruction and restoration of road surfaces after construction (estimated 5% of the area)	m²	2 086	9 618	9 718	3 112	2 742	4 437	2 206	2 403	6 482	2 638	4 079	2 625	2 947	1 386	5 101	955	5 728	2 381	1 807	970	2 317	1 143
Modification of watercourses	m		250	600						250	250												
VHV	m		1 300	800											500								
HV	m		1 750	1 670		130	250							500	250	120		400	600			1 000	1 000
LV	km																						
Long-distance telecommunications networks and lines	km																						
Local telecommunications distribution	km																						
Long-distance gas distribution systems:																							
VHP	km																						
HP	km																						
MP	km																						
Local gas pipelines (LP)	km																						
Other objects																							
Construction site equipment	pcs	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Land lease - Temporary land take up to 1 year	m²																						
Land lease - Temporary land take	ha		0.032	0.084	0.035	0.031	0.031			0.004	0.006	0.054				0.048		0.071				0.008	
Purchase of lands - Permanent land take (total)	ha		1.050	2.805	1.173	1.020	1.020			0.128	0.213	1.785				1.615		2.380				0.280	
of this the TTP (permanent grassland)	ha			0.421	0.117	0.306	0.153					0.089				0.614		0.952					
of this the LPF (Forest Soil Fund)	ha			0.000	0.059	0.102	0.051					0.446				0.032		1.309					
of this other and built-up areas	ha		1.050	2.384	0.997	0.612	0.816			0.128	0.213	1.250				0.969		0.119				0.280	
Payments from LPF (Forest Soil Fund)	m²																						
Social value for logged wood	pcs				587	1020	510					4463				323		13090					
Purchase of buildings and objects intended for disposal	m²																						

5.2 Variant 2 – bypasses of municipalities

5.2.1 Description of variants

Variant V2 (bypasses of municipalities) was proposed in these 13 sections

Section number	Section
2	I/67 Betliar - Vlachovo
3	I/67 Vlachovo - region border PSK-BBSK
4	I/66 region border PSK-BBSK – Vernár
6	I/66 Hranovnica - Poprad
7	I/66 Poprad - Huncovce
8	I/66 Huncovce - Kežmarok
12	I/66 a I/77 Kežmarok – Spišská Belá
14	I/77 Podolínec
15	I/77 Podolínec - Hniezdne
18	I/77 Lenartov - Tarnov
19	I/77 Tarnov - Mokroluh
20	I/77 Mokroluh
22	I/77 Bardejovské Kúpele - Dlhá Lúka

Section no.2 I/67 Betliar - Vlachovo km 0.000 – km 17.409

Total length of the section is 17.409 km. Section start (SS) is at km 19.053 of the road I/67 before the municipality of Betliar. The route turns to the left from the existing road and bypasses the municipality of Betliar from the left. At km 1.100 it intersects the existing railway track no. 161, continues on the left hand side of the track, bypassing the municipality of Gemerská Poloma from the left. In the cadastral area of the municipality it crosses the Slaná river several times to get into the corridor between the railway track and the river Slana from km 3.500 up to km 5.5 where it crosses the railway track and the river to reach the right side of the railway track and continues along the track. From the right side it bypasses the municipality of Henckovce, at km 6.5 it crosses the road I/67 and continues to the right of the railway track. At km 8.5 it crosses the river Slaná so that the route of the variant runs on the right side of the river valley. On the left side it bypasses the municipalities of Nižná Slaná and Nižnoslanské Bane. At km 10.600 it crosses the railway track and later also the river Slaná to reach the left side of the valley. At km 11.25 it crosses the existing road I/67 before the municipality of Gočovo. On the left side of the valley it bypasses the municipality of Gočovo and municipality of Vlachovo. At km 13.600 it crosses the railway track and at km 13.8 the river Slaná so as to connect to at the end of the section to the existing road I/67 at km 14.5. From there it follows the same route as the existing road and variant 1. Section end is at km 36.98 of the road I/67 or 17.886 of variant 1.

As part of the route, there are 6 level crossings, 10 bridge structures with a total length of 1162 m, 1 breast wall with a total length of 1500 m, 9 retaining walls with a total length of 2846 m.

Section no.3 I/67 Vlachovo – region border PSK-BBSK km 36.98 of the road I/67 – km 168.78 of the road I/66

Total length of the section is 17.785 km. Section start (SS) is at km 36.98 of the road I/67 at a crossing with road III/3033 before the municipality of Dobšiná. At the section start the route crosses the Slaná River and the Dobšinský Stream, bypassing the existing water reservoir from the left as well as the town of Dobšiná, continuing on the left side of the Dobšinský Stream valley in the direction of Vyšný Hámor. Past the municipality of Vyšný Hámor the route continues in the place of the existing forest road in the floodplain of the Dobšinský stream up to Danková lazy, where it enters the Ondrejisko tunnel at km 12.5. The Ondrejisko massif is crossed via tunnels of XX m in length. After that, at km 14.5, it crosses the railway trakc no. 173 to connect at km 15.0 to the existing I/67 road at approximately km 58.376. The route then runs along the corridor of the existing I/67 road to the intersection with the I/66 road.

Two level crossings, 3 bridge structures with a total length of 1030 m, 18 breast walls with a total length of 5910 m, 8 retaining walls with a total length of 1722 m are designed as part of this route. Noise barriers with a total length of 893 m are proposed to reduce noise levels.

Section no. 4 I/66 region border PSK-BBSK – Vernár

Total length of the section is 6.544 km. Section start (SS) is at km 168.78 of the road I/66, where the route variant after crossing the river Hnilec turns left from the existing road at the place of the existing forest road around the mountain of Barbolica above the village of Vernár, where it bypasses the municipality of Vernár from the left side in the location of the existing local road to connect to the existing road I/66 at km 175.88.

Two level crossings, 3 bridge structures with a total length of 750 m, 7 breast walls with a total length of 2250 m, 3 retaining walls with a total length of 770 m are designed as part of this route. Noise barriers with a total length of 126 m are proposed to reduce noise levels.

Section no. 6 I/66 Hranovnica – Poprad

Total length of the section is 11.057 km. Section start (SS) is at km 182.31 of the road I/66 before the municipality of Hranovnica. Subsequently, the route bypasses the municipality from the right side. At km 3.5 it connects again to the existing I/66 road at km 186.26, continues on the I/66 corridor, where it adjusts the direction of the route through the garden area, at the existing quarry site and at the old quarry site in Kvietnica municipality, where it levels the existing serpentines. At km 8.5 it connects to the existing I/66 road (km 190.46) from where the directional line follows the existing I/66 road to the end of the section at the I/18 intersection at km 193.07.
Three level crossings, 5 bridge structures with a total length of 655 m, 7 breast walls with a total length of 1500 m, 3 retaining walls with a total length of 1015 m are designed as part of this route. Noise barriers with a total length of 1968 m are proposed to reduce noise levels.

Section no. 7 I/66 Poprad – Huncovce

Total length of the section is 5.603 km. The section start (SS) is at km 199.542 of the I/66 road at the end of the 4 lane road behind the intersection with the III/3093 road, where the route follows the already constructed section of “I/66 Poprad - Kežmarok, 1st phase”. At the section start, there is an interchange Veľká Lomnica, which allows the interconnection of the relocation of the road I/66 to the existing road network. Subsequently, the route turns right from the I/66 road where it crosses the river Poprad at km 1.0. The route bypasses the eastern side of the municipality of Veľká Lomnica and Huncovce, crossing the road III/3094 via a bridge. At km 5.5, there is an interchange Huncovce, which provides connection to the existing I/67 road at km 204.678 by two three-way intersections in the section between Huncovce and Kežmark.
As part of the route, there are 1 level crossings and one interchange, 6 bridge structures with a total length of 630 m, 1 breast wall with a total length of 80 m, 1 retaining wall with a total length of 280 m.

Section no.8 I/66 Huncovce – Kežmarok Variant A - red

Total length of the section is 5.116 km. Section start (SS) is at the proposed crossing with road I/67 at km 204.678. The route then runs on the left side of the town of Kežmarok. At km 0.35 the route crosses the railway track, at km 1.6 the route crosses the road III/3096. In this place the design includes an interchange Kežmarok West, which is connected via two roundabouts to the road III/3096. Road III/3096 will be reconstructed to a min. category of MZ 8.0/50 up to the intersection with road I/66. From the intersection, the route continues northward as a bypass of the town, crossing the III/3097 and III/3098 roads, and at the end of the section the route approaches the existing I/67 and ends at 5.116 km, with a prospect for its future continuation towards Spišská Belá. At the end of the section there is an incomplete tubular intersection Kežmarok north, which is connected to the existing road I/67 by a roundabout and a feeder with a length of 0.506 km. The route is in accordance with zoning documentation (DÚR) (10/2014) and EIA.
Two elevated intersections and one level roundabout, 8 bridge structures with a total length of 1230 m are designed as part of this route.

Section no.8 I/66 Huncovce – Kežmarok Variant B - blue

Total length of the section is 4.893 km. Section start (SS) is at the proposed crossing with road I/67 at km 204.678. The route then runs on the left side of the town of Kežmarok. Unlike variant A, the route runs more westward of Kežmarok. At km 1.25 the route crosses the road III/3096, then runs behind the premises of Podtatranskej Hydina a.s. Road III/3096 will be reconstructed to a min. category of MZ 8.0/50 up to the intersection with road I/66. It crosses the road III/3097 at 2.21 km and road III/3098 at 4.29 km. Subsequently, it connects with variant A and the route ends at the incomplete tubular intersection Kežmarok north at km 4.893, which is connected to the existing I/67 road by a roundabout and a feeder with a length of 0.506 km.
Two elevated intersections and one level roundabout, 8 bridge structures with a total length of 1320 m are designed as part of this route.

Section no. 12 /66 a I/77 križovatka - Ždiar

Total length of the section is 6.564 km. Section start is at the Kežmarok-north intersection as a continuation of section 8. The route runs north from the existing agricultural cooperative in the area of Pradiareň. At km 2.273 the route crosses the stream of Čierna voda north from the municipally of Strážky. The route then runs around the town of Spišška Belá from the west. At km 4.0 it crosses the road I/66 at intersection Spišská Belá – north. Subsequently, the route turns westwards so that at km 6.564 it connects to the I/77 road at the Spišská Belá - East intersection at km 1.672 I/77. Section 12 also includes the proposed relocation of road II/542 at a length of 0.826 km, which redirects all traffic to the intersection Spišská Belá - north. The existing road II/542 will be closed and used only by local transport.
Two level crossings, 3 bridge structures with a total length of 315 m. Noise barriers with a total length of 160 m are proposed to reduce noise levels.

Section no. 14 I/77 Podolínec

Total length of the section is 3.228 km. Section start is at v km 8.489 of the road I/77 before the town of Podolínec at the intersection Podolínec – west. The route runs from the intersection to the north, then the route leads along the corridor of the railway track no.185, north of the center of Podolínec, and behind the cemetery the route turns towards I/77 and at km 3.228 it connects to the I/77 road at km 11.674 at intersection Podolínec-east.

Two level crossings, 3 bridge structures with a total length of 90 m, 3 breast walls with a total length of 970 m, 6 retaining walls with a total length of 1435 m are designed as part of this route. Noise barriers with a total length of 1744 m are proposed to reduce noise levels.

Section no. 15 I/77 Podolínec – Hniezdne

Total length of the section is 9.865 km. Section start is at km 11.675 of the road I/77 past the town of Podolínec. At the beginning, the route follows the existing I/77 road up to approximately 0.800 km, where the route then continues in the corridor between the existing railways track 185 and the river Poprad, bypassing the municipality of Nižné Ružbachy on the right, then continues in the corridor between the existing railway track 185 and the river Poprad up to km 5.0 where the route enters the tunnel Záhora 270 m long, then crosses the river Poprad and continues along the railway track on the right. The route passes the municipality of Forbasy and Hniezdne from the left side to cross the railway track at km 9.0 and connect to the road I/77 at km 23.41 behind the municipality of Hniezdne via a level intersection Hniezdne.

Two level crossings, 4 bridge structures with a total length of 615 m, 6 breast walls with a total length of 1510 m, 2 retaining walls with a total length of 715 m are designed as part of this route. Noise barriers with a total length of 306 m are proposed to reduce noise levels.

Section no. 18 I/77 Lenartov - Tarnov

Total length of the section is 9.865 km. Section start is at km 39.80 of the road I/77 past the municipality of Lenartov. The route then turns from the I/77 road to the right, bypassing the village of Lenartov. At km 2.7 it crosses the I/77 road at the Malcov - west intersection, where it crosses to the left side of the I/77 road, bypassing the municipality of Malcov from left to cross again the I/77 road at 5.2 km at the Malcov - east intersection to the right side of the I/77 road. After that, the route continues from the left of Gerlachov to cross the I/77 road and the Topľa river at km 9.0, between the municipality of Gerlachov and Kružľov and cross to the right side of the I/77 road. The section end is at km 10.9 behind the Kružlov intersection at km 51.290 on the road I/77.

As part of the route, there are 4 level crossings, 6 bridge structures with a total length of 1032 m, 14 breast walls with a total length of 4805 m, 6 retaining walls with a total length of 2100 m.

Section no.19 I/77 Tarnov – Mokroluh km 51.29 – km 55.48 of the road I/77

Total length of the section is 4.219 km. The section start is at km 51.290 on the road I/77, where the route follows the existing road approx. up to km 0.5 where the route diverts south of the road I/77 and the municipality of Tarnov, continues along the Topľa river on its left bank, bypasses the municipality of Rokytov to join the road I/77 at km 55.482 via the Rokytka intersection at km 4.219.

Two level crossings, 2 bridge structures with a total length of 54 m. Noise barriers with a total length of 188 m are proposed to reduce noise levels.

Section no.20 I/77 Mokroluh km 55.48 – km 58.70 of the road I/77

Total length of the section is 2.572 km. The section start is at km 55.482 on the road I/77, where the route follows the existing road approx. up to km 0.4 where the route diverts south of the road I/77 via the Mokroluh - west intersection, continues along the Topľa river on its left bank, bypasses the municipality of Mokroluh to join the road I/77 at km 57.718 via the Mokroluh - east intersection at km 2.572.

Two level crossings, 1 bridge structure with a total length of 17 m are designed as part of this route. Noise barriers with a total length of 232 m are proposed to reduce noise levels.

Section no.22 I/77 Bardejovské Kúpele – Dlhá Lúka km 63.723 – km 68.09 of the road I/77

Total length of the section is 2.552 km. The section start is at km 63,723 on road I/77 at the designed intersection of Bardejovské kúpeľe with road III/3504. The route continues northwards, bypasses the municipality of Dlhá Lúka from the left to join the road I/77 via the designed intersection Dlhá Lúka. After that, the route follows the existing rod I/77 up to km 66.400.

Two level crossings, 1 bridge overpass with a total length of 1610 m, 1 breast wall with a total length of 525 m, 1 retaining wall with a total length of 262 m are designed as part of this route. Noise barriers with a total length of 786 m are proposed to reduce noise levels.

5.2.2 Balance data

Table 3: Variant balance data

	Embankment (m^3)	Excavation (m^3)	Difference (surplus from embankment) (m^3)
Variant 2	417 210	305 260	111 950
Variant 3	378 420	1 051 072	-672 652
Variant 4	247 620	366 360	-118 740
Variant 6	142 330	362 870	-220 540
Variant 7	457 640	844 450	-386 810
Variant 8A	313 020	220 500	92 520
Variant 8B	395 365	456 502	-61 137
Variant 12	146 520	365 540	-219 020
Variant 14	71 900	80 360	-8460
Variant 15	365 280	399 620	-34 340
Variant 18	409 035	689 760	-280 725
Variant 19	30 645	12 012	18 633
Variant 20	43 050	15 050	28 000
Variant 22	5610	14 440	-8 830

5.2.3 Table of sections of Variant 2

		Variant 2													
Section		U2	U3	U4	U6	U7	U8A	U8B	U12	U14	U15	U18	U19	U20	U22
Length of the route (km)		17.409	17.919	6.544	11.057	5.603	5.116	4.893	6.564	3.228	9.865	10.900	4.218	2.527	2.552
Road information system	km	17.409	17.919	6.544	11.057	5.603	5.116	4.893	6.564	3.228	9.865	10.900	4.218	2.527	2.552
Tunnel technological equipment	km		1.520								0.270				
Railway crossing	pcs														
and other, e.g. Intersection lighting and the like	pcs				6.000							1.000			
Demolition of buildings, bridges, masts, concretes, stands, disposal of old roads, etc.	m^3	7 650	1 700	850	19 244	2 338			4 200	2 916	3 825	6 800	2 550	1 700	1 700
Milling of roads	m^2	26 584	24 390	974	53 277	3 110	1 223	773	1 969	1 067	10 200	841	354	213	555
Remediation - temporary land takes PPF and LPF, old troughs, etc.	m^2														
Vegetation modification - roads, crossroads, other objects	m^2														
Road: Roadway: area in m2	m^2	142 381	147 774	50 152	91 458	106 769	41 985	39 816	67 594	27 464	80 819	86 664	36 444	21 966	8 166
total embankment	m^3	417 210	378 420	247 620	142 330	457 640	313 020	395 365	146 520	71 900	365 280	409 035	30 645	43 050	5 610
Total excavation	km	305 260	1 051 072	366 360	362 870	844 450	220 500	456 502	365 540	80 360	399 620	689 760	12 012	15 050	14 440
special foundation (exchange of subbase)	m2	142 381	147 774	50 152	91 458	106 769	41 985	39 816	67 594	27 464	80 819	86 664	36 444	21 966	8 166
shoulder - soil	m^3	8 026	9 050	3 220	5 870	2 797	2 328	2 220	2 950	1 660	4 900	5 115	1 979	1 429	1 084
shoulder - gravel	m^3	2 929	3 603	1 327	2 466	1 137	1 008	965	1 025	649	1 928	1 956	698	600	656
Crash barriers, length in both directions	m	8 700	12 200	7 000	3 860	5 720	6 200	6 000	2 000	2 800	7 000	7 600	630	2 200	3 200

E. Summary in English language

		Variant 2													
Interchange	pcs					2	2	2							
Intersections															
- four-way intersection	pcs	1	1		1							1			
- staggered junction	pcs	2	1									3			
- three-way intersection	pcs	3	1	2	2				1	2	3	0	2	2	1
- roundabout	pcs								1						
Bridges, area m2	m^2	14 245	13 003	10 195	7 672	13 980	17 421	16 731	4 515	870	7 904	12 458	593	229	24 758
Breast walls m2.	m^2	10 617	44 608	20 775	11 272	306				5 239	9 388	31 761			2 096
Retaining walls m2.	m^2	17 371	12 591	8 308	5 735	1 040				5 712	3 881	16 776			844
Noise barriers m2.	m^2		3 129		6 888						1 071		658	812	2 748
Tunnels km	km		2												
Sewerage of roads and intersections	m		5,200			5 500									
Retention tanks	pcs	4	1												
Oil separators	pcs					1									
Field, purpose, access roads and detours etc. (estimated 7% area)	m2	9 967	10 344	3 511	6 402	7 474	2 939	2 787	4 732	1 923	5 657	6 066	2 551	1 538	572
Reconstruction and restoration of road surfaces after construction (estimated 5% of the area)	m2	7 119	7 389	2 508	4 573	5 338	2 099	1 991	3 380	1 373	4 041	4 333	1 822	1 098	408
Modification of watercourses	m	250	1 565								650	280	180	50	
VHV	m		1 100		650					500					
HV	m	8 100	1 140	570	3 570	1 700	6 850	7 000	700	900	900	2 600	0	200	1 000
LV	km														
Long-distance telecommunications networks and lines	km														
Local telecommunications distribution	km														
Long-distance gas distribution systems:															

		Variant 2													
VHP	km														
HP	km														
MP	km														
Local gas pipelines (LP)	km														
Other objects															
Construction site equipment	pcs	2	1	1	1	1	1	1	1	1	1	2	1	1	1
		0													
Land lease - Temporary land take up to 1 year	m^2														
Land lease - Temporary land take	ha	1.27	0.380	0.542	0.865.	1.335	0.752	0.740	0.632	0.203	0.452	0.998	0.300	0.212	0.124
Purchase of lands - Permanent land take (total)	ha	42.38	12.670	18.080	28.840	44.500	25.050	24.660	21.080	6.780	15.060	33.250	10.010	7.080	4.120
of this the TTP (permanent grassland)	ha	24.61	3.548	4.158	9.229	41.385	24.800	24.413	20.869	5.831	5.723	25.760	7.908	6.726	3.708
of this the LPF (Forest Soil Fund)	ha	9.97	4.561	12.294	3.172	2.670						7.158			
of this other and built-up areas	ha	7.80	4.561	1.627	16.439	0.445	0.251	0.247	0.211	0.949	9.337	0.333	2.102	0.354	0.412
Payments from LPF (Forest Soil Fund)	m^2														
Logging and social value of logged wood	pcs	99 714.00	45612	122944	31724	26700						71578			
Purchase of buildings and objects intended for disposal	m^2														

5.3 Final assessment from the technical perspective

The reason for the preparation of the technical study is to assess the feasibility of the construction and the selection of the most suitable variant in terms of the proposed route through the area of interest with the possibility of technical, functional, transport, economic and environmentally most advantageous solution with required parameters and to verify the need for financial resources, or to propose separately operable sections and a schedule for the construction of individual sections of the transport corridor including the roads I/66, I/67 and I/77.

Risk identification and assessment are carried out for individual variants.

Risk identification is focused primarily on the identification of possible technical aspects of the proposal, the proposal of possible elimination, which should be taken into account in more detailed design of selected variants in the next more detailed stage of the project documentation.

Comprehensive advantage or disadvantage of the individual variants was assessed by means of the Multi-Criterial Analysis, where key criteria of route geometry, complexity of construction, transport impacts, environmental impacts, technical-economic criteria and project risks of individual sub-variants in the given section were compared. (see Chapter 9)

5.3.1 IGHP risks identification

The individual sections of the expressways I/66, I/67 and I/77 have been put into three categories in terms of geological risks:

- rock environment with low geological risk,
- rock environment with medium geological risk,
- rock environment with high geological risk

The criteria for the inclusion of the territory into individual categories of geological risk included the following:

degree of tendency of the rock environment to volume changes: the assessment criterion was the classification of soils for the road body (STN 73 6133), according to which fine-grained soils are predominantly classified as unsuitable for subsoil in terms of their possible volume changes and sandy and gravel soils are classified as conditionally suitable or suitable soils for the subsoil of the roadway. Prone rock environment is also represented by Paleogenic claystones and chalk marlstones, shales, which, due to exogenous factors, significantly change geotechnical properties and at times acquire the character of soils.

- degree of tendency of the rock environment to slope movements: the assessment criterion was the occurrence of sections where we anticipate, due to the nature of the rock environment due to slope-forming factors, the occurrence of slope deformations and also the possibility of landslide formation at deep cut slopes,

- degree of tendency of the rock environment to tectonic failure: the assessment criterion was the anticipated occurrence of predominantly nappe lines, thrust lines and distinct tectonic lines on the basis of archive data,

- degree of tendency of the rock environment to increased water content: the assessment criterion was the level of the groundwater level, the nature of the structure (bridge structures, cuts, where groundwater inflows into the building are expected),

- occurrence of mineral deposits,
- occurrence of existing slope deformations,
- occurrence of karst phenomena,
- quality of rock mass in the tunnel tube objects.

On the basis of the obtained data, purpose-specific engineering-geological maps in scale of 1:10 000 were prepared for individual road sections I/66, I/67, I/77, in which the geological risks are graphically depicted in a traffic-light way. The following territory is specified in the maps:

area with low geological risk is specified:

- in flat sections of floodplains, terrace grades, proluvial, glacifluvial cones where the surface layer consists of gravel sediments with an admixture of organic substances up to 2%, the ground water level is at least 2 - 5 m below the ground ①
- in the object of the cut and the tunnel tube, where we assume good quality of the rock mass ⑮
- area with seismic intensity below 6° MSK-64 ③,

area with medium geological risk is specified

- in sections with occurrence of tectonic (fault) lines ④
- in places where geodynamic phenomena can occur, i.e. areas with tendency to slope deformation and also in the area of projected deep cuts due to extreme precipitation, erosion, or anthropogenic activity ⑤
- on slopes where the surface layer is formed by soils that have tendency to volume changes also at the projected deep cuts, due to extreme precipitation, erosion, or anthropogenic activity ⑥
- the level of groundwater close to very close to the surface, ⑦
- expectation of soils with admixture of organic matter content 2 - 6% ⑧
- in the object of the cut and the tunnel tube, where we satisfactory quality of the rock mass ⑮
- in those sections where we anticipate inflow of groundwater to the buildings and tunnel tube ⑩
- area with intensity 7° MSK-64 ⑪

area with high geological risk is specified

- in places where slope deformations occur, or in close proximity to the assessed object ⑫
- in section where the rock environment is in the zone of thrust line ⑬
- in a place with organic soil ⑭
- in the tunnel tube, where we assume poor quality of the rock mass ⑮
- in sections with karst phenomena ⑯
- in sections with occurrence of erosion ⑰
- in sections with occurrence of travertine ⑱
- in sections with the occurrence of old mining works ⑲

For the next stage of project documentation we recommend the following character of the geological works in compliance with TP 028 for the most suitable variants within the selected sections of the road I/66, I/67, I/77 Rožňava - Bardejovské kúpeľe:

- to carry out WL boreholes in the area of bridge structures at the location of individual pillars and at the point of supports,

presiometric or dilatometric tests will be carried out in the boreholes,

to specify the aggressive effects of groundwater,

- in order to determine the density of gravel soils at boreholes, we propose to carry out field tests - dynamic penetration probes,
- in cut locations make drill holes in the cross sections of the WL boreholes or IG boreholes so that TP is adhered to 028,
- to implement test pit probes in the place of cuts to verify the storage conditions in the place of deep cuts

build monitoring objects to monitor the stability of the slope cuts,

- realize core IG boreholes, static penetration probes according to TP 7/2008 at the embankment site,
- in place of high embankments implement the horizontal inclinometric boreholes,
- to carry out core drilling, geophysical measurements at the site of slope deformations

to the extent that it is possible to assess the stability of the area and to propose remediation of the unstable area

a survey system should be built (INK boreholes, HG boreholes, geodetic

points)

- in the place of individual gantry sections we recommend to verify the engineering-geological and hydrogeological conditions

by WL boreholes and with geophysical measurements; we recommended to implement boreholes as inclinometric and hydrogeological monitoring objects, which will be included in the monitoring system

- to verify the nature of the rock environment in the location of tunnel objects by WL boreholes and by geophysical measurements, as part of the survey, we recommend to implement at least 2 - 3 boreholes as hydrogeological boreholes and implement test pits to verify storage capacity,
- on the basis of the results of engineering geological survey to evaluate the rock environment in terms of its usability.

A detailed analysis of the entry into the rock environment a description of the individual risks for each variant is given in Annex C.3 of the IGHP.

5.3.2 Variant assessment

Section	V0			V1	V2
	Stationing		length	length	length
	from	to	[km]	[km]	[km]
1	15.136	19.053	3.917	3.917	
2	19.053	36.963	17.910	17.886.	**17.407**
3	36.963	61.320	24.357	23.793	**17.785**
4	167.830	175.872	8.042	7.533	**6.544**
5	175.872	182.313	6.441	6.305	**-**
6	182.313	193.060	10.747	10.484	**11.057**
7	199.542	204.678	5.136	5.136	**5.603**
8	204.678	210.160	5.482	5.682	
8A					**5.116 + 0.506**
8B					**4.893 + 0.506**
9	214.470	229.584	15.114	13.768	**-**
10	229.584	235.650	6.066	6.049	**-**
11	235.650	246.495	10.845	9.387	**-**
12	210.160	214.470	*4.310*	*5.635*	**6.564+ 0.826**
	0.000	1.672	*1.672*	*2.940*	
			5.982	**8.575**	
13	1.672	8.489	6.817	6.805	**-**
14	8.489	11.675	3.186	3.180	**3.228**
15	11.675	23.390	11.715	11.729	**9.865**
16	23.390	25.600	2.210	2.208	-
17	25.600	39.800	14.200	13.164	**-**
18	39.800	51.290	11.490	11.442	**10.9**
19	51.290	55.482	4.192	4.191	**4.219**
20	55.482	57.718	2.236	2.236	**2.527**
21	60.640	63.793	3.153	3.370	-

Section	V0			V1	V2
	Stationing		length	length	length
	from	to	[km]	[km]	[km]
22	63.793	66.400	2.607	2.614	**2.552**

Variants 1 were assessed as more advantageous based on the following reasons:

- Variants 1 examine the possibility of reconstruction of the existing state and respect as much as possible the existing development in urban areas of municipalities.
- Variants 1 modify the local critical points on an existing road as unsatisfactory directional and height curves, add additional lanes in climbs, reconstruct unsatisfactory bridges, etc. This is technically less demanding than the construction of proposed bypasses and road relocations.
- Under Variant 1, the reconstructions of existing intersections are proposed as level intersections, which is less technically demanding compared to proposed interchanges in Variant 2.

All proposed variants 1 and 2 in all sections are technically feasible.

Based on the above, Variants 1 are more preferred than Variants 2.

6 Traffic assessment and prognosis

6.1 Transport service

The traffic forecast was prepared for the time horizons provided by the client - years 2025, 2035 and 2045. The design and calibration of the basic routing matrix were based on the results of traffic surveys for 2018.

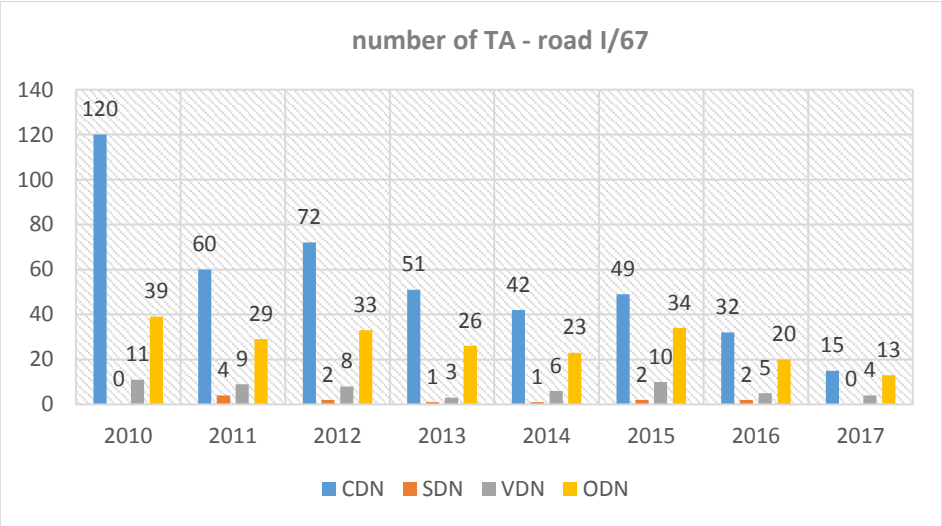
The basis for the processing of the traffic model was data from the national DM of Slovakia, CSD 2015 and surveys carried out in 10/2018 (ASD 16x, Cordon surveys 2x, crossroad surveys 14 x). Based on the results, the current traffic situation on the route was determined.

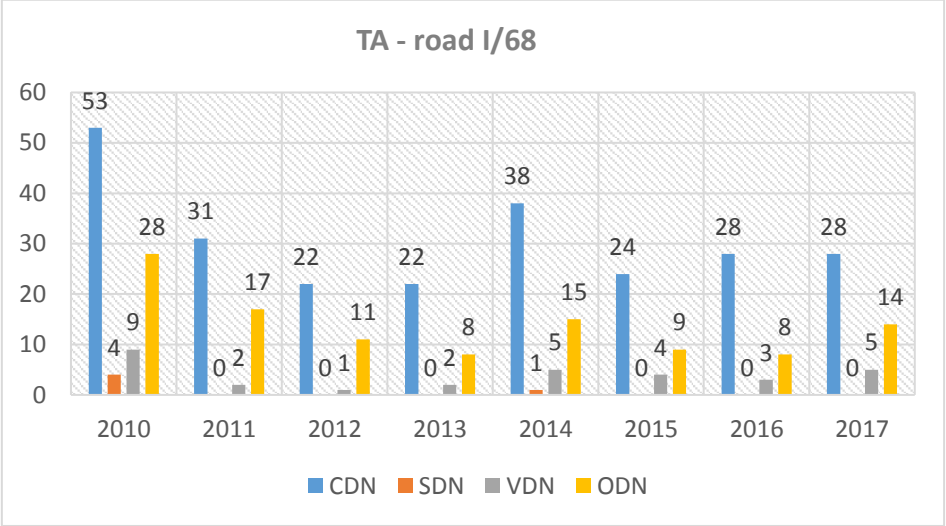
The second step included the traffic forecast - the outlook traffic load.

6.2 Rate of traffic accidents (TA)

Based on the data from SSC, the rate of traffic accidents in 2017 on class I roads reached a level of 0.72 TA/km/year and on the class II road this was 0.40 TA/km/year.
Statistics of TA on individual sections is provided in Annex C.2. Transportation (Source: SSC – BECEP)
Below we only list a summary of traffic accidents for individual roads.

Figure 2




TA - road I/68
60
50
40
30
20
10
0
53
4
9
28
31
0
2
17
22
0
1
11
22
0
2
8
38
1
5
15
24
0
4
9
28
0
3
8
28
0
5
14
2010
2011
2012
2013
2014
2015
2016
2017
CDN
SDN
VDN
ODN

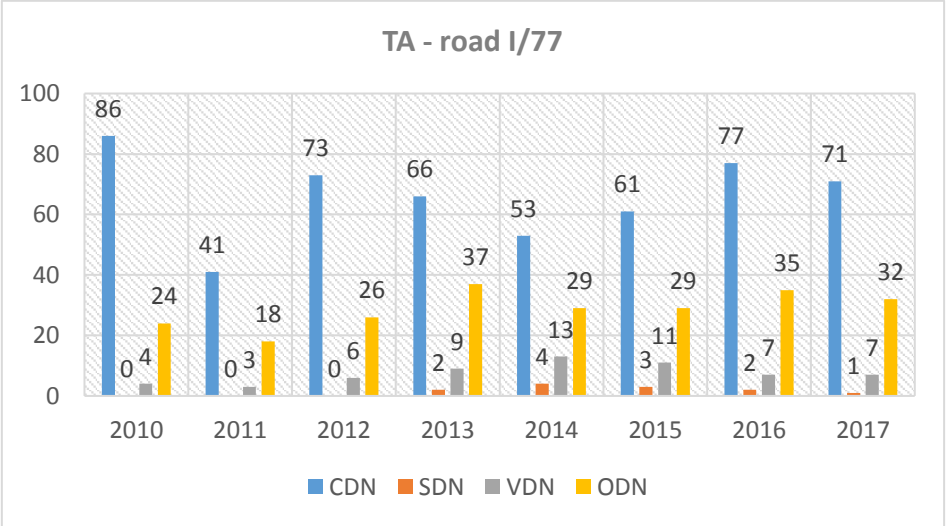
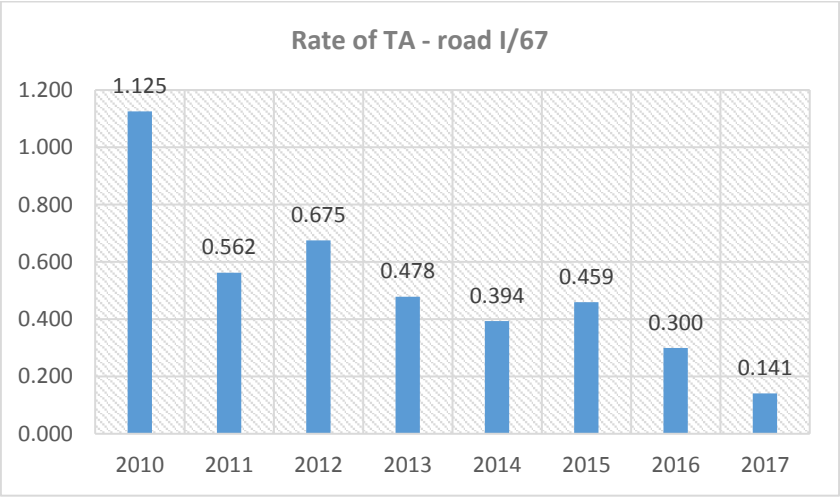
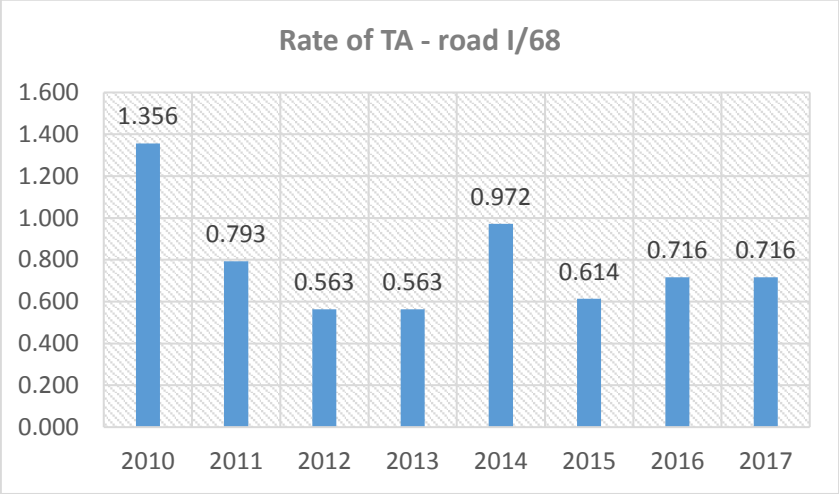
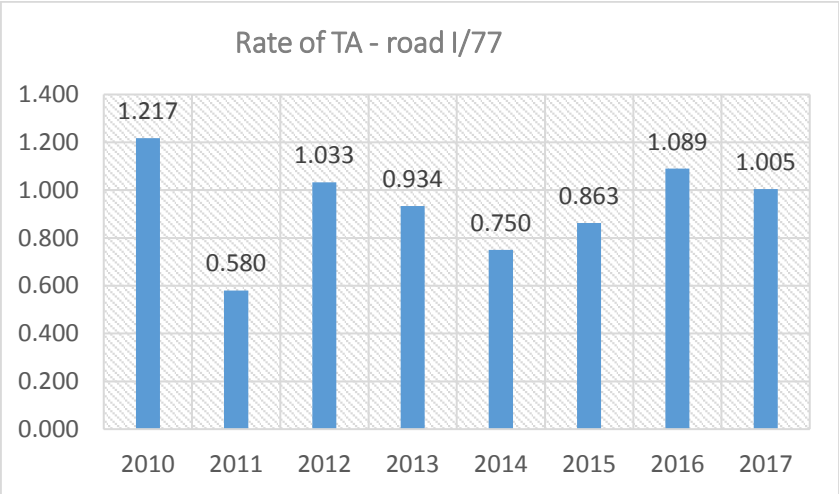

TA - road I/77
100
80
60
40
20
0
86
0
4
24
41
0
3
18
73
0
6
26
66
2
9
37
53
4
13
29
61
3
11
29
77
2
7
35
71
1
7
32
2010
2011
2012
2013
2014
2015
2016
2017
CDN
SDN
VDN
ODN

Figure 3


Rate of TA - road I/67
1.200
1.000
0.800
0.600
0.400
0.200
0.000
1.125
0.562
0.675
0.478
0.394
0.459
0.300
0.141
2010
2011
2012
2013
2014
2015
2016
2017



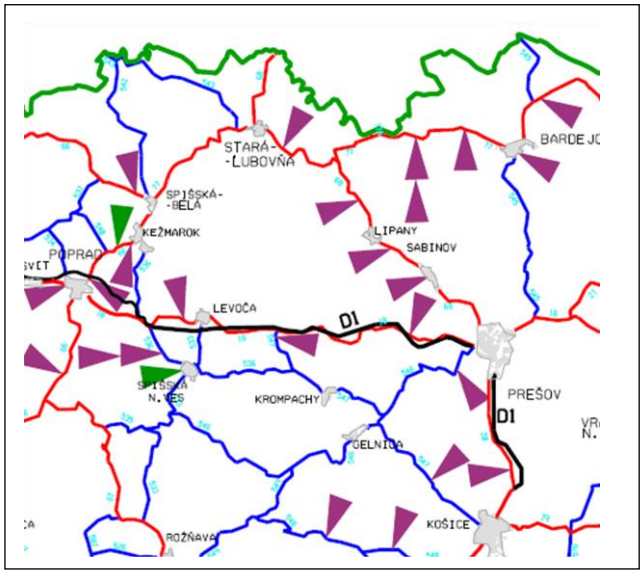


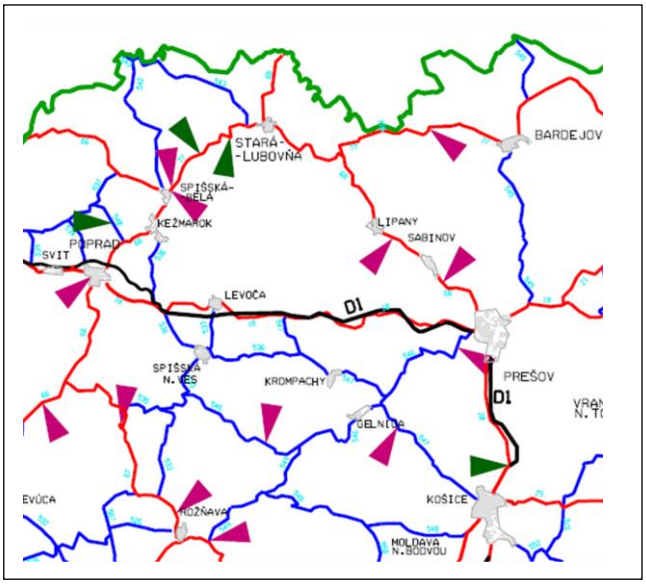
Critical accident sites on affected sections

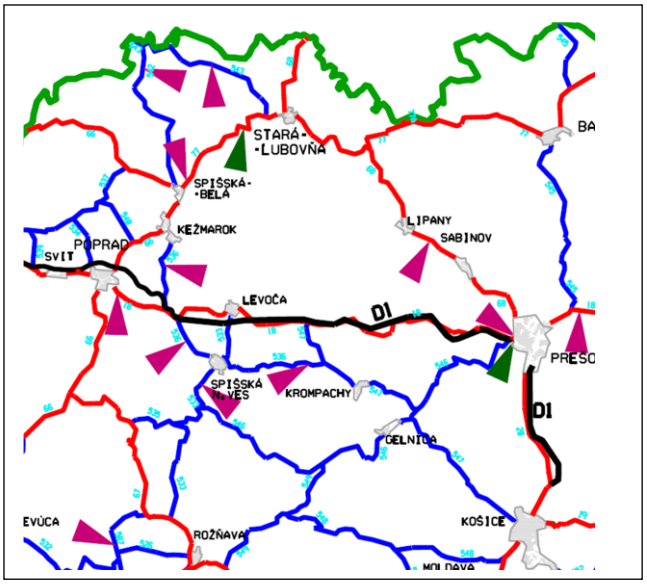
CAS - critical accident site is a location with a length of max. 0.500 km in length with an evidently high number of road accidents. For an accident site to become critical in terms of the number of traffic accidents, the condition must be met that the actual number of traffic accidents is equal to or greater than the calculated critical number of accidents within a calendar year at the site under review.
Recurrent CAS - A recurring critical accident site is considered to be a CAS where a high number of traffic accidents have been consistently occurring over the past 5 years, exceeding a critical mass threshold.

Figure 4 – Localization of CAS on the road network 2015, 2016, 2017

-







2016

More details are specified for 3 CAS from the period of 2015-2017 with the characteristics provided by SSC. Practices recommended by SSC have also been applied in the feasibility study proposals.

6.3 Traffic forecast

The traffic forecast was prepared for the time horizons provided by the client - years 2025, 2035 and 2045. The design and calibration of the basic routing matrix were based on the results of traffic surveys for 2018.

The forecast for the years 2035 and 2045 included the redistribution of traffic to the border crossing Mníšek nad Popradom, where an unlimited passage of freight transport will be possible in the future.

After discussing and approving the methodology of processing the traffic forecast, routing outlook matrices were processed.

Traffic model was processed for 3 traffic states

- **State without implementation - zero state**
- **State with implementation of modification of existing network**
- **State with implementation of proposed new measures apart from the existing network (municipality bypasses)**

6.3.1 State without implementation - zero state

Zero state represents the existing road network, burdened with outlook traffic load. This zero state is processed primarily as a comparative state for subsequent economic analysis. Transport investments, which will be realized by 2025, are also included in the zero state. If the individual designed constructions were not to be implemented, the transport would have to use the existing road network. However, other planned investments, which should be taken into account, would be implemented under zero state.

The planned border crossing point Mníšek nad Popradom was included as a full border crossing point in the zero state. The transfer of freight transport to that border crossing point (in line with the December 2018 meeting) was foreseen for the year of 2035.

In the case of zero state, transport would continue to use the existing network - in this case, roads included in the transport model. The road network will only be able to carry the outlook traffic intensity up to a certain period. This period will occur when its capacity is reached, or its most critical section is overloaded.

Table 4: Outlook traffic intensity - zero state

	Position	2025			2035			2045		
		Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
I/67	KO Rožňava - III/3028	4444	378	4822	4902	422	5324	5343	448	5791
	III/3028 - ZO Betliar	4144	356	4500	4678	398	5076	5160	444	5604
	ZO - KO Betliar	4678	398	5076	5160	444	5604	5624	472	6096
	KO Betliar - ZO Gem.Poloma	5022	420	5442	5522	466	5988	6002	494	6496
	ZO Gemerská Poloma -cross. II/533	5022	420	5442	5522	466	5988	6002	494	6496
	II/533 - KO Gem.Poloma	5022	420	5442	5522	466	5988	6002	494	6496
	KO Gem.Poloma - ZO Henckovce	3376	300	3676	3660	330	3990	3926	342	4268
	ZO - KO Henckovce	3376	300	3676	3660	330	3990	3926	342	4268
	KO Henckovce - II/587	3376	300	3676	3660	330	3990	3926	342	4268
	II/587 - ZO Nižná Slaná	3342	294	3636	3622	322	3944	3884	334	4218
	ZO Nižná Slaná -III/3030	2912	254	3166	3156	278	3434	3388	288	3676
	III/3030-KO Nižná Slaná	2912	254	3166	3156	278	3434	3388	288	3676
	KO N.Slaná - ZO NS.Baňa	3118	376	3494	3358	408	3766	3578	424	4002
	ZO NS Baňa - III/3031	3118	376	3494	3358	408	3766	3578	424	4002
	III/3031 - KO NS Baňa	3118	376	3494	3358	408	3766	3578	424	4002
	KO NS Baňa - ZO Gočovo	3134	362	3496	3374	394	3768	3594	410	4004
	ZO Gočovo - Ko Gočovo	3134	362	3496	3374	394	3768	3594	410	4004
	KO Gočovo - ZO Vlachovo	3040	362	3402	3276	394	3670	3492	410	3902
	ZO- KO Vlachovo	3040	362	3402	3276	394	3670	3492	410	3902
	KO Vlachovo - III/3033	2940	364	3304	3168	396	3564	3376	412	3788
	III/3033 - ZO Dobšiná	3102	404	3506	3332	438	3770	3538	456	3994
	ZO - KO Dobšiná	3102	404	3506	3332	438	3770	3538	456	3994
	KO Dobšiná - II/535	2322	276	2598	2522	300	2822	2712	314	3026
	II/535 - ZO Stratená	1452	226	1678	1590	246	1836	1720	256	1976
	ZO - KO Stratená	1452	226	1678	1590	246	1836	1720	256	1976
	KO Stratená - III/3227	1436	226	1662	1574	246	1820	1704	256	1960
	III/3227 - ZO Dobš.ľ.jaskyňa	1436	226	1662	1574	246	1820	1704	256	1960
	ZO - KO Dobš.ľ.jaskyňa	1436	226	1662	1574	246	1820	1704	256	1960
	KO DĽJ - III/3036	1436	226	1662	1574	246	1820	1704	256	1960
	III/3036 - I/66	1598	244	1842	1748	266	2014	1892	276	2168
I/66	cross. I66/I67 - ZO Vernár	1866	316	2182	2080	348	2428	2296	368	2664

E. Summary in English language

	Position	2025			2035			2045		
		Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
	ZO - KO Vernár	2962	322	3284	3216	356	3572	3452	376	3828
	KO Vernár - ZO Hranovica	2962	322	3284	3216	356	3572	3452	376	3828
	ZO Hranovica - III/3069	2962	322	3284	3216	356	3572	3452	376	3828
	III/3069 - KO Hranovica	3934	408	4342	4287	450	4737	4638	476	5114
	KO Hranovica - ZO Kvetnica	3934	408	4342	4287	450	4737	4638	476	5114
	ZO - KO Kvetnica	3934	408	4342	4287	450	4737	4638	476	5114
	KO Kvetnica - ZO Poprad	3934	408	4342	4287	450	4737	4638	476	5114

	Position	2025			2035			2045		
		Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
I/66	section start - III/3093	18024	2148	20172	19690	2720	22410	21268	3168	24436
	III/3093 end of 4-lanes	18024	2148	20172	19690	2720	22410	21268	3168	24436
	end of 4-lanes - Veľká Lomnica	18024	2148	20172	19690	2720	22410	21268	3168	24436
	Veľká Lomnica - KO V. Lomnica	18024	2148	20172	19690	2720	22410	21268	3168	24436
	KO V.Lominca - ZO Huncovce	14787	1633	16420	16089	2103	18192	17321	2439	19760
	ZO Huncovce - III/3094	14787	1633	16420	16089	2103	18192	17321	2439	19760
	III/3094 - III/3095	14748	1628	16376	14786	2003	16789	15918	2320	18238
	III/3095 - KO Huncovce	13590	1549	15139	14786	2003	16789	15918	2320	18238
	KO Huncovce - ZO Kežmarok	13590	1549	15139	14786	2003	16789	15918	2320	18238
	ZO Kežmarok - KK	13590	1549	15139	14786	2003	16789	15918	2320	18238
	Kežmarok- II/536 (road to Ľubica)	13590	1549	15139	14786	2003	16789	15918	2320	18238
	II/536 - OK next to LIDL	18643	1805	20448	19988	2237	22225	21188	2508	23696
	OK next toLIDL - III/3097(road on the way to Stráne pod Tatrami)	18052	1807	19859	19328	2233	21561	20461	2494	22955
	Kežmarok III/3097- Tehelňa	16691	1777	18468	17886	2197	20083	18978	2451	21429
	Tehelňa - III/3098 (road on the way to Rakúsy and Mlynčeky)	13797	1211	15008	14745	1551	16296	15576	1719	17295
	III/3098 - OK Strážky	10667	1103	11770	11423	1426	12849	12090	1571	13661
	OK Strážky - Strážky	10667	1103	11770	11423	1426	12849	12090	1571	13661
	Strážky - Spišská Belá (cross. with I/66)	10431	1045	11476	11181	1362	12543	11846	1503	13349
I/77	Spišská Belá built-up area (up to cross. with III/3103)	11738	862	12600	12532	1150	13682	13224	1268	14492
	Spišská Belá (III/3103) - Bušovce	7082	588	7670	7614	838	8452	8078	908	8986
	Bušovce -(III/3105 to Slov.Nova Ves	7082	588	7670	7614	838	8452	8078	908	8986
	III/3105 to Slov.Nova Ves - III/3106 Podhorany	7082	588	7670	7614	838	8452	8078	908	8986

E. Summary in English language

	Position	2025			2035			2045		
		Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
	III/3106 - III/3107+3099 Holumnica	7106	588	7694	7639	838	8477	8103	908	9011
	III/3107+3099 - ZO Podolínec	6550	588	7138	7041	838	7879	7467	908	8375
	ZO Podolínec - Podolínec III/3123	6550	588	7138	7041	838	7879	7467	908	8375
	III/3123 Podolínec - KO Podolínec	5974	518	6492	6441	762	7203	6847	828	7675
	KO Podolínec ZO Nižné Ružbachy	5974	518	6492	6441	762	7203	6847	828	7675
	ZO N.Ružbachy - III/3124 (road o the way to Vyšné Ružbachy)	5974	518	6492	6441	762	7203	6847	828	7675
	III/3124 - KO N Ružbachy	6702	538	7240	7155	784	7939	7539	850	8389
	KO N.Ružbachy - III/3125 (road on the way to Lacková)	6702	538	7240	7155	784	7939	7539	850	8389
	III/3125 - ZO Hniezdne	6702	538	7240	7155	784	7939	7539	850	8389
	ZO Hniezdne -Hniezdne III/3126	6702	538	7240	7155	784	7939	7539	850	8389
	III/3126 - II/543 (road on the way to Kamienka)	6702	538	7240	7155	784	7939	7539	850	8389
	II/543 - KO Hniezdne	7484	908	8392	7990	1202	9192	8430	1320	9750
	KO Hniezdne - ZO Stará Ľubovňa	7484	908	8392	7990	1202	9192	8430	1320	9750
	ZO Stará Ľubovňa - I/68 (road on the way to Mníšek /Poprad)	7514	908	8422	8022	1202	9224	8460	1320	9780
	I/68 - III/3152	7150	926	8076	7616	1338	8954	8018	1460	9478
I/68	Stará Ľubovňa built-up area (section III/3152- III/3149)	7518	1047	8565	7998	1480	9478	8399	1618	10017
I/68	Stará Ľubovňa built-up area (section III/3149 - OK)	7886	1168	9054	8380	1622	10002	8780	1776	10556
I/68	OK Stará Ľubovňa - interchange with III/3120	6490	1091	7581	6973	1543	8516	7332	1684	9016
I/68	III/3120 - III/3145(cesta smer Chmelnica)	7048	1286	8334	7586	1772	9358	7984	1942	9926
I/68	III/3145 - III/3144	4742	784	5526	5206	1226	6432	5552	1360	6912
I/68	III/3144 - III/3171 ZO Plavnica	4742	784	5526	5206	1226	6432	5552	1360	6912
I/68	III/3171 - III/3138	4696	782	5478	5158	1224	6382	5504	1360	6864
I/68	III/3138 - KO Plavnica	3864	720	4584	4302	1162	5464	4630	1296	5926
I/68	KO Plavnica - III/3137	3864	720	4584	4302	1162	5464	4630	1296	5926
I/68	III/3137 - III/3151	3864	720	4584	4302	1162	5464	4630	1296	5926
I/68	III/3151 - ZO Plaveč III/3156	3864	720	4584	4302	1162	5464	4630	1296	5926
I/68	III/3156 - III/3150	3864	720	4584	4302	1162	5464	4630	1296	5926
I/68	III/3150 - KO Plaveč	4304	852	5156	4808	1302	6110	5190	1444	6634
I/68	KO Plaveč - I/77	4304	852	5156	4808	1302	6110	5190	1444	6634
I/68	I/77 - ZO Ľubotín	4134	632	4766	4756	1066	5822	5200	1182	6382
I/77	ZO - KO Orlov III/3159	2690	376	3066	2952	428	3380	3162	482	3644
I/77	Orlov III/3159 - III/3160 Čirč	2638	368	3006	2900	420	3320	3108	472	3580
I/77	III/3160 Čirč - I/77A	2626	352	2978	2888	402	3290	3096	450	3546
I/77	I/77A - ZO Lenartov	1872	224	2096	2010	250	2260	2130	278	2408
I/77	KO Lenartov - ZO Malcov	1608	198	1806	1730	218	1948	1838	240	2078
I/77	ZO Malcov - KO Malcov III/3183	1626	198	1824	1750	218	1968	1838	240	2078

E. Summary in English language

	Position	2025			2035			2045		
		Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
	KO Malcov III/3183 - III/3481	1648	198	1846	1778	218	1996	1860	240	2100
	III/3481- ZO Gerlachov Mlynská	1648	198	1846	1778	218	1996	1860	240	2100
	ZO - KO Gerlachov Mlynská	1648	198	1846	1778	218	1996	1860	240	2100
	KO G.Mlynská - ZO Gerlachov	1648	198	1846	1778	218	1996	1860	240	2100
	ZO Gerlachov - Ko Gerlachov	4836	674	5510	5058	732	5790	5230	794	6024
	KO Gerlachov - III/3487 Kružlov	4836	674	5510	5058	732	5790	5230	794	6024
	III/3487 Kružlov - III/3483	5236	674	5910	5474	732	6206	5654	794	6448
	III/3483 - III/3485 Tarnov	5646	669	6315	5896	726	6622	6084	786	6870
	ZO -KO Tarnov	7286	669	7955	7582	700	8282	7802	756	8558
	KO Tarnov - ZO Rokytov	7258	646	7904	7552	700	8252	7772	756	8528
	ZO -KO Rokytov	7258	646	7904	7552	700	8252	7772	756	8528
	KO Rokytov - III/3488	7174	648	7822	7466	700	8166	7684	756	8440
	III/3488 - Mokroluh	7174	648	7822	7466	700	8166	7684	756	8440
	Mokroluh - bypass start - BJ	8274	648	8922	8598	700	9298	8838	756	9594
	Bardejov bypass	4210	398	4608	4377	429	4806	4502	465	4967
	OK - Bardejov middle	11710	1182	12892	12917	1065	13982	14050	1225	15275
	Bardejov middle - Bardejovská nová ves	16385	1496	17881	17960	1420	19380	19431	1628	21059
	Bardejovská Nová Ves end of built-up area	12317	1116	13433	13348	988	14336	14291	1148	15439
	Bardejovská Nová Ves - BJ kúpele	7832	816	8648	8648	652	9300	9420	776	10196
	BJ Kúpele - Dlhá lúka	5956	458	6414	6680	248	6928	7374	322	7696
	Dlhá Lúka - Dlhá Lúka	5106	404	5510	5756	184	5940	6378	246	6624
I/66	cross. with I/67 - cross. with II/542	5921	620	6541	6313	689	7002	6670	757	7427
	II/542 - KO SB	2639	359	2998	2829	391	3220	2999	423	3422
	KO Spišská Belá - cross. III/3098	2563	215	2778	2751	235	2986	2917	257	3174
	cross. III/3098 - cross. II/537	3300	236	3536	3526	262	3788	3723	290	4013
	cross. II/537 - ZO Tatranská Kotlina	5500	513	6013	5994	581	6575	6462	664	7126
	ZO Tat.Kotlina - III/3077	5500	513	6013	5994	581	6575	6462	664	7126
	III/3077 - KO Tat.Kotlina	5196	460	5656	5666	518	6184	6108	590	6698
	KO Tat.Kotlina - ZO Ždiar	5196	460	5656	5666	518	6184	6108	590	6698
	ZO - KO Ždiar	5196	460	5656	5666	518	6184	6108	590	6698
	KO Ždiar - ZO Podspády	3522	134	3656	3886	150	4036	4234	176	4410
	ZO Podspády - III/3078	3522	134	3656	3886	150	4036	4234	176	4410
	III/3078 -KO Podspády	826	38	864	926	36	962	1028	42	1070
	KO Podspády -ZO Tat.Javorina	826	38	864	926	36	962	1028	42	1070
	KO-ZO Tat.Javorina	826	38	864	926	36	962	1028	42	1070
	KO Tat.Javorina - st.border SK/PL	826	38	864	926	36	962	1028	42	1070

E. Summary in English language

	Position	2025			2035			2045		
		Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
III/3078	KO Pospády - st. border SK/PL	2696	96	2792	2960	114	3074	3206	134	3340

6.3.2 State with realization of investment

The planned road network will not be affected by any of the planned motorways or expressways. It is not planned that the construction of bypasses or modification to the network will have an impact on a significant redistribution of traffic. Improvement of the flow of traffic in the case of bypasses can only affect the local redistribution of traffic.

In the individual sections are 2 variants proposed:

- **Variant 1 (to a minimum)** represents a solution to improve the existing situation at minimum investment costs, such as small adjustments of directional and height lines, adding safety features in the rural area, adding elements moderating the transport in the urban area, extending the communication to min. category of C9,5 and others.
  - ***The road network load for variant 1 is equal to zero state.***
  - ***Detailed cartograms of traffic loads are provided in Annex C.2 Transport***

- **Variant 2** includes a full-profile bypass of the settlement, which diverts traffic away from the built-up area, thereby contributing to increased safety at the settlement, reducing travel time on Class I roads and also contributing to improving the environment of affected residents transport.

  - ***Detailed cartograms of traffic loads are provided in Annex C.2 Transport***

Table 5: Outlook traffic intensity - Variant V2 red (traffic on proposed bypasses)

start	end	Position	2025			2035			2045		
			Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h	Light vehicle/24h	Heavy vehicle/24h	Total vehicle /24h
	U1										
I/67	U2	SS - Betliar	4678	398	5076	5160	444	5604	5624	472	6096
		Betliar - Gemerská Poloma	4352	398	4750	4810	444	5254	5252	472	5724
		G.Poloma - Henckovce	2708	242	2950	2950	268	3218	3176	280	3456
		Henckovce - Nižná Slaná	2770	228	2998	3240	262	3502	3012	525	3537
		Nižná Slaná - Gočovo	3054	358	3412	3290	390	3680	3508	406	3914
		Gočovo - Vlachovo	2858	342	3200	3080	372	3452	3286	388	3674
		Vlachovo - KÚ Dobšiná south	2940	364	3304	3168	396	3564	3376	412	3788
	U3	ZÚ - Dobšiná west	1132	140	1272	1246	154	1400	1346	160	1506
		Dobšiná west - Stratená	1316	212	1528	1442	232	1674	1556	242	1798
		Stratená - SE	1598	244	1842	1748	266	2014	1892	276	2168
	U4	SS - Pusté Pole	1732	236	1968	1956	266	2222	2172	284	2456
		Pusté Pole - SE Vernár	1866	316	2182	2080	348	2428	2296	368	2664
	U6	Hranovica south - Hranovica east	2498	310	2808	2740	344	3084	2971	364	3335
		Hranovica east - Kvetnica	3934	408	4342	4287	450	4737	4638	476	5114
		Kvetnica - SE	3934	408	4342	4287	450	4737	4638	476	5114

	Position		2025			2035			2045		
			Light vehicle/24h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h
		SS - K07.2.1. Veľká Lomnica	19520	2218	**21738**	21322	2802	**24124**	23028	3266	**26294**
	U7	**K07.2.1. Veľká Lomnica - K07.2.2 Kežmarok, south**	13130	1514	**14644**	14330	1970	**16300**	15464	2290	**17754**
		K07.2.2 Kežmarok, south - K07.2.3 Kežmarok, west	8830	933	**9763**	9621	1277	**10898**	10372	1471	**11843**
		K07.2.3 Kežmarok, west - K08.2.1 Kežmarok, north	4778	520	**5298**	5188	785	**5973**	5577	886	**6463**
	U8	**K08.2.1 Kežmarok, north - KO8.2.5 Spišská Belá west**	10565	973	**11538**	11367	1291	**12658**	12078	1438	**13516**
		KO8.2.5 Sp.Belá west - K12 Sp.Belá north	9616	774	**10390**	10353	1056	**11409**	11007	1163	**12170**

	Position		2025			2035			2045		
			Light vehicle/24h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h
	U12	**K12 Sp.Belá North - K12 Sp.Belá East**	7034	464	**7498**	7566	700	**8266**	8028	760	**8788**
	U14	**K14.2.1 Podolínec, west**	5447	520	5967	5898	764	6662	6295	828	7123
		K14.2.2, Podolínec, East	5447	520	5967	5898	764	6662	6295	828	7123
	U15	**K15.2.1 Nižné Ružbachy, west - K15.2.2 Nižné Ružbachy, east**	5383	518	5901	5798	762	6560	6155	826	6981
		K15.2.2 Nižné Ružbachy, east - K15.2.3 Hniezdne	6725	540	7265	7178	786	7964	7563	850	8413
	U18	**K18.2.1, Lenartov - K18.2.2, Malcov, west**	1608	198	1806	1730	218	1948	1838	240	2078
		K18.2.2, Malcov, west - K18.2.3 Malcov, east	1608	198	1806	1730	218	1948	1838	240	2078
		K18.2.3 Malcov, east - K18.2.4 Kružlov	1298	136	1434	1416	150	1566	1518	168	1686
	U19	**K19.2.1 Tarnov - K19.2.2 Rokytov**	7146	648	7794	7438	700	8138	7656	756	8412
	U20	**K20.2.1 Mokroluh, west - K20.2.2 Mokroluh, east**	7076	648	7724	7366	700	8066	7582	756	8338
	U21	**K22.2.1 Bardejovské kúpele**	5102	404	5506	5750	184	5934	6372	246	6618
		K22.2.2 Dlhá Lúka	5102	404	5506	5750	184	5934	6372	246	6618

Table 6: Outlook traffic intensity - variant 2 - blue - section 8A

	Position		2025			2035			2045		
			Light vehicle/24h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h
		SS - K07.2.1. Veľká Lomnica	19520	2218	**21738**	21322	2802	**24124**	23028	3266	**26294**
	U7	**K07.2.1. Veľká Lomnica - K07.2.2 Kežmarok, south**	13130	1514	**14644**	14330	1970	**16300**	15464	2290	**17754**
		K07.2.2 Kežmarok, south - K07.2.3 Kežmarok, west									
		K07.2.3 Kežmarok, west - K08.2.1 Kežmarok, north									
	U8	**K08.2.1 Kežmarok, north - KO8.2.5 Spišská Belá west**									
		KO8.2.5 Sp.Belá west - K12 Sp.Belá north									
	U12	**K12 Sp.Belá North - K12 Sp.Belá East**									

E. Summary in English language

	Position		2025			2035			2045		
			Light vehicle/24h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h	Light vehicle/24 h	Heavy vehicle/24 h	Total vehicle /24h
	U14	**K14.2.1 Podolínec, west**	5447	520	5967	5898	764	6662	6295	828	7123

6.4 Assessment of the performance of the road network

The calculation of the road capacity was carried out according to TP 102 “Calculation of road capacities" for rural and STN 73 6110 “Design of urban and similar roads” for urban sections based on the following assumptions:

- The prospective hourly intensity of vehicle traffic was set at 8% of all-day volume
- The calculation was made for the outlook years of 2025, 2035 and 2045

Section in rural area – TP 102

The quality level of the traffic flow was determined from the medium speed OA according to graphs 6.2-6.6 TP 102, which depends on

- Outlook peak intensity in vehi/h/profile
- Climb class determined from the lowest mean speed of heavy vehicles according to graph 6.1 TP 102
- Curvature and overtaking possibilities according to relation 6.1 TP 102
- Share of heavy vehicles in traffic flow

Quality grades E, F are unsatisfactory and are highlighted orange and red in the table

Section in urban area - STN 73 6110

The permissible (design) intensity of the traffic flow (capacity) in veh/h (Ip) of the collecting MK was calculated from the relation (according to STN 73 6110):

Ip = Iz . kk . ks . km . kb , where

Ip permissible traffic flow intensity in veh/hour

Iz basic value of traffic flow intensity in veh/hour according to table B.1 - B.4 of STN 73 6110

kk the value of the influence coefficient of the light-controlled intersection according to Table B.5 of ST 73 6110

pcs value of width coefficient according to table B.6 STN 73 6110

km coefficient of vehicle maneuvering according to table B.7 STN 73 6110

kb coefficient of impact of very slow vehicles according to Table B.8 of STN 73 6110

6.4.1 State without implementation - zero state

Table 7: Results of capacity assessment of rural area sections - zero state

Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/67	U1	KO Rožňava - III/3028	B	B	B	B
I/67		III/3028 - ZO Betliar	B	B	B	B
I/67	U2	ZO - KO Betliar	B	B	B	B
I/67		KO Betliar - ZO Gem.Poloma	B	B	B	B
I/67		KO Gem.Poloma - ZO Henckovce	B	B	B	B
I/67		ZO - KO Henckovce	B	B	B	B
I/67		KO Henckovce - II/587	B	B	B	B
I/67		II/587 - ZO Nižná Slaná	A	A	A	B
I/67		KO N.Slaná - ZO NS.Baňa	B	B	B	B
I/67		ZO NS Baňa - III/3031	B	B	B	B
I/67		III/3031 - KO NS Baňa	A	A	A	A
I/67		KO NS Baňa - ZO Gočovo	B	B	B	B
I/67		ZO Gočovo - KO Gočovo	B	B	B	B
I/67		KO Gočovo - ZO Vlachovo	A	B	B	B
I/67		KO Vlachovo - III/3033	B	B	B	B

Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/67	U3	III/3033 - ZO Dobšiná	B	B	B	B
I/67		KO Dobšiná - II/535	A	A	B	B
I/67		II/535 - ZO Stratená	A	A	A	A
I/67		ZO - KO Stratená	A	A	A	A
I/67		KO Stratená - III/3227	A	A	A	A
I/67		III/3227 - ZO Dobš.ľ.jaskyňa	A	A	A	A
I/67		ZO - KO Dobš.ľ.jaskyňa	A	A	A	A
I/67		KO DĽJ - III/3036	A	A	A	A
I/67		III/3036 - I/66	A	A	A	A
I/66	U4	cross. I66/I67 - ZO Vernár	A	A	A	B
I/66	U5	KO Vernár - ZO Hranovica	B	B	B	B
I/66	U6	KO Hranovica - ZO Kvetnica	B	B	B	B
I/66		ZO - KO Kvetnica	B	B	B	B
I/66		KO Kvetnica - ZO Poprad	B	B	B	B
I/66	U7	III/3093 - ZO Veľká Lomnica	E	E	F	F
I/66		KO V.Lominca - ZO Huncovce	D	D	E	E
I/66		ZO Huncovce - III/3094	D	D	E	E
I/66		III/3094 - III/3095	C	C	D	D
I/66		III/3095 - KO Huncovce	D	D	D	E
I/66	U8	KO Huncovce - ZO Kežmarok	D	D	D	E
I/66		KO Kežmarok - OK Pradiareň	C	C	C	D
I/66	U12	OK Pradiareň - ZO Strážky	C	C	C	C
I/66		ZO Strážky - KO Strážky	C	C	D	D
I/66		KO Strážky ZO Spišská Belá	C	C	D	D
I/66	U9	KO Spišská Belá - cross. III/3098	A	A	A	A
I/66		cross. III/3098 - cross. II/537	A	A	B	B
I/66		cross. II/537 - ZO Tatranská Kotlina	B	B	B	B
I/66		ZO Tat.Kotlina - III/3077	B	B	B	B
I/66		III/3077 - KO Tat.Kotlina	B	B	B	B
I/66		KO Tat.Kotlina - ZO Ždiar	B	B	B	B
I/66	U10	ZO - KO Ždiar	B	B	B	B
I/66	U11	KO Ždiar - ZO Podspády	B	B	B	B
I/66		ZO Podspády - III/3078	B	B	B	B
I/66		III/3078 -KO Podspády	A	A	A	B
I/66		KO Podspády -ZO Tat.Javorina	A	A	A	A
I/66		KO-ZO Tat.Javorina	A	A	A	A
I/66		KO Tat.Javorina - st.border SK/PL	A	A	A	A
III/3078		KO Pospády - st. border SK/PL	A	A	A	A
I/77	U13	KO Spišská Belá - ZO Bušovce	B	B	B	C
I/77		ZO Bušovce - III/3104	B	B	C	C
I/77		III/3104 - KO Bušovce	B	B	C	C
I/77		KO Bušovce - III/3105	B	B	C	C
I/77		III/3105 - III/3106	B	B	C	C
I/77		III/3106 - III/3107+3099	B	B	B	C
I/77		III/3107+3099 - ZO Podolínec	B	B	B	B
I/77	U14	ZO-KO Podolínec - built-up area				

Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/77	U15	KO Podolínec - ZO Nižné Ružbachy	B	B	B	B
I/77		ZO N.Ružbachy - III/3124	B	B	B	B
I/77		III/3124 - KO N Ružbachy	B	B	B	C
I/77		KO N.Ružbachy - III/3125	B	B	B	C
I/77		III/3125 - ZO Hniezdne	B	B	B	C
I/77		ZO Hniezdne - III/3126	B	B	B	C
I/77		III/3126 - II/543	B	B	B	C
I/77		II/543 - KO Hniezdne	B	C	C	C
I/77	U16	KO Hniezdne - ZO Stará Ľubovňa	B	B	C	C
I/68		KO Stará Ľubovňa - III/3120	C	C	C	C
I/68		III/3120 - III/3145	C	C	C	C
I/68		III/3145 - III/3144	B	B	B	B
I/68		III/3144 - ZO Plavnica	B	B	C	C
I/68		ZO Plavnica - III/3171	B	B	C	C
I/68		III/3171 - III/3138	B	B	C	C
I/68		III/3138 - KO Plavnica	B	B	B	B
I/68		KO Plavnica - III/3137	B	B	B	B
I/68		III/3137 - III/3151	B	B	B	B
I/68		III/3151 - ZO Plaveč III/3156	B	B	B	B
I/68		ZO Plaveč - III/3156	B	B	B	B
I/68		III/3156 - III/3150	B	B	B	B
I/68		III/3150 - KO Plaveč	B	B	B	C
I/68		KO Plaveč - I/77	B	B	B	C
I/68		I/77 - ZO Ľubotín	B	B	B	B
I/77	U17	Ľubotín cross. with I/68 – ZO Lenartov				
I/77	U18	ZO - KO Lenartov	A	A	A	A
I/77		KO Lenartov - ZO Malcov	A	A	A	A
I/77		ZO Malcov - KO Malcov	A	A	A	A
I/77		KO Malcov - III/3481	A	A	A	A
I/77		III/3481- ZO Gerlachov Mlynská	A	A	A	A
I/77		ZO - KO Gerlachov Mlynská	A	A	A	A
I/77		KO G.Mlynská - ZO Gerlachov	A	A	A	A
I/77		ZO Gerlachov - Ko Gerlachov	B	B	B	B
I/77		KO Gerlachov - III/3483	B	B	B	B
I/77	U19	III/3483 - ZO Tarnov	B	B	C	C
I/77		ZO -KO Tarnov	B	B	C	C
I/77		KO Tarnov - ZO Rokytov	B	B	B	B
I/77		ZO -KO Rokytov	B	B	C	C
I/77		KO Rokytov - III/3488	B	B	B	B
I/77	U20	III/3488 - ZO Mokroluh	B	B	B	B
I/77		ZO - KO Mokroluh	B	B	B	C

Table 8: Results of capacity assessment of built-up area sections - zero state

Municipality	Road no.	section	Section location	Year 2015 Quality of transportation	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
Gemerská Poloma	I/67	U2	Hlavná st. ZO - II/533	B	B	B	B
	II/533		Súľovská st. ZO before cross. with I/67	A	A	A	A
Nižná Slaná	I/67		Rožňavská st. ZO- III/3030	A	A	A	A
	I/67		Rožňavská st. III/3030 - KO	A	A	A	A
Vlachovo	I/67		Intersection - Post office	A	A	A	A
Dobšiná	I/67	U3	Niže Mesta, services	A	A	A	A
	I/67		Tri ruže square	A	A	A	A
Vernár	I/66	U4	shopping center	A	A	A	A
Hranovica	I/66	U6	SNP cross. Hviezdoslavova	A	A	A	A
	I/66		SNP III/3069 - Družstevná	A	A	A	B
	I/66		Hviezdoslavova Družstevná - KO	A	A	A	B
Veľká Lomnica	I/66	U7	Popradská st. Km 96.0, before crossing with II/540	F	F	F	F
Kežmarok	I/66		Huncovská st., before crossing with Tatranskou	E	F	F	F
	I/66		Toporcerova, km 102	F	F	F	F
	I/66		Michalská, before crossing III/3098	F	F	F	F
Spišská Belá	I/66	U8	I/66 SNP,ZO - cross.I/66	C	D	D	E
	I/77	U12	I/77 SNPI/68 - III/3103	D	D	E	E
	I/66	U12	I/66 Zimná,II/542 - I/77	B	C	C	C
	I/66	U12	I/66 Zimná, ZO - II/542	B	B	B	B
Podolínec	I/77	U14	Tatranská ZO-Bernolákova	B	B	C	C
	I/77		Mariánske námestie	B	B	B	C
	I/77		Sv.Anny	B	B	B	C
Stará Ľubovňa	I/77	U16	Rožňavská st. ZO- III/3128	C	C	C	C
	I/77		Popradská st. III/3128 - I/68	C	C	C	C
	I/68		Popradská st. I/68 - III/3152	B	B	C	C
	I/68		Popradská st. III/3152 - III/3149	B	C	C	C
	I/68		Popradská st. III/3149 - OK III/3120	C	C	C	C
	I/68		Popradská st. OK III/31209 - Hviezdoslavova st.	B	B	B	B
Bardejov	II/545	U21	Starý Blich. OK 77B - Šiancová	B	B	B	B
	II/545		Starý Blich. Šiancová - I/77	B	C	C	C
	I/77		Štefánikova I/77 ZO-Mikulovská	B	B	B	B
	I/77		Štefánikova I/77 Mikulovská - Mlynská	A	A	A	A
	I/77		Dlhý rad I/77 Jirásková - Slovenská	A	A	A	A
	I/77		Slovenská I/77 Dlhý rad - Kúpeľná	C	D	D	E
	I/77		Slovenská I/77 Kúpeľná - Pod Vinbargom	C	D	D	E
	I/77		Duklianska I/77 Pod Vinbargom - Ľ.Štúra	C	C	C	D
	I/77		Duklianska I/77 Ľ.Štúra-OK 3533	E	F	F	F
	I/77		Duklianska I/77 OK 3533 - turn B.Kúpele	C	C	D	D

A detailed assessment of individual sections of the road network is provided in Annex no. 2 Transport

6.4.2 State with realization

The assessment of the capacity of the state with the realization of the investment was divided into 22 sections, which were assessed separately

1. section: road I/67 Rožňava crossing with road II/526(km15.136000) – ZO Betliar(km19.052867)

Variant 1 : km 0.000 – km 3.917

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	2.535	SS - III/3027/3028	A	2.9	A	3.0	A	3.0
2.535	3.917	III/3027/3028 - SE	B		B		B	
3.917	2.535	III/3027/3028 - SE	A	2.7	B	2.7	B	2.7
2.535	0	SS - III/3027/3028	A		A		A	

2. section: road I/67 ZO Betliar(km19.052867) – crossing with road III/3033(km36.963065)

Variant 1 : km 0.000 – km 17.890

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.7	SS - ZO Betliar	B	17.0	B	17.0	B	17.1
1.655	2.8	KO Betliar - ZO Gemerská Poloma	A		B		B	
3.685	6.575	KO Gem.Poloma - ZO Henckovce	A		A		A	
7.25	7.6	KO Henckovce - II/587	A		A		A	
7.6	8.3	II/587 ZO Nižná Slaná	A		A		A	
8.85	10.5	KO N.Slaná - ZO N.Baňa	A		A		B	
11.225	12.22	KO N.Baňa - ZO Gočovo	A		A		A	
14.5	17.89	KO Vlachovo - SE (III/3033)	A		A		A	
17.89	14.5	KO Vlachovo - SE (III/3033)	A	16.2	A	16.3	A	16.4
12.22	11.225	KO N.Baňa - ZO Gočovo	A		A		A	
10.5	8.85	KO N.Slaná - ZO N.Baňa	A		A		A	
8.3	7.6	II/587 ZO Nižná Slaná	A		A		A	
7.6	7.25	KO Henckovce - II/587	A		A		A	
6.575	3.685	KO Gem.Poloma - ZO Henckovce	A		A		A	
2.8	1.655	KO Betliar - ZO Gemerská Poloma	A		B		B	
0.7	0	SS - ZO Betliar	B		B		B	

Variant 2 : km 0.000 – km 17.407

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.3	SS - KO Betliar	B	13.7	B	13.8	B	13.9
0.3	3.468	Betliar - Gemerská Poloma	A		A		B	
3.468	6.143	Gem.Poloma - Henckovce	A		A		A	
6.143	8.413	Henckovce - Nižná Slaná	A		A		A	
8.413	11.26	Nižná Slaná - Gočovo	A		A		A	
11.26	14.15	Gočovo - Vlachovo	A		A		A	
14.15	17.407	Vlachovo - KÚ Dobšiná south	A		A		A	
17.407	14.15	Vlachovo - KÚ Dobšiná south	A	12.8	A	12.8	A	13.0
14.15	11.26	Gočovo - Vlachovo	A		A		A	
11.26	8.413	Nižná Slaná - Gočovo	A		A		A	
8.413	6.143	Henckovce - Nižná Slaná	A		A		A	
6.143	3.468	Gem.Poloma - Henckovce	A		A		A	
3.468	0.3	Betliar - Gemerská Poloma	A		A		B	
0.3	0	SS - KO Betliar	A		A		B	

3. section: road I/67 crossing with road III/3033(km36.963065) – crossing with road I/66

Variant 1 : km 0.000 – km 23.790

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.12	SS - ZO Dobšiná	A	24.7	A	25.0	A	25.2
3.13	9.715	KO Dobšiná - II/535	B		B		B	
9.715	13.25	II/535 - ZO Stratená	A		A		A	
14.66	19	KO Stratená - III/3036	A		A		A	
19	23.79	III/3036-SE Pusté Pole	A		A		A	
23.79	19	III/3036-SE Pusté Pole	A	23.9	A	24.0	A	24.2
19	14.66	KO Stratená - III/3036	A		A		A	
13.25	9.715	II/535 - ZO Stratená	A		A		A	
9.715	3.13	KO Dobšiná - II/535	A		A		B	
1.12	0	SS - ZO Dobšiná	A		A		A	

Variant 2 : km 0.000 – km 17.917

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	2.71	ZÚ - Dobšiná west	A	16.8	A	16.9	A	16.9
2.71	14.91	Dobšiná west - Stratená	A		A		A	
14.91	17.917	Stratená - SE	A		A		A	
17.917	14.91	Stratená - SE	A	14.7	A	14.7	A	14.8
14.91	2.71	Dobšiná west - Stratená	A		A		A	
2.71	0	ZÚ - Dobšiná west	A		A		A	

4. section: road I/66 (km 0.000000) – Vernár, part Niže dediny (km 8.054527)

Variant 1 : km 0.000 – km 7.530

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.774	SS - I/67	A	7.7	A	7.8	A	7.8
0.774	6.28	I/67- ZO Vernár	A		A		A	
7.2	7.53	KO Vernár - SE	A		A		A	
7.53	7.2	KO Vernár - SE	A	9.1	A	9.2	A	9.2
6.28	0.774	I/67- ZO Vernár	A		A		A	
0.774	0	SS - I/67	A		A		A	

Variant 2 : km 0.000 – km 6.450

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.475	SS - Pusté Pole	A	6.4	A	6.4	A	6.5
0.475	6.45	Pusté Pole - SE Vernár	A		A		A	
6.45	0.475	Stratená - SE	A	5.9	A	6.0	A	6.0
0.475	0	Dobšiná west - Stratená	A		A		A	

5.section: road I/66 Vernár, part below the village (km 8.054527) – ZO Hranovica

Variant 1 : km 0.000 – km 6.305

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	6.305	SS - SE	A	5.9	A	6.0	A	6.0
6.305	0	SS - SE	A	5.9	A	6.0	A	6.0

6. section: road I/66 ZO Hranovica (km 0.000000) – Poprad, cross. with I/18 (km 10.746681)

Variant 1 : km 0.000 – km 9.645

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.5	SS-ZO Hranovica	A	11.2	A	11.3	A	11.3
2.37	9.645	KO Hranovica - ZO Poprad	B		B		B	
9.645	2.37	KO Hranovica - ZO Poprad	B	10.7	B	10.7	B	10.7
0.5	0	SS-ZO Hranovica	A		A		A	

Variant 2 : km 0.000 – km 11.057

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.407.	SS - Hranovica south	A	11.1	A	11.3	B	11.4
0.407.	2.364	Hranovica south - Hranovica east	A		A		A	
2.364	8.528.	Hranovica east - Kvetnica	B		B		B	
8.528.	11.057	Kvetnica - SE	B		B		B	
11.057	8.528.	Kvetnica - SE	B	10.5	B	10.6	B	10.7
8.528.	2.364	Hranovica east - Kvetnica	B		B		B	
2.364	0.407.	Hranovica south - Hranovica east	A		A		A	
0.407.	0	SS - Hranovica south	A		A		A	

7. section: road I/66 cross. with III/3093 (km 0.000000) – KO Kežmarok (km 10.711088)

Variant 1 : km 0.000 – km 5.136

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.5	I/66 Poprad-ZO Veľká Lomnica	D		D		E	
2.24	2.62	V. Lomnica - Huncovce	D		D		E	
4	5.136	Huncovce - cross. Huncovce	C		C		C	
5.136	4	Huncovce - cross. Huncovce	C		C		C	
2.62	2.24	V. Lomnica - Huncovce	D		D		E	
1.5	0	I/66 Poprad-ZO Veľká Lomnica	D		D		E	

Variant 2 2-lane : km 0.000 – km 10.715

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.3	SS - Veľká Lomnica interchange	D	6.3	E	6.4	E	6.5
0.3	5.6	V. Lomnica interchange - Kežmarok interchange south	D		D		D	
5.6	0.3	V. Lomnica interchange - Kežmarok interchange south	D	6.3	D	6.4	D	6.5
0.3	0	SS - Veľká Lomnica interchange	D		E		E	

Variant 2 4-lane : km 0.000 – km 10.715

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati on	Year 2035 Quality of transportati on	Year 2045 Quality of transportati on
0	0.3	SS - Veľká Lomnica interchange	A	A	B
0.3	5.6	V. Lomnica interchange - Kežmarok interchange south	A	A	A
5.6	0.3	V. Lomnica interchange - Kežmarok interchange south	A	A	A
0.3	0	SS - Veľká Lomnica interchange	A	A	B

Assessment of the original road after reducing the load with the construction of the bypass:

Road no.	section	Section location	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/66	U7	III/3093 - ZO Veľká Lomnica	B	B	C
I/66		KO V.Lominca - ZO Huncovce	A	A	A
I/66		ZO Huncovce - III/3094	A	A	A
I/66		III/3094 - III/3095	A	A	A
I/66		III/3095 - KO Huncovce	A	A	A
I/66		KO Huncovce – Huncovce interchange	A	A	A
I/66		Huncovce interchange – ZO Kežmarok	B	B	B

Municipality	Road no.	section	Section location	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
Veľká Lomnica	I/66	U7	Popradská st. Km 96.0, before crossing with II/540	B	B	B
Kežmarok	I/66		Huncovská st., before crossing with Tatranskou	B	B	B
	I/66		Toporcerova, km 102	E	E	F
	I/66		Michalská, before crossing III/3098	E	F	F

8. section: road I/66 KO Kežmarok (km 0.000000) – KO Spišská Belá (km 5.680131)

Variant 1 : km 0.000 – km 5.575

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.914	cross. Huncovce - Kežmarok	C		C		D	
5.095	5.575	Kežmarok - SE						
5.575	5.095	Kežmarok - SE						
1.914	0	cross. Huncovce - Kežmarok	C		C		D	

Variant 2 : km 0.000 – km 5.116

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.4	Kežmarok south – Kežmarok west	B	4.4	B	4.5	C	4.5
1.4	5.116	Kežmarok west – Kežmarok north	B		B		B	
5.116	1.4	Kežmarok west – Kežmarok north	B	4.5	B	4.5	B	4.5
1.4	0	Kežmarok south – Kežmarok west	B		B		C	

Assessment of the original road after reducing the load with the construction of the bypass:

Road no.	section	Section location	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
I/66	U8	KO Kežmarok - feeder to interchange north	B	B	B
I/66		feeder to interchange north - OK Pradiareň	A	A	A
I/66		OK Pradiareň - ZO Strážky	A	A	A
I/66		ZO Strážky - KO Strážky	A	A	A
I/66		KO Strážky - ZO Spičská Belá	A	A	A

Municipality	Road no.	section	Section location	Year 2025 Quality of transportation	Year 2035 Quality of transportation	Year 2045 Quality of transportation
Spišská Belá	I/66	U8	I/66 SNP,ZO - cross.I/66	A	A	A
	I/77	U12	I/77 SNPI/68 - III/3103	B	B	B
	I/66	U12	I/66 Zimná,II/542 - I/77	A	B	B
	I/66	U12	I/66 Zimná, ZO - II/542	A	B	B

9. section: road I/66 KO Spišská Belá, cross. II/542 (km 0.000000) – ZO Ždiar (km 13.834072)

Variant 1 : km 0.000 – km 15.049

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	5.4	Sp.Belá - III/3098	A	13.1	A	13.2	A	13.3
5.4	8.5	III/3098 - II/537	A		A		A	
8.5	9.22	II/537 - Tatranská Kotlina	B		B		B	
10.33	15.049	Tatranská Kotlina - Ždiar	B		B		B	
15.049	10.33	Tatranská Kotlina - Ždiar	B	12.3	B	12.5	B	12.5
9.22	8.5	II/537 - Tatranská Kotlina	B		B		B	
8.5	5.4	III/3098 - II/537	A		A		A	
5.4	0	Sp.Belá - III/3098	A		A		A	

10. section: road I/66 ZO Ždiar (km 0.000000) – KO Ždiar (km 6.066816)

Variant 1 : km 0.000 – km 6.049

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.88	SS - Ždiar	B	5.9	B	5.9	B	6.0
3.6	6.049	Ždiar - SE	A		A		A	
6.049	3.6	Ždiar - SE	A	5.8	A	5.8	A	5.8
0.88	0	SS - Ždiar	B		B		B	

11. section: road I/66 ZKO Ždiar (km 0.000000) – Lysá Poľana cross. with II/960 (km 10.820167)

Variant 1 : km 0.000 – km 9.180

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	4.27	SS - Podspády	A	8.6	A	8.7	B	8.7
4.6	9.18	Podspády - Lysá Poľana	A		A		A	
9.18	4.6	Podspády - Lysá Poľana	A	8.3	A	8.3	A	8.4
4.27	0	SS - Podspády	A		A		B	

12. section: road I/77 KO Spišská Belá, cross. II/542 (km 0.000000) – Bušovce cross. with III/3105(km 4.508592)

Variant 1 : km 0.000 – km 6.029

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.5	SS - Strážky	C		C		C	
3	3.625	Strážky - Spišská Belá	C		C		D	
4.84	6.029	Spišská Belá - SE						
6.029	4.84	Spišská Belá - SE						
4.105	3.48	Strážky - Spišská Belá	C		C		D	
1.98	0	SS - Strážky	C		C		C	

Variant 2 : km 0.000 – km 5.334

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.5	KK north interchange - Sp.Belá west	B	5.6	C	5.7	C	5.8
0.5	2.35	Sp.Belá west -Sp.Belá east	B		B		C	
2.35	0.5	Sp.Belá west -Sp.Belá east	B	6.3	B	6.4	C	6.5
0.5	0	KK north interchange - Sp.Belá west	C		C		C	

13. section: road I/77 Bušovce cross. with III/3105(4.508592) – ZO Podolínec (km 8.489057)

Variant 1 : km 0.000 – km 6.805

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	2.21	SS - Bušovce	B	6.3	B	6.4	C	6.5
2.69	2.88	Bušovce - III/3105	B		C		C	
2.88	4.09	III/3105 - III/3106	B		B		B	
4.09	6.11	III/3106 - III/3107	B		B		B	
6.11	6.805	III/3107 - SE	B		B		C	
6.805	6.11	III/3107 - SE	B	6.8	B	7.0	B	7.0
6.11	4.09	III/3106 - III/3107	B		B		B	
4.09	2.88	III/3105 - III/3106	B		C		C	
2.88	2.69	Bušovce - III/3105	B		C		C	
2.21	0	SS - Bušovce	B		B		C	

14. section: road I/77 ZO Podolínec (km 8.489057) - KO Podolínec (km 11.674509)

Variant 1 : km 0.000 – km 3.180

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.5	SS - Podolínec	B	4.0	B	4.0	B	4.0
3	3.18	Podolínec - SE	B		B		B	
3.18	3	Podolínec - SE	B	3.8	B	3.8	B	3.8
0.5	0	SS - Podolínec	B		B		B	

Variant 2 : km 0.000 – km 3.228

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.25	SS - Podolínec west	B	3.4	B	3.4	C	3.5
0.25	3	Podolínec west - Podolínec east	B		B		B	
3	3.228	Podolínec east - SE	B		B		B	
3.228	3	Podolínec east - SE	B	3.3	B	3.3	B	3.4
3	0.25	Podolínec west - Podolínec east	B		B		B	
0.25	0	SS - Podolínec west	B		B		B	

15. section: road I/77 KO Podolínec (km 11.674509) – KO Hniezdne (km 23.388789)

Variant 1 : km 0.000 – km 11.729

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	2.5	Podolínec - Nižné Ružbachy	B	12.5	B	12.6	B	12.7
3.5	9.34	Nižné Ružbachy - Hniezdne	B		B		C	
11.06	11.73	Hniezdne - SE	B		B		B	
11.73	11.06	Hniezdne - SE	B	12.7	C	12.8	C	13.0
9.34	3.5	Nižné Ružbachy - Hniezdne	B		B		B	
2.5	0	Podolínec - Nižné Ružbachy	B		B		B	

Variant 2 : km 0.000 – km 9.865

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.2	SS - Nižné Ružbachy west	B	9.6	B	9.7	B	9.8
1.2	3.4	Nižné Ružbachy west - N.R. east	B		B		B	
3.4	9.35	N.Ružbachy east - Hniezdne	B		B		B	
9.35	9.865	Hniezdne - SE	B		B		B	
9.865	9.35	Hniezdne - SE	B	9.1	C	9.2	C	9.5
9.35	3.4	N.Ružbachy east - Hniezdne	B		B		B	
3.4	1.2	Nižné Ružbachy west - N.R. east	B		B		B	
1.2	0	SS - Nižné Ružbachy west	B		B		B	

16. section: road I/77 KO Hniezdne (km 23.388789) – cross. with I/68 (km 25.598090)

Variant 1 : km 0.000 – km 2.208

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	1.32	SS - Podolínec	B	2.6	B	2.6	C	2.6
0.5	0	SS - Podolínec	B	2.6	B	2.6	C	2.6

17. section: road I/77 KO cross. with I/68 (km 25.600000) – ZO Lenartov (km 39.900627)

Variant 1: km 0.000 – km 13.163

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.9	SS - III/3159	A	13.5	A	13.5	A	13.5
0.9	5	III/3159 - III/3150	A		A		A	
5	6.489	III/3150 - road to border crossing SR/PR	A		A		A	
6.489	7	road to border crossing SR/PR - Ruská Voľa	A		A		A	
7.78	13.73	Ruská Voľa - Lenartov	A		A		A	
13.73	7.78	Ruská Voľa - Lenartov	A	13.6	A	13.7	A	13.9
7	6.489	road to border crossing SR/PR - Ruská Voľa	A		A		A	
6.489	5	III/3150 - road to border crossing SR/PR	A		A		A	
5	0.9	III/3159 - III/3150	A		A		A	
0.9	0	SS - III/3159	A		A		A	

18. section: road I/77 ZO Lenartov (km 39.900627) – before cross. with III/3483 (km 51.382901)

Variant 1: km 0.000 – km 11.441

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.57	SS-Lenartov	A	12.4	A	12.4	A	12.4
2.65	3.15	Lenartov -Malcov	A		A		A	
5.2	7.9	Malcov - Gerlachov	A		A		A	
10.5	11.44	Gerlachov - SE	B		B		B	

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
11.44	10.5	Gerlachov - SE	B	12.5	B	12.5	B	12.6
7.9	5.2	Malcov - Gerlachov	A		A		A	
3.15	2.65	Lenartov -Malcov	A		A		A	
0.57	0	SS-Lenartov	A		A		A	

Variant 2 : km 0.000 – km 10.899

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.4	SS - Lenartov	A	10.0	A	10.1	A	10.1
0.4	2.735	Lenartov - Malcov west	A		A		A	
2.735	5.23	Malcov west - Malcov east	A		A		A	
5.23	10.6	Malcov east - Kružlov	A		A		A	
10.6	10.9	Kružlov - SE	B		B		B	
10.9	10.6	Kružlov - SE	B	9.9	B	10.0	B	10.0
10.6	5.23	Malcov east - Kružlov	A		A		A	
5.23	2.735	Malcov west - Malcov east	A		A		A	
2.735	0.4	Lenartov - Malcov west	A		A		A	
0.4	0	SS - Lenartov	A		A		A	

19. section: road I/77 before cross. with III/3483 (km 51.382901) – before cross. with III/3488 (km 55.574880)

Variant 1: km 0.000 – km 4.190

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.265	SS - III/3483	B	4.2	B	4.2	B	4.2
0.265	0.953	III/3483-III/3485 ZO Tarnov	B		B		B	
2.65	3.06	Tarnov-Rokytov	B		B		B	
3.56	4.19	Rokytov - SE	B		B		B	
4.19	3.56	Rokytov - SE	B	4.5	B	4.5	C	4.5
3.06	2.65	Tarnov-Rokytov	B		B		B	
0.953	0.265	III/3483-III/3485 ZO Tarnov	B		B		B	
0.265	0	SS - III/3483	B		B		B	

Variant 2: km 0.000 – km 4.232

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.68	SS - Tarnov	B	3.2	B	3.2	C	3.3
0.68	3.9	Tarnov - Rokytov	B		B		B	
3.9	4.232	Rokytov - SE	B		B		B	
4.232	3.9	Rokytov - SE	B	3.9	B	3.9	B	3.9
3.9	0.68	Tarnov - Rokytov	B		B		B	
0.68	0	SS - Tarnov	B		B		B	

20. section: road I/77 before cross. with III/3488 (km 55.574880) – KO Mokroluh (km 57.810676)

Variant 1 : km 0.000 – km 2.236

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.82	SS - Mokroluh	B	2.4	B	2.4	B	2.4
1.61	2.236	Mokroluh - SE	C		C		C	
2.236	1.61	Mokroluh - SE	C	2.5	C	2.5	C	2.5
0.82	0	SS - Mokroluh	B		B		B	

Variant 2 : km 0.000 – km 2.518

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.45	SS - Mokroluh west	B	2.0	B	2.0	C	2.0
0.45	2.2	Mokroluh west - Mokroluh east	B		B		B	
2.2	2.518	Mokroluh east - SE	B		B		B	
2.518	2.2	Mokroluh east - SE	B	2.3	B	2.3	B	2.3
2.2	0.45	Mokroluh west - Mokroluh east	B		B		B	
0.45	0	SS - Mokroluh west	B		B		B	

21. section: road I/77 Bardejov center (km 60.460000) – cross. with III/3504 (km 63.793303)

Variant 1: km 0.000000 – km 3.370234

22. section: road I/77 cross. with III/3504 (km 63.793303) – KO Dlhá Lúka (km 66.436413)

Variant 1: km 0.000 – km 2.614

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2045 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	0.72	III/3504 - Dlhá Lúka	B	2.6	B	2.6	B	2.6
1.89	2.614	Dlhá Lúka - SE	B		B		B	
2.614	1.89	Dlhá Lúka - SE	B	2.7	B	2.7	B	2.7
0.72	0	III/3504 - Dlhá Lúka	B		B		B	

Variant 2 : km 0.000 – km 2.552

Stationing start	Stationing end	Section location	Year 2025 Quality of transportati	Section drive time (min)	Year 2035 Quality of	Section drive time (min)	Year 2045 Quality of	Section drive time (min)
0	2.03	SS OK Bardejovské Kúpele - Dlhá Lúka	B	2.4	B	2.4	C	2.4
2.03	2.552	Dlhá Lúka - SE	B		B		C	
2.552	2.03	Dlhá Lúka - SE	B	2.5	B	2.5	C	2.6
2.03	0	SS OK Bardejovské Kúpele - Dlhá Lúka	B		B		C	

Table 9 - Recommended solutions for individual sections

section	Proposed variants	Localization	Recommended variant	Recommended year of implementation	Note
U1	V1 – blue - reconstruction	I/67 Rožňava – Betliar	V1 - reconstruction	2045	Section is sufficient in capacity until 2045.
U2	V1 – blue - reconstruction	I/67 Betliar – Vlachovo	V1 - reconstruction	2045	
	V2 – red - relocation	I/67 Betliar – Vlachovo			
U3	V1 – blue - reconstruction	I/67 Vlachovo - region border PSK-BBSK	Without modifications		
	V2 – red - relocation	I/67 Vlachovo - region border PSK-BBSK			
U4	V1 – blue - reconstruction	I/66 region border PSK-BBSK – Vernár	V1 - reconstruction	2045	Section is sufficient in capacity until 2045.
	V2 – red - relocation	I/66 region border PSK-BBSK – Vernár			
U5	V1 – blue - reconstruction	I/66 Vernár – Hranovnica	V1 - reconstruction	2045	
U6	V1 – blue - reconstruction	I/66 Hranovnica – Poprad	V1 - reconstruction	2045	
	V2 – red - relocation	I/66 Hranovnica - Poprad			
U7	V1 – blue - reconstruction	I/66 Poprad – Huncovce	V2 - Relocation	**2025**	The existing road is no longer satisfactory, the reconstruction will not increase the capacity of the road **Priority for construction.** In km 97.030-97.040 in Huncovce municipality a critical accident site (CAS) was identified (years 2015-2016) – bypass was recommended
	V2 – red - relocation	I/66 Poprad – Huncovce			
U8	V1 – blue - reconstruction	I/66 Huncovce – Kežmarok	V2B – relocation	**2025**	
	V2A– red - relocation	I/66 Huncovce – Kežmarok			
	V2B - magenta	I/66 Huncovce – Kežmarok			
U9	V1 – blue - reconstruction	I/66 a I/77 križovatka - Ždiar	V1 - reconstruction	2045	
U10	V1 – blue - reconstruction	I/66 Ždiar	V1 - reconstruction	2045	
U11	V1 – blue - reconstruction	I/66 Ždiar – Podspády state border SR/PL	V1 - reconstruction	**2025**	Rerouting of the traffic to the border crossing Podspády and re-categorizing of the III. class road to I/66
U12	V1 – blue - reconstruction	I/66 Kežmarok - I/77 Spišská Belá	V2 - Relocation	**2030**	Capacity unsatisfactory for this section already in 2025, but within the phase included in stage III.
	V2 – red - relocation	I/66 Kežmarok - I/77 Spišská Belá			

E. Summary in English language

section	Proposed variants	Localization	Recommended variant	Recommended year of implementation	Note
U13	V1 – blue - reconstruction	I/77 Spišská Belá- Podolínec	V1 - reconstruction	**2035**	After the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport. At km 2.87 a CAS was identified (year 2017) - we recommend implementing traffic signs and reduced speed
U14	V1 – blue - reconstruction	I/77 Podolínec	V2 - Relocation	**2035**	After the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport.
	V2 – red - relocation	I/77 Podolínec			
U15	V1 – blue - reconstruction	I/77 Podolínec – Hniezdne	V2 - Relocation	**2035**	After the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport. At km 16.10-16.39 a CAS was identified (year 2017) – section Nižné Ružbachy – Lachov – we recommend changing the parameters of the road At km 21.8-22.0 a CAS was identified (year 2015 and 2016) - the section does not comply with STN parameters, bypasses of municipalities are recommended
	V2 – red - relocation	I/77 Podolínec – Hniezdne			
U16	V1 – blue - reconstruction	I/77 Hniezdne - Stará Ľubovňa	V1 - reconstruction	**2035**	After the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport.
U17	V1 – blue - reconstruction	I/77 Ľubotín – Lenartov	V1 - reconstruction	2045	Section is sufficient in capacity until 2045.
U18	V1 – blue - reconstruction	I/77 Lenartov - Tarnov	V1 - reconstruction	2045	
	V2 – red - relocation	I/77 Lenartov - Tarnov			
U19	V1 – blue - reconstruction	I/77 Tarnov – Mokroluh	V1 - reconstruction	2045	
	V2 – red - relocation	I/77 Tarnov - Mokroluh			
U20	V1 – blue - reconstruction	I/77 Mokroluh	V1 - reconstruction	2045	
	V2 – red - relocation	I/77 Mokroluh			
U21	V1 – blue - reconstruction	I/77 Bardejov – Bardejovské kúpele	V1 - reconstruction	**2025**	Section includes point defects (2 lane, OK) on the section - necessary communication enlargement and intersection capacity increase
U22	V1 – blue - reconstruction	I/77 Bardejovské kúpele - Dlhá Lúka	V1 - reconstruction	2045	Section is sufficient in capacity until 2045.

7 Impact and the environment.

The environmental impact is specified in detail in Annex C.1 Environment for each section. The documentation examines the possibilities of routing for the I/66, I/67 and I/77 roads in brand new, but also in previously examined routes, from an environmental point of view.

Assessment of territorial capacity

The method of processing this part of the work was based on the requirements of the client of this study and is prepared for the overall comprehensive assessment of individual variants within the feasibility study.

The assessment of territorial capacity was prepared according to Annex 9 of Act No. 24/2006 Coll. (Content and structure of the EIA intent). In accordance with the nature of the feasibility study, environmental components and nature conservation institutes were selected, which represent significant limits in terms of territorial capacity.

In the assessment of the territorial capacity, all variants in the defined area of 500m on each side from the axis of the variant were considered. The assessment focused on the impacts of the different variants on soil, protected areas, Natura 2000 areas, ecological stability system areas, water, noise impacts, emission and immission impacts and collisions with deposit protection areas.

Finally, a comparison and an overall summary of the environmental impacts of individual variants of the road I/66, I/67, I/77 in the given section were prepared.

Impact assessment on Natura 2000 areas and proposed measures

The objective of the present “Nature Assessment” as part of the Feasibility Study is to identify in advance which variants are likely to have a significant negative impact on the conservation and integrity of specific sites. The detail of the assessment corresponds to the details of the submitted study.

The assessment is intended in particular to identify problematic and less problematic parts in terms of Natura 2000 and to select the most appropriate variant. It is therefore not a standard Adequate Assessment, which is most often carried out within the EIA Report (detail of DÚR), but with its detail and content, it is rather to be considered a strategic assessment (pursuant to Section 4 of Act No. 24/2006 Coll.).

The “Nature Assessment” processing was carried out according to the Methodological Guide to the provisions of Articles 6(3) and 6(4) of Directive 92/43/EEC on the protection of habitats, wild fauna and flora (MoE SR, 2002).

The submitted natural assessment is designed to meet the Methodological Requirements and contains the following data:

- Introduction – Assignment, Objective and Assessment Processing Procedure.
- Data on individual variants within the Study - Basic Data, Main Objectives, Measures, Concept
- Data on SAC and SPA - Identify affected sites, Description of affected sites
- Assessment of the impact of the study on the SAC and the SPA - Assessment of the completeness of the supporting documents, Possible effects of the intent
- Conclusion - indication of the resulting assessment, recommended mitigation measures

Summaries of collisions of variants with selected environmental elements, description of problematic parts in terms of Natura 2000 system, impacts from emissions and immissions and impacts on groundwater and watercourses in table form for all sections are specified in Annex C.1 Environment

Section	Variant	Protected areas			Natura 2000			Territorial system of ecological stability (ÚSES)				Water courses		Groundwater object used for water management	Protective zones of water resources	TTP (permanent grassland)	LPF (Forest Soil Fund)	Noise and emissions
		MCHÚ (small scale protected area)	VCHÚ (large scale protected area)	Other	SPA	SAC	PBC (provincional biocentre)	NBC (supra-regional biocentre)	NBK (supra-regional biocorridor)	RBC (regional biocentre)	RBK (regional biocorridor)	Crossing	Intervention in shore stands	Collision	Collision	Occupation	Occupation	Noise barriers
		Collision										number	m			ha	ha	m
1	V1	N	N		N	N	N	N	N	N	A	4	40	Not present	Not present	0	0	-
2	V1	N	N		N	N	N	N	N	N	A	21	140	Not present	Not present	0	0	-
	V2	N	N		N	N	N	N	N	N	A	29	1135	Not present	Not present	24.61	9.97	-
3	V1	A	A		A	A	A	N	A	N	A	22	1030	PWMA Hnilec upper basin (2800m)	Not present	0.42	0	-
	V2	A	A		A	A	N	N	A	N	N	21	1615	PWMA Hnilec upper basin (5600m)	Located by the 1. class protected area	3.55	4.56	893
4	V1	A	A		A	A	A	N	N	N	N	5	55	PWMA Hnilec upper basin (2320m)	Not present	0.12	0.06	-
	V2	A	A		A	A	A	N	N	N	N	8	729	PWMA Hnilec upper basin (2000m)	Not present	4.16	12.29	126
5	V1	N	A		A	A	A	N	N	N	N	12	840	Not present	Not present	0.31	0.1	-
6	V1	N	N		N	N	N	N	N	N	A	5	265	Not present	Not present	0.15	0.05	-
	V2	N	N		N	N	N	N	N	N	A	6	93	Not present	Not present	9.23	3.17	1968

E. Summary in English language

Section	Variant	Protected areas			Natura 2000			Territorial system of ecological stability (ÚSES)				Water courses		Groundwater object used for water management	Protective zones of water resources	TTP (permanent grassland)	LPF (Forest Soil Fund)	Noise and emissions
		MCHÚ (small scale protected area)	VCHÚ (large scale protected area)	Other	SPA	SAC	PBC (provincial biocentre)	NBC (supra-regional biocentre)	NBK (supra-regional biocorridor)	RBC (regional biocentre)	RBK (regional biocorridor)	Crossing	Intervention in shore stands	Collision	Collision	Occupation	Occupation	Noise barriers
		Collision										number	m			ha	ha	m
7	V1	N	N		N	N	N	N	N	N	N	5	35	Not present	Not present	0	0	-
	V2	N	N		N	N	N	N	N	N	N	2	71	Not present	Not present	41.39	2.67	-
8	V1	N	N		N	N	N	N	N	N	N	4	25	Not present	Not present	0	0	-
	V2A	N	N		N	N	N	N	N	N	N	6	107	Not present	Not present	24.8	0	-
	V2B	N	N		N	N	N	N	N	N	N	6	109	Not present	Not present	24.41	0	-
9	V1	A	A		N	N	N	A	A	N	N	10	424	Not present	Located by the 2. class protected area (2 900m)	0	0	-
10	V1	N	A		A	N	N	N	N	N	N	9	367	Not present	Not present	0	0	-
11	V1	A	A		A	A	N	A	N	N	A	14	370	Not present	Not present	0.09	0.45	-
12	V1	N	N		N	N	N	N	N	N	N	6	25	Not present	Not present	0	0	-
	V2	N	N		N	N	N	N	N	N	N	7	99	Not present	Not present	20.87	0	160
13	V1	N	N		N	N	N	N	N	A	A	6	45	Not present	Not present	0	0	-
14	V1	N	N		N	N	N	N	N	N	N	2	10	Not present	Not present	0	0	-
	V2	N	N		N	N	N	N	N	N	N	3	80	Not present	Not present	5.83	0	1745

E. Summary in English language

Section	Variant	Protected areas			Natura 2000			Territorial system of ecological stability (ÚSES)				Water courses		Groundwater object used for water management	Protective zones of water resources	TTP (permanent grassland)	LPF (Forest Soil Fund)	Noise and emissions
		MCHÚ (small scale protected area)	VCHÚ (large scale protected area)	Other	SPA	SAC	PBC (provincial biocentre)	NBC (supra-regional biocentre)	NBK (supra-regional biocorridor)	RBC (regional biocentre)	RBK (regional biocorridor)	Crossing	Intervention in shore stands	Collision	Collision	Occupation	Occupation	Noise barriers
		Collision										number	m			ha	ha	m
15	V1	N	N		N	N	N	N	A	N	N	12	124	Not present	Located by the 2. class protected area (471m)	0.61	0.03	-
	V2	N	N		A	A	N	N	A	N	N	10	353	Not present	Located by the 2. class protected area (510m)	5.72	0	306
16	V1	A	N		N	N	N	N	N	N	N	3	30	Not present	Located by the 2. class protected area (280m)	0	0	-
17	V1	N	N		N	N	N	N	N	A	N	22	309	Not present	Not present	0.95	1.31	-
18	V1	N	N		N	N	N	N	A	N	A	14	85	Not present	Not present	0	0	-
	V2	N	N		A	A	N	A	A	N	A	11	385	Not present	Not present	25.76	7.16	-
19	V1	N	N		N	N	N	N	N	N	A	4	20	Not present	Not present	0	0	-
	V2	N	N		N	A	N	N	N	N	A	4	85	Not present	Not present	7.91	0	188
20	V1	N	N		N	N	N	N	N	N	N	3	25	Not present	Not present	0	0	-

E. Summary in English language

Section	Variant	Protected areas			Natura 2000			Territorial system of ecological stability (ÚSES)				Water courses		Groundwater object used for water management	Protective zones of water resources	TTP (permanent grassland)	LPF (Forest Soil Fund)	Noise and emissions
		MCHÚ (small scale protected area)	VCHÚ (large scale protected area)	Other	SPA	SAC	PBC (provincial biocentre)	NBC (supra-regional biocentre)	NBK (supra-regional biocorridor)	RBC (regional biocentre)	RBK (regional biocorridor)	Crossing	Intervention in shore stands	Collision	Collision	Occupation	Occupation	Noise barriers
		Collision										number	m			ha	ha	m
	V2	N	N		N	A	N	N	N	N	A	3	73	Not present	Not present	6.73	0	232
21	V1	N	N		N	N	N	N	N	A	A	4	15	Not present	Not present	0	0	-
22	V1	N	N		N	N	N	N	N	N	A	4	20	Not present	Not present	0	0	-
	V2	N	N		N	N	N	N	N	N	A	6	126	Not present	Not present	3.71	0	786

7.1.1 Final assessment of territorial capacity

For the overall comparison of the variants in terms of environmental impacts, a table form was used to evaluate the individual impacts on the monitored environmental components and environmental characteristics. The assessment was carried out on the basis of the results given in Annex C.1 Environment.

The assessment was performed with the following impact scale:

- 0 – neutral impact
- -1 – light negative impact
- -2 – negativ impact
- -3 – significant negative impact
- -4 – liquidation impact

Table 10: Impact of individual variants on the elements of the environment

Section	Variant	Elements of the environment								Total	Feasibility	Order
		Soil	Protected areas	Natura 2000	ESES	Water	Noise situation	Air and Climate	Rock environment			
1	V1	-2	0	0	-2	-2	-1	0	0	-7	yes	
2	V1	-2	0	0	-2	-2	-1	0	-1	-8	yes	2
	V2	-3	0	0	-1	-3	-1	0	-1	-9	yes	1
3	V1	-2	-3	-3	-3	-2	-1	0	0	-14	yes	1
	V2	-3	-3	-3	-2	-3	-1	0	0	-15	yes	2
4	V1	-2	-2	-2	-2	-2	-1	0	0	-11	yes	1
	V2	-3	-3	-3	-2	-3	-1	0	0	-15	yes	2
5	V1	-2	-2	-2	-2	-3	-1	0	0	-12	yes	
6	V1	-2	0	0	-1	-3	-1	0	0	-7	yes	1
	V2	-3	0	0	-2	-2	-1	0	0	-8	yes	
7	V1	-2	0	0	-1	-2	-1	0	0	-6	yes	1
	V2	-3	0	0	-1	-3	-1	0	0	-8	yes	2
8	V1	-2	0	0	0	-2	-1	0	-1	-6	yes	1
	V2A	-3	0	0	0	-3	-1	0	-1	-8	yes	2
	V2B	-3	0	0	0	-3	-1	0	-1	-8	yes	3
9	V1	-2	-2	-2	-2	-2	-1	0	0	-11	yes	
10	V1	-2	-1	-1	-1	-2	-1	0	0	-8	yes	
11	V1	-2	-2	-2	-2	-2	-1	0	0	-11	yes	
12	V1	-2	0	0	0	-1	-1	0	-1	-5	yes	1
	V2	-3	0	0	0	-2	-1	0	-1	-7	yes	2
13	V1	-2	0	0	-1	-2	-1	0	0	-6	yes	
14	V1	-2	0	0	-1	-2	-1	0	0	-6	yes	1
	V2	-3	0	0	-1	-3	-1	0	0	-8	yes	2

Section	Variant	Elements of the environment								Total	Feasibility	Order
		Soil	Protected areas	Natura 2000	ESES	Water	Noise situation	Air and Climate	Rock environment			
15	V1	-2	0	-2	-1	-2	-1	0	0	-8	yes	1
	V2	-3	0	-3	-2	-3	-1	0	0	-12	yes	2
16	V1	-2	-1	0	-1	-2	-1	0	0	-7	yes	
17	V1	-2	0	0	-1	-3	-1	0	0	-7	yes	
18	V1	-2	0	0	-2	-2	-1	0	0	-7	yes	1
	V2	-3	0	-2	-1	-3	-1	0	0	-10	yes	2
19	V1	-2	0	0	-1	-2	-1	0	0	-6	yes	1
	V2	-3	0	-2	-2	-3	-1	0	0	-11	yes	2
20	V1	-2	0	0	0	-2	-1	0	0	-5	yes	1
	V2	-3	0	-2	-1	-3	-1	0	0	-10	yes	2
21	V1	-2	0	0	-1	-2	-1	0	0	-6	yes	
22	V1	-2	0	0	-2	-2	-1	0	0	-7	yes	1
	V2	-3	0	0	-2	-3	-1	0	0	-9	yes	2

8 Economic assessment - CBA cost-benefit analysis

8.1 Project implementation objectives

The purpose of the construction is to build a road route with an optimal route in terms of smooth and safe transport as well as in terms of the impact of construction and operation on the population and the natural environment.

The aim of the economic assessment was to assess the eligibility of the investment costs by comparing them with the benefits of the constructed road route. Economic efficiency indicators should also be an important criterion in choosing the optimal I/66, I/67, I/77 route variant.

The cost-benefit analysis (CBA) was prepared in accordance with the CBA Methodology Manual, version 2.1, issued by the Ministry of Transportation and Construction of the Slovak Republic in November 2018.

the assessment of the study of roads I/66, I/67 and I/ 77 was carried out using the Cost Benefit Analysis (CBA) method, which is a comprehensive tool for evaluating investment projects.

The “No investment” variant represents an affected road network without the implementation of I/66, I/67 and I/77 roads with only the cost of maintaining the current road network's operational capability. It is a variant without investment costs - a comparative basis, or also a zero variant.

Variant “with investment” represents the state of operation of the reconstructed or relocated road I/66, I/67, I/77 and further consists of an affected load lightened road network over the life of the investment. In principle, it consists of the proposed variant of the I/9 road, and the load lightened old road. Variant “with investment” is solved in 2 variants. The first one solves the improvement of road reconstruction and with the maximum utilization of the existing road. The second variant solves the problem by building relocations, or bypass roads outside the municipalities.

The construction of road sections was considered for comparison in 2023-2024 with the first year of operation in 2025.

The assessment period is 30 years.

The financial discount rate was set at 4.00%, and the real economic discount rate was set at 5%.

Table 11: Investment costs of variants of roads I/ 66 and I/67 Rožňava - Poprad (€)

Section	Name	Variant	Eur without VAT
U1	I/67 Rožnava - Betliar	V1	7 808 715.63 €
U2	I/67 Betliar - Vlachovo	V1	38 461 528.19 €
U2	I/67 Betliar - Vlachovo	V2	91 796 982.95 €
U3	I/67 Vlachovo - hranica kraja PSK-BBSK	V1	144 973 762.62 €
U3	I/67 Vlachovo - hranica kraja PSK-BBSK	V2	152 468 807.85 €
U4	I/66 hranica kraja PSK-BBSK - Vernár	V1	29 615 783.29 €
U4	I/66 hranica kraja PSK-BBSK - Vernár	V2	60 054 503.89 €
U5	I/66 Vernár - Hranovnica	V1	17 411 689.97 €
U6	I/66 Hranovnica - Poprad	V1	25 194 820.12 €

Section	Name	Variant	Eur without VAT
U6	I/66 Hranovnica - Poprad	V2	58 233 413.56 €

Table 12: Investment costs of variants of roads I/ 66 and I/77 Poprad – Bardejovské Kúpele (€)

Section	Name	Variant	Eur without VAT
U7	I/66 Poprad - Huncovce	V1	10 151 210.73 €
U7	I/66 Poprad - Huncovce	V2	72 443 822.81 €
U8	I/66 Huncovce - Kežmarok	V1	11 052 937.98 €
U8	I/66 Huncovce - Kežmarok	V2A	50 304 513.03 €
U8	I/66 Huncovce - Kežmarok	V2B	53 388 825.56 €
U9	I/66 a I/77 križovatka - Ždiar	V1	33 725 627.25 €
U10	I/66 Ždiar	V1	10 465 306.17 €
U11	I/66 Ždiar - Štátna hranica SR/PL	V1	26 121 309.69 €
U12	I/66 a I/77 Kežmarok- Spišská Belá	V1	8 764 722.15 €
U12	I/66 a I/77 Kežmarok- Spišská Belá	V2	29 892 288.09 €
U13	I/77 Spišská Belá - Podolínec	V1	11 684 978.99 €
U14	I/77 Podolínec	V1	5 582 703.27 €
U14	I/77 Podolínec	V2	14 979 774.94 €
U15	I/77 Podolínec - Hniezdne	V1	28 869 735.46 €
U15	I/77 Podolínec - Hniezdne	V2	58 060 665.45 €
U16	I/77 Hniezdne - Stará Ľubovňa	V1	3 613 534.45 €
U17	I/77 Ľubotín - Lenartov	V1	34 590 573.92 €
U18	I/77 Lenartov - Tarnov	V1	20 587 958.74 €
U18	I/77 Lenartov - Tarnov	V2	86 064 570.48 €
U19	I/77 Tarnov - Mokroluh	V1	6 362 893.56 €
U19	I/77 Tarnov - Mokroluh	V2	9 565 921.01 €
U20	I/77 Mokroluh	V1	3 719 009.28 €
U20	I/77 Mokroluh	V2	8 411 804.11 €
U21	I/77 Bardejov - Bardejovské Kúpele	V1	15 019 168.08 €
U22	I/77 Bardejovské Kúpele - Dlhá Lúka	V1	4 106 067.09 €
U22	I/77 Bardejovské Kúpele - Dlhá Lúka	V2	42 849 723.37 €

Table 13: Resulting assessment of sections

Section	Name	Variant	Eur without VAT	Net Present value (ENPV)	Internal rate of return (ERR)	Socio-economic return
U1	I/67 Rožnava - Betliar	V1	7 808 715.63 €	-5 524 333 €	-3.54%	49.8
U2	I/67 Betliar - Vlachovo	V1	38 461 528.19 €	-20 278 697 €	-0.76%	32.4
U2	I/67 Betliar - Vlachovo	V2	91 796 982.95 €	-46 150 922 €	0.66%	36.4
U3	I/67 Vlachovo - hranica kraja PSK-BBSK	V1	144 973 762.62 €	-100 135 533 €	-1.90%	78.2
U3	I/67 Vlachovo - hranica kraja PSK-BBSK	V2	152 468 807.85 €	-101 549 405 €	-1.67%	61.6
U4	I/66 hranica kraja PSK-BBSK - Vernár	V1	29 615 783.29 €	-12 814 312 €	0.70%	28.4
U4	I/66 hranica kraja PSK-BBSK - Vernár	V2	60 054 503.89 €	-32 823 196 €	0.22%	43.5
U5	I/66 Vernár - Hranovnica	V1	17 411 689.97 €	-9 648 865 €	-1.11%	37.4
U6	I/66 Hranovnica - Poprad	V1	25 194 820.12 €	1 185 949 €	5.39%	15.8
U6	I/66 Hranovnica - Poprad	V2	58 233 413.56 €	-23 971 776 €	1.46%	30.3
U7	I/66 Poprad - Huncovce	V1	10 151 210.73 €	5 014 529 €	8.42%	12.0
U7	I/66 Poprad - Huncovce	V2	72 443 822.81 €	11 843 291 €	6.24%	15.1
U8	I/66 Huncovce - Kežmarok	V1	11 052 937.98 €	4 663 618 €	7.72%	13.4
U8	I/66 Huncovce - Kežmarok	V2A	50 304 513.03 €	25 673 365 €	8.56%	12.4
U8	I/66 Huncovce - Kežmarok	V2B	53 388 825.56 €	20 010 537 €	7.69%	13.3
U9	I/66 a I/77 križovatka - Ždiar	V1	33 725 627.25 €	-18 379 746 €	-0.99%	33.6
U10	I/66 Ždiar	V1	10 465 306.17 €	-4 975 095 €	0.09%	31.1
U11	I/66 Ždiar - Štátna hranica SR/PL	V1	26 121 309.69 €	-6 453 353 €	2.62%	22.6
U12	I/66 a I/77 Kežmarok- Spišská Belá	V1	8 764 722.15 €	6 444 067 €	9.88%	10.5
U12	I/66 a I/77 Kežmarok- Spišská Belá	V2	29 892 288.09 €	24 662 153 €	10.93%	8.7
U13	I/77 Spišská Belá - Podolínec	V1	11 684 978.99 €	-1 789 931 €	3.59%	19.0
U14	I/77 Podolínec	V1	5 582 703.27 €	-455 516 €	4.29%	17.7
U14	I/77 Podolínec	V2	14 979 774.94 €	6 530 522 €	8.24%	12.0
U15	I/77 Podolínec - Hniezdne	V1	28 869 735.46 €	-10 877 530 €	1.39%	25.5
U15	I/77 Podolínec - Hniezdne	V2	58 060 665.45 €	25 141 809 €	8.27%	12.0
U16	I/77 Hniezdne - Stará Ľubovňa	V1	3 613 534.45 €	397 065 €	5.91%	14.7
U17	I/77 Ľubotín - Lenartov	V1	34 590 573.92 €	-18 220 804 €	-0.58%	31.9
U18	I/77 Lenartov - Tarnov	V1	20 587 958.74 €	-12 308 268 €	-1.76%	37.5
U18	I/77 Lenartov - Tarnov	V2	86 064 570.48 €	-62 746 840 €	-2.04%	56.3
U19	I/77 Tarnov - Mokroluh	V1	6 362 893.56 €	-834 100 €	3.84%	20
U19	I/77 Tarnov - Mokroluh	V2	9 565 921.01 €	6 063 161 €	9.64%	9.6
U20	I/77 Mokroluh	V1	3 719 009.28 €	-1 921 648 €	-0.39%	30.6
U20	I/77 Mokroluh	V2	8 411 804.11 €	-78 671 871 €	n	n
U21	I/77 Bardejov - Bardejovské Kúpele	V1	15 019 168.08 €	2 501 220 €	6.34%	14.5
U22	I/77 Bardejovské Kúpele - Dlhá Lúka	V1	4 106 067.09 €	-798 081 €	3.22%	20.2
U22	I/77 Bardejovské Kúpele - Dlhá Lúka	V2	42 849 723.37 €	-28 695 805 €	-0.86%	37.0

The investment efficiency calculations should answer the question of the extent to which the construction of a specific road section is necessary and which variant is most suitable. This takes into account the amount of data on the proposed route, the network affected, the characteristics of the road, traffic flow, traffic growth forecast, construction cost, etc.

On the basis of the sections assessed in the reconstruction variant (variant V1), the following sections come out as profitable (listed in the order of ERR achieved):

I/66 Poprad – Huncovce

I/66 Huncovce – Kežmarok

I/66 a I/77 Kežmarok – Spišská Belá

I/77 Bardejov – Bardejovské Kúpele

Hniezdne – Stará Ľubovňa

I/66 Hranovnica – Poprad

On the basis of the sections assessed in the relocation variant (variant V2), the following sections come out as profitable (listed in the order of ERR achieved):

I/66 Kežmarok – Spišská Belá

I/77 Podolínec – Hniezdne

I/77 Podolínec, bypass

I/77 Tarnov – Mokroluh

I/66 Huncovce – Kežmarok V2A

I/66 Poprad - Huncovce

9 Detailed summaries of assessment and assessment of variants and recommendations

9.1 Assessment from the technical perspective

Section	V0			V1	V2
	Stationing		length	length	length
	from	to	[km]	[km]	[km]
1	15.136	19.053	3.917	3.917	
2	19.053	36.963	17.910	17.886	**17.407**
3	36.963	61.320	24.357	23.793	**17.785**
4	167.830	175.872	8.042	7.533	**6.544**
5	175.872	182.313	6.441	6.305	**-**
6	182.313	193.060	10.747	10.484	**11.057**
7	199.542	204.678	5.136	5.136	**5.603**
8	204.678	210.160	5.482	5.682	
8A					**5.116 + 0.506**
8B					**4.893 + 0.506**
8C					**4.915 + 0.506**
9	214.470	229.584	15.114	15.049	**-**
10	229.584	235.650	6.066	6.049	**-**
11	235.650	246.495	10.845	9.387	**-**
12	210.160	214.470	*4.310*	*4.362*	**6.564+ 0.826**
	0.000	1.672	*1.672*	*1.667*	
			5.982	**6.029**	
13	1.672	8.489	6.817	6.805	**-**
14	8.489	11.675	3.186	3.180	**3.228**
15	11.675	23.390	11.715	11.729	**9.865**
16	23.390	25.600	2.210	2.208	-
17	25.600	39.800	14.200	13.164	**-**
18	39.800	51.290	11.490	11.442	**10.9**
19	51.290	55.482	4.192	4.191	**4.219**
20	55.482	57.718	2.236	2.236	**2.527**
21	60.640	63.793	3.153	3.370	-
22	63.793	66.400	2.607	2.614	**2.552**

Variants 1 were assessed as more advantageous based on the following reasons:

- Variants 1 examine the possibility of reconstruction of the existing state and respect as much as possible the existing development in urban areas of municipalities.
- Variants 1 modify the local critical points on an existing road as unsatisfactory directional and height curves, add additional lanes in climbs, reconstruct unsatisfactory bridges, etc. This is technically less demanding than the construction of proposed bypasses and road relocations.
- Under Variant 1, the reconstructions of existing intersections are proposed as level intersections, which is less technically demanding compared to proposed interchanges in Variant 2.

All proposed variants 1 and 2 in all sections are technically feasible.

Based on the above, Variants 1 are more preferred than Variants 2.

9.2 Assessment from the traffic perspective

The results of the traffic zero state assessment - i.e. state without modifications on the road network - showed the following:

Year 2025

During this period, the sections with insufficient capacity and exceeded capacity sections occur in section Poprad –Kežmarok. There is a strong traffic relationship between these towns, and transit traffic also increases the traffic load.

The unsuitable sections in the rural begin at the intersection with the road III/3093 (V. Slavkov) - up to the beginning of Kežmarok (level of transport quality D and E).

In the urban areas of Veľká Lomnica and Kežmarok, the capacity of the road I/67 is exceeded. In Veľká Lomnica there is also a critical intersection I/67 - III/540 (proximity to the railway track, poor visibility conditions).

The quality level D (in accordance with STN 73 6101, no longer satisfactory for class I roads) will be achieved also in the urban area of Spišská Belá - to the cross. with route III/3103.

Unsatisfactory condition cannot be resolved by modification on the road network - construction of the bypass of Kežmarok and Spišská Belá is necessary

Width arrangement

- **4 lane road in the section from the start of the bypass - intersection Kežmarok west**
- **2 lane road (half profile road) - Kežmarok west - end of bypass**

Given the short time period, it is not realistic to build a bypass as a whole by 2025.

Recommended phase of construction:

Until 2025

- **1st phase: Section start – intersection Kežmarok south**
- **2nd phase: Intersection Kežmarok, south - Kežmarok, west – Kežmarok, north, including the spur road to road I/66**

Until 2030

- **3rd phase: Kežmarok, north – Spišská Belá , west – Spišská Belá, east**

In the outlook period of 2025 the capacity of the urban section on the road I/77 in Bardejov is exceeded (2 - lane section of Duklianska street in the section from Ľ. Štúra street – up to roundabout III/3533) and grade “D” is achieved by urban sections of Slovenská street

All other sections of the existing road network under assessment are in compliance.

Unsuitable condition will be solved by modifications on the road network - extension to 4-lane and increasing the intersection capacity.

Year 2035

In this period, we also recommend to address the "sufficient" capacity of transits of urban areas of towns which are important in their function within the area (historical center, significant tourism, spas ...), where the negative impact of heavy transit traffic is apparent and point defects occur, causing risks to transport safety.

By 2035 resolve bypasses of municipalities on the section Stará Ľubovňa - Poprad, where the intensity of transit traffic will increase after opening of the border crossing Mníšek nad Popradom for heavy freight transport.

In the affected section of Stará Ľubovňa - Poprad we recommend the implementation of the proposed bypasses, even with sufficient capacity of the existing road by 2035, in order to ensure safety and protection of residents from the negative effects of heavy freight transport.

Year 2045

We recommend making modifications to the road network to improve the quality of the road network and contribute to transport safety

We recommend reevaluating the potential of the railway track no. 185 Poprad - Stará Ľubovňa, as an alternative to IAD by means of a separate study, mainly as an alternative to the proposed bypasses of the towns of Kežmarok and Spišská Belá.

We recommend reviewing the efficiency of connections and the options for optimizing public car transport lines based on a detailed analysis of passenger demand.

We recommend the construction of cycling routes within larger towns, which could be used for trips within the town territory, or shorter trips to the surroundings (Rožňava, Poprad, Kežmarok, Stará Ľubovňa, Bardejov).

In relation to longer routes, we propose a combination of bicycle in urban area + railway.

We recommend supporting the development of cycle routes, but with an emphasis on safety of such travel. In any case, it is necessary to observe the conditions specified in TP 085 Design of cycling infrastructure.

9.3 Assessment from the economical perspective

From the economic point of view, sections no. 6, 7, 8, 16 and 21 are favourable for Variant 1.

For Variant 2 the favourable section include sections no. 7, no.8, no.12, no. 14, no.15 and no.19.

Variant	Section		Recommended year of implementation	ENPV	IRR	B/C
Variant 1	Section no.1	I/67 Rožňava - Betliar	2045	-5 524 333	-3.54	0.14
	Section no.2	I/67 Betliar - Vlachovo	2045	-20 278 697	-0.76	0.39
	Section no.3	I/67 Vlachovo - hranica kraja PSK-BBSK	2045	-100 135 533	-1.9	0.22
	Section no.4	I/66 hranica kraja PSK-BBSK – Vernár	2045	-12 814 312	0.7	0.55

Variant	Section		Recommended year of implementation	ENPV	IRR	B/C
	Section no.5	I/66 Vernár – Hranovnica	2045	-9 648 865	-1.11	0.39
	Section no.6	I/66 Hranovnica – Poprad	2045	1 185 949	5.39	1.05
	Section no.7	I/66 Poprad – Huncovce	2025	5 014 529	8.42	1.56
	Section no.8	I/66 Huncovce - Kežmarok	2025	4 663 618	7.72	1.48
	Section no.9	I/66 a I/77 križovatka - Ždiar	2045	-18 379 746	-0.99	0.38
	Section no.10	I/66 Ždiar	2045	-4 975 095	0.09	0.46
	Section no.11	I/66 Ždiar - Štátna hranica SR/PL	2025	-6 453 353	2.62	0.71
	Section no.12	I/66 Kežmarok - I/77 Spišská Belá	2030	6 444 067	9.88	1.80
	Section no.13	I/77 Spišská Belá - Podolínec	2035	-1 789 931	3.59	0.82
	Section no.14	I/77 Podolínec	2035	-455 516	4.29	0.91
	Section no.15	I/77 Podolínec – Hniezdne	2035	-10 877 530	1.39	0.58
	Section no.16	I/77 Hniezdne – Stará Ľubovňa	2035	397 065	5.91	1.13
	Section no.17	I/77 Ľubotín - Lenartov	2045	-18 220 804	-0.58	0.40
	Section no.18	I/77 Lenartov - Tarnov	2045	-12 308 268	-1.76	0.31
	Section no.19	I/77 Tarnov – Mokroluh	2045	-834 100 €	3.84	0.84
	Section no.20	I/77 Mokroluh	2045	-1 921 648	-0.39	0.40
	Section no.21	I/77 Bardejov – Bardejovské kúpele	2025	2 501 220	6.34	1.19
	Section no.22	I/77 Bardejovské kúpele - Dlhá Lúka	2045	-789 081	3.22	0.78

Variant	Section		Recommended year of implementation	ENPV	IRR	B/C
Variant 2	Section no.2	I/67 Betliar - Vlachovo	2045	-46 150 922	0.66	0.51
	Section no. 3	I/67 Vlachovo - hranica kraja PSK-BBSK	2045	-101 549 405	-1.67	0.33

Variant	Section		Recommended year of implementation	ENPV	IRR	B/C
	Section No. 4	I/66 hranica kraja PSK-BBSK – Vernár	2045	-32 823 196	0.22	0.43
	Section No. 6	I/66 Hranovnica – Poprad	2045	-23 971 776	1.46	0.55
	Section No. 7	I/66 Poprad – Huncovce	2025	11 843 291	6.24	1.16
	Section no.8A	I/66 Huncovce - Kežmarok	2025	25 673 365	8.56	1.49
	Section no. 8B	I/66 Huncovce - Kežmarok	2025	20 010 537	7.69	1.37
	Section No. 8C	I/66 Huncovce - Kežmarok	2025	20 979 722	7.54	1.35
	Section No. 12	I/66 Kežmarok - I/77 Spišská Belá	2030	24 662 153	10.93	1.49
	Section No. 14	I/77 Podolínec	2035	6 530 522	8.24	1.43
	Section No. 15	I/77 Podolínec – Hniezdne	2035	25 141 809	8.27	1.43
	Section no.18	I/77 Lenartov - Tarnov	2045	-62 746 840	-2.04	0.28
	Section no.19	I/77 Tarnov – Mokroluh	2045	6 063 161	9.64	1.56
	Section no.20	I/77 Mokroluh	2045	-78 671 871	-100	-7.66
	Section no.22	I/77 Bardejovské kúpele - Dlhá Lúka	2045	-28 695 805	-0.86	0.37

9.4 Environmental assessment

The content of this work includes the collisions of the designed variants with the environment, presentation and assessment of these collisions.

In processing this part of the feasibility study, the area of interest was examined, described and assessed in all required areas. The work described collisions with partial institutes of nature and landscape protection (SPA, ÚSES, Natura 2000) and also collisions with selected environmental components (water, soil, rocks, climate, air) listed in Annex 9 of Act no. 24/2006 Coll. on Environmental Impact Assessment as amended. Impact assessment on noise and emissions was also performed.

Possible impacts of individual routes were assessed with the precautionary principle. Finally, the assessment of such collisions and comparison of individual variants was carried out.

All mitigation measures must be incorporated into the project during the next project preparation of the selected variant

The assessment of the variants showed that all variants are comparable from a comprehensive point of view, are feasible and can be recommended from the point of view of environmental protection also for further project preparation and subsequent implementation.

9.5 Final assessment of the project and recommendation of the person preparing the feasibility study

Section no. 1 I/67 Rožňava – Betliar km 15.136 – km 19.053 of the road I/67

Due to the route of I/67, Variant 2 was not designed for this section

The existing I/67 road is capacity-sufficient for the entire outlook period. The existing category (C11,5) corresponds to a class I road.

Prospectively, we recommend the Variant V1, as we assume that the I/67 road should mainly provide a service function in these sections.

Section no. 2 I/67 Betliar - Vlachovo km 19.08 – km 36.963 of the road I/67

The existing I/67 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

Prospectively, we recommend the Variant V1, as we assume that the I/67 road should mainly provide a service function in these sections. At the same time, we recommend to monitor the development of traffic on the existing road and, in case of increased traffic load, to consider the preparation of Variant V2.

Section no.3 I/67 Vlachovo – region border PSK-BBSK km 36.963 of the road I/67 – km 167.83 of the road I/66

The existing I/67 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

Prospectively, we recommend the Variant V1, as we assume that the I/67 road should mainly provide a service function in these sections. At the same time, we recommend to monitor the development of traffic on the existing road and, in case of increased traffic load, to consider the preparation of Variant V2.

Section no.4 I/66 region border PSK – BBSK - Vernár km 167.83 – km 175.872 of the road I/66

The existing I/66 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

Prospectively, we recommend the Variant V1, as we assume that the I/67 road should mainly provide a service function in these sections. At the same time, we recommend to monitor the development of traffic on the existing road and, in case of increased traffic load, to consider the preparation of Variant V2.

Section no.5 I/66 Vernár – Hranovnica km 175.872 – 182.313 of the road I/66

The existing I/66 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Prospectively we recommend Variant 2 (2045), which is more economical than Variant 1. (modification of the routing of existing road)

Section no.6 I/66 Hranovnica – Poprad km 182.313 – km 193.06 of the road I/66

The existing I/66 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Variant V1 improves directional and elevation routing and thus increases safety and driving comfort

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

We recommend the implementation of Variant 1 by 2045 in this section.

By 2045 in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard in the maintenance of the existing road. Prioritize the modification of intersection with road III / 3075 to a light controlled intersection.

Section no.7 I/66 Poprad – Huncovce km 199.542 – 204.678 of the road I/66

The existing I/66 road no longer meets the capacity requirements. With the proposed variant of V1 we will reconstruct the road to category C 9.5/60 in the rural area of the municipality (C9.5 in the urban area would require extensive demolition in the municipality), but even its expansion is not sufficient for capacity reasons. Solution comes with the construction of the bypass (V2), which will connect to the I/66 road at km 199.542 to the already constructed section of the "I/67 Poprad – Kežmarok, 1st phase". At km 5.5, there is an interchange Huncovce, which provides connection to the existing I/66 road at km 204.678 by two three-way intersections in the section between Huncovce and Kežmark.

We recommend the implementation of variant no. 2 by 2025 in category C 24.5/80.

For the half profile of category C24.5, the quality level in 2025 reaches grade D, which is unsuitable for class I roads.

At the same time, we recommend a change of traffic direction at the intersection with road II/540, where it is proposed to turn road II/540 into a one-way road (Poprad-Tatranská Lomnica direction) and also change the Jilemnického street to a one-way road (Tatranská Lomnica - Poprad direction). At the same time, the necessary turn and merge lanes would be added on the road I/66.

Section no.8 I/66 Huncovce – Kežmarok km 204.678 – 210.16 of the road I/66

The existing I/66 road no longer meets the capacity requirements.

With the proposed variant V1 we will reconstruct the road to the category C 9.5/60 in the rural area of the municipality, but even after the reconstruction, the road will not be sufficient for capacity reasons.

The solution is to build a bypass (V2) of the town of Kežmarok. Variant A - red is based on the town plan of Kežmarok and PSK and is more cost-effective, but it is in close proximity to the town and does not allow further development of the town.

Variant B – blue and Variant C – green are not in line with the currently valid version of the town plan of Kežmarok and PSK and is less cost-effective than variant A. However, Variant B as same as Variant C are not in close proximity to the town and thus allows further development of the town.

Comparison of variants using multicriteria analysis showed that Variant 2A is the most suitable variant.

We recommend the implementation of the bypass by 2025 in variant 2A.

This study did not confirm the need to build Option 2A in category C 24.5 / 80.

We recommend optimizing the investment costs of the recommended option in the next stage of project documentation

- changing the communication category to C 11,5 / 80,
- adjusting the horizontal and vertical aligement of the route in the sense of reducing earthworks and eliminating PHS,
- optimization of bridge structures and relocation of engineering networks in the area.

In the next stage of the project documentation we recommend the development of new traffic documents, which will include changes in the ŽSR graphics resulting from the PUM of the Prešov region (PUM proposes a 30 min interval Spišská Belá - Poprad). hour interval Stará Ľubovňa - Spišská Belá).

At the same time for the road I/66 we recommend replacing and expanding the existing roadway to category C9.5 and implementing modifications to increase the road safety standard in the town of Kežmarok.

Section no.9 I/66 and I/77 intersection - Ždiar km 214.47 – 229.584 of the road I/66

The existing I/66 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Prospectively, we recommend the Variant V1 (2045), as we assume that the I/66 road should mainly provide a service function in these sections.

Section no.10 I/66 Ždiar km 229.854 – km 235.650 of the road I/66

The existing I/66 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Prospectively, we recommend the Variant V1 (2045), as we assume that the I/66 road should mainly provide a service function in these sections.

Section no.11 I/66 Ždiar – state border SR/PL km 235.65 – km 240.731 road I/66

The existing I/66 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Prospectively, we recommend the Variant V1 (2045), as we assume that the I/66 road should mainly provide a service function in these sections.

At the same time, we recommend rerouting of the traffic to the border crossing Podspády and re-categorizing of the III. class road to I/66 by 2025.

Section no.12 I/66 and I/77 Kežmarok – Spišská Belá km 210.16 of the road I/66 – km 1.672 of the road I/77

The existing I/66 road will be sufficient until 2035, mainly in the Strážky - Spišská Belá section. The capacity of existing road is already exceeded in the Spišská Belá urban area.

With the proposed variant V1 we will reconstruct the road to the category C 9.5/60 in the rural area of the municipality, but even after the reconstruction, the road will not be sufficient for capacity reasons in the year 2045 in the Strážky – Spišská Belá section.

The solution is to build a bypass (V2) of the town of Spišská Belá.

We recommend the implementation of the bypass by 2030 in the half profile of category C 24.5/80.

Section no.13 I/77 Spišská Belá – Podolínec km 1.672 – km 8.489 road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

We recommend the implementation of Variant V1 by 2035, as after the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport.

We also recommend resolving the CAS issue at km 2.87 with the help of traffic signs.

Section no.14 I/77 Podolínec km 8.489 – km 11.675 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V2 is the most suitable variant.

We recommend the implementation of Variant V2 by 2035, as after the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport.

For the implementation of the bypass in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

Section no.15 I/77 Podolínec – Hniezdne km 11.675 – km 23.390 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V2 is the most suitable variant.

We recommend the implementation of Variant V2 by 2035, as after the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport.

For the implementation of the bypass in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

Section no.16 I/77 Hniezdne – Stará Ľubovňa km 23.390 – km 25.60 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

We recommend the implementation of Variant V1 by 2035, as after the restrictions on the border crossing at Mníšek nad Popradom are lifted, the traffic load on the section will be increased by heavy freight transport.

For the implementation of Variant V1 in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

Section no.17 I/77 Ľubotín – Lenartov km 25.600 – km 39.80 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Prospectively, we recommend the Variant V1 (2045), as we assume that the I/66 road should mainly provide a service function in these sections.

For the implementation of Variant V1 in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

Section no.18 I/77 Lenartov – Tarnov km 39.80 – km 51.29 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

Prospectively, we recommend the Variant V1 (2045), as we assume that the I/77 road should mainly provide a service function in these sections.

For the implementation of Variant V1 in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

Section no.19 I/77 Tarnov – Mokroluh km 51.290 – km 55.482 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

We recommend the implementation of Variant V2 by 2045.

For the implementation of the bypass in this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

Section no.20 I/77 Mokroluh km 55.482 – km 57.718 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

In this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard .

Section no.21 I/77 Bardejov – Bardejovské Kúpele km 60.640 – km 63.793 of the road I/77

The existing I/77 route is currently sufficient in capacity up to coke 2025. In the outlook period of 2025 the capacity of the urban section on the road I/77 in Bardejov will be exceeded (2 - lane section of Duklianska street in the section from the Ľ. Štúra street – up to roundabout III/3533) and grade “D” is achieved by urban sections of Slovenská street

We recommend the implementation of Variant V1 by 2025.

Section no.22 I/77 Bardejovské Kúpele – Dlhá Lúka km 63.793 – km 66.400 of the road I/77

The existing I/77 road is capacity-sufficient for the entire outlook period.

In some parts, however, its category does not correspond to the class I road.

Comparison of variants using multicriteria analysis showed that Variant V1 is the most suitable variant.

In this section, we recommend replacing and expanding the existing roadway and implementing modifications to increase the road safety standard.

We recommend reevaluating the potential of the railway track no. 185 Poprad - Stará Ľubovňa, as an alternative to IAD by means of a separate study, mainly as an alternative to the proposed bypasses of the towns of Kežmarok and Spišská Belá.

We recommend reviewing the efficiency of connections and the options for optimizing public car transport lines based on a detailed analysis of passenger demand.

We recommend the construction of cycling routes within larger towns, which could be used for trips within the town territory, or shorter trips to the surroundings (Rožňava, Poprad, Kežmarok, Stará Ľubovňa, Bardejov).

In relation to longer routes, we propose a combination of bicycle in urban area + railway.

We recommend supporting the development of cycle routes, but with an emphasis on safety of such travel. In any case, it is necessary to observe the conditions specified in TP 085 Design of cycling infrastructure.

Table 14: Draft schedule for implementation of variants

Draft schedule									
Section number	Section	Variant	year						
			2020	2025	2030	2035	2040	2045	after 2045
1	I/67 Rožňava - Betliar	V1							
2	I/67 Betliar - Vlachovo	V1							
		V2							
3	I/67 Vlachovo - region border PSK-BBSK	V1							
		V2							
4	I/66 region border PSK-BBSK – Vernár	V1							
		V2							
5	I/66 Vernár – Hranovnica	V1							
6	I/66 Hranovnica – Poprad	V1							
		V2							
7	I/66 Poprad – Huncovce	V1							
		V2							
8	I/66 Huncovce - Kežmarok	V1							
		V2A							
		V2B							
		V2C							

Draft schedule									
9	I/66 Spišská Belá – Ždiar	V1							
10	I/66 Ždiar	V1							
11	I/66 Ždiar - State border SR/PL	V1							
12	I/66 Kežmarok - I/77 Spišská Belá	V1							
		V2							
13	I/77 Spišská Belá - Podolínec	V1							
14	I/77 Podolínec	V1							
		V2							
15	I/77 Podolínec – Hniezdne	V1							
		V2							
16	I/77 Hniezdne – Stará Ľubovňa	V1							
17	I/77 Ľubotín - Lenartov	V1							
18	I/77 Lenartov - Tarnov	V1							
		V2							
19	I/77 Tarnov – Mokroluh	V1							
		V2							
20	I/77 Mokroluh – Bardejov	V1							
		V2							
21	I/77 Bardejov – Bardejovské kúpele	V1							
22	I/77 Bardejovské kúpele - Dlhá Lúka	V1							
		V2							

Prepared by:

June 2019

Ing. Tomáš Kubačka (t.kubacka@hbhprojekt.sk) and others from HBH Projekt spol s.r.o.