

**D1 MOTORWAY, CONSTRUCTION 0135 KROMĚŘÍŽ VÝCHOD -
ŘÍKOVICE
R55 EXPRESSWAY, CONSTRUCTION 5503 SKALKA – HULÍN**

PEI
PROJECT ENVIRONMENTAL INFORMATION



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INTRODUCTION

The present document "Project Environmental Information" (hereinafter PEI) has been developed as a separate annex to the application for the financing of the construction of the D1 Motorway, construction 0135 Kroměříž východ - Říkovice and the R55 Expressway, construction 5503 Skalka - Hulín from the EU funds.

The purpose of this document is to provide a comprehensive survey of the method of how the environmental protection has been reflected in the process of preparation of these constructions.

The present document not only deals with the very process of assessing the environmental impact of the construction (EIA process) but it also summarises all the necessary measures and decisions which precede and follow the process.

This document gives an overall summary of how the environmental protection was secured during the investment preparation, for further details, please consult the individual source documents.

The structure of the present PEI is based on Annex IV to Directive EIA No. 85/337/ECC (as amended by Directives 97/11/EC and 2003/35/EC), which has been slightly modified in certain parts to correspond to these particular cases.

1. DESCRIPTION OF THE PLAN

1.1. LOCALISATION OF THE PLAN IN THE TRAFFIC AND TRANSPORT NETWORK

The submitted plan comprises two closely linked constructions, namely the section of the D1 Motorway, construction 0135 Kroměříž východ - Říkovice and the section of the R55 Expressway, construction 5503 Skalka-Hulín. For location of these constructions on the Czech Republic map, see *Figure 1*.



Figure 1: Location of constructions 0135 and 5503 on the map of the Czech Republic and its traffic and transport network

D1 Motorway, construction 0135 Kroměříž východ - Říkovice is a part of the newly built D1 Motorway Vyškov - Kroměříž - Hulín - Přerov - Lipník nad Bečvou which will provide an appropriate capacity connection of the Central Moravia area, particularly of the entire Zlín Region with the region capital - Zlín, to the Czech national motorway network in the directions of Brno, Praha and Ostrava. Construction 0135 is a part of the backbone motorway route in the Czech Republic, i.e. the D1 Motorway Praha - Brno - Ostrava. The D1 motorway route in question represents a road of international importance which forms a part of the TEN-T transport network and is linked to the Pan-European transport corridor IV (priority axis no. 25 Gdaňsk - Brno/Bratislava - Vienna).

A part of the D1 motorway route Vyškov - Kroměříž - Hulín - Přerov - Lipník nad Bečvou, i.e. the section before the construction 0135 Kroměříž východ - Říkovice, is already in operation. Individual constructions located in the motorway route in question and the stages of preparedness are given in the following table.

Table 1: Overview of constructions located in the D1 motorway route Vyškov - Kroměříž - Lipník nad Bečvou

construction number	Section	Kilometre on the D1	Length [km]	Category as per ČSN	Structures/facilities	Preparation stage	Implementation
0133	Vyškov - Mořice	229.675 - 245.684	16	D26.5/120	3 MÚK (interchanges), motorway administration and maintenance centre, 22 bridge structures	in operation	12/2001 - 10/2005

0134.1/I	Mořice - Kojetín, stage I	245.684 - 247.184	1.5	D26.5/120	2 bridge structures	in operation	10/2004 - 10/2005
0134.1/II	Mořice - Kojetín, stage II	247.184 - 253.784	6.6	D26.5/120	1 MÚK, rest area, 11 bridge structures	in operation	02/2007 - 09/2009
0134.2	Kojetín - Kroměříž západ	253.784 - 257.784	4	D26.5/120	4 bridge structures	in operation	05/2006 - 09/2008
0134.3	Kroměříž západ - Kroměříž východ	257.784 - 260.800	3	D26.5/120	2 MÚK, 7 bridge structures	in operation	02/2005 - 09/2008
0135	Kroměříž východ - Říkovice	260.800 - 272.100	11.3	D26.5/120, or R24.5/120 for R55	3 MÚK, 21 bridge structures	under construction	04/2008 - end of 2010, based on the plan)
0136	Říkovice - Přerov	272.100 - 282.200	10.1	D26.5/120	3 MÚK, 15 bridge structures	planning permission issued	2012 - 2014 planned
0137	Přerov - Lipník	282.200 - 296.513	14.3	D26.5/120	3 MÚK, motorway administration and maintenance centre, 24 bridge structures	planning permission issued	2011 - 2013 planned

The D1 Motorway, construction 0135, also includes the intersection of two other important transport routes, the R55 and R49 Expressways. This intersection, sometimes called “Moravian crossroad” is serviced by MÚK Hulín. In an eastward direction, still within MÚK Hulín, the R49 Expressway (currently being prepared) joins the D1 Motorway. The expressway goes further to the east to the Slovak borders. In an southward direction, within MÚK Hulín, the R55 Expressway leading to Otrokovice joins the D1 Motorway. A part of R55 up to MÚK Hulín east belongs to construction 0135; further to the south, the construction 5503 Skalka - Hulín is located.

R55 Expressway, Construction 5503 Skalka - Hulín replaces a part of the existing 1st Class Road I/55. This road is a part of the international European network TEN-T with direct links to Poland, Czech Republic, Austria and Slovakia. Within the Czech Republic, the I/55 provides a passage through the south-eastern part of Moravia as it interlinks the cities of Olomouc - Přerov - Otrokovice - Uherské Hradiště - Břeclav, and hereby interlinks the Olomouc, Zlín and South Moravian Regions. In the area affected by construction 5503, the road also provides connection to another important route, Road I/49 which interlinks the cities of Otrokovice and the region capital Zlín. With the construction 5503 in operation, the section of R55 will connect the capital of Zlín and other parts of the Zlín Region with the Czech national motorway network.

As mentioned above, in the north, construction 5503 adjoins the partially functional (still under construction) D1 motorway route Vyškov - Kroměříž - Hulín - Přerov - Lipník nad Bečvou. Towards the south, the construction adjoins the fully operated part of the R55 Expressway leading in the north-eastern bypass of Otrokovice (the section put into operation in 2006). From the technical point of view, it must be mentioned that in the section Hulín - Říkovice, the road R55 runs in a parallel line with the D1, leaving Přerov, the road runs independently towards Olomouc, i.e. in the section Hulín - Říkovice, the D1 Motorway forms a common route with R55.

The section of the R55 Expressway, construction 5503, is closely related with the section of the D1 Motorway, construction 0135. The most efficient and environmentally friendly solution of the interconnection is only possible if both the sections are constructed simultaneously, the preparation took this fact into account.

For location of constructions 0135 and 5503 and the adjoining sections in the area of the Central Moravia, see *Figure 2*.



Figure 2: Location of construction "D1 0135" within the transport network of the Central Moravia

With the completion of the outstanding constructions 0135 and 5503 between the functional sections of the D1 Motorway and the R55 Expressway (north-eastern bypass of Otrokovice), the important transport routes of the Central Moravia will be interconnected and the Zlín Region and its capital city easily connected to the Czech national motorway network. Concurrently, the traffic on the existing city roads I/47 and I/55 will be reduced, namely in Kroměříž, Hulín, Břest, Záhlnice, Tlumačov, Otrokovice, the cities which are currently threatened by negative impacts of traffic - growing traffic intensity and inherent risks of elevated noise, emission and road accidents.

1.2. BASIC TECHNICAL DESCRIPTION

The section of the **D1 Motorway, construction 0135 Kroměříž východ - Říkovice**, as dealt with herein, begins at the north-eastern edge of the city of Kroměříž, in km 64.000, where it joins the previous construction 0134.3 Kroměříž západ - Kroměříž východ. From this connecting point, the construction 0135 bears north-east towards Hulín and along the toll road R55 towards north in the vicinity of the Říkovice municipality. The construction ends with a temporary connection to the existing road I/55 north of the Říkovice municipality. Construction 0136 Říkovice - Přerov a further section of the D1 Motorway is envisaged to adjoin the construction described herein. Total length of the construction in question is 11.300 km.

Construction 0135 also includes a small section of the R55 Expressway with a length of 3.375 km which runs in the area between Hulín and Pravčice and joins the D1 Motorway northeast of Hulín. From the south this small section is connected to the R55 Expressway, construction 5503 Skalka - Hulín. The reason for close cohesion of these sections of the D1 and the R55 both in preparation and implementation is the necessity of maximum reduction of transport and traffic intensity from the centres on the existing roads I/47 and I/55 within the framework of one complex of consecutive constructions. If the construction 0135 was constructed without the section 5503 the effect of reducing the intensity of traffic in the city centres would be incomparably lower.

Crossing with the existing road network is ensured by three interchanges (MÚK). The D1 Motorway incorporates the MÚK Hulín západ which provides connection of the existing road I/55, whereas the interconnection between the R55 Expressway and road II/432 (direction of Holešov) is ensured by MÚK Hulín východ. However, the most important interconnection is ensured by MÚK Hulín where the D1 Motorway intersects with the R55 in the direction of Otrokovice as well as with the projected R49 Expressway leading to Slovak borders.

Construction 5503 Skalka - Hulín begins beyond the intersection of the existing north-eastern bypass of Otrokovice and road II/438 Otrokovice - Machová. Construction construction 5503 route runs in the north-western direction towards Hulín in the transport corridor along with the existing road I/55 and railway line no. 330 Přerov - Břeclav, but it avoids residential area in a sufficient distance. The most affected culture is farm land (arable land and pastures) and forest growth to a limited extent. The construction ends beyond the bridge structure with railway line no. 300 Hulín - Valašské Meziříčí in the area southeast of Hulín, here it is directly

linked to the adjoining section of the R55 Expressway which forms a part of the D1 Motorway, construction 0135 Kroměříž východ -Říkovice. Total length of construction 5503 is 10.800 km. Construction 5503 also incorporates construction of rest area on both sides of the road, near Kurovice, commercial part of the rest area is subject to the operator's authority; the operator should be appointed in the follow-up tender.

Construction 5503 includes no interchanges, the section has been designed as the last one of the follow-up structures. The section of the R55 Expressway, linked at the south and forming the north-eastern bypass of Otrokovice, was put into operation in autumn 2006. The section of the D1 Motorway, construction 0135 which is also described in this PEI, is linked in the northern part.

Based on the Czech technical standard (ČSN) 736101 categorisation, the section of the D1 Motorway, construction 0135, is designed to comply with Category D26.5/120 (i.e. motorway with a total carriageway width of 26.5 m and design speed of 120 km/h). The R55 Expressway (the section in construction 0135 and construction 5503) is designed to comply with Category 24,5/120 (i.e. expressway with a total carriageway width of 24.5 m and design speed of 120 km/h). In both cases, it is a two lane dual-carriageway road.

Both constructions discussed herein are built outside the residential areas in a slightly rugged terrain. Construction 0135 runs in its entire length on a gentle embankment (approx. up to 3 m), which ascends to 9 metres only in places where the motorway intersects the railway. Due to technical possibilities, intersecting structures and geomorphology of the terrain, construction 5503 runs alternately in cuttings and embankments.

Both structures discussed herein intersect the current road network. The road network is preserved in its original form as much as possible, as it uses overpasses and underpasses. Routes discussed herein also cross several smaller water streams. These crossings always use bridge structures.

For layout of both constructions discussed herein, see *Figure 3*.

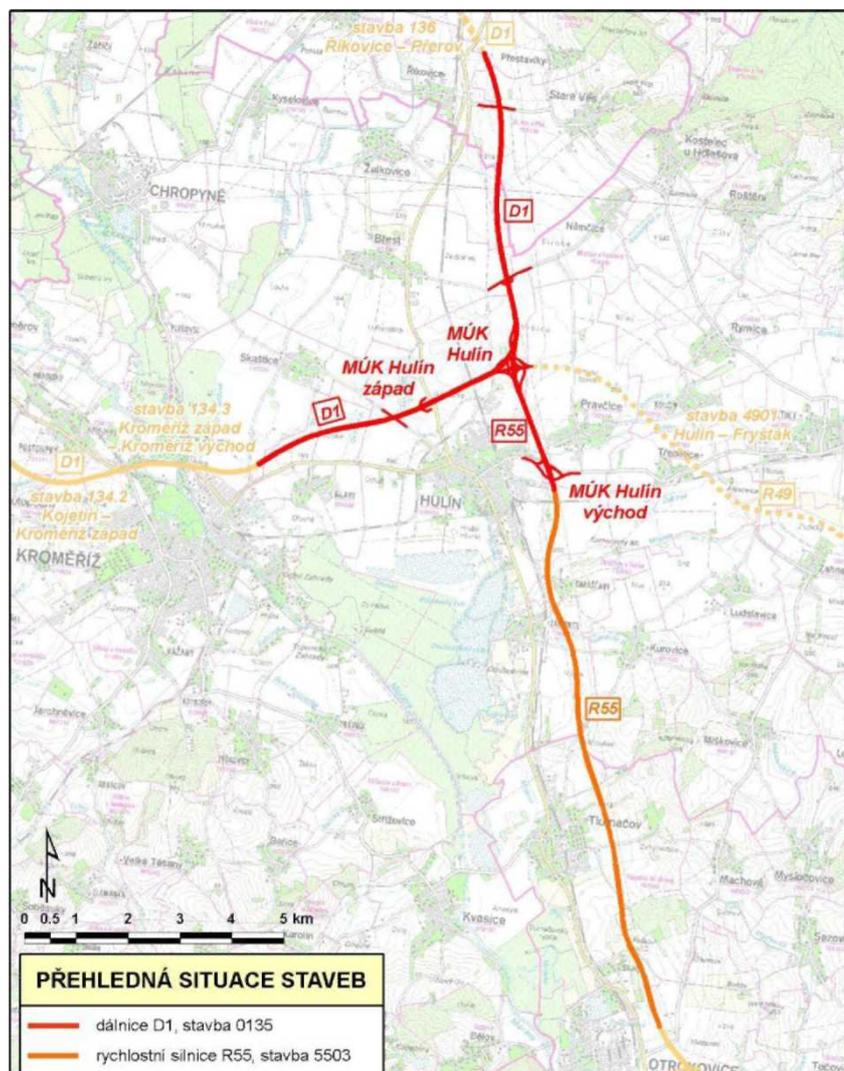


Figure 3: Layout of constructions 0135 and 5503 and plans adjoined thereto.

1.3. TRAFFIC SITUATION

The backbone roads of the area in question are the roads I/47 and I/55 that pass through the cities of Kroměříž, Hulín and other municipalities; the capacity and technical parameters are seriously inadequate for the high traffic load. High traffic load imposed on these roads is mainly due to an increasing number of vehicles in the Zlín conurbation, which use the route via Hulín, Kroměříž and Vyškov as the shortest link to the motorway network.

One of the most problematic issues these days is the traffic situation in Hulín, where the road I/55 - running through the city centre in - with a traffic load exceeding 20,000 vehicles/day reaches the limit of permeability which is also worsen by roads I/47 from Kroměříž and II/432 from Holešov. The traffic situation on the existing road I/55 in the Hulín city centre is also illustrated in the following photograph.



Figure 4: The traffic situation on the road I/55 in the Hulín city centre

Poor quality of the backbone road I/47 was preliminary solved in Kroměříž where a section of the D1 Motorway has already been put into operation at the northern edge of the city, the section will be connected to construction 0135, and partially by launching the north-eastern bypass of Otrokovice.

The traffic intensity on the existing road network in the year 2005 in the area concerned and in the Hulín city centre are shown in Figures 5 and 6.

Implementation of the entire section of the D1 Motorway from Vyškov via Kroměříž to Lipník nad Bečvou, and of the R55 Expressway up to Otrokovice, will create a capacity network which allows transferring of the transit transport which nowadays significantly contributes to the high traffic intensity in the existing road network, outside the urban areas or Kroměříž, Hulín and other municipalities lying on the current roads I/47 and I/55.

Construction of the D1 Motorway and the R55 Expressway sections will increase the availability of the area, safety and comfort of transport in the area concerned, with substantial improvement of the environment and life standard of people living along the existing roads I/47 and I/55.

In the area discussed herein, the situation will significantly improve by implementation of constructions of D1.135 Kroměříž -Říkovice and 5503 Skalka - Hulín, as a uniform route which will maximise the use of the invested funds also with respect to the environment.

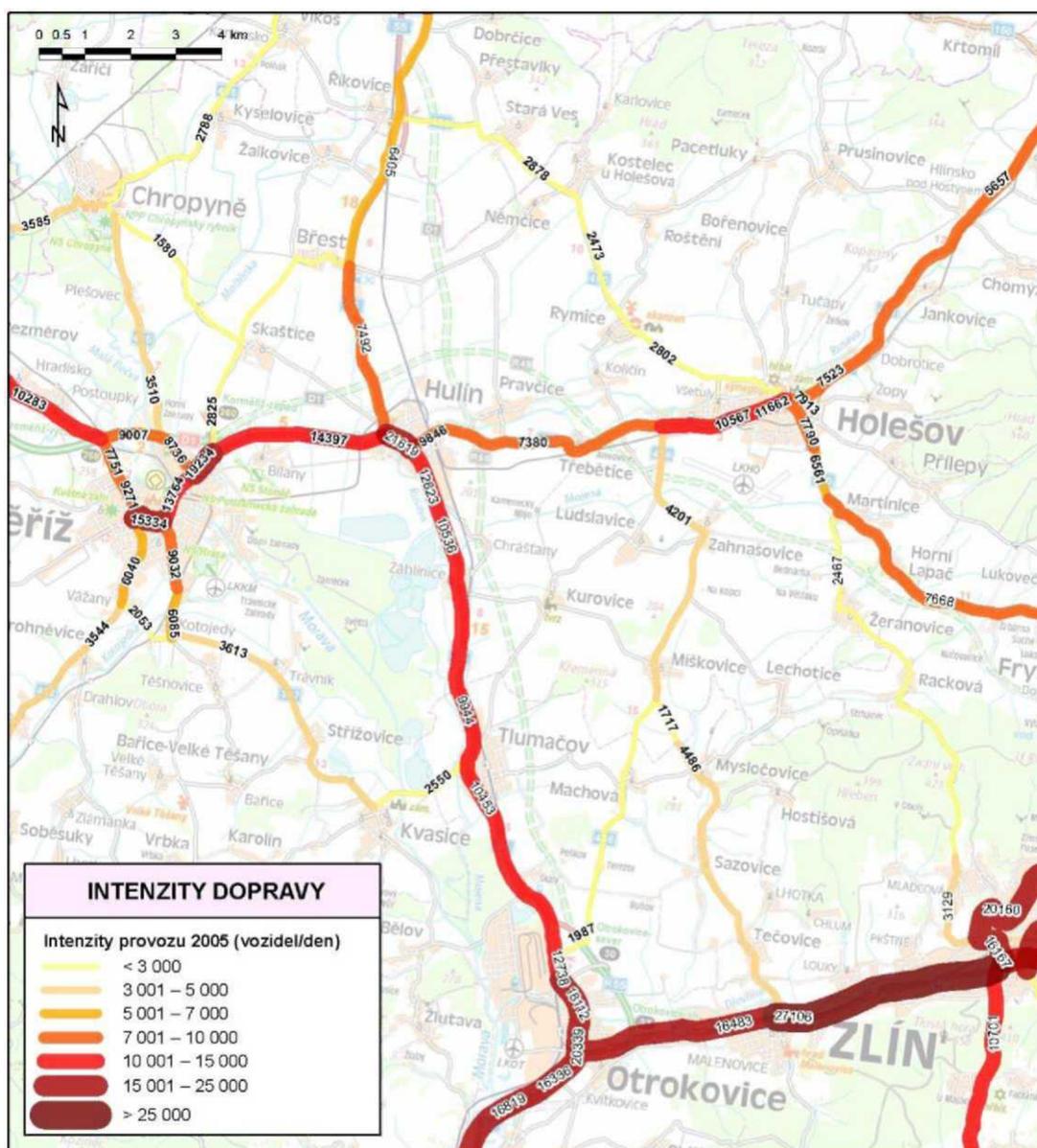


Figure 5: Traffic intensity on the existing road network (traffic census, 2005)

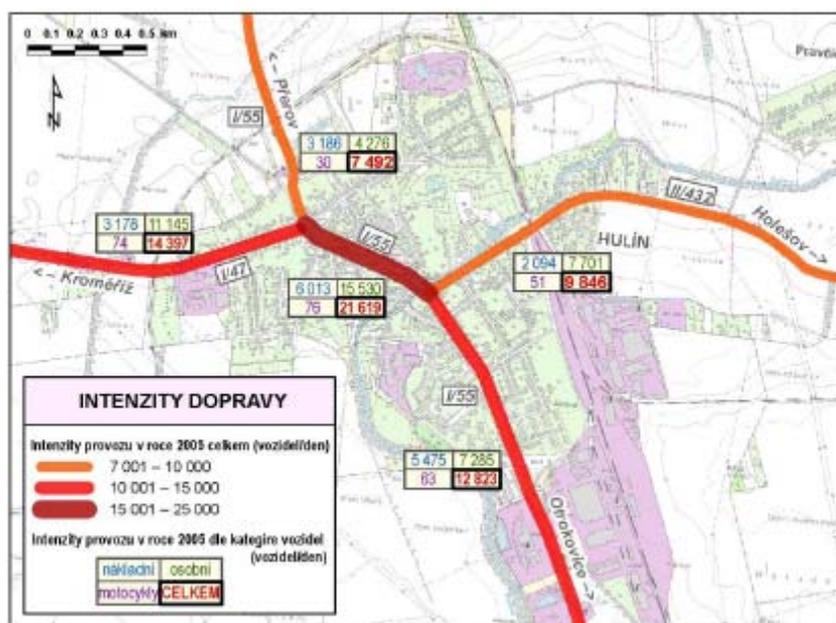


Figure 6: Traffic intensity on the existing road network in Hulín (traffic census, 2005)

1.4. ESTIMATED SPILLS AND EMISSIONS DUE TO OPERATION OF THE PROPOSED PLAN.

The operation of the sections of the D1 Motorway, construction 0135, and the R55 Expressway, construction 5503, is estimated to generate emissions of noise and pollutants into air, water and soil in the vicinity of the road, as well as waste.

Noise

In the case of construction 0135, the acoustic impact study - prepared as a basic data for the EIA Documentation (and later updated during the project preparation) - suggests that the noise impact will be redistributed within the area due to the implementation of the construction. The Hulín urban area, which is presently exposed to an enormous noise impact, will experience significant reduction in noise level, primarily by night. The noise impact will grow up to the noise level limit, particularly in the western part of the Pravčice municipality. Nevertheless, this part of the municipality will be protected by means of noise barrier.

In the case of construction 5503, the acoustic impact study - prepared as a basic data for the EIA Documentation (and later updated during the project preparation) - suggests that the situation would be similar to that of the D1 Motorway. The noise impact on the area will be redistributed, with a significant reduction along the existing road I/55 in the urban areas, whereas the noise impact will grow around the newly built construction 5503, which runs outside of the developed or potentially developed parts of municipalities. Increase in the noise impact, which will affect the western part of the village of Chrástany, will be eliminated by noise barrier.

Air pollution

Traffic on both constructions discussed herein will represent a significant line source of air pollution. Road transport is considerable source of solid particles PM (secondary dust nuisance), nitrogen oxides (NOX), polyaromatic hydrocarbons (PAU), carbon monoxide (CO) and many others.

In the case of construction 0135, the dispersive capacity study (Ekoair, 2002) calculated the following values of emissions of selected pollutants (estimate for the year 2010).

Table 2: Summary of pollutant emissions calculated for implementation of construction 0135 (tonne/year)

Harmful substance	Construction 0135	Other roads	Total emissions
NOx	205.3	36.8	242.1
CO	310.3	75.1	385.4

In the case of construction 5503, the dispersive capacity study was processed in the framework of documents for land permit (DLP), the study estimates the following emission figures for the year 2020.

Table 3: Summary of pollutant emissions calculated for implementation of construction 5503 (tonne/year)

Harmful substance	Total emissions
NO _x	175.7
CO	246.2
C _x H _y	90.6

Waste water

According to applicable legislation, all the water drained from the carriageway surface should be considered waste water. It is likely to be contaminated with oil product drops, containing residues of spreading materials used in winter time, abrasive wear of tyres and fly ash of loose materials.

Waste

During operation, the main process generating the waste will be the cleaning and maintenance of the road. Waste will be generated predominantly as a result of the following processes: cleaning of carriageway, cleaning of ditches and gulleys, minor modifications of carriageways and motorway embankments, removal of impurities from roads and of other waste generated during the operation of the motorway, maintenance of expressway practicability in winter, cleaning of storm-water sedimentation tanks and oil product separators, green lane cutting and maintenance.

2. OUTLINE OF THE MAJOR OPTIONS/ALTERNATIVES STUDIED BY THE INVESTOR, AND INDICATION OF MAIN REASONS FOR THEIR SELECTION TAKING INTO ACCOUNT THE ENVIRONMENTAL IMPACTS

The process of environmental protection is a natural part of all the preparation stages for the particular plan, it can be divided into three interlinked parts. From the most general to the particular issues:

- 1) Strategic area of concepts
- 2) Area of zone planning of all levels (national, regional and local)
- 3) Investment (pre-project and project) preparation of particular project

2.1. STRATEGIC AREA OF CONCEPTS AT THE NATIONAL LEVEL

Basic concept of the traffic infrastructure in the Czech Republic is presently described in the **Transport Policy of the Czech Republic for the years 2005 - 2013**, approved by the Government Decree no. 882 as of 13 July 2005. That document determines the main directions of development in the sector of transport within the Czech Republic in a medium-term basis. According to the priorities of this concept, the minimisation of the environmental impact should be emphasised.

The **Operation program Transport 2007-2012** represents another important strategic document concerning the road transport infrastructure. This program also includes specific plans to be co-financed from the EU funds.

Within the operation program, both constructions are included in the priority axis no. 2 - Construction and modernisation of motorway and road network TEN-T which pertains to support of construction of new motorway and road network sections. Both constructions are listed in the OP "Doprava" as major projects in the framework of this priority axis.

With respect to the environment, the impacts of the aforementioned strategic documents were examined within the framework of the process of assessing the concept on the sustainable development and on the Natura 2000 system (SEA process) based on the applicable Act No. 100/2001 Coll., on environmental impact assessment, as amended.

Assessment of the Transport Policy of the Czech Republic for the years 2005-2013 as carried out by Ing. Jana Svobodová, assessment of impact on Natura 2000 by Ing. Ivo Machar PhD. Approval was issued by the Ministry of the Environment of the Czech Republic on 28 June 2005 (ref. no. 4793/OPVI/05MP).

As regards the Operation program Transport, the assessment of the impact on sustainable development was carried out by Ing. Jana Svobodová, whereas the assessment of impact on Natura 2000 by Ing. Ivo Machar PhD. Approval was issued by the Ministry of the Environment of the Czech Republic on 13 November 2006 (ref. no. 76994/ENV/06).

2.2. AREA OF ZONE PLANNING

Basic act, which governs the process of zone planning is the so called Building Act. At present, the valid legislation is Act No. 183/2006 Coll. as amended, preceded by Act No. 50/1976 Coll. According to the valid Building Act, the purpose of the zone planning is to provide prerequiconstructions for sustainable development of the area, which lies in balanced relation of conditions for good environmental conditions, for economic development and the consistency of community living in the area concerned.

The process of zone planning takes place at three levels of particularity (generality):

- 1) National level - basic document represented by the Area Development Policy of the Czech Republic.
- 2) Regional level - basic documents are the principles for area development (based on the former Building Act, land use plans of the big territories)
- 3) Local level - basic documents are the municipal plans and local plans

2.2.1 NATIONAL LEVEL

The basic document for the zone planning, which supersedes and prevails over the zone-planning documentation at lower levels, is the current **Area Development Policy of the Czech Republic 2008 (ADP)**. ADP was drawn up by the Ministry for Regional Development of the Czech Republic and approved by the Government Decree No. 929 on 20 July 2009. As regards the environmental protection, ADP was assessed in the course of the SEA process.

ADP, as the basic conceptual document, determines the strategy and basic conditions for achievement of the zone planning goals in the territory of the Czech Republic, and it defines the development areas and axes or corridors and surfaces with respect to the documented demands of the state territory development.

According to ADP, the D1 Motorway in its section Vyškov-Kroměříž-Lipník nad Bečvou forms the eastern branch of the development axis OS10 (Katowice -) border Poland/CZ - Ostrava - Lipník nad Bečvou - Olomouc - Brno -Břeclav - border CZ/Slovakia (- Bratislava). Construction 5503 is a part of the defined development axis OS11 Lipník nad Bečvou - Přerov - Uherské Hradiště - Břeclav -border CZ/Austria and development surface OB9 Zlín.

Comprehensive survey of the plans as per ADP 2008 is shown in the following figure.

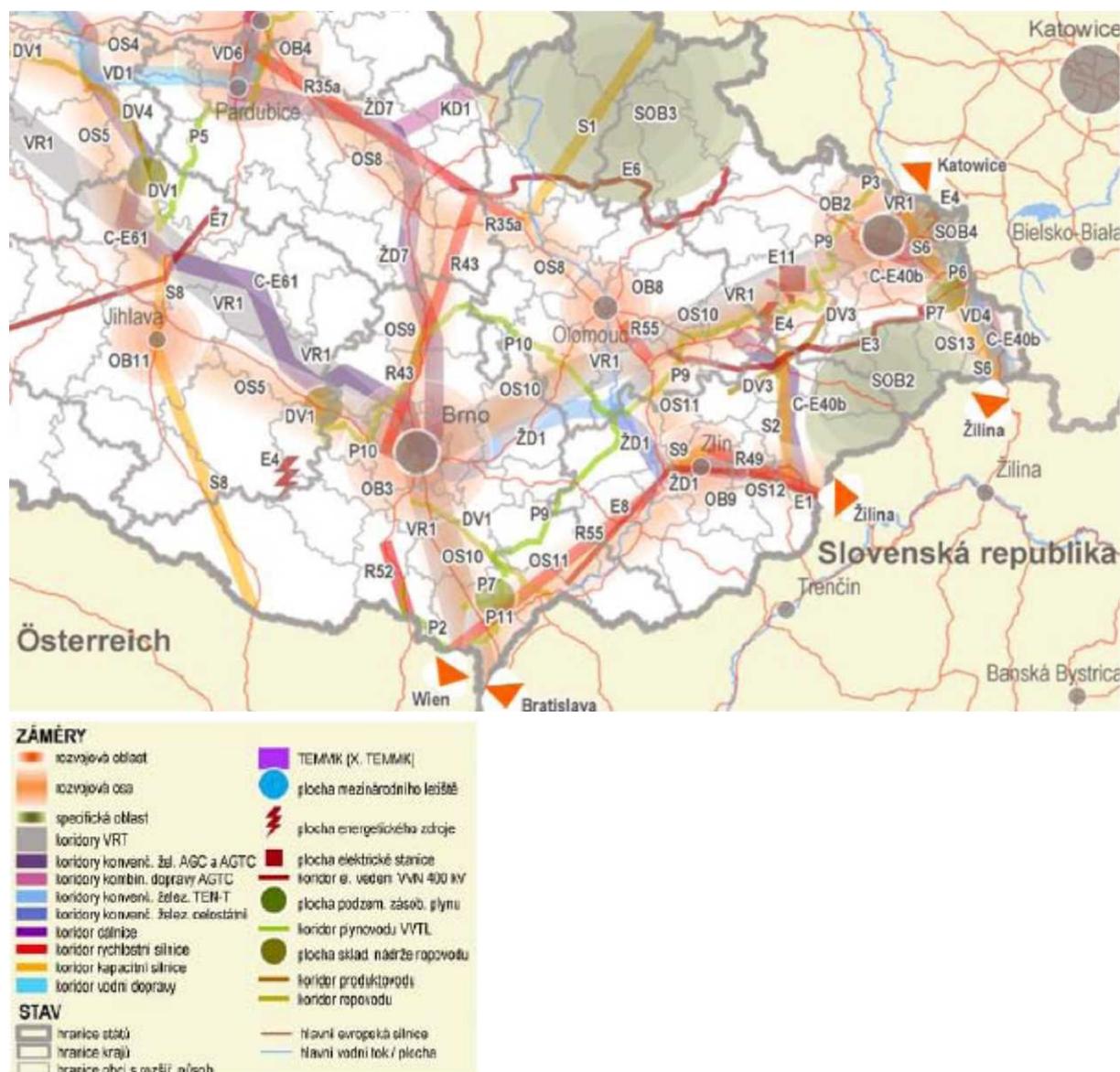


Figure 7: Comprehensive survey from ADP 2008

2.2.2. REGIONAL LEVEL

At the regional level, the basic conceptual document is represented by the principles for area development (PAD) of individual regions, which supersede the land use plans of the big territories within the relevant areas. PAD provide particulars of the general requirements set out by the Area Development Policy within the relevant area. Among other issues, PAD specify the positions of the priority axes and surfaces.

Both regions where the constructions in question are located, have approved PAD.

Principles for area development of the Zlín Region were approved by the Regional Assembly on 10 September 2008, superseding the Land Use Plan of the Big Territory (LUPBT) of the Zlín conurbation (originally issued by virtue of the Government Regulation No. 87 of 23 March 1994). The relevant section of the D1 Motorway (from Vyškov to Lipník) is in full compliance with PAD, as a part of the eastern branch of the axis of the national importance OS05 (at the time of approval of the Zlín Region PAD, the ADP 2006 was valid, OS05 as per ADP 2006 corresponds to the development axis OS10 as per ADP 2008). The relevant section of the R55 Expressway is a part of the development area OB9 Zlín and the development axis OS5 (Katowice -) Czech borders - Ostrava - Břeclav - Czech borders (-Wien) (at the time of approval of the Zlín Region PAD, the ADP 2006 was valid, OS05 as per ADP 2006 corresponds to the development axis OS11 Lipník nad Bečvou - Přerov - Uherské Hradiště - Břeclav - Czech borders as per ADP 2008).

Principles for area development of the Olomouc Region were approved by the Regional Assembly on 22 February 2008 superseding the Land Use Plan of the Big Territory of the Olomouc conurbation (originally issued by virtue of the Government Regulation No. 212 of 16 July 1997). The relevant section of the D1 Motorway from Vyškov to Lipník nad Bečvou is in full compliance with PAD, as a part of the eastern branch of the axis of the national importance OS05

(at the time of approval of the Zlín Region PAD, the ADP 2006 was valid, OS05 as per ADP 2006 corresponds to the development axis OS10 as per ADP 2008).

As regards the environmental protection, PAD was assessed in the course of the SEA process. As regards the Zlín Region PAD, the assessment of the concept impact on sustainable development was carried out by Ing. Milan Sáníka, whereas the assessment of impact on Natura 2000 by Ing. Ivo Machar PhD. The process of assessment was completed by the approval of the Ministry of the Environment of the Czech Republic on 21 August 2005 (ref. no. 53913/ENV/08). Assessment of the Olomouc Region PAD impact on sustainable development and Natura 2000 was carried out by RNDr., Bc. Jaroslav Bosák. The process of assessment was completed by the approval of the Ministry of the Environment of the Czech Republic on 6 November 2007 (ref. no. 81806/ENV/07).

2.2.3. LOCAL LEVEL

Based on the Building Act, the zone-planning documentation at the regional level is elaborated in detail in the municipal plans and local plans. The municipal and local plan determines the basic concept for the development of the locality/town area, protection of its values, its urban development plan, landscaping and public infrastructure concept.

The discussed constructions are located in the area of several municipalities. Construction 0135 - Skaštice, Bílany, Hulín, Pravčice, Břest, Němčice, Žalkovice, Říkovice; construction 5503 - Hulín, Kurovice, Tlumačov, Otrokovice. In relation to the project preparation pending, the constructions in question have been gradually harmonised with the municipal plans and local plans.

2.3. INVESTMENT PREPARATION OF PARTICULAR PLAN

The investment preparation is a long-term process which combines the strategic and technical elements. The environmental protection is ensured during the entire process of the investment preparation and is related to both the strategic decisions (selection of corridor) and concrete solution of the plan (technical solution). The principal task in terms of environmental protection is represented by the EIA process, during which the approved routes are specified and elaborated in detail and reflected in the zone-planning documentation.

The process of preparation of the plan in question can be divided into several basic stages:

- 1) Corridor selection
- 2) EIA process
- 3) Planning permission proceedings

- 4) Building permit proceedings
- 5) Implementation

Within each stage the initial prerequisites are analysed, the environmental basic data are processed, and the decision is discussed and rendered.

2.3.1. STAGE I - CORRIDOR SELECTION

Due to significant geo-political changes that took place after the year 1989, the Czech Government decided in November 1993 (by virtue of Government Decree No. 631/1993) to abandon the project of the D1 Motorway corridor leading from Vyškov towards Uherské Hradiště and Trenčín, which had been retained on the basis of the previous Government Decree No. 286/1963. Concurrently, it was decided that the D1 Motorway should be staked out from Vyškov, via Kroměříž, Zlín and Lyský pass towards the Slovak border. The staking out of the relevant section of the D1 Motorway was primarily based on the need to connect further important routes (namely R55 to Přerov and Otrokovice) and to connect the rapidly developing Zlín conurbation. The new routing of the D1 Motorway from Vyškov to Lyský pass was examined by the exploration study D1 Vyškov - Kroměříž - Zlín - Lyský pass (Slovak border) (HBH Projekt, 1995).

2.3.1.1. DEMARCATION OF THE AREA CONCERNED

The area concerned was demarcated in wider context along the D1 Motorway and the R55 Expressway corridor. Primarily due to the connection of the important roads to the D1 Motorway in the area of Hulín and the necessity of examining their location in the territory, the area concerned was demarcated among Kojetín, Přerov and Zlín (see Figure 2).

2.3.1.2. PROPOSAL AND TECHNICAL EXAMINATION OF THE CORRIDORS

Comparison of the potential layouts of the motorway network in the Central Moravia was made and processed in the framework of the transport-urban comparative study (TUCS) **Central Moravia - concept** of the higher road network (Viapont, 1996). In this study, three options were comprehensively examined (in terms of transport, urban development, serviceability of the area, environmental interventions, costs):

- Option A - taken from the Land Use Plan of the Big Territory (LUPBT) of the Zlín conurbation
- Option B - taken from the Exploration study of the D1 Motorway Vyškov - Kroměříž - Zlín - Lyský pass (Slovak border) (HBH Projekt, 1995), where it is identified as 2 and 2A
- Option C - proposed in the framework of TUCS in order to minimise the deficiencies of other options and to minimise potential environmental impacts

Option C was unambiguously found as the most favourable in all respects.

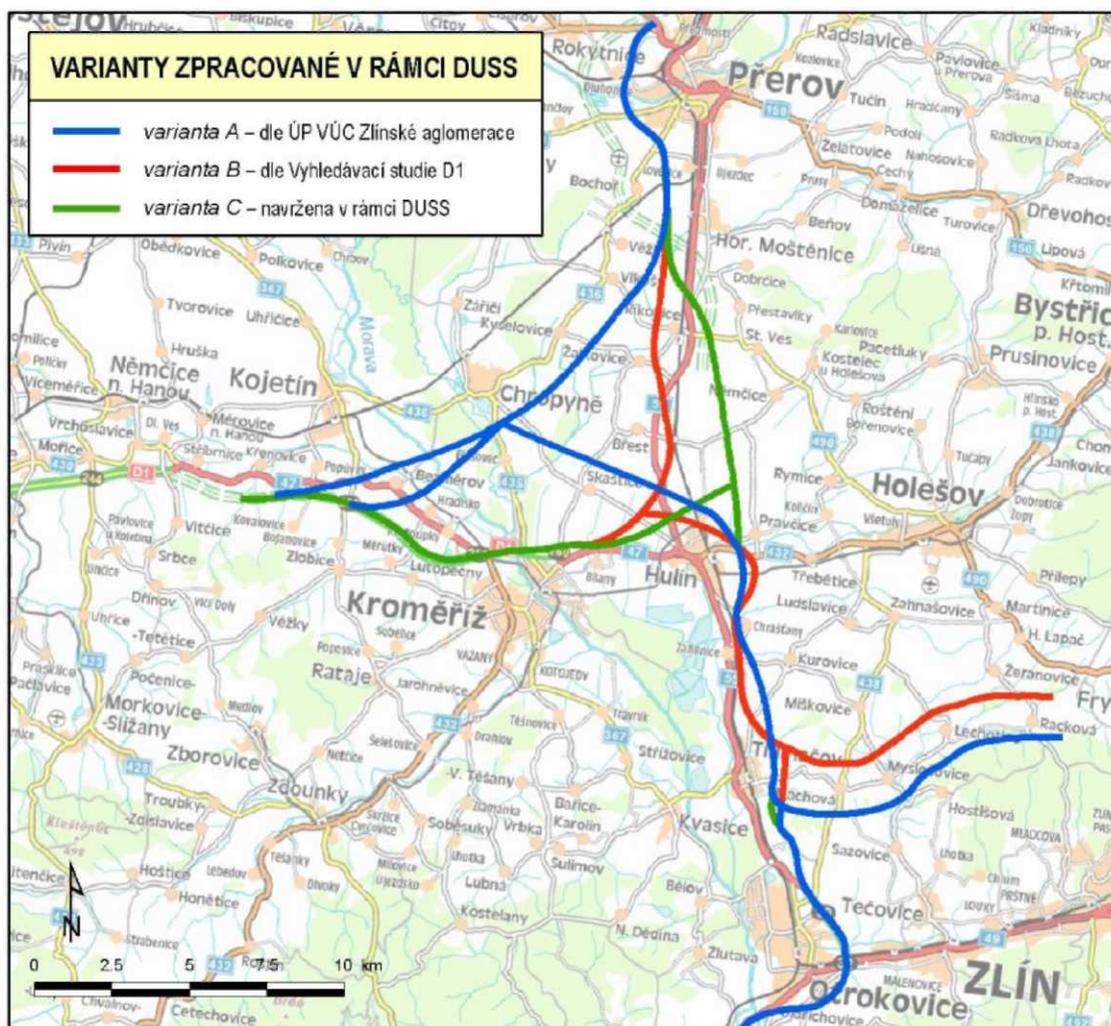


Figure 8: Options of the motorway network staking as assessed by the transport-urban comparative study (TUCS) Central Moravia - concept of the higher road network (Viapont, 1996)

2.3.1.3. ANALYSIS OF THE AREA ENVIRONMENTAL SENSITIVITY

Analysis of the environmental sensitivity of a wider area in question was carried out during selection of the corridor at two stages. In 1994, the Investprojekt Brno company processed the Landscape assessment for the localisation of the D1 Motorway in the section from Vyškov to Slovak borders, based on the Methodology for landscape assessment of line structures (issued by the Ministry of the Environment of the Czech Republic, ref. no. OÚV/1128/93 on 16 September 1993).

The environmental impacts were compared in details among the options processed in the framework of the TUCS Central Moravia - concept of the higher road network. Assessment of the environmental impacts of the concept in the Central Moravia - concept of the higher road network was processed to the extent as set out by the Act No. 244/1992 Coll. (SEA) by Transconsult s.r.o. in 1996. In terms of the environmental impact imposed by the layout of the motorway network in the area concerned, the most favourable option was found to be Option C.

2.3.1.4. TECHNICAL REVIEW OF THE STUDY (DISCUSSION ABOUT THE PROPOSAL)

Traffic layout of the higher road network in the area of the Central Moravia was elaborated into a project in the selected Option C as per TUCS for both constructions in question.

In the case of the D1 Motorway, two technical studies (TS) were drawn up concerning the section in question - TS **D1 Motorway, construction 0135 MÚK Hulín** (Viapont, 1997) and TS **D1 Motorway, construction 0134.2 Kojetín -Hulín, transport-urban technical concept** (Viapont, 1997)

Note: At all stages of the project preparation until DBP, a different identification of individual constructions of the D1 Motorway is used in comparison with the current state. The initial section of the currently identified construction 0135 Kroměříž východ - Hulín západ was a part of construction 0134.2 at the stage of technical study.

The relevant section of the R55 Expressway was specified in more detail in the TS Study of the route of the R55 Expressway Hulín - Skalka (Dopravoprojekt Brno, October 1997). 6 working options of the direction routing was proposed during the work on the study. Based on the subsequent negotiation with the involved self-governing bodies and on the comprehensive assessment in terms of technical potential, interventions in the open landscape and forest growth, passages in the vicinity of settlements and difficulty of the utility lines relocations, the most acceptable option was chosen - i.e. Option 6, which is worked out in the study (reasons for selection of Option 6 are given in chapter 2.3.2.1). For layout of the discussed options, see *Figure 9*.

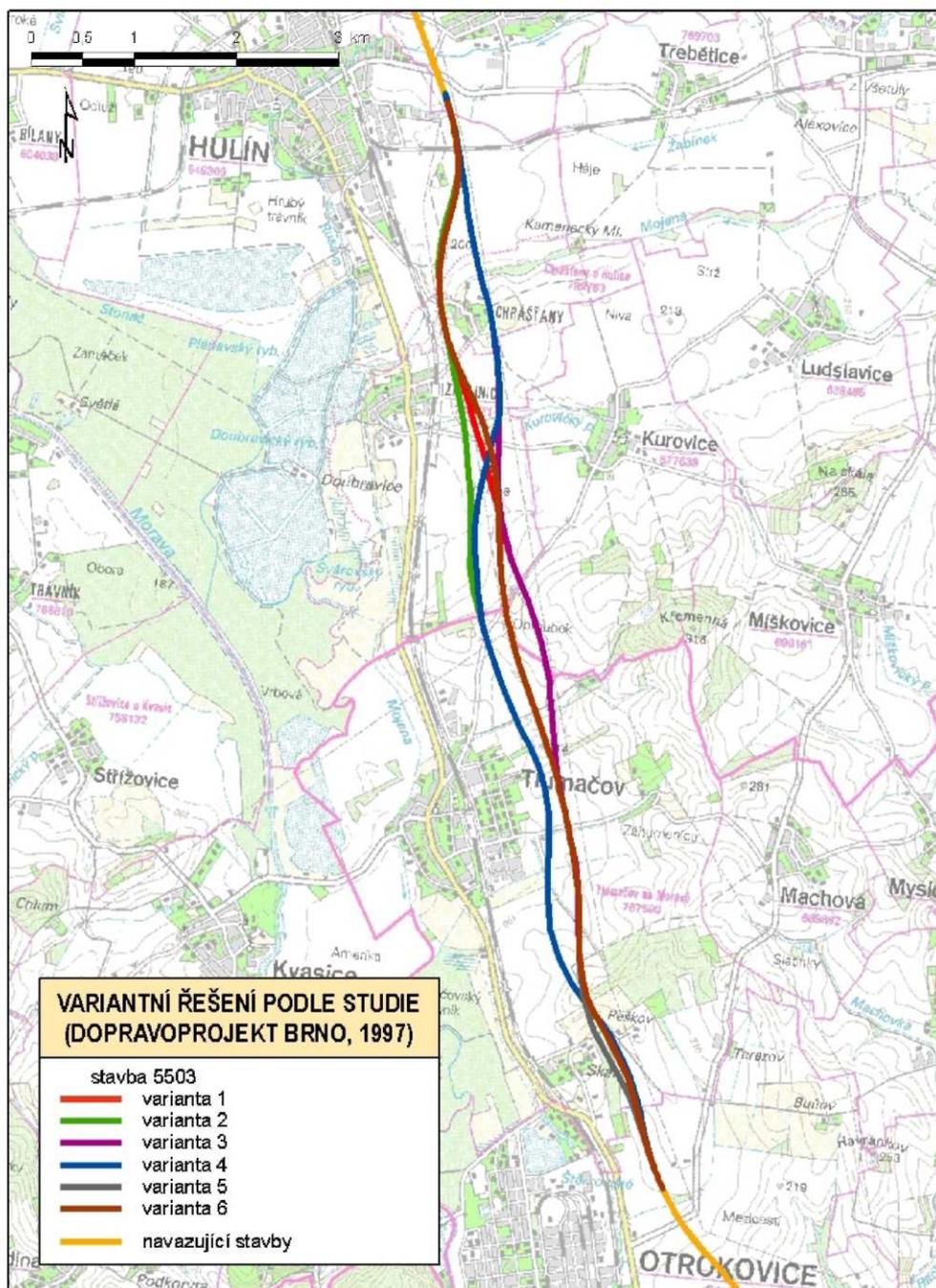


Figure 9: Alternative solution of section 5503 based on the Study (Dopravoprojekt Brno, 1997)

2.3.1.5. RENDERING THE DECISION

Based on the performed analyses of terrain and terrain relations, Option C was found the most appropriate transport solution in all respects (urbanism, traffic relations, transport serviceability in the area, environmental sensitivity, finances) according to the transport-urban comparative study. Conclusions of the aforementioned studies were negotiated at all national levels. Acceptance of the proposed transport solution was completed by approval of the 1st variation in the Zlín conurbation LUPBT by virtue of Government Regulation No. 213 of 16 July 1997.

Final stabilisation of the R55 Expressway route corridor in the area between Hulín and Otrokovice was completed on the basis of all the aforementioned studies and the EIA process as reflected in the 2nd variation in the Zlín conurbation LUPBT. The legally binding part of the variation was announced in the Notification of the Ministry for Regional Development as of 31 October 2000.

2.3.2. STAGE II - EIA PROCESS

2.3.2.1. INITIAL PREREQUISITES - SCREENING AND SCOPING

The entire process of the environmental impact assessment (EIA process) took place in compliance with the then applicable Act No. 244/1992 Coll. on the Environmental Impact Assessment. Based on this act, the process of assessing the plan was managed by the Ministry of the Environment of the Czech Republic.

All the previously conducted studies, whether project studies or analyses of the area environmental sensitivity, supplied sufficient number of input basic data for the initial screening and scoping.

In the case of the D1 Motorway, the EIA process assessed the solution designed in the aforementioned technical studies. Therefore, two EIA processes were carried out on the D1 Motorway in the scope of construction 0135. With reference to sufficient number of assessments of the options in the previous studies, the EIA process assessed only one option of the D1 Motorway routing, the Zero Option (i.e. retention of the current status of the road network arrangement) was used as a reference in relation to the traffic intensity, noise, emission and impact on the resident population.

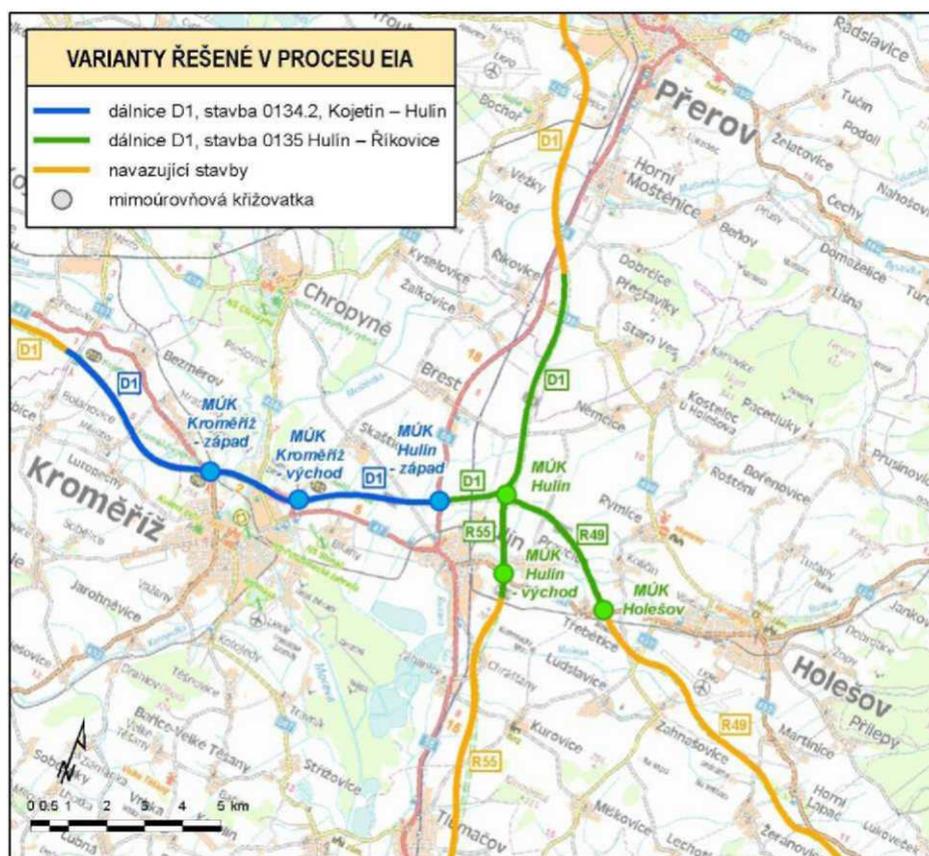


Figure 10: Scope of structure dealt with by the relevant EIA processes in the current scope of construction 0135

In the case of the R55 Expressway, the basic data for assessment within the EIA process was represented by the Study of the R55 Expressway route Hulín - Skalka (Dopravoprojekt Brno, October 1997), which elaborated the option derived from the comprehensive evaluation and following the mutual agreement of all involved self-governing bodies and institutes. The option was chosen primarily for the following reasons:

- It does not interfere with the forest growth along the Skalka hamlet,
- It minimises the intervention in the forest offspur adjoining the forested area around Hrabůvka,

- It minimises the number of relocations of utility lines (overground and underground)
- It runs as far as possible from the edge of the residential area of Tlumačov,
- In the area of Chrást'any, it runs along the Czech railway track (i.e. the village of Chrást'any will not lie between the railway corridor and the R55 Expressway, which would otherwise limit the development of the village in the eastbound direction), and it does not interfere with the arable areas east of the village either
- It has more favourable parameters of the longitudinal profile in the area of the Kurovice dumping site than that of the option located east of the dumping site

2.3.2.2. EIA DOCUMENTATION

In the case of the D1 Motorway, two EIA Documentations were drawn up due to separation of the EIA processes: D1 Motorway, construction 0134.2 Kojetín - Hulín, District Kroměříž (Ekola Prague, August 1997) and D1 Motorway, construction 0135 Hulín - Říkovice (Ekola Prague, September 1998).

In the case of both documentations, the authorised person according to Act No. 244/1992 Coll. was Ing. Libor Ládyš (original licence no. 3772/603/OPV/93; current authorisation number: 48068/ENV/06).

In the case of construction 5503 the EIA documentation was drawn up for the investment plan R55 Expressway, section Hulín - Skalka, by the ENVIROAD company (Ostrava, August 1998). The authorised person of the processor was Ing. Petr Továryš (professional competence licence of 14 February 1995, ref. no. 914/139/OVPŽP/95) Partial sections were processed in cooperation with the companies: VEGI s.r.o. a EKODATASERVIS - RNDr. E. Quitt, CSc., the documentation also includes the conclusions of the report "R55 Expressway Hulín -Skalka, geotechnical exploration (GTE) preliminary stage" (Ing. Antonín Paseka, CSc., Brno 1998).

All three EIA documentations were processed on the basis of field surveys, study of technical literature, consultations with involved institutes and self-governing bodies, available technical reports and other detailed surveys and studies (biological studies were carried out in the area in question, as well as acoustic impact, dispersive capacity and archaeological studies).

In the case of construction 5503, the hydrogeological features of the area were assessed with respect to the previously conducted preliminary geo-technical study; for construction 0135, a hydrogeological research was processed to the current extent of the construction, along with hydrological and hydrogeological surveys.

All three EIA documentation include the evaluation of the impact on the individual environmental elements as well as the overall impact of the plan. Direct and indirect, synergic and various-period influences were examined at individual stages (preparation, implementation, operation, potential accident effects).

All EIA documentations contains measures concerning prevention, elimination and minimisation of the construction operation impact, as well as organisational and compensation measures at all stages of preparation. Monitoring of partial elements of the environment was suggested.

2.3.2.3. DISCUSSION ABOUT DOCUMENTATION

In the case of construction 0135 in its current scope, both EIA documentations were discussed in compliance with the requirements set out in Act No. 244/1992 Coll. Both evaluations were sent by the Ministry of the Environment of the Czech Republic to the competent public authorities and municipalities, which subsequently informed the public of when and where the EIA documentation would be made available for consultation. The documentation was made available for consultation for a period of 30 days in all the involved municipalities (towns and villages), the public was allowed to make abstracts or copies thereof. For this period, the competent public authorities as well as the public might submit their written statements and comments thereto.

None of the submitted statements contained any major objections against any of the documentations. All the statements and comments were provided to the authorised processors of assessments. The assessment of the EIA documentation for construction 0134.2 was processed by Ing. Mojmír Novotný (original licence no. 10133/1180/OPŽP/94; current authorisation ref. number: 7512/ENV/06); whereas for construction 0135 the assessment was processed by Ing. Josef Konečný (original licence no. 16041/4289/OEP/92; current authorisation ref. number: 37668/ENV/06). Documentations for both plans were found sufficient by the aforementioned processors and no criterion has been found to prevent the implementation of the constructions in terms of environmental protection.

Both public discussions of the assessment and statements of the public took place in the period set out by the law, venue and time were properly announced.

- Public discussion over construction 0134.2 took place on 13 January 1998,
- Public discussion over construction 0135 took place on 26 July 1998.

No serious objections which would prevent the implementation of the plan were raised on either of the discussions.

Also, the discussion over the EIA documentation pertaining construction 5503 took place in compliance with the requirements set out in Act No. 244/1992 Coll. On 26 November 1998, the EIA documentation was sent by the Ministry of the Environment of the Czech Republic to the competent public authorities and municipalities, which subsequently informed the public of when and where the EIA documentation would be made available for consultation. The EIA documentation was made available for consultation for a period of 30 days in all the involved municipalities (towns and villages), the public was allowed to make abstracts or copies thereof. For this period, the competent public authorities as well as the public might submit their written statements and comments thereto. All the submitted statements (total 9, of which 8 submitted by public authorities and involved municipalities, and 1 by the general public) were transferred to the processor of the assessment, Ing. Alexandr Mertl (licence ref. no. 961/196/OPV/93). With the assessment completed, the aforementioned processor found the EIA documentation sufficient as to its extent, no major objections were raised in the submitted statements. The public discussion of the assessment and statements of the public took place in the period set out by the law, venue and time were properly announced. The public discussion was held on 5 May 1999 in the social club in Hulín. The present representatives of the competent public authorities had no objections against the plan, the general public raised one query concerning the balance of soil and borrow area, the question was answered by the announciator representative by referring to the further stages of the design documentation. The public discussion was closed and with respect to the witnessed facts suggested approval of the plan.

2.3.2.4. DECISION

Based on the EIA documentation, assessments and public discussions, all the three EIA processes were found in full compliance with the applicable legislation and the approval of the Ministry of the Environment of the Czech Republic was issued concerning the submitted invariant solutions.

As regards the D1 Motorway, the following approvals were issued:

- For construction 0134.2, the approval was issued on 19 January 1998, under ref. no. 125/400/63/OPVŽP/98.
- For construction 0135, the approval was issued on 16 August 1999, under ref. no. 1630/700/870/1/464/99/11-Gr.

Both these plans were elaborated as projects at further stages and their parts are included in the submitted plan for construction 0135 Kroměříž východ - Říkovice, which is the subject of this application.

As regards construction 5503, approval was issued by the Ministry of the Environment of the Czech Republic on 12 May 1999 under ref. no. 975/700/1213/OPVŽP/99. The plan was elaborated at further stages to the form of the plan for construction 5503 Hulín - Skalka, which is the subject of the application and this PEI.

All three statements indicate conditions under which the statements are valid, at the stage of preparation, construction and putting into operation.

2.3.3. STAGE III - PLANNING PERMISSION PROCEEDINGS

2.3.3.1. ANALYSIS OF INITIAL BASIC DATA

Basic principles of the planning permission proceedings are determined by the building act and the very procedure is governed by the Administrative Procedure Code. The planning permission proceedings are conducted by the competent or authorised building control department. From the environmental point of view, the basic input materials for further investment preparation were the conclusions of the EIA process summarised in the requirements of the Ministry of the Environment of the Czech Republic. Whereas the EIA process was governed by one act only, the stage of planning permission proceedings requires the environmental protection to be stratified into the competences of individual, i.e. component, laws and related legal regulations of lower rank (Government Regulation, decrees, guidelines). Individual features of the environment are protected by virtue of the following acts:

population - Public Health Act, Air Protection Act

water - Water Act

soil - Act on the Protection of Agricultural Land Reserves in the Rock Environment - Mining Act

biota (fauna, flora, eco-systems) - Act on Protection of the Environment and Landscape; landscape - Act on Protection of the Environment and Landscape; forest - Forest Act

The same applied to the assessment during the EIA process, similarly the stage of planning permission proceedings stratifies the construction 0135 in its current scope into two proceedings. The relevant section of construction 0135 is therefore processed in two documents for land permit (DLP): **D1 Motorway, construction 0134.2 Kojetín - Hulín** (Viapont, 1999) and **D1 Motorway, construction 0135 Hulín - Říkovice** (Viapont, 2000). The result of projection at this stage is a precisely defined and examined route. Further comments and requirements of the public authorities, which assessed the documentation in the preparation proceedings of the planning permission proceedings, have been incorporated in both documentation during the preparation for the planning permission proceedings. Concurrently, the documentation was being harmonised with the changing environmental protection legislation.

According to the Building Act, the land permit proceedings commence upon submission of the written application by the participant, or upon the motion filed by the building control department or any other public authority. In the case of both constructions discussed herein, the motion for the initiation of the land permit proceedings was filed by the Road and Motorway Directorate of the Czech Republic as of 10 May 2000 (construction 0134.2 Kojetín - Hulín západ) and as of 15 May 2000 (construction 0135 Hulín - Říkovice) respectively.

Construction 5503 is therefore processed in the documents for land permit (DLP): R55 Expressway, Section Skalka - Hulín (VPÚ DECO PRAGUE a.s., September 1999). The result of projection at this stage is a precisely defined and examined route. Further comments and requirements of the public authorities, which assessed the documentation in the preparation proceedings of the land permit proceedings, have been incorporated in the documentation during the preparation for the land permit proceedings. Concurrently, the documentation was being harmonised with the changing environmental protection legislation.

Pursuant to the Building Act, the land permit proceedings commence upon submission of the written application by the participant, or upon the motion filed by the building control department or any other public authority; in the case of the construction in question, the motion for the issue of land permit was filed by the Road and Motorway Directorate of the Czech Republic as of 17 August 2000.

2.3.3.2. PROCESSING THE ENVIRONMENTAL BASIC DATA

The technical solution as processed at the previous level (technical study) will be specified and optimised as a project at the stage of land permit proceedings based on the conditions determined by the EIA statement and the requirements set out and derived from the legislation. Compliance with the legislation is inspected by the public authorities. The relevant DLP's are processed on the basis of detailed technical survey and a large number of researches (e.g. engineering-geological, pedological, natural scientific, archaeological) and studies (e.g. noise, emissions, traffic and transport).

2.3.3.3. CONSULTATION

During each land permit proceedings, the plan is always consulted with the competent state administration bodies on the basis of the applicable legislation.

The general public is also allowed to express its comments in two manners as follows. First, the involved public may express its opinion during the proceedings by proxy of the involved municipalities, which are automatically considered a participant in the proceedings. As regards the proceedings that pertain to the environmental and landscape protection (Act No. 114/1992 Coll.) the proceedings participants should also include the unincorporated associations which register themselves to the proceedings.

2.3.3.4. DECISION

The major purpose of the land permit is to determine the area intended for the particular structure.

In the course of the land permit proceedings, the competent specialised authorities and state administration bodies examine the compliance with the applicable legislation. Concurrently, they monitor the compliance with the requirements set out by the EIA process as the previous level of preparation. Depending on the type of the legislation, these authorities issue their official opinions or decisions which represent the vital basic data for the land permit.

In the case of the land permit proceedings and with respect to the applicable legislation, consents with the implementation of the structure were obtained and the requirements set out by individual authorities were incorporated in the documentation or in the conditions for the land permit. The vital basic data for the land permit is also the EIA consent granted by the Ministry of the Environment of the Czech Republic concerning the environmental impact.

In the case of the D1 Motorway, both pending land permit proceedings were concluded with the land permits granted:

D1 Motorway, construction 0134.2 Kojetín - Hulín

The land permit for locating the structure on lands in the cadastral area of Skaštice, Bílany and Hulín, was - as per the Building Act - issued by virtue of the public notice of the Municipality office of Kroměříž - building control department on 8 December 2000 (ref. no./328/619/33/2000/Opr). This decision became effective as of 24 January 2001.

D1 Motorway, construction 0135 Hulín - Říkovice

The land permit no. 16/2000 for locating the structure on lands in the cadastral area of Hulín, Pravčice, Břest, Němčice u Holešova and Žalkovice in the district of Kroměříž and in the cadastral area of Stará Ves u Přerova, Říkovice, Přestavky u Přerova and Horní Moštěnice in the district of Přerov was - as per the Building Act - issued by virtue of the public notice of the Municipality office of Hulín - building control department on 18 December 2000 (ref. no. SÚ/2231/304/2000/Ša). This decision became effective as of 6 February 2001.

In the case of construction 5503, the land permit proceedings was concluded on 21 November 2000 by the planning

permission ref. no. SÚ/737/2000/2649/2000/Tk. Decision of locating the structure “**R55 Expressway, section Skalka - Hulín**, Skalka - Tlumačov (district of Zlín), Tlumačov - Hulín (district of Kroměříž)” on the lands in the cadastral area of Otrokovice, Tlumačov na Moravě, Kurovice, Záhlinice, Chrášťany u Hulína, Hulín was - as per the Building Act - issued in the form of public notice no. 20/2000 by the building control department at the Municipality office of Otrokovice. This decision became effective as of 2 January 2001.

An integral part of the aforementioned land permit is represented by the conditions set out for the location of the structure and for further project preparation, as well as the attendance to the comments submitted during the land permit proceedings.

2.3.4. STAGE IV - BUILDING PERMIT PROCEEDINGS

Pursuant to the Building Act, the building permit proceedings should follow the land permit proceedings. The Building Act also determines the basic principles of the building permit proceedings. The building permit proceedings commence on the date the building owner submits the application for the building permit. In the framework of this proceedings, the detailed technical and organisational form of the structure is dealt with.

In the framework of the building permit proceedings, the plan is divided into partial units or structures, for which individual or group building permits are issued under the auspices of the competent building control departments.

The basic data concerning the application for the building permit is represented by the documentation for the building permit (DBP).

In the case of construction 0135, the scope of the construction of the D1 Motorway was modified as against the original land permit proceedings, therefore the DBP has already been prepared for construction 0135 in the scope covered by the application (Kroměříž východ - Říkovice). Documentation for the building permit concerning D1 Motorway, construction 0135 Kroměříž východ - Říkovice has been drawn up by the Viapont company in the year 2002.

The following studies were carried out to supply the basic data for the DBP:

- D1 Motorway, construction 0135 Kroměříž východ - Říkovice, Determination of the traffic intensity (ADIAS s.r.o., 2001)
- D1 Motorway, construction 0135 Kroměříž východ - Říkovice. Dispersive capacity study concerning the pollutants emissions due to traffic (Ekoair, 2002)
- Acoustic impact study for construction 0135 Kroměříž východ - Říkovice, focused on the locality of Pravčice (Pragoprojekt, 2002)
- Dendrological survey (Pragoprojekt, 2002)
- Proposed landscaping (800 series facilities) (Pragoprojekt, 2002)

- Draft document for acquisition of land (Geodis, 2006)

The construction 0135, discussed herein, is governed and subject to all the **building permits, of which the most important is the building permit for the main route of the D1 Motorway and the R55 Expressway, including but not limited to all three interchanges**. Application for the aforementioned building permit was filed by the Road and Motorway Directorate of the Czech Republic (by proxy) on 22 December 2004 in the letter of 13 December 2004. The building permit was issued pursuant to the Building Act by the Ministry of Transport of the Czech Republic in its public notice of 24 October 2006 (ref. no. 1010/2004-120-RD/20). This decision became effective as of 27 November 2006.

As regards construction 5503, the documentation for the building permit was prepared and released under title “**R55 Expressway, section Skalka - Hulín**” (Dopravoprojekt Brno, a.s., VPÚ DECO PRAHA a.s., May 2002).

The following studies were carried out to supply the basic data for the DBP:

- Detailed geo-technical survey (Ing. Paseka, 2000)
- Hydro-geological survey (Ekohydro-Pospíšil, 2000)
- Comprehensive water-management solution (DBP author)
- Proposal for the geo-technical monitoring (Geostar spol. s r.o., 2002)
- Determination of the traffic intensity - update of cartograms of the traffic load, based on the country-wide traffic census 2000 (ADIAS s.r.o., 2001)
- Noise-level study - updated on the basis of the traffic load updated data (ENVIROAD s.r.o., 2002)
- Emission study - updated on the basis of the traffic load updated data (ENVIROAD s.r.o., 2002)
- Dendrological survey (Ing. Ivo Erben, 2002)

The construction 5503, discussed herein, is governed and subject to all the **building permits, of which the most important is the building permit for the main route, including the rest area, bridge structures, and framing on the main route, storm sewers and landscaping of the main route**.

Application for the aforementioned building permit was lodged by the Road and Motorway Directorate of the Czech Republic (by proxy) on 30 October 2006. The building permit was issued pursuant to the Building Act by the Ministry of Transport of the Czech Republic in its public notice of 4 July 2007 (ref. no. 606/2006-120-RS/6). This decision became effective as of 4 October 2007.

2.3.5. STAGE V - IMPLEMENTATION:

As of the application date, both solutions of the structure are at advanced implementation stage.

Construction 0135 was commenced in April 2008, with estimated completion by the end of 2010. The Contractor is the “Sdružení Kroměříž východ - Říkovice” Consortium, composed of SKANSKA DS a.s. (the leading partner), METROSTAV a.s., ALPINE construction company CZ, s.r.o. and M-SILNICE a.s..

As of month of PEI (February 2010), the earthworks were carried out in the main route, the subgrade of crushed-run rock was placed, culverts installed, and the central and outer draining ditches made. In some sections, the subgrade of mechanically-compacted aggregate and bitumen courses have already been implemented. Dirt roads as well as secondary roads Kostelec - Karlovice, Kostelec - Roštění, Roštění - Pacetluky, Skaštice - Hulín and Holešov - Bořenovice are being repaired on a year-long basis.



Figure 11: Arable soil stripping on construction 0135 as the initial stage of the earthworks (September 2008)

Out of eleven bridge structures, one has been finished, including the installation of its accessories. At other bridges, the load-bearing structures were concreted and the transition part backfilled. Insulations, bridge cornices and bitumen compacted courses are currently being implemented. The ditch pavements crossing the water streams under the bridges have already been installed using the natural quarry stone.

Sewer system of the main route is now at the stage of installation of the storm-water gully connections. Oil product separators, totalling 7 along the construction, now have their tanks backfilled and accessories installed. Out of six storm-water sedimentation tanks, one is backfilled and two prepared for seating. All the relocations of the electric power line, optical fibre cables and gas pipelines have already been performed.

Construction work on **Construction 5503** commenced in July 2008, with estimated completion by the end of 2010. The Contractor is the “Sdružení Skalka-Hulín-R55” Consortium, composed of EUROVIA CS a.s., STRABAG, a.s., OHL ŽS, a.s. and PSVS, a.s.

In the main route, the subgrade of crushed-run rock was placed, the central draining ditches and sewer system with connection made; final excavation is being performed in the cutting. In autumn, the slopes around the route were cropped with grass seeds. The adaptation of the crossing road Hulín - Chrášťany has been finished and the road is in preliminary use. Dirt roads as well as secondary roads are being repaired on a year-long basis. All bridge structures are under construction. Installation of precast modules, load-bearing structures, insulation of foundation take place, load-bearing structure are being concreted and the transition parts backfilled, including tapers. The ditch pavements crossing the water streams under the bridges have already been installed using the natural quarry stone. At the rest areas along the main route, formations are installed and the road structure at the level of gross plain. Works on sewer system and drainage are under way. Out of nine storm-water sedimentation tanks, five have been finished and backfilled. All the relocations of the electric power line, optical fibre cables and gas pipelines have already been performed.

2.4. COMPARISON OF OPTIONS:

Comprehensive comparison of the optional layouts of the motorway network in the wider area was made in the framework of the transport-urban comparative study (TUCS) Central Moravia - concept of the higher road network (Viapont, 1996). The environmental assessment was carried out in the framework of the environmental impact assessment concerning the present concept (Transconsult s.r.o., 1996). Both the studies assessed in general the suitability of the three options in terms of transport relations, urban development, area transport serviceability and costs. The options were of course assessed as to their impact on the environment.

The following three options of traffic and transport arrangement were compared (see Figure 8):

Option A - taken from the Land Use Plan of the Big Territory (LUPBT) of the Zlín conurbation

- Option B - taken from the Exploration study of the D1 Motorway Vyškov - Kroměříž - Zlín - Lyský pass (Slovak border) (HBH Projekt, 1995)
- Option C - proposed in the framework of TUCS in order to minimise the deficiencies of other options and to minimise potential environmental impacts

Option C was found the most adequate in all respects. The option was subjected to the environmental impact assessment in more detail and divided into individual sections. In the case of construction 0135, in its current scope (i.e. Kroměříž východ - Říkovice), two options were assessed one of which was the present one. In both cases, the invariant assessment was made, in both cases the proposed projects were approved by the competent state administration bodies and were granted the consent of the Ministry of the Environment of the Czech Republic with respect to the environmental impact of the project.

In the framework of construction 5503, the variation was addressed in more detail within the defined corridor as per the 1st variation in the Land Use Plan of the Big Territory of the Zlín conurbation at the stage of the Study on the R55 Expressway Hulín - Skalka routing (Dopravoprojekt Brno, October 1997). 6 working options of the direction routing was proposed by the study in the defined corridor. Based on the subsequent negotiation with the involved self-governing bodies and on the comprehensive assessment in terms of technical potential, interventions in the open landscape and forest growth, passages in the vicinity of settlements and difficulty of the utility lines relocations, the most acceptable option was chosen - i.e. Option 6, which is worked out in the study and recommended for the environmental impact assessment as per Act No. 244/1992 Coll.

2.5. INVOLVEMENT OF THE PUBLIC IN THE PROCESS OF ENVIRONMENTAL PROTECTION

The Czech legislation provides the general public with many opportunities to be involved in the process of preparation of the particular construction.

The citizen right to the administrative adjudication is primarily derived from the internationally recognised Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, which was ratified by the Czech Republic in autumn 2004. This Convention forms a basis for the Czech legal rules, namely the Act on Access to Information, Act on Right to Information about the Environment, Act on Protection of the Environment and Landscape, the Building Act to certain extent, and also the Act on Environmental Impact Assessment.

The general public was involved in the process of preparation of the section of the D1 Motorway, construction 0135 Kroměříž východ - Říkovice and the section of the R55 Expressway, construction 5503 Skalka-Hulín, in the following manner:

SEA process

All the concepts given in chapter 2, as assessed in the SEA process, were made available to the public and the comments, and all such comments had to be properly attended to prior to the announcement of the official opinion about the concept.

According to the applicable legislation, in the course of the SEA process, the public is entitled to express its opinion as early as at the stage of declaratory hearing, when the decision is made whether the concept should be assessed in the framework of the SEA process and what should be the extent of such assessment. The conclusions of the declaratory hearing take into account the opinions submitted within the legal period (20 days of publication).

Upon completion of the SEA evaluation, the concept draft of which SEA is an integral part is posted on the internet and submitted for comments by the state administration bodies, self-government bodies and general public.

The SEA process includes a public discussion which must be notified at least 10 days in advance on the notice board, internet and by at least another one usual method (local press, radio, etc.).

Anyone is entitled to submit their opinion in writing concerning the concept draft, within 5 days of the public discussion. The submitted statements as well as the progress of the public discussion form a basis for the SEA official opinion.

EIA process

During processing of all three EIA documentations in question (see chapter 2.3.2), the processor collaborated with the relevant state administration bodies whose comments and objections were reflected in the prepared assessment as necessary.

Upon completion of the processing, the EIA documentation was, in accordance with the then applicable legislation, sent to the competent state administration bodies and municipalities, which subsequently informed the public in a usual manner (notice boards) of when and where the EIA documentation would be made available for consultation. The documentation was made available for consultation for a period of 30 days in all the involved municipalities (towns and villages), the public was allowed to make abstracts or copies thereof. For this period, the public might submit their written statements and comments thereto. The relevant state administration bodies were given a 50-day period to deliver their comments on the EIA documentation.

The public was entitled to be involved in the EIA process indirectly by proxy of the state administration bodies or to directly raise their comments and objections in the form of written statements, or via interest groups or unincorporated associations.

In the case of the EIA documentation for construction 0135 in the then scope (i.e. Hulín - Říkovice), the public made its statement only by proxy of municipalities. The Ministry of the Environment of the Czech Republic received a total of 13 statements of the relevant state administration bodies.

In the case of the EIA documentation for construction 0134.2 Kojetín - Hulín the district of Kroměříž, the Ministry of the Environment of the Czech Republic received a total of 8 statements of the relevant state administration bodies and 2 statements of the general public (individuals).

In the case of the EIA documentation for construction 5503, the Ministry of the Environment of the Czech Republic only received the statements of the relevant municipalities and public authorities.

The processors were obliged to draw the assessments taking into account the received statements and opinions after proper resolution thereof.

With the assessments completed, public discussions followed concerning the content of the assessment and the received statements; in accordance with the legislation, the public discussion took place within one month of the receipt of the assessment. The public discussions about the assessment and statements of the public took place in the period set out by the law; venue and time were properly announced. The venue and time of the public discussion should be announced by the competent public authority at least one week in advance, the notice thereof should be sent to the announciator, municipalities, relevant state administration bodies, interest groups and the assessment processor.

Public discussion over construction 0134.2 took place on 13 January 1998. The public discussion was participated by the representatives of the state administration bodies and the general public - approximately 60 persons in total.

In the case of construction 0135, the public discussion took place on 26 July 1999. The public discussion was participated by 24 persons, of which only 2 were from the general public. No serious objections which would prevent the implementation of the project or reveal deficiencies of the assessment were raised on either of the public discussions.

In the case of construction 5503, the public discussion took place on 5 May 1999 the social club in Hulín. The discussion was participated by the representatives of the affected municipalities and the state administration bodies, the announciator of the project, EIA documentation and the Assessment processor, and general public, a total of 20 persons. The representatives of the competent state administration bodies had no objections against the project, the general public raised one query which was answered by the announciator representative and subsequently accepted by the public. No other deficiencies were revealed in the Assessment or the EIA documentation.

No interest groups were formed during either EIA processes, the process was not participated by any existing interest groups or unincorporated associations. No objections or comments were raised outside the scope of the public discussion.

Land and building permit proceedings

At the stage of the land and building permit proceedings, the public was involved in the process of preparation either indirectly through the competent state administration bodies or directly in the form of unincorporated associations. Commencement of the building or building permit proceedings was announced in compliance with the legislation, i.e. in the form of public notice. Participants in the proceedings were automatically the persons whose rights might be affected by the construction. In compliance with the act on protection of the environment and landscape, the unincorporated associations have the right to enrol to the preparation or initial administrative procedure (preceding the land permit proceedings, land and building permit proceedings), where their interests in the protection of the environment and landscape may be affected.

Integral part of the land permit proceedings is represented by oral proceedings, often including the local investigation. The participants were allowed to be involved in the proceedings, venue and time were announced

at least 15 days in advance. Potential objections or comments might be raised at the latest during the oral proceedings.

In the case of construction 0135, during both land permit proceedings, a number of negotiations were held with the competent state administration bodies and other subjects involved. These institutes issued statements and opinions about the project, these statements and opinions were subsequently discussed and the requirements arising therefrom were incorporated in the DLP.

In the course of the land permit proceedings for construction 0134.2, the final oral proceedings on the technical solution were held in Kroměříž on 4 February 1998. In the case of construction 0135, the initial negotiations were held in Hulín on 25 June 1998, whereas the final discussion about the technical solution was held on 15 April 1999.

In the course of the land permit proceedings on the section of the 5503 Expressway, a number of negotiations were held with the competent state administration bodies and other subjects involved. These institutes issued statements and opinions about the project, these statements and opinions were subsequently discussed and the requirements arising therefrom were incorporated in the DLP. A list and statements are included in the DLP in its Part E "Basic Data and Documents". As the construction 5503 was covered by the 2nd variation of the Land Use Plan of the Big Territory of the Zlín conurbation on the basis of which the proposal could have been assessed, the building control department at the Municipality office of Otrokovice abandoned the oral proceedings and assign the deadline to the participants and relevant state administration bodies for submission of their opinions by 27 October 2000.

In the framework of the land permit proceedings for construction 0135 in the then scope and construction 5503, a number of objections were raised, the majority of which did not pertain to the environment. All the objections concerning the environment which are reasonably covered by the land permit proceedings (for construction 0135 a total of 7, whereas for construction 5503 a total of 8) were gratified. The objections were raised by the self-governing bodies or state enterprises. The participants raised no objections in the framework of the land permit proceedings for construction 0134.2.

The land permit concerning the location of the line structures was announced in the form of public notice, posted 15 days in advance in the usual manner (i.e. notice board).

In the framework of the building permit proceedings, the participants of the proceedings include: the building owner and the persons whose rights might be affected. The building control department ordered the oral proceedings with local investigation. The venue and time were announced at least 15 days in advance. Objections or comments might be raised at the latest during the oral proceedings.

Final negotiation concerning the construction 0135 took place in Hulín on 13 September 2006.

In the framework of the building permit proceedings, the participants did not raise any objection against either of the constructions or structures in question.

2.6 COMPLAINTS AND LAWSUITS

The entire process of the investment preparation took place in accordance with applicable legislation. No complaints or lawsuits were filed during the preparation of the section of the D1 Motorway, constructions 0135 and R55, construction 5503, which would concern the processes, material or any other malpractice or failures.

3. DESCRIPTION OF THE ENVIRONMENTAL ASPECTS LIKELY TO BE SERIOUSLY IMPACTED BY THE PRESENT PROJECT

The area affected by construction 0135 Kroměříž východ - Říkovice and construction 5503 Skalka - Hulín is located in a slightly rugged terrain of the Hornomoravský úval (Upper Moravian Vale) and the edge of Zlínská vrchovina (Zlín Highlands). The landscape has a predominating transport and energy corridor running from the north to the south, including the I/55 road, railway line no. 330 Přerov - Břeclav and several high-voltage overhead lines. The area is primarily used as agricultural land, the most quality soil is found in the northern part. Forests are located in the floodplain of the Morava River, sporadically among the arable lands and along water streams. Due to the nature of the subsoil, the area concerned has favourable conditions for formation of water-bearing ground. For this reason, the groundwater is often intercepted and confined. Larger residential communities are the cities of Kroměříž, Hulín and Otrokovice. Smaller communities are located along the existing roads I/47 and I/55.

For comprehensive description of the environmental characteristics, see the following table.

Table 4: Survey and description of the environmental elements and characteristics in the area concerned

<i>Environmental element, environmental characteristics</i>		<i>Description</i>
<i>Category</i>	<i>Sub-Category</i>	
POPULATION DENSITY	Densely populated area	The area is intensively used as agricultural land, residential centres are the cities of Kroměříž, Přerov and Zlín, whereas smaller rural centres are the cities of Hulín and Otrokovice.
	Areas of historical, cultural or archaeological importance	The area has been settled by humans since time immemorial, there are several important archaeological excavation sites in the area; no sites of architectural importance or cultural monuments are found outside the residential communities and built-up areas.
ATMOSPHERE AND CLIMATE	-	The area belongs to the warm climatic zone; favourable wind and orographic conditions ensure good dispersion of harmful substances in the air, nevertheless the emission limits of some pollutants are sometimes exceeded in the urban areas or larger cities.
NOISE	-	The noise limits set out by the law are primarily exceeded along the main routes. The highest negative impact of the noise is imposed on the built-up areas of Hulín, Záhlinice and Tlumačov.
WATER	Surface	The area belongs to the Morava River basin, the main recipients in the area are the small water streams, strongly influenced by human activity, the southern part is drained via the Mojena and Dřevnice streams.
	Ground	The area is important for water management, the territory extends to the Protected Area of Natural Water Storage (PANWS) Quaternary strata of the Morava River, several drinking water sources.

SOIL	Agricultural	The area is dominated by the top-quality agricultural (arable) land.
	Forest	Small areas, predominantly in the southern part.
GEOLOGY	Rock environment	The area in question is formed by Neogene sediments, which are overlapped with Quaternary deluvial deposits.
	Natural resources	The river gravel-sands are extracted in a wider surrounding area.
FAUNA AND FLORA	-	The predominating agro-coenoses in the area are poor in terms of animal and plant species, as they provide a habitat for only common fauna and flora.
SPECIALLY PROTECTED AREAS	National park	None
	Protected landscape area	None
	National Nature Reserves	None
	National natural monument in the nature reserve	None None
SPECIAL MONUMENTS	Natural monument (NM)	In the wider surrounding area: NM Stonáč, proposed NM Pumpák Wetland, NM Kurovický quarry and NM Tlumačovská stream pool
	-	
TERRITORIAL SYSTEM OF ECOLOGICAL STABILITY(TSES)	-	TSES at all levels: - Supraregional bio-corridor (SRBC) 142 Chropyňský riparian forest - Soutok - regional bio-centre (RBC) 121 Hrabůvka - Local bio-centres and bio-corridors
SIGNIFICANT LANDSCAPE FEATURES (SLF)	Registered	SLF Skalky, ecologically significant landscape segment (ESLS) Remíz proposed for registration.
	“Ex lege” (forests, water streams, ponds, floodplains, bogs)	Density of “ex lege” SLF is relatively small, primarily limited to water streams and small water bodies.
NATURA 2000	Special Protection Area for birds	None
	Special Area of Conservation (SAC)	In the wider surrounding area: SAC Stonáč, SAC in Pumpák Wetland, SAC Skalky and SAC Kurovice-quarry.
LANDSCAPE	Landscape pattern Natural park	Slightly rugged, strong influence of human activity with predominating areas of agricultural land, relatively poor representation of natural characteristics. None
TOTAL IMPACT IMPOSED ON THE AREA	-	Due to the intensive agricultural use, the landscape exhibits low ecological stability.

As suggested above, the most sensitive issue concerning the negative environmental impacts is the protection of land resources, water resources and lands with forest growth.

4. DESCRIPTION OF THE POTENTIALLY SERIOUS ENVIRONMENTAL IMPACTS OF THE PROJECT, INDUCED BY THE EXISTENCE OF THE PROJECT, EMISSION OF POLLUTANTS, GENERATION OF NUISANCE AND DESCRIPTION OF FORECASTING METHODS USED BY THE INVESTOR FOR ASSESSING THESE ENVIRONMENTAL IMPACTS

4.1. COMPREHENSIVE ASSESSMENT OF IMPACTS ON INDIVIDUAL ENVIRONMENTAL FEATURES

4.1.1. POPULATION

Status

The affected area is settled on a long-term basis, the residential centres are the cities of Kroměříž, Přerov and Zlín, whereas smaller rural centres are the cities of Hulín and Otrokovice.

The submitted project for the D1 Motorway, construction 0135, runs from the northern edge of Kroměříž towards the east, and from the area north-east of Hulín towards the north, and is partial branch (R55 Expressway) is due south. Here, the link with the projected R55 Expressway, construction 5503, is proposed to run parallel with the railway line no. 330 Přerov-Břeclav towards the south and to terminate north of Otrokovice.

Direct and indirect influences

Impact on the resident population may be divided into three categories - health-related (noise- and air-pollution - see below, vibration and road accidents), social and economic.

Construction 0135 runs outside of the municipality in the area concerned, its implementation should therefore significantly reduce the traffic intensity especially on the road I/47 between Kroměříž and Hulín, and I/55 heading north and south from Hulín. As regards the public health in the affected municipalities, the construction itself will undoubtedly have positive effect as it diverts the traffic outside of the urban area along the roads I/55 and I/47 and II/367 (decreased air pollution load, elimination of vibrations). The implementation of the project will limit the accident rate (grade-separated interchanges, restricted contact with cyclists and pedestrians). Job opportunities will emerge in relation to and as a result of the construction. Economic impacts are likely to be positive, as the area serviceability and accessibility would increase, resulting in revitalised economy and development of new business opportunities. Access to the lots will be ensured by construction of local and dirt road diversions.

The proposed route 5503 copies the existing traffic corridor, but unlike the road I/55 it avoids the developed areas of the municipalities. The route is linked to the north-east bypass of Otrokovice and heads north, passing the local community Tlumačov - Skaly in the east, the municipality of Tlumačov and local community Záhlinice; it circumvents Chrástřany in the west and joins the construction 0135 east of Hulín. With the traffic transferred to the Expressway with corresponding technical parameters for the transport load, the traffic flow in the region will increase along with its speed, accordingly the accident rate and congestion will decrease on the currently used road. There is estimated interest in certain services provided along and in the vicinity of I/55 (restaurants, petrol stations), these will be relocated to the areas linked to the expressway (e.g. rest area). The barrier effect of the expressway is minimised by maintaining the permeability for all lower category roads and the access to the landscape via dirt roads.

Measures

The suggested measures eliminate negative impacts on the resident population, especially in terms of eliminated noise and emission nuisance during construction and operation of the road (see chapters 4.1.2 and 4.1.3).

4.1.2. ATMOSPHERE AND CLIMATE

Status

According to the climate classification, the entire area in question belongs to the warm climatic zone, or the T2 climatic unit, which is characterised by shorter and more humid summer, very short transition period; short, moderately warm, dry to very dry winter with a very short period of snow cover.

The following characteristics are defined for construction 0135: average annual air temperature (1961-1990) in Kroměříž is 8.7°C, average precipitation amount is 577 mm. The area is relatively windy, with predominating northern, western and southern winds, while the eastern quadrant is small in number.

Favourable wind and orographic conditions ensure good dispersion of harmful substances in the air. Based on the defined areas with deteriorated air quality in 2007 and based on measurement by Czech Hydrometeorological Institut (CHMI), imission limits for the majority of observed harmful substances are not exceeded in the area concerned. Only in the urban areas or Kroměříž and Hulín, the target imission limit for benzo(a)pyrene in annual average is exceeded, in Hulín the 24-hour limit for PM10 particles is also exceeded. The pollution sources in the area concerned primarily include: traffic, with significant representation of planar sources, i.e. municipalities.

The following characteristics are defined for construction 5503: average annual air temperature is 8.6°C, average precipitation amount is 625 mm.

Based on the defined areas with deteriorated air quality in 2007 and based on measurement by CHMI, imission limits for the majority of observed harmful substances are not exceeded in the area concerned. Only in the urban areas or Hulín, Tlumačov and Otrokovice the target imission limit for benzo(a)pyrene in annual average is exceeded as well as the 24-hour limit for PM10 particles, in the north-eastern part of Otrokovice, the imission limit for nitrogen oxides are exceeded in average annual concentration. The pollution sources in the area concerned primarily include: traffic, with significant representation of planar sources, i.e. municipalities.

Direct and indirect influences

To assess the impact of construction 0135 on the imission conditions within the area concerned, a separate dispersive capacity study was carried out within the EIA documentation; the study was updated at further stages of preparation. Special attention was paid to the interchange MÚK .

The road transport is significant source of the following pollutants: PM solid particle, NOX, PAU, COX (primarily CO). The implementation of the present project will result in an overall increase in the traffic emissions within the area. Nevertheless, the increase in emissions in the open landscape will be paid back by considerable decrease in imission load in the Hulín city centre and other municipalities in the area which are currently exposed to high imission loads. With the motorway completed, the place most impacted with the imissions will be the area surrounding the motorway, primarily the points of interchanges. In spite of potential short-term excess of the harmful substance imission concentration in the vicinity of the motorway, the residential and built-up area (in sufficient distance from the project) will not be affected.

The dispersive capacity study was carried out within the EIA process concerning the construction 5503, the study was updated both at DLP and documents for building permit (DBP) stage. The calculated values imply that the imission from the road I/55 and the section of the Expressway in question may have direct impact on the municipalities/communities of Tlumačov-Skály, Tlumačov, Záhlinice, Chrástřany, Hulín and Kurovice. The analysis of the air pollution load values, defined limits and isolines of average annual and short-term imission concentration, implies that with the average traffic intensity, the imission concentrations of any harmful substance emitted by the vehicles will not reach the limit values in the nearest residential area. In the immediate vicinity of the existing road I/55 (Tlumačov, Záhlinice), the limit values of the short-term imission concentration during rush hours are exceeded even nowadays. With the implementation of the present project, the overall imission situation will improve.

Climate changes in the wider surrounding area of both constructions, which may occur as a direct consequence of the implementation and operation of the present project, cannot be estimated. Insignificant influence may only be expected in the micro- and topo-scale.

Measures

The proposed measures apply to the construction stage, and are primarily focused on the elimination of dust nuisance on the site.



Figure 12: Dust nuisance on the site is eliminated during construction by means of sprinkler trucks

4.1.3. NOISE

Status

In order to evaluate the noise conditions in the area concerned (evaluation of how the constructions influence these conditions), the individual EIA documentations included separate noise-level studies which were updated at the stage of construction preparation. The evaluation of noise levels implies that the high traffic intensity in the main routes, i.e. I/55 and I/47, results in excess of the legally defined noise limits, both during day and night hours, in the built-up area around the roads and all the 2nd and 3rd class roads adjoined. The highest negative impact of the noise is imposed on the built-up areas of Hulín, Záhlnice and Tlumačov.

Direct and indirect influences

The implementation of the present section of the D1 Motorway will re-distribute the traffic across the area, with the significant part of the transit transport diverted from the urban areas. Therefore, the operation of the D1 Motorway, construction 0135, will definitely have positive effect on the noise conditions in the municipalities which hitherto have been exposed to noise. The only locality where the noise impact is likely to increase is the western edge of the Pravčice municipality, where the noise level will be near the defined limit according to the calculation for the year 2020.

In the case of construction 5503, outside the village of Chrášťany, the levels of noise impact along the construction 5503 were proven to be below limits. As regards the village of Chrášťany, the accumulation of noise from the railway and road transport was addressed and the excess of limits for noise impact was confirmed. The relocation of the traffic from the road I/55 to the present project will significantly reduce the traffic intensity through the cities of Hulín, Záhlnice and Tlumačov, which will also reduce the noise impact imposed on the resident population living around the existing road I/55.

Measures

In the case of construction 0135, the developed and built-up area at the western edge of Pravčice will be protected against the excessive noise levels by means of noise barrier. The noise impact will be continuously measured in this locality during the construction.

The village of Chrášťany will be protected against the excessive noise levels, emitted by the operation of construction 5503, by means of noise barrier located at the western edge of the municipality to deaden the noise generated by railway transport too.

4.1.4. WATER

Status

The area in question lies in the Morava River basin, this important river flows through the area from north-west to the south. In the northern part of the area, several water streams - under strong influence of human activity - flow from the north-east to the basis of the Morava River, these streams are Stonáč, Svinský, Němčický and others. The southern part of the area is drained via the Mojena and Dřevnice streams, their smaller tributaries are also under strong influence of human activity. Agricultural lands are interlaced with amelioration channels.

The eastern part of the area belongs to the hydrogeological region “Hornomoravský úval (Upper Moravian Vale), whereas the western part lies in the Pliocene-Pleistocene sediment Upper Moravian Vale, the southern part is located in the Flysch of the Morava River basin.

Owing to the water management importance the western part of the area extends to the PANWS Quaternary part of the Morava River. There are several drinking water sources in the area concerned, with defined protection zones of 1st and 2nd degree. The northern part of the area is overlapped by the protection zone of the mineral water source Horní Moštěnice, 2nd degree.

Direct and indirect influences

The water conditions in the area of construction 0135 are nowadays strongly influenced by human activity, the implementation of the present project will result in further influence, theoretically in terms of quantity and quality of the surface and ground-water in the area concerned. The construction discussed herein crosses several water courses, to which the road body will be drained, the construction runs through two zones of sanitary protection 2nd outer degree, through 2nd degree of the mineral water source protection zone “Horní Moštěnice” and its initial part intervene in the PANWS Quaternary part of the Morava River. However, the present construction does not extend to the inundation area of the Morava River.

No significant intervention is expected in terms of impact on the hydrologic regime of the surface or ground-water. The influence on the extreme flow rates will be eliminated by the proposed technical measures. The influence during construction and operation is theoretically expected in the area of quality of surface water mainly. Entrapping of pollutants (nonpolar extractives, precious metals) escaping from the carriageway in the water solution and potential oil spills primarily due to accidents will all be entrapped by means of oil separators, or scum boards in the storm-water sedimentation tanks. The water courses will be exposed to the leakage of chloride ions, however they will be sufficiently dissolved in the water streams so that the environment of water streams and growths will not be significantly damaged.

The implementation of the present project will result in substantial improvement in quality control of the waters escaping from the carriageway as the existing traffic system lacks any system for control and purification of effluents.

As the construction 5503 is staked out in a free landscape, the hydrologic regime of the area will be partially influenced, both by the construction of the road body and the modification of crossings above water streams and proposed drainage of the road. The route is in direct contact with 2nd outer protection zone of the water source in Tlumačov and Kvasice, the Kaplička water source has its 2nd degree protection zone running along the edge of the north-eastern bypass of Otrokovice. PANWS Quaternary part of the Morava River remains unaffected. The route does not extend to the inundation area of the Morava River either. Due to the hydrologic importance of the area, the projected road drainage should consistently separate the potentially contaminated water from the hard surfaces of the road which are driven into the sewer and via storm-water sedimentation tanks with gravitation-operated oil product separators into the recipients with sufficient flow rate, from other precipitation water. The entire route is secured against spills of harmful substances. Crossing the water streams employs the bridge structures, modification of water streams upstream and downstream of the crossing are minimal only, amelioration network is retained, only the channels were adjusted and re-linked to fit the staking of the present project. Significant influence on the hydrologic regime and the groundwater quality are not expected.

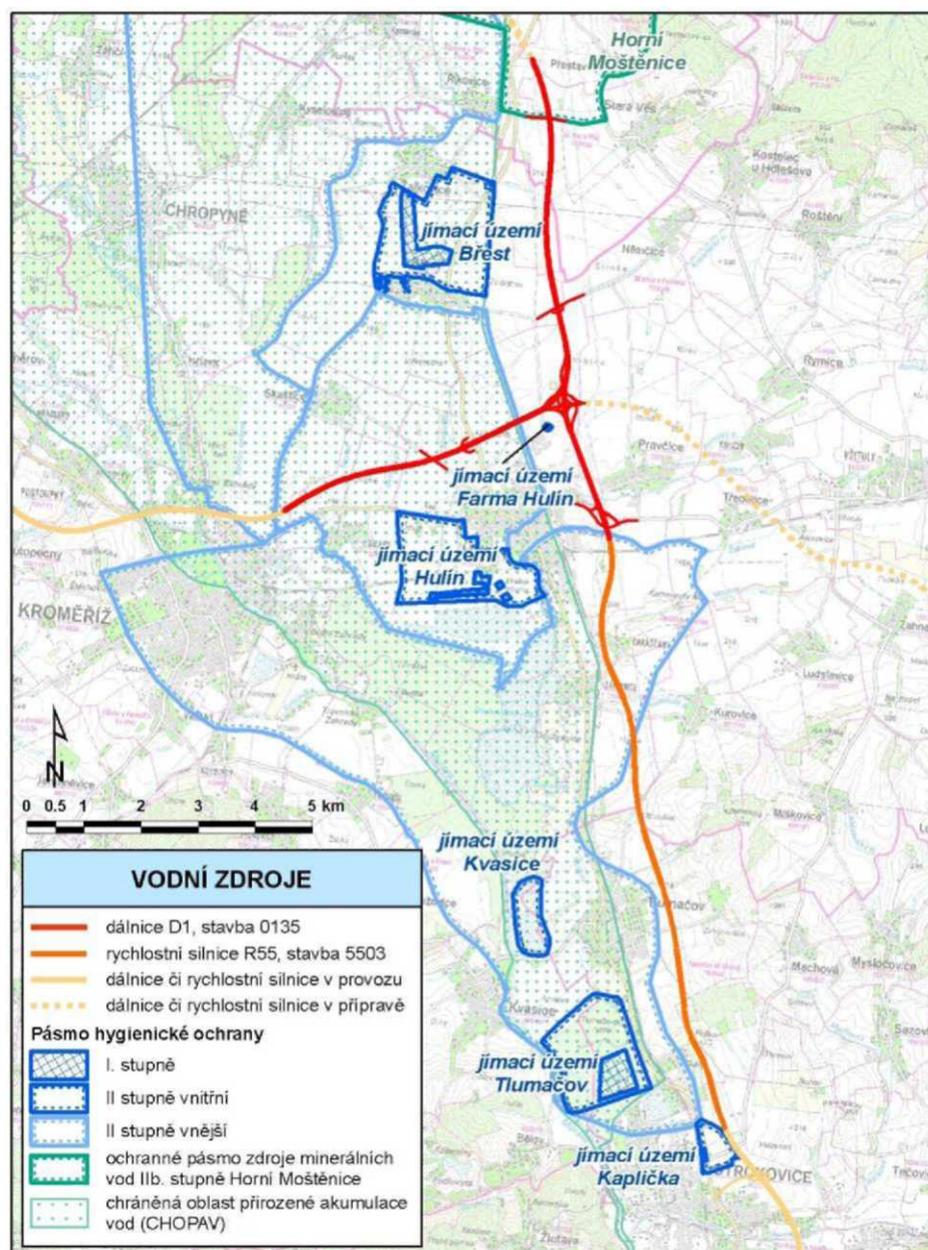


Figure 13: Water sources and their protection zones within the area in question

Measures

The staking out of the route in construction 0135 is optimised to minimise the intervention in the water sources and in their protection zones. For the time of constructions, measures were proposed concerning mostly the technical conditions of the machinery and storage of fuels. To entrap the extreme flows, storm-water sedimentation tanks and oil product separator with sedimentation collectors were designed and proposed. These devices will ensure entrapping of oil products and other pollutants, including precious metals. To monitor the level of the groundwater and its quality, the monitoring of groundwater was proposed during the building permit proceedings linked to the previous project stage.

Measures to protect the quality of water in the case of construction 5503 primarily concern the technical solution for draining the road body and sufficient entrapping of potential pollutants in the storm-water sedimentation tanks with gravitation-operated oil product separators. The discharge of the water into the final recipients was sized to suit the sufficient solution of the chloride ions taken from the spreading material in compliance with the regulations and capacities of the area. Within the framework of the geo-technical monitoring, several profiles were proposed to be distributed along the entire length of the construction to measure the current level of the groundwater. Monitoring of the groundwater quality will be performed in the area around the Kurovice landfill.

To lower the risk of flooding from the Hrabůvka water course which flows through the city of Otrokovice, a retention tank has been proposed.



Figure 14: Placing the underground storm-water sedimentation tanks which will be incorporated in construction 5503 (September, 2009)

4.1.5. SOIL

Status

In the middle to the western part of the area in question, the predominating soil type is Fluvisol (subtype Fluvisol gley); in the eastern, northern and at some points of the southern part the predominating soil type is Chernozem (black earth) (subtype Luvial Chernozem and sporadically Phaeozem), in the southern part, the Chernozem with addition of brown earth (subtype Modal) and Cambisol.

As regards the quality, the soils in the area concerned belong to the top, the northern part is dominated by the soils of 1st protection class (the top quality soils), in the western part prevails the soils of 2nd protection class (excessively productive soils), whereas in the southern part, the substandard soils (4th protection class) can also be found.

Direct and indirect influences

Impact on the soil in the area concerned may be theoretically expected at the level of quantity and quality. Contamination of soil due to operation of the projected motorway may only be expected in the immediate vicinity thereof (within approx. 20 metres). Embankment and cutting slopes may be endangered by erosion, especially water erosion. This danger is eliminated by the measures proposed herein.

The construction on construction 0135 will require a permanent annexation of quality agricultural land in a total area of 117.6 ha. The surfaces of the temporary land annexation with an area of 12.4 ha within one year, and 25.8 ha above one year, will be restored after the completion of the construction to make them available for further use.

The construction on construction 5503 will require a permanent annexation of lands with an area of 67.97 ha, of which 92.0% belong to the agricultural land resources, 1.7% areas with a forest function, and 6.3% others. The surfaces of the temporary land annexation with an area of 14.9 ha within one year, and 30.2 ha above one year, will be restored after the completion of the construction to make them available for further use.

Measures

The key measure to eliminate the impact of the construction on the soils within the area concerned is the minimisation of the permanent and temporary annexation of land. The surfaces of the temporary land annexation will be restored after the completion of the construction. To eliminate the soil exposure to erosion,

appropriate sloping of embankments and cuttings is proposed, the slopes should be compacted with adequate planting. All the measures proposed for elimination of impacts on the soils were consulted with and approved by the department for protection of agricultural land resources.

4.1.6. GEOLOGY

Status

The area in question is a part of Carpathian fore-deep (tectonic depression), which was filled with sediments in the Neogene period. These sediments were overlapped with Quaternary deluvial-fluvial deposits. The largest portion is covered with Quaternary gravel fluvial sediments which are overlapped with Holocene flood loam. Loess and loess loams are abundant in the northern part of the area, whereas the southern part is rich in brown sandy loams. The river gravel-sands are often extracted in a wider surrounding area.

Direct and indirect influences

Due to the D1 Motorway routing and the fact that deep cuttings are not required on the embankments, no significant influence on the geological conditions is expected. Local impacts will occur due to foundation of the bridge structures. The demarcated areas of deposit and reservoir protection will not be affected.

Rock environment of the area affected by construction 5503 will be disrupted on a local basis only, i.e. in places where deeper cuttings and bridge structure foundations are needed. The areas of deposit and reservoir protection will not be affected by the project.

Measures

In the case of construction 0135, no special measures were required in terms of protection of the rock environment and deposits/reservoirs.

The impacts of the intervention in the construction 5503 subsoil will be compensated by the proposed measures which are based on the geo-technical survey and apply to the improvement of subsoil, embankment and cutting slopes, partial transfer of acceptable soil to the embankments and landscaping on the slopes.

4.1.7. FAUNA, FLORA AND ECO-SYSTEMS

The environmental protection in the Czech Republic is generally governed by Act No. 114/1992 Coll., which defines several institutes of environment and landscape protection - primarily the specially protected species of plants and animals, specially protected areas, TSES, SLF, landscape pattern and off-forest woody plants, a specific category of local environmental protection is an ecological network called "Natura 2000".

4.1.7.1. FAUNA

Status

The agricultural use of the landscape is a dominating factor which influences the composition of animal species in the area concerned. The area concerned is poor in terms of animal species, as it provides a habitat for fauna which is common for similar agro-coenoses (roe deers, rabbits, field rodents), the bird species composition is rather poor too. During the EIA process surveys, no specially protected species of animals were detected in the motorway or expressway route.

Direct and indirect influences

In the absence of localities which might be important for animal species in the area concerned, the 0135 route will not affect any specially protected species of animals or their habitats. Although the project will affect the habitats of common animal species, the area surrounding the projected site offers sufficient number of similar habitats. The impact on migration permeability is dealt with in chapter 4.1.7.6. Fragmentation of populations and landscape.

The route of construction 5503 runs predominantly through the agricultural lands with arable soil, with no significant impact on the population of animals common for these areas. As regards the intervention in Hrabůvka forest, the impact is rather marginal, the annexation of the forest area, i.e. the habitat for forest animals, will be negligible in comparison with the overall area of the forest. Fragmentation of the growth and the consequent prevention of migration of the forest population are not expected.

Measures

The proposed measures concerning construction 0135 are established to prevent contact with animals. Fencing is designed to run virtually along the entire length of the road. If any specially protected species emerges on the construction site, it is necessary to provide for appropriate transport thereof to an adequate area outside the site.

In the case of construction 5503, the annexed areas with forest growth is projected to be compensated for by the vegetation planted between Hrabůvka forest and the expressway; in addition a protective green lane will be

planted to minimise the negative impacts of traffic on the forest growth and to enhance the function of ecotone population. Fences are projected to prevent contact with animals in the places of increased pressure between Hrabůvka and Tlumačovský forest and to channel the animals to the wildlife crossing.

4.1.7.2. FLORA

Status

The area concerned belongs to the phytogeographic region of Pannonicum. The northern part of the area belongs to the area 21.b Upper Moravian Vale, whereas the southern part belongs to 21.a Hanácká pahorkatina (Haná Hill Land). Potential vegetation is represented by riparian forests, alder forests, and oak-hornbeam forests. However, no natural vegetation is practically present in the area concerned. The area is indisputably predominated by agro-coenoses, in small areas of non-arable soil are strongly ruderalised populations with a significant proportion of allochthonous woody plants. Although these segments are of no special botanical interest, they play eco-stabilising function in the landscape. To some extent, the northern part is also covered with forest growths.



Figure 15: One of the few off-forest greenery examples in an intensively used agricultural land

Direct and indirect influences

In the case of construction 0135, in the absence of any localities of botanical interest, the projected route will not influence any precious vegetation, it will not deteriorate the biodiversity of the area either. On the contrary, planting the autochthonous species on the embankments may increase the biodiversity and enhance the eco-stability of the area.

Habitats in the 5503 route are under influence of human activity and they do not represent a refugium for specially protected species of plants. The forest area “Hrabůvka”, with a higher biodiversity of plants and animals, is affected by the project rather marginally, the annexation of the forest habitats will be negligible.

Measures

The proposed measures apply to the period of construction (minimisation of tree chopping in the crossed line growths) and to the amenities planting of slopes (using the species of woody plants that are original for the relevant site, resistant to salts, the nature of seeds should be adjusted to fit the local conditions).

4.1.7.3. SPECIALLY PROTECTED TERRITORIES

Act on Protection of the Environment and Landscape defines the large-scale specially protected areas (protected landscape areas and national parks) and small-scale specially protected areas (natural monument - NM, nature reserve -NR, national natural monument - NNM, national nature reserves - NNR).

Status

Due to agricultural use of the area in question, no large-scale specially protected areas are found here. In the wider surrounding area, there are several small-scale specially protected areas, namely: NM Stonáč, proposed NM in the Pumpák Wetland, NM Kurovický quarry and NM Tlumačovská stream pool, which mainly protect the water and wetland habitats with the occurrence of specially protected species.

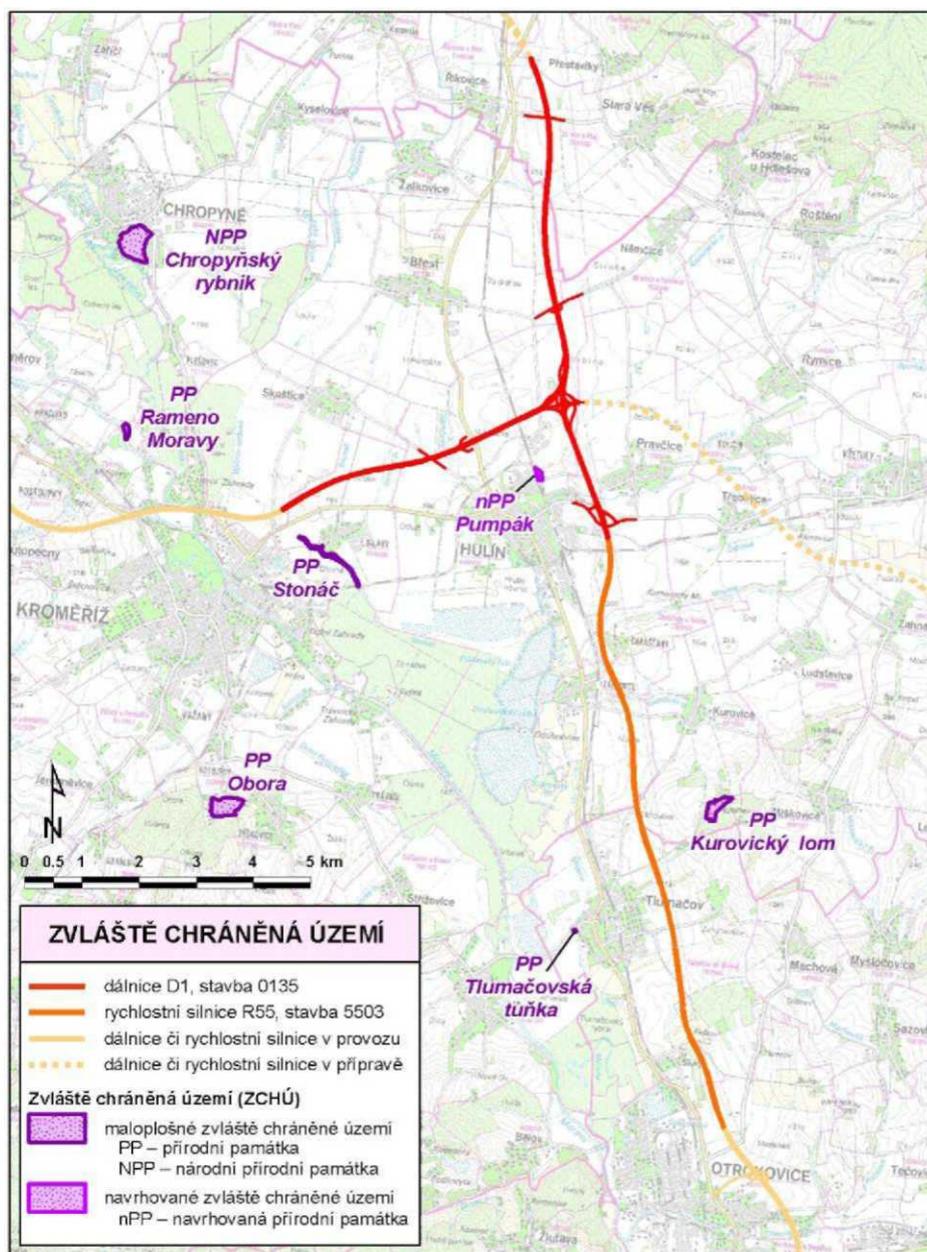


Figure 16: Protected areas in the area concerned

Direct and indirect influences

As regards 0135, NM Stonáč and NM Pumpák are in a sufficient distance from the construction in question (600 m at minimum), therefore no negative impacts can be expected during the construction of the motorway.

In the case of NM Stonáč, the impact may be expected through the waters drained from the carriageway, which are discharged into the Stonáč stream. Nevertheless, this impact will be eliminated by the proposed measure (see below).

Due to a sufficient distance from the project (900 m at minimum), no direct or indirect influences on the protected areas of NM Kurovický quarry and NM Tlumačovská stream pool are envisaged, including the protection zones of these areas, during the construction or during operation of construction 5503 .

Measures

To handle a potential impact imposed by construction 0135 on the water quality in the Stonáč stream, the oil product separator with an integrated sedimentation tank is installed at the orifice of the sewer.

In the absence of any negative impacts on the specially protected areas, no measures were proposed for construction 5503.

4.1.7.4. TERRITORIAL SYSTEM OF ECOLOGICAL STABILITY

According to the Act on Protection of the Environment and Landscape, the territorial system of ecological stability (TSES) is defined at the local, regional and supra-regional level, and it represents an interlinked set of ecosystems close to the nature, which keeps the balance of the landscape. The TSES features are defined in the process of zone planning.

Status

In the wider area, there are TSES segments at supra-regional, regional and local level. The only feature at the supra-regional level is located in the western part of the area, SRBC 142 Chropyňský riparian forest - Soutok, protection zone of this bio-corridor also contains further features of the system at the regional level; in the area of the Záhlinické ponds, and the forest growth of the manor-house, it is a regional bio-centre RBC 344 Filena, in the forest growth between Tlumačov and Otrokovice, it is RBC 117 Tlumačovský forest. In the southern part of the area towards the east, this bio-centre is linked with the regional bio-centre RBC 121 Hrabůvka via the projected regional bio-corridor RBCo 1585. The TSES features at the local level are located in the landscape under strong influence of human activity, formed primarily by groves and water bodies (bio-centres) and water streams with bank growths (bio-corridors). Due to the strong anthropogenic use of the area, the quality of the features at the local level is not high, growths are thin and strongly ruderalised.

Direct and indirect influences

The project of construction 0135 only interferes with the TSES features at the local level. The motorway route crosses 5 bio-corridors, in certain cases the bio-corridor is designed along the motorway body. 2 bio-centres are located in the vicinity of the motorway. Although the bio-centres will not be affected directly by the construction, they are likely to be influenced, primarily by noise and emission from traffic.

TSES will be affected by construction 5503 at the local and regional level. The regional forest bio-centre RBC Hrabůvka is affected marginally at its south-western edge, the passage through the regional bio-corridor RBCo 1585 is designed as a bridge structure with 5 spans, three of which are exclusively designed for the transfer of the bio-corridor. The route of the project also crosses 3 local bio-corridors, two of which run along the water streams and transferred by means of bridge structures; one of the proposed bio-corridors was impossible to be transferred due to the technical solution, therefore certain alleviating measures were suggested.



Figure 17: Construction of the bridge structure used for transfer of the regional bio-corridor 1585 between Hrabůvka and Tlumačovský forest, along with the local road Skály-Peškov and an interconnection of the paddock (October 2009)

Measures

For construction 0135, measures are proposed for the period of construction (minimisation of interventions) and technical design of the crossing. All the crossings of the bio-corridors are designed to keep the bio-corridors' functions. Methods for crossing of the construction with the TSES features were approved by the competent environmental protection authorities.

To ensure the acceptability of the present project 5503 and the existence of the system of ecological stability in the affected area, several measures were proposed concerning the technical solution of the bridge structures and modifications of the water streams and landscaping, which incorporate replacement planting, supportive planting and planting for stabilisation of this system. The affected features at the regional level are solved by the pass under the bridge structure and replacement planting; to protect the regional bio-centre, the protective green lane will be implemented parallel with the projected route, this green lane should enhance the forest population and eliminate the impacts imposed by the traffic (noise, dust, emissions). Collisions with the local bio-corridor are solved by bridge structures adjusted to the requirements for the permeability of the local system, the alleviating measure concerning the bio-corridor which could not be transferred features the planting along the dirt road parallel with the route.

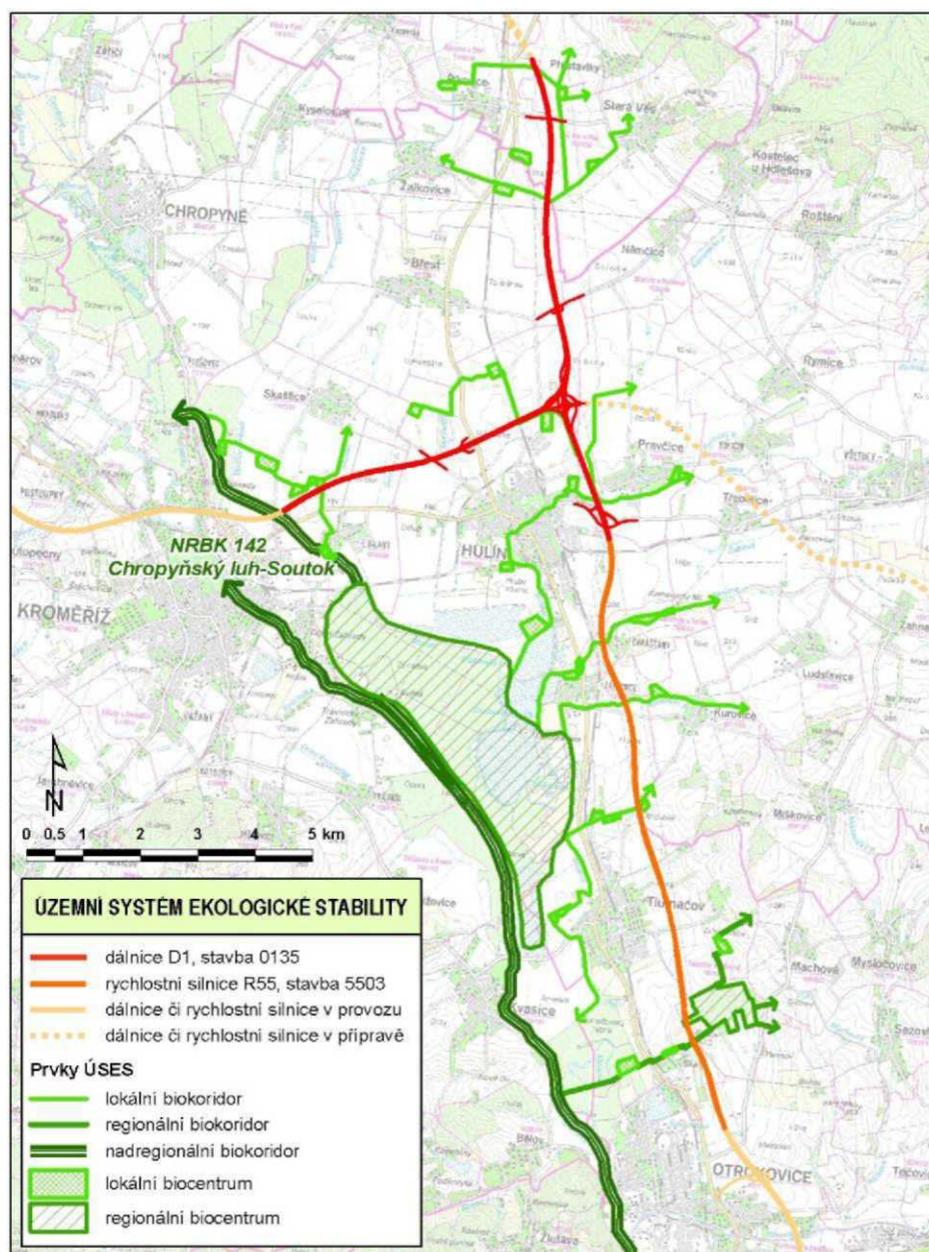


Figure 18: TSES in the area concerned

4.1.7.5. SIGNIFICANT LANDSCAPE FEATURES (SLF)

The significant landscape features (SLF) is defined in the Act on Protection of the Environment and Landscape as ecologically, geomorphologically or aesthetically valuable part of the nature. Generally, the SLF's include: forests, bogs, water streams, ponds, lakes, and floodplains, or any other segment may also be registered as SLF.

Status

Density of "ex lege" SLF in the area concerned is relatively small, primarily limited to water streams and small water bodies, it sporadically includes thin groves and larger forest growths. The Morava River floodplain extends to the area in the south-east. One SLF feature is registered in the area concerned, namely SLF Skalky (water body and wetland in the cadastral area of Hulín, at the edge of the Záhlinické ponds), one ESLS feature is proposed for registration - ESLS Remíz (forest segment in the cadastral area of Hulín, north-east of the MÚK (interchange) Hulín).

Direct and indirect influences

The assessed route 0135 comes into collision with water streams which are “ex-lege” SLF’s, all the crossings are implemented in the form of bridge structures. The ESLS Remíz proposed for registration, is situated north-east of the MÚK Hulín, is not directly affected by the construction, but an indirect influence is likely to occur.

The registered SLF Skalky will not be affected by the construction or operation of construction 5503, as it is approx. 490 metres distant from the projected site and separated by means of the busy railway line no. 330 Přerov - Břeclav and the 1st class road no. 55 between Hulín and Otrokovice. The direct influences on SLF are restricted by the law to the crossings of water streams, which will be bridged, or the amelioration ditches will use culverts to cross the road body. The larger forest in the locality Hrabůvka will be affected marginally, as well as the smaller growth along the landfill in the cadastral area Kurovice.

Measures

The measures proposed for construction 0135 concern the minimisation of interventions in the water stream beds and adjoining growths. Further measures are identical with those for protection of water streams.

Measures adopted in the case of construction 5503 concerning the maintenance of ecological-stabilising function of the significant landscape features, include the substitutive planting for the annexed areas, or maximum maintenance of the natural form of the water stream beds in the vicinity of the project.

4.1.7.6. FRAGMENTATION OF POPULATIONS AND LANDSCAPE.

Fragmentation of the landscape is a process when the construction of the transport infrastructure results in the division of the landscape into smaller parts, which are free of the properties of the original environment. The fragmented segment of the landscape loses the opportunity to communicate with its environment via eco-system relations, which - on a long-term basis - leads to a decreased genetic variability of animals and consequently to a deteriorated health status and population dynamics of animals. In the event of insufficiently large habitats within the fragment, the biodiversity decreases; without connection to the maternal (source) population the daughter population disappears.

Status

Based on the mapping of the area non-fragmented by the traffic, the affected area belongs to the fragmented areas, primarily due to a high density of roads, high traffic intensity and the totally prevailing cultivated landscape (intensively cultivated arable soil, developing municipalities). The area is dominated by non-oriented migration of animals in the search for food, the orientation features for migration of animals are the growths along the water courses, which are the only places with better food conditions and ecological stability. The affected species of migrating animals are: Roe Deer (*Capreolus capreolus*), European Hare (*Lepus europaeus*), Red Fox (*Vulpes vulpes*), weasel family (*Mustelidae*), Common Pheasant (*Phasianus colchicus*), Common Buzzard (*Buteo buteo*).

Direct and indirect influences

Construction 0135 will become a significant migration barrier in the landscape, which will lead to a further fragmentation of the already disturbed cultivated landscape. The motorway is led through strongly modified habitats free of any close relations to particular animal or plant species. The area affected by the construction lies outside the main migration routes of bigger mammals; due to lack of attractiveness no migration of regional scope is expected either. In spite of certain limitation of free move of the local animals (local migration for food), the motorway allows collision-free passage through the road via bridge structures, wildlife crossings. Therefore, no significant deterioration of the current state is expected, with the motorway opened for operation, the traffic intensity on the lower class roads will decrease which will increase their permeability for the migrating animals.

Construction 5503 will become a new landscape feature which will function as a significant migration barrier in the landscape leading to a further fragmentation of the already disturbed cultivated landscape. The road is led through strongly modified habitats (with prevalence of arable soil) free of any close relations to particular animal or plant species. The area affected by the construction lies outside the main migration routes of bigger mammals; the project runs parallel with the current road I/55. With the built-up area along the road, the place will experience the emergence of migration barriers as well as limitation of regional migration between the riparian forests along the Morava River and Hostýnské vrchy (mountain range). With the construction put into operation, the traffic intensity on the lower class roads will decrease which will increase their permeability for the migrating animals. The expressway also allows a collision-free passing of the road via bridge structures (underpass, wildlife crossings) for certain groups of animals, based on the technical possibilities and the actual execution.

Measures

The measures proposed for reduction of fragmentation of the area due to construction 0135 are focused on the following:

- Through the use of migration facilities, reduction of the barrier effect induced by the motorway: route will run predominantly on a low embankment, which limits the possibility of building the migration facilities to the points of crossing the small water streams. The construction concerned will incorporate 8 bridge structures which will be used as migration facilities by animals at a size of a fox or a boar.
- Preventing the animals from entering the carriageway: to prevent direct contact of wild animals with the vehicles, fencing is projected at both sides of the road along the entire length of the route.

The measures proposed for reduction of fragmentation of the area due to construction 5503 are focused on the following:

- Through the use of migration facilities, reduction of the barrier effect - the road runs through a mildly rugged landscape alternately on the embankment or in a deep cutting; in the crossing points with the bio-corridors, the under-bridge incorporates a sufficient space for transfer of the bio-corridor. There are 9 bridge structures (wildlife crossings), of which 3 will be fully functional for all animal species, 2 partially functional and 4 limited to serve mammals at a size of a fox.
- Preventing the animals from entering the carriageway - category of the road and estimated density of traffic represent an unsurpassable barrier with a low to zero success rate of passing it by run. Therefore, a partial fencing of the expressway is projected in the places of estimated risk of conflicts, in the vicinity of the regional bio-corridor between the forest growths Hrabůvka - Tlumačovský forest (transfer via a bridge structures).

4.1.8. LANDSCAPE

Landscape pattern and its protection are governed and set out in the Act on Protection of the Environment and Landscape. To intervene in this institute, the approval is required from the competent environment protection authority. To protect the landscape pattern of a unique part of the landscape, the so-called “natural parks” are established.

Status

Both constructions discussed herein runs through a rather slightly rugged terrain of the Hornomoravský úval (Upper Moravian Vale), whereas the south-eastern part is formed by a more hilly terrain of Zlínská vrchovina (Zlín Highlands). The landscape is under strong anthropogenic influence, the northern and central parts of the area, outside the municipalities, are dominated by sheets of arable soil with minimum off-forest vegetation, limited only to a narrow lane along the artificially straightened water streams, or along the roads. The southern part of the area in question is more rich in natural characteristics. These characteristics are concentrated in the valley floodplains of the Morava River (network of ponds, riparian forests); isolated water streams among the agricultural lands are of smaller size.

Cultural signs of the landscape pattern are related to the settlement in the landscape, the majority of monuments are found in the residential communities.

Historic and long-term settlement of the area is concentrated to the municipalities of various sizes, the centre of wider area is the city of Kroměříž or Zlín, other important cities are Hulín and Otrokovice.

The natural park was established in the year 1997 to protect the specific landscape features of the Záhlinické ponds.

Direct and indirect influences

Construction 0135 respects the terrain of the area in question and runs on the level of the terrain, or slightly above it. Therefore, the construction will not dominate the altitude of the landscape, but it still will be clearly visible even in long-distance views due to the flat terrain. The MÚK Hulín will be a remarkable point in the views of the landscape. In the absence of significant features of the landscape pattern, the construction will not affect any unique signs of natural, cultural-historical or aesthetic characteristics.

Another line feature of technical nature will be introduced in the area affected by construction 5503; thanks to the parallel routing in the same corridor with the existing road I/55, railway line no. 330 Přerov-Břeclav and the high-voltage overhead lines, the construction will only emphasise the line feature with a negative technical effect. There will be no direct impact on the important cultural monuments within the area, only one place of piety could be affected and therefore relocated to a more appropriate place. As regards the features of nature

(forests, water streams), the minimisation of intervention was addressed by both the appropriate technical solution and the follow-up landscaping.

Construction 5503 will not intervene in the Natural Park “Záhlinické ponds”, the limits of the park run along the edge of the currently used busy road I/55, in a distance of approx. 700 metres and separated by the railway line no. 330 Přerov-Břeclav.

Measures

Technical design of construction 0135 minimises the size of embankments and cuttings. The proposed landscaping should help to integrate the road in the landscape and will “embellish” the landscape which otherwise lacks the features of off-forest greenery.

Measures concerning the integration of construction 5503 into the landscape apply mainly to the design of the landscaping which should use the very area of the road as much as possible (embankments and cuttings), as well as the water streams crossing the road and the dirt roads. The planting should replace the disturbed line features in the most large scope by using the similar structures and composition of species.

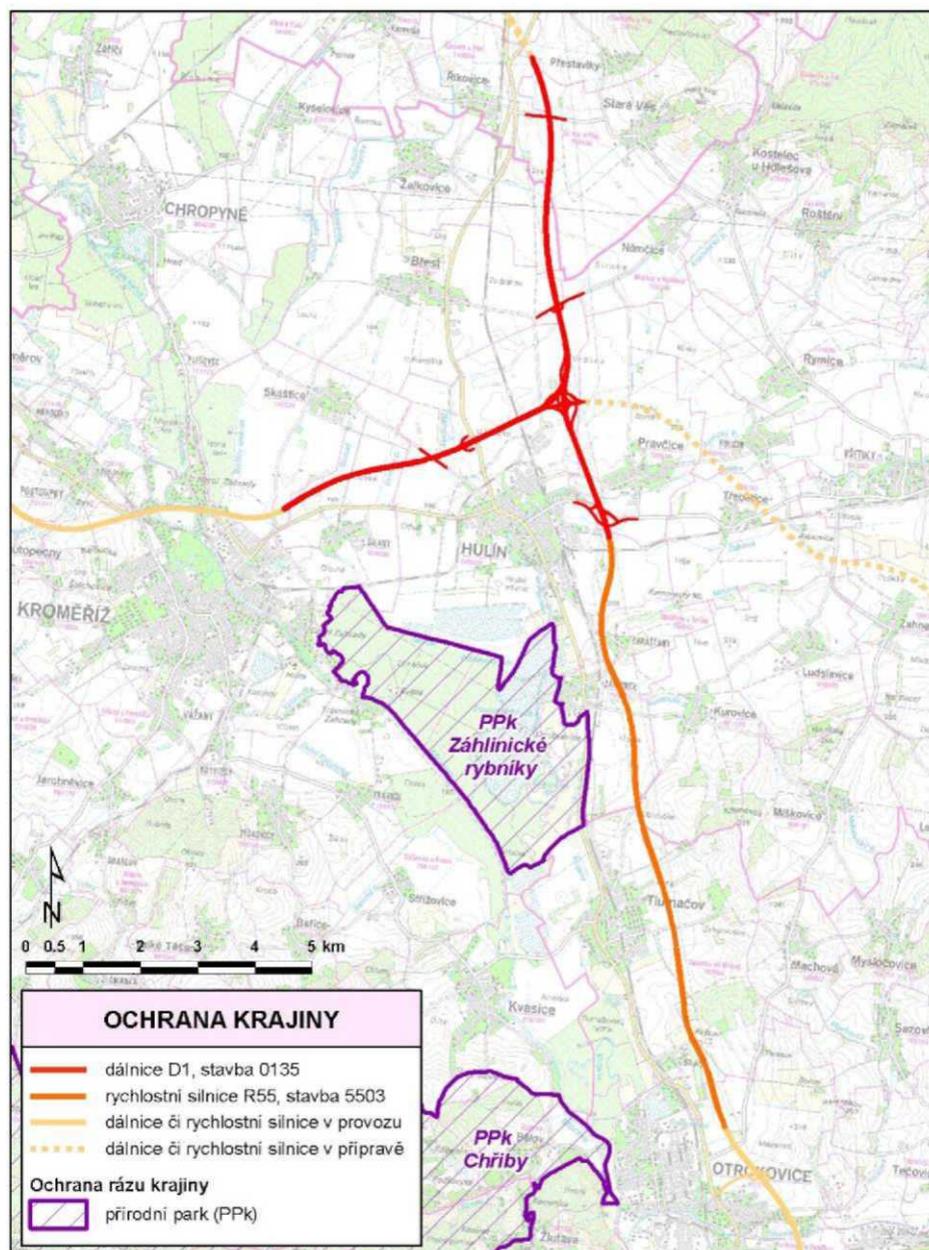


Figure 19: Protection of the landscape pattern in the area concerned

4.1.9. CULTURAL AND ARCHAEOLOGICAL MONUMENTS AND OTHER SITES

Status

Both the constructions pass through the area under long-term anthropogenic influence, the area has been settled since the Stone Age. Therefore, the area may be considered as area with archaeological excavations according to the Act on State Preservation of Monuments. There are several important archaeological excavation sites in the area. Both the constructions avoid the built-up area of municipalities, and do not interfere with any structures of architectural interest or cultural monument. Minor monuments are located along the roads (chapels, wayside shrines, bildstocks).

Direct and indirect influences

The implementation of construction 0135 will interfere with the known archaeological sites, in accordance with the applicable legislation. In the absence of cultural and architectural values in the area, they cannot be affected by the construction concerned. The vicinity of two minor monuments of local importance will be interfered, the monuments themselves will remain intact.

The area affected by construction 5503 is characterised as an area of archaeological interest, several well-known archaeological sites will be affected, either directly in the direction of the route or in its vicinity, where the locality is likely to overlap towards the road. Cultural monuments will not be affected, the project runs in the vicinity of the Chrášťany cemetery and the sculpture of the Virgin Mary in front of the cemetery, none of these objects will be affected. Relocations apply to two minor objects without special protection but with certain relation to the locality (a small memorial along the road III/43835 Tlumačov - Machová and a border stone at the road III/05511 Záhlinice -Chrášťany). From the other facilities, the landfill in Kurovice will be partially affected.

Measures

The key requirement is to carry out the archaeological survey during the pre-construction works.

In the framework of the construction works on construction 5503, the sculpture of the Virgin Mary will be protected against damage as well as the two lime trees at the Chrášťany cemetery. Relocation was approved for smaller objects of local importance. The intervention in the Kurovice landfill was minimised by means of abutment walls.

4.2. ASSESSMENT OF IMPACT ON NATURA 2000

The institute of demarcation and protection of the Natura 2000 sites was incorporated into the Czech legislation after the herein projected sections of the D1 Motorway and the R55 Expressway had undergone the EIA process.

In the year 2004, when the amendment to Act No. 114/1992 Coll. on the protection of the environment and landscape, which transpose the "Natura" regulations of the EU (92/43/ECC, 79/409/ECC), was signed into law, the present projects had already been granted the land permit and had been at various degrees of completion of DBP.

The opinions concerning the potential impact of construction 0135 on the Natura 2000 network were obtained post facto from the competent environmental protection bodies, i.e. the Regional Offices of the Czech Republic. As the construction 0135 is located in the territory of two regions, two official opinions were issued. The Regional Office of the Zlín Region - Department of the Environment and Agriculture issued its official opinion on 9 October 2007, ref. no. KUZL 67797/2007, where **the significant impact on the Special Area of Conservation or the Special Protection Area for birds was excluded.** The Regional Office of the Olomouc Region - Department of the Environment and Agriculture issued its official opinion on 5 February 2010 October, ref. no. KUOK 13278/2010, where **the significant impact on the subject of protection or integrity of the Special Area of Conservation or the Special Protection Area for birds was excluded.**

Two Special Areas of Conservation (SAC) are located close to the projected construction 0135. These areas are: CZ0723424 Stonáč and CZ0723410 Pumpák Wetland. Both areas are more than 600 metres distant from the construction in question; technical solution of the construction allowed the release of the aforementioned official opinions which exclude the significant impacts.

As the herein discussed section of the D1 Motorway, construction 0135, as a public utility construction, forms a part of the development plans of the Zlín Region, the assessment of this project was also carried out within the assessment of impact of the Principles of area development of the Zlín Region and the Principles of area development of the Olomouc Region concerning the Natura 2000 sites in the framework of the SEA process (see chapter 2.2.2). In both cases, the impact was not assessed as significant.

The opinion concerning the potential impact of construction 5503 on the Natura 2000 network were obtained post facto from the competent environmental protection bodies (Regional Office). The Regional Office of the Zlín Region - Department of the Environment and Agriculture issued its official opinion on 9 October 2007, ref. no. KUZL 67801/2007, where **the significant impact on the Special Area of Conservation or the Special Protection Area for birds was excluded.**

Two Special Areas of Conservation (SAC) are located close to the projected construction 5503. These areas are: CZ0723423 Skalky and CZ0723409 Kurovice-quarry. The Skalky SAC is about 470 metres distant from the construction and separated by a busy railway line and the road I/55; whereas the Kurovice-quarry SAC is in a distance of approx. 900 metres. The aforementioned facts as well as the technical solution of the construction allowed the release of the aforementioned official opinion which excludes the significant impacts.

As the herein discussed section of the Expressway, construction 5503, as a public utility construction, forms a part of the development plans of the Zlín Region, the assessment of this project was also carried out within the assessment of impact of the Principles of area development of the Zlín Region concerning the Natura 2000 sites in the framework of the SEA process (see chapter 2.2.2). The impact was not assessed as significant.

No Special Protection Area for birds is located in the area of both the constructions concerned.

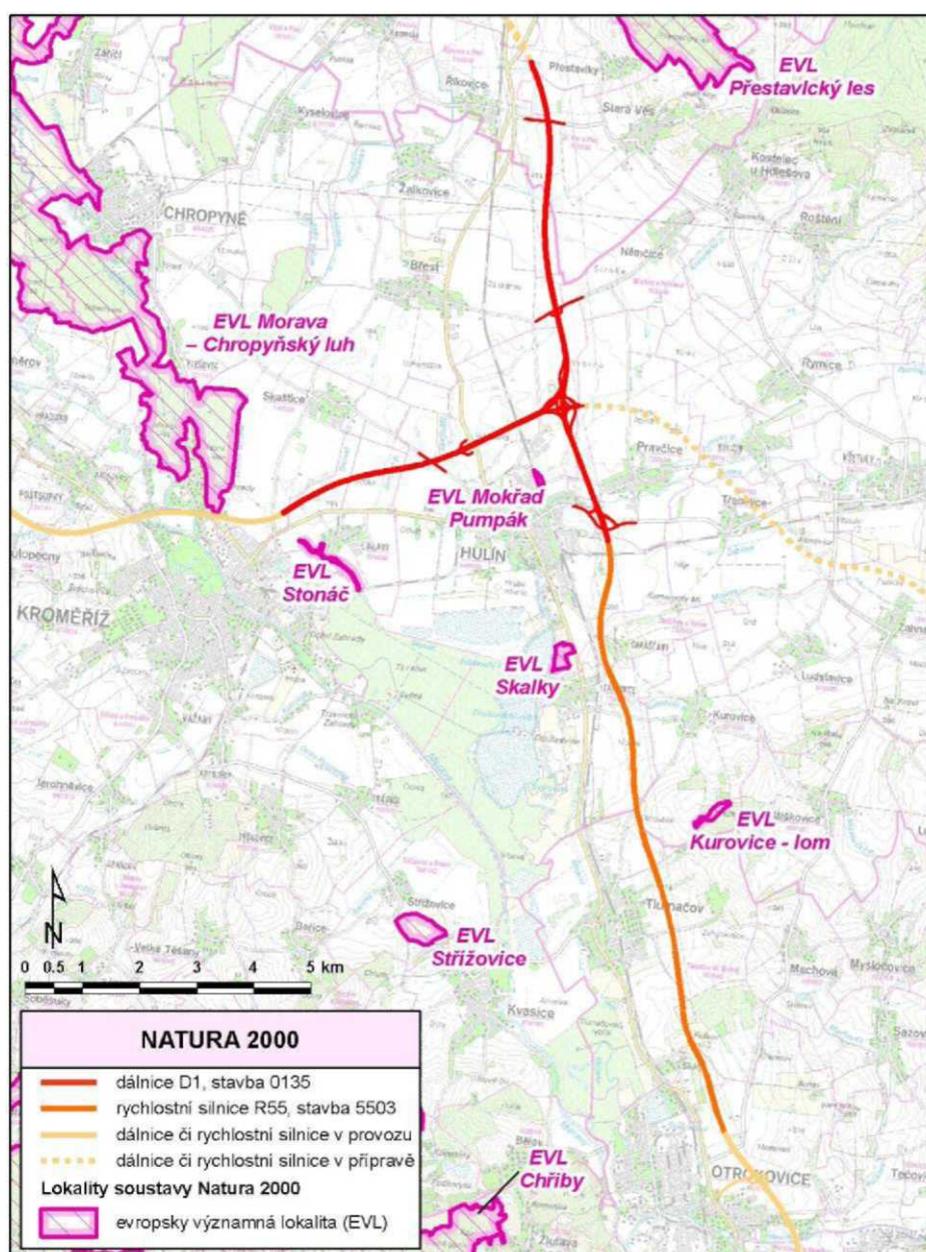


Figure 20: Natura 2000 localities within the area concerned

4.3. CROSS-BORDER INFLUENCES

As both the constructions are in a sufficient distance from the borders of the Czech Republic, no cross-border influences are expected to occur.

4.4. CUMULATIVE IMPACTS

One way the construction may affect the environment is the co-action with the impacts of other construction sites and projects. In such a case, the overall effect of the impacts may decrease (inhibition) or increase (accumulation), or the impacts may not influence one another at all (indifference).

From the point of view of the environmental impacts, the most critical are **the cumulative impacts**, which are described below.

Thanks to their extent and future use, both the constructions are considered major line new constructions of supra-regional and regional importance. The implementation of these constructions will not only follow the other constructions within the entire the D1 Motorway route and the fully operative part of R55 expressway by Otrokovice, but it will also connect the upcoming R49 Expressway.

The potential accumulation of the projects herein with other projects in the area may be envisaged in relation to the existing constructions and to the planned projects.

As regards the existing constructions, the cumulative impact may be expected in the case of the railway line no. 330 Přerov - Břeclav, along which a part of the D1 Motorway runs from Hulín to the north, and a part of the R55 Expressway runs southward from Hulín to Otrokovice. Theoretically, a decrease in the migration permeability of the current corridor is expected, as well as local increase of the noise level.

A relatively more considerable accumulation of negative impacts with the existing projects may be expected during construction period, mainly in relation to the potential traffic restraints on the roads affected by the construction. Nevertheless, these restraints will be of short-term nature only (during the course of construction). No other significant accumulations with the existing projects are expected to have negative environmental impact during the implementation or operation of the motorway of the expressway.

As a long-range goal in the wider area concerned, the Morava River stretch from Kroměříž to Otrokovice would be made navigable. None of the constructions discussed herein comes into contact or conflict with the Morava River. No significant accumulation is expected. In addition, the issue of accumulation should be assessed with a view of the navigable canal in mind, the benefit of which for the area concerned might be considered disputable.

4.5. DESCRIPTION OF THE FORECASTING METHODS USED FOR THE ENVIRONMENTAL IMPACT ASSESSMENT

The environmental impact assessment used the standard methods and available basic data processed during individual stages of the project preparation. If possible, the individual impacts were assessed in relation to the limits set out by the applicable legal regulations.

Air pollution

At the individual stages of preparation, the dispersive capacity studies were carried for both the constructions.

For construction 0135 with its current extent, the dispersive capacity studies were processed to provide basic data for both EIA documentations concerning the section of construction 0135 in question (processed by ATEM, 1997 and Ekola, 1998). The ATEM model was used in both the cases, which is a Gaussian dispersion model of pollution. The model is based on the stationary solution of equations for the dispersion of passive admixture in the air. The input parameters for the model are the data about the wind conditions in the area (wind rose with 16 basic directions, 3 speed ranges and 5 stability ranges). Traffic emission data.

In the framework of the DBP, a new dispersive capacity study was carried out based on the more recent basic data (EKOAIR, 2002). The study was processed according to the SYMOS 97 Methodology, published by the Ministry of the Environment of the Czech Republic in 1998. The methodology is based on the Gaussian concentration profile at the smoke plume cross-section. The methodology derives from similar basic data, but it takes into account the rugged terrain which definitely represents a significant improvement.

For construction 5503, the dispersive capacity study was processed to provide basic data for the EIA documentation concerning the section of construction 5503 in question (ENVIROAD, 1998). The calculation

itself was made using the computer model EPA - ISC2, calibrated to the results as determined by the SYMOS methodology (system for modelling the stationary sources). The methodology is based on the Gaussian concentration profile at the smoke plume cross-section. The input parameters include: climatic conditions in the area concerned (model file "METEO.DAT"), traffic emission data, terrain course and the level line of the construction site.

In the framework of the follow-up DLP and DBP documentations, the dispersive capacity studies were updated on the basis of a more accurate route survey. The SYMOS' 97 methodology was used again.

Noise

Noise-level studies were carried out and processed as early as at the stage of the environmental impact assessment, at the subsequent stages of preparation the studies were worked out to achieve higher accuracy.

For construction 0135 with its current extent, the acoustic impact studies were processed to provide basic data for both EIA documentations concerning the section of construction 0135 in question (processed by Ekola, 1997 and Ekola, 1998). The current noise impact in the area was determined by direct measurements. The calculation of the perspective noise impact employed the HLUK+ program approved by the Environmental Health Officer of the Czech Republic as the uniform methodological tool for assessment of noise in the outdoor environment. The noise-level study was updated on the basis of the new basic data, the problematic locality in the western part of Pravčice was thoroughly addressed by the noise-level study processed as the basic data for DBP (Pragoprojekt, 2002).

For construction 5503, the noise-level study was processed to provide basic data for the EIA documentation concerning the section of construction 5503 in question (ENVIROAD, 1998). The calculation of the perspective noise impact employed the HLUK+ program, version 4. The calculations at the Chrášťany municipality also modelled the options with the noise generated by the upgraded railway line (the upgrade is currently completed). Individual situations of the noise impact along the entire route were assessed with respect to the hygiene requirements set out by the applicable legislation; in the stretches where the road passes along the residential area, the calculation points were determined at the edges of the area.

The noise-level study was updated on the basis of the basic data at the DLP and DBP stage, the extent of the noise barrier at Chrášťany was specified in more detail.

Water

Assessment of changes in the quantity and quality of the surface and ground-water was carried out in relation to the limits given by the applicable legislation.

Information about the surface and ground-water was acquired from the available literature, maps, from the water management authorities and the water streams administrators.

In the case of the D1 Motorway, the information about water sources was also taken from the study by Ing. Kliner (1998), which was used as a basis for the EIA documentation concerning construction 0135 in the then scope. Information about the hydro-geological conditions in the area concerned was obtained from the hydro-geological research processed as the basic data for the EIA documentation (Ekohydro-Pospíšil, 1997). Detailed engineering-geological surveys were processed to provide the basic data for DLP (doc. Paseka, 1999 and INGE-ZS Brno, 2000).

Information about the hydro-geological conditions in the area of construction 5503 was also obtained from the preliminary stage of the geo-technical survey (Ing. Paseka, 1998), which was used as a basis for the EIA documentation and subsequently worked out in more detail at the DBP stage (Ing. Paseka, 2000). Another source of information was the hydro-geological research for the route of the higher-class of roads in the Central Morava in the area between Hulín, Říkovice, Holešov and Tlumačov (Pospíšil, 1997) and Kurovice - landfill with sludge from the water treatment plant - preliminary hydro-geological survey (Žákovská, 1994).

The proposal of the geo-technical monitoring was processed at the DBP stage (Geostar, 2002).

Soil

Assessment of the land annexation, in terms of quality, was carried out in compliance with the valid categorisation of the protection classes as determined in the guidelines issued by the Ministry of the

Environment of the Czech Republic under ref. no. OOLP/IO67/96 of 1 October 1996. The most valuable arable soils belong to the 1st protection class, whereas the least productive soils are in the 5th protection class.

The detailed pedologic survey for construction 0135 was processed by the Agreko Olomouc company in 1997 to provide basic data for the DLP.

The detailed pedologic survey for construction 5503 was processed by the Vegi Kroměříž company in 1998 to provide basic data for the DLP.

Geology

To recognise the geological conditions and to identify the impacts on the rock environment, the available literature and maps were used.

For construction 0135, detailed engineering-geological surveys were processed to provide the basic data for DLP (doc. Paseka, 1999 and INGE-ZS Brno, 2000).

To provide basic data for the EIA documentation in the case of construction 5503, a preliminary stage of GTE was carried out (Ing. Paseka, 1999) which was worked out in more detail in the framework of DBP (Ing. Paseka, 2000).

Fauna, flora, eco-systems

Data about the presence of fauna and flora in the area of construction 0135 were obtained from the available literature, and primarily from the field investigations, to form a basis for the EIA documentation.

Information about the territorial system of ecological stability was taken from the Territory technical data for the supra-regional and regional TSES ČR (the Ministry for Regional Development and the Ministry of the Environment of the Czech Republic, 1996) and from the applicable zoning plans of the affected municipalities.

In the course of the EIA documentation for construction 5503, the field investigation was conducted in the area concerned to map the occurrence of flora and fauna.

Information about the territorial system of ecological stability at the time of the EIA documentation was taken from the Territory technical data for the supra-regional and regional TSES ČR (the Ministry for Regional Development and the Ministry of the Environment of the Czech Republic, 1996) and from the data obtained from the affected district offices, concerning the master plans of the local and regional system of ecological stability. The current status given in this summary was taken from the zoning plans of the individual municipalities.

At the DLP and DBP stages, several basic data documents were prepared concerning the environmental protection (Natural scientific and biological survey, Assessment of impact on the landscape, Description of technical solutions - construction environmental impact, Dendrological survey, Landscaping proposal).

Cultural and archaeological monuments

Information about monuments in the area concerned, was obtained from the available literature and maps.

In the case of construction 0135, the Report on archeo-geo-physical search in the project of the D1 Motorway, construction 0134.2 Kojetín - Hulín (Archeologický ústav ČSAV and the GEODRILL company, 1999) was processed, on the basis of which the archaeological works were performed in compliance with the standard methods of archaeological prospecting.

In the framework of the EIA documentation for construction 5503, a list of archaeological sites was compiled on the basis of the detailed study of the archaeological researches and the subsequent field inspection of the area concerned. The list also forms a basis for the archaeological study, included in the DLP. In compliance with the land permit, prior to the commencement of the construction, archaeological works were carried out in the area using the standard methods of archaeological prospecting.

5. DESCRIPTION OF THE ESTIMATED MEASURES FOR PREVENTIVE EXCLUSION, REDUCTION AND - IF POSSIBLE - COMPENSATION OF ALL THE CONSIDERABLE ADVERSE IMPACTS ON THE ENVIRONMENT

The following sub-chapters describe the way the conditions resulting from the EIA process was handled in the subsequent administrative procedures, and how these conditions were addressed.

Sub-chapter 5.6 summarises the measures implemented on the basis of these conditions, sorted on the basis of individual environmental features.

The important thing is that if the conditions were taken from the EIA opinion and incorporated in the land permit, they became legally binding and enforceable.

5.1. EIA OPINION

As the discussed construction 0135 Kroměříž východ - Říkovice was assessed in the EIA process as a part of two projects, there are two EIA opinions on the construction site in question. Both the EIA opinions are AFFIRMATIVE.

The EIA opinion on the D1 Motorway, construction 0134.2 Kojetín - Hulín, District of Kroměříž (issued by the Ministry of the Environment of the Czech Republic on 19 January 1998 ref. no. 125/400/63/OPVŽP/98)

The EIA opinion on the D1 Motorway, construction 0135 Hulín - Říkovice (issued by the Ministry of the Environment of the Czech Republic on 28 August 1999 ref. no. 1630/700/870/1/464/99/13-Gr)

From these opinions, the conditions applicable to the sections of construction 0135 (Kroměříž východ - Říkovice), in the current scope, needed to be selected.

AFFIRMATIVE opinion was issued by the Ministry of the Environment on 12 May 1999, ref. no. 975/700/1213/OPVŽP/99, concerning the construction 5503.

Conditions given in the EIA opinions and stratified to the stages of preparation, implementation and operation (or pre-commissioning, in the case of construction 0135), applied to the standard measures which are always adopted and implemented in similar projects, neither of the EIA opinions required an implementation of special non-standard measures or compensations.

5.2. LAND PERMIT PROCEEDINGS

The documentation (DLP) compiled for the land permit proceedings has already solved a number of conditions mentioned in the EIA opinions by incorporating these conditions into the project.

During the subsequent negotiations and consideration of proposed amendments to the DLP (see chapter 2.3), further conditions were defined and reflected in the land permits along with the previously unsolved conditions from the EIA opinions.

The land permit for construction 0134.2 was issued by the Municipality office in Kroměříž - building control department on 8 December 2000 under ref. no. stav/328/619/33/2000/Opr; for construction 0135, the land permit was issued by the Municipality office in Hulín - building control department on 18 December 2000, ref. no. SÚ/2231/304/2000/Ša).

The land permit for construction 5503 was issued by the Municipality office in Otrokovice - building control department on 21 November 2000 under ref. no. SÚ/737/2000/2649/2000/Tk.

5.3. BUILDING PERMIT PROCEEDINGS

The documentation (DBP) compiled for the building permit proceedings has already solved the majority of conditions mentioned in the EIA opinions and the land permit by incorporating these conditions into the project.

During the subsequent negotiations and consideration of proposed amendments to the DBP (see chapter 2.3), further requirements were defined for the measures concerning the elimination of the negative environmental impact.

Conditions mentioned in the building permit for the main route in construction 0135 (issued by the Ministry of Transport, ref. no. 1010/2004-120-RD/20 of 24 October 2006) applied to the technical solution of the project, and to a large extent they also dealt with the measures for restriction of the environmental impacts.

In the case of main route in construction 5503, the building permit was issued pursuant to the Building Act by the Ministry of Transport of the Czech Republic in its public notice of 4 July 2007, ref. no 606/2006-120-RS/6). Conditions for the implementation of the construction site also applied to the technical solution of the project and to the measures for restriction of the environmental impacts.

5.4. IMPLEMENTATION

The function of Eco-supervision was appointed during the implementation, the Eco-supervision has supervised the compliance with the conditions pertaining to the environment as mentioned in the aforesaid documents.

Apart from the wildlife nature (protection of species, habitats, woody plants), other relevant environmental features have been observed (e.g. water, soil, air) as well as the waste and chemicals management.

5.5. THE CHARACTERISTICS OF THE ENVIRONMENTAL RISKS POSED BY THE ACCIDENTS AND CONTINGENCIES

The extent of environmental risks during the operation of the construction is identical to that of similar constructions. The highest potential risk to the environment is posed by the accidental spills of harmful substances, be it in the form of various fluids used in vehicles or the transported goods. Fluid substances, or those in the water-soluble form, are extremely dangerous. Contamination may influence primarily the water courses and soils in the vicinity of the road. Watercourses in the area concerned are protected against contamination by the projected oil product separators. The projected storm-water sedimentation tanks have the form which allows them to be fitted with a fibrillolysis filter that entraps the oil products.

The actual severity of an accident always depends on its extent and place where it happens.

The progress of works in case of accident is compiled during the development of emergency plans.

Another form of protection is represented by technical measures, such as guardrails installed in compliance with the applicable technical standards.

Another environmental risk is the fire, primarily in relation to the potential emissions of harmful pollutants into the air. The danger of negative impact on the resident population is eliminated by the motorway/expressway routing outside the municipalities. The scope of fire precautions is designed to comply with the standard requirements for this type of construction and with the applicable legislation.

As both the constructions discussed herein cross several water courses, they are designed taking into consideration the risk of flooding. All the bridge structures mentioned herein are sufficiently sized to correspond to the flow rates as set out in the applicable standards.

Flooding may also have a negative influence on the body of the constructions discussed herein. This risk will be eliminated in the inundated area by means of the formation feet and the reinforcement of ditches and bridge cones.

5.6. MEASURES TO PREVENT, MINIMISE AND COMPENSATE THE NEGATIVE IMPACTS

Summary of the most important requirements for measures (conditions) as determined at the individual stages of preparation (EIA opinion, land permit and building permit) and compliance with the same

Population

The measures suggested to eliminate the negative impacts of both the construction sites on the resident population primarily apply to the elimination of noise and emission nuisance during construction and operation (see below).

Atmosphere and climate

In the case of constructions 0135 and 5503, the proposed measures apply to the construction stage, and are primarily focused on the elimination of dust nuisance on the construction. To this end, the dusty surfaces on the site are sprinkled as necessary.

Noise

To eliminate the noise impact imposed on the municipalities, the noise control measures are proposed.

The developed and built-up area at the western edge of Pravčice (close to construction 0135) will be protected against the excessive noise levels by means of a 300-metre long and 2-metre high noise barrier. The noise impact will be continuously measured in this locality during the construction.

Table 5: Noise barriers proposed for the construction 0135 route

Noise barrier				
Construction part	km	Total length (m)	Uniform height (m)	Location
C 701	11.540-11.840	300	2.0	Right

In the case of construction 5503, measures for on-site traffic and transport are proposed; according to these measures the construction site traffic should use the roads and dirt roads outside the urban areas as much as possible. The Chrástany municipality will be protected against the excessive noise levels generated by the project by means of a noise barrier, 1066 metres in length.

Table 6: Noise barriers proposed for the construction 5503 route

Noise barrier				
Construction part	km	Total length (m)	Uniform height (m)	Location
241	8.242-9.308	1 066	4.30	Right

Water

The staking out of constructions is optimised to minimise the intervention in the water sources and in their protection zones. For the time of constructions, measures were proposed concerning mostly the technical conditions of the machinery and storage of fuels.

In the case of construction 0135, 6 storm-water sedimentation tanks and 7 oil product separators with sedimentation collectors were designed to entrap the extreme flows. These devices will ensure entrapping of oil products and other pollutants, including precious metals. In addition, one stable scum board is designed to entrap the oil products.

Table 7: Structures designed for water protection in the route of construction 0135

Oil product separator with a sedimentation tank				
Construction part	km	Locality		
C 312	64.150	Wolf's weir, left		
C 313	64.700	The Stonač stream, right		
C 314	64.750	The Stonač stream, left		
C 315	65.900	The Svinský stream, right		
C 316	65.950	The Svinský stream, left		
C 317	67.000	The Němčický stream, right		
C 318	67.070	The Němčický stream, left		
Storm-water sedimentation tanks with a scum board				
Construction part	km	Effective capacity (m³)	Ineffective storage capacity (m³)	Locality
C 319	70.600	666.00	366.60	The Němčický stream, right
C 320	72.900	480.00	235.00	The Rumza stream, right
C 321	75.100	211.00	119.00	The Přestavlický stream, left
C 322	11.590	365.00	176.00	The Rusava River, left
C 323	11.520	86.00	56.00	The Rusava River, left
C 325	10.900	86.00	56.00	The Žabínek stream, right

Stable scum board		
Construction part	km	Locality
C 324	10.940	The Žabínek stream

In the case of construction 5503, the measures for protection of the water quality during operation primarily concern the technical solution for draining the road body and sufficient entrapping of potential pollutants in the storm-water sedimentation tanks with the scum boards.

Table 8: Structures designed for water protection in the route of construction 5503

Storm-water sedimentation tanks with a scum board			
Construction part	km	Minimum capacity of the gravitation part of the tank (m3)	Locality
331	0.140	156.30	Hrabůvka, left
332	2.620	75.10	The Mojeny tributary, left
333	3.500	72.00	The Mojeny tributary, left
334	3.550	112.20	The Mojeny tributary, left
335	7.770	216.70	The Kurovický stream, left
336	7.850	63.50	The Kurovický stream, left
337	9.000	149.40	The Mojena, right
338	7.400	87.40	The Kurovický stream, rest area to the left
339	7.400	88.40	The Kurovický stream, rest area to the right
Retention tank			
Civil unit	km	Total tank volume (m3)	Locality
330	0.140	2 500	Hrabůvka

Soil

The key measure to eliminate the impact of the constructions concerned on the soils within the area concerned is the minimisation of the permanent and temporary annexation of land. The surfaces of the temporary land annexation will be restored after the completion of the construction. To eliminate the soil exposure to erosion, appropriate sloping of embankments and cuttings is proposed, the slopes should be compacted with adequate planting. All the measures proposed for elimination of impacts on the soils were consulted with and approved by the department for protection of agricultural land resources.

Geology

In the case of construction 0135, no special measures were required in terms of protection of the rock environment and deposits/reservoirs.

The impacts of the intervention in the construction 5503 subsoil will be compensated by the proposed measures which are based on the geo-technical survey and apply to the improvement of subsoil, embankment and cutting slopes, partial transfer of acceptable soil to the embankments and landscaping on the slopes.

Fauna, flora, eco-systems

In the case of construction 0135, the measures proposed for elimination of negative impacts on the fauna are established to prevent contact with animals. Fencing is designed to run virtually along the entire length of the road. Total length of fencing is 24 km. If any specially protected species emerges on the construction site, it is necessary to provide for appropriate transport thereof to an adequate area outside the site.

The measures proposed for the protection of flora apply to the period of construction (minimisation of tree chopping in the crossed line growths) and to the amenities planting of slopes (using the species of woody plants that are original for the relevant site, resistant to salts, the nature of seeds should be adjusted to fit the local conditions).

To prevent a potential impact imposed on the water quality in the Stonáč stream and consequently the negative impact on the natural monument Stonáč, the oil product separator with an integrated sedimentation tank will be installed at the orifice of the sewer.

To protect the features of the territorial system of ecological stability, the proposed measures are related to the period of construction (minimisation of interventions). All the crossings of the bio-corridors will be designed to keep their migration function. Methods for crossing of the construction with the TSES features were approved by the competent environmental protection authorities.

The measures proposed for protection of the significant landscape features are related with the minimisation of interventions in the water stream beds and adjoining growths. Further measures are identical with those for protection of water streams. Method of intervention in the significant landscape features was approved by the competent environmental protection authorities.

Measures suggested to reduce the fragmentation of the area are focused on the reduction of the barrier effect by means of the migration facilities - primarily at the crossings of water streams and preventing wild animals from entering the carriageway: to prevent direct contact of wild animals with the vehicles, a fencing is projected at both sides of the road along the entire length of the route.

Table 9: Proposed bridge structures in the construction 0135 route

Bridge structure				
Construction part	km	Span clearance (mm)	Vertical clearance (mm)	Purpose of diversion
C 201	64.118	12 000	1 330-2 170	Wolf's weir
C 202	64.767	12 000	1 950-2 250	The Stonáč stream, local bio-corridor
C 204	65.964	12 000	1 520-1 820	The Svinský stream
C 206	67.086	12 000	1 500-1 800	The Němčický stream
C 208	68.417	56 381	7 333	Railway line Břeclav - Přerov, dirt road, local bio-corridor
C 211	70.742	12 000	2 390-2 690	The Němčický stream relocation
C 214	72.782	12 000	1 560-1 860	The Rumza stream, local bio-corridor
C 216	75.169	12 000	1 550-1 850	The Přestavlký stream relocation, local bio-corridor
C 217	11.099	136 000	6 960-7 700	Road II/432, the Žabínek stream, local bio-corridor
C 218	11.522	44 000	4 550	The Rusava River
C 219	11.903	81 500	6 800	Local road and the Kostecký stream

In the case of construction 5503, the annexed areas with forest growth is projected to be compensated for by the vegetation planted between Hrabůvka forest and the expressway; in addition a protective green lane will be planted to minimise the negative impacts of traffic on the forest growth and to enhance the function of ecotone population. The sufficiently large bridge structure and fences around the expressway are projected to prevent contact with animals in the places of increased pressure between Hrabůvka and Tlumačovský forest and to channel the animals to the wildlife crossing.

The proposed measures eliminating the negative impacts on the flora apply to the period of construction (minimisation of tree chopping in the forest and line growths) and to the amenities planting of slopes (using the species of woody plants that are original for the relevant site, resistant to salts, the nature of seeds should be adjusted to fit the local conditions).

In the absence of negative impacts, no measures for protection of the specially protected areas were proposed.

To ensure the acceptability of the present project and the existence of the system of ecological stability in the affected area, several measures were proposed concerning the technical solution of the bridge structures and modifications of the water streams and landscaping, which incorporate replacement planting, supportive planting and planting for stabilisation of this system. The affected features at the regional level are solved by the

pass under the bridge structure and replacement planting; to protect the regional bio-centre, the protective green lane will be implemented parallel with the projected route, this green lane should enhance the forest population and eliminate the impacts imposed by the traffic (noise, dust, emissions). Collisions with the local bio-corridor are solved by bridge structures adjusted to the requirements for the permeability of the local system, the alleviating measure concerning the bio-corridor which could not be transferred features the planting along the dirt road parallel with the route.

Measures concerning the maintenance of ecological-stabilising function of the significant landscape features, include the substitutive planting for the annexed areas, or maximum maintenance of the natural form of the water stream beds in the vicinity of the project.

One of the measures for reduction of the barrier effect is the construction of bridge structures across the water streams, to prevent wild animals from entering the carriageway and to channel the animals to the bridge structures, a partial fencing is projected for the expressway, in the section close to the regional bio-corridor transfer Hrabůvka - Tlumačovský forest.

Table 10: Proposed bridge structures in the construction 5503 route

Bridge structures				
Construction part	km	Span clearance (mm)	Vertical clearance (mm)	Purpose of diversion
201	1.659	10 850+ 3x 9 850+10 850	4 025-4 350	Regional bio-corridor, local road Skály - Peškov, paddock
202	2.640	27 800	4 200-4 600	Dirt road
204	5.000	21 400	4 350-4 650	Access road to the quarry
205	7.805	6 000	1 870-2 000	The Kurovický stream, local bio-corridor
206	8.936	22 400	4 730-5 730	Mojena, local bio-corridor
208	10.553	51 256	6 200-7 074	Railway line Hulín - Valašské Meziříčí

Landscape

Technical design of construction 0135 minimises the size of embankments and cuttings. Landscaping is projected to facilitate the integration of the construction in the landscape. The accompanying vegetation along the road will “embellish” the landscape which otherwise lacks the features of off-forest greenery.

Measures concerning the integration of construction 5503 into the landscape apply mainly to the design of the landscaping which should use the very area of the road as much as possible (embankments and cuttings), as well as the water streams crossing the road and the dirt roads. The planting should replace the disturbed line features in the most largest scope by using the similar structures and composition of species.

Cultural and archaeological monuments and other sites

The key requirement for the monument protection is to carry out the emergency archaeological survey during the pre-construction works.

In the framework of the construction works on construction 5503, the sculpture of the Virgin Mary will be protected against damage as well as the two lime trees at the Chrášřany cemetery. Relocation was approved for smaller objects of local importance. The intervention in the Kurovice landfill was minimised by means of abutment walls.

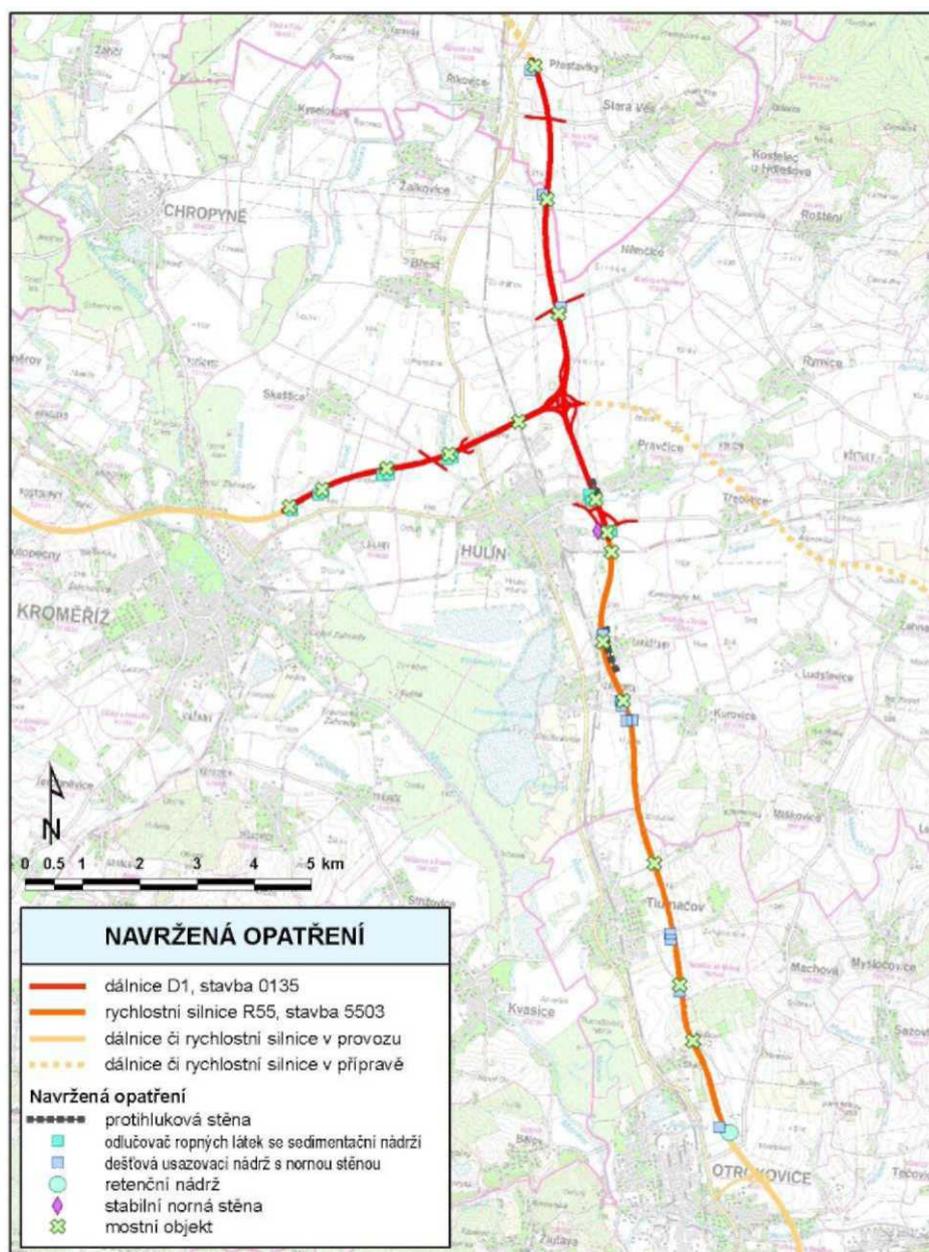


Figure 21: Measures suggested for constructions 0135 and 5503

6. NON-TECHNICAL SUMMARY OF THE DATA OBTAINED FROM THE CHAPTERS ABOVE

The structure of the present PEI (including the division into chapters) is based on Annex IV to Directive EIA No. 85/337/ECC (as amended by Directives 97/11/EC and 2003/35/EC), which has been slightly modified in certain parts to correspond to these particular cases.

Description of the project

The submitted project comprises two closely linked constructions, namely the section of the D1 Motorway, construction 0135 Kroměříž východ - Říkovice and the section of the R55 Expressway, construction 5503 Skalka-Hulín.

Motorway D1, construction 0135 Kroměříž východ - Říkovice is a part of the newly built D1 Motorway Vyškov - Kroměříž - Hulín - Přerov - Lipník nad Bečvou which will provide an appropriate capacity connection of the Central Moravia area to the Czech national motorway network in the directions of Brno, Praha and Ostrava.

Construction 5503 Skalka - Hulín is a part of the international European network TEN-T with direct links to Poland, Czech Republic, Austria and Slovakia. Within the Czech Republic, it provides a high-capacity passage through the south-eastern part of Moravia as it interlinks the Olomouc, Zlín and South Moravian Regions. With the construction 5503 in operation, the section of R55 will connect the capital of Zlín and other parts of the Zlín Region with the Czech national motorway network.

In both cases, it is a two lane dual-carriageway road. Construction D1, 0135, designed in categories D26,5/120 has a total main route length of 11.300 km. This construction also incorporates a small section of the R55 Expressway designed in category R24,5/120 with a length of 3.375 km. Construction 5503 is designed in category R24,5/120 with a total main route length of 10.800 km.

Outline of the main options/alternatives studied by the Investor

Both the roads in question in the scope of the constructions discussed herein are stabilised on a long-term basis, which is also documented by the compliance of their location with the zone-planning documentation at all levels, as well as the compliance with the other strategic-conceptual materials.

The investment preparation of the constructions 0135 and 5503 comprised of individual consecutive stages, namely: the selection of corridor, EIA process, planning and building permit proceedings, and finally the implementation stage.

Comparison of the potential layouts of the motorway network in the Central Moravia was made and processed in the framework of the transport-urban comparative study (TUCS) **Central Moravia - concept** of the higher road network (Viapont, 1996). In the framework of this study, three options were compared comprehensively, with Option C assessed as the most favourable in all respects.

The selected option was further worked out as a project. The suggested technical solutions of the constructions 0135 and 5503 underwent the process of environmental impact assessment (EIA process). All the assessments were completed with affirmative opinions. The relevant sections of the D1 Motorway and the R55 Expressway have successively passed the land permit proceedings (land permit issued over the years 2000 and 2001), building permit proceedings (building permit for the main route issued over the years 2004 and 2006), and since 2008 the constructions 0135 and 5503 have been at the stage of implementation.

At all the stages of the investment preparation, the public and the affected municipalities might express their opinions on the project and raise their requirements. All the affected municipalities, as the representatives of the general public, granted their consent with the project.

Description of the environmental aspects likely to be seriously impacted by the present project

The area affected by the constructions discussed herein is located in a slightly rugged terrain of the Hornomoravský úval (Upper Moravian Vale) and the edge of Zlínská vrchovina (Zlín Highlands). The area concerned is under strong anthropogenic influence, the land is mainly used for the agricultural purpose. The area is dominated by large sheets of high-quality arable soil. Forest growth occurs to a limited extent. The few examples of the off-forest greenery are confined to the narrow accompanying growths along the water courses or dirt roads. The area is located in the Morava River basin, drained by a number of small, strongly regulated water courses. Due to the nature of the subsoil, the area concerned has favourable conditions for formation of water-bearing ground. The water-bearing grounds are often intercepted, they are subject to legal protection. Larger residential communities are the cities of Kroměříž, Hulín and Otrokovice. Smaller communities are located along the existing roads I/47 and I/55.

As suggested above, the most sensitive issue concerning the negative environmental impacts is the protection of land resources, water resources and lands with forest growths.

Description of the potentially serious environmental impacts of the project, induced by the existence of the project, emission of pollutants and generation of nuisance

Both constructions in question will represent an intervention in the individual environmental features, however this intervention is bearable thanks to the nature of the constructions and the nature of the surrounding area. During the investment preparation, the technical solution of both the constructions was optimised to eliminate the intervention in the landscape to the maximum degree.

Both the constructions 0135 and 5503 are designed to eliminate the negative impacts of traffic on the resident population. This is primarily ensured by diverting the road traffic outside the built-up areas of municipalities. As a result, the number of exposed population decreases in terms of the pollutant emissions as well as the noise emissions. Noise emissions are further reduced by the projected noise control measures. In addition, both the projected four-lane roads will contribute to the traffic safety and flow in the area as well as to the safety of the resident population. All these positive factors indisputably prevail over the negative impacts on the environmental features.

Neither of the constructions has considerable negative impact on the Natura 2000 localities.

One of the relatively most serious impacts is the annexation of high quality arable land and potential impact on the quality of surface and groundwater. These impacts, including the influence on other environmental features, were eliminated by the proposed measures which are based on the EIA process, or on the framework of the subsequent administrative procedures with the requirements set out by the competent state administration bodies and self-governing bodies and other institutes.

Description of the estimated measures for preventive exclusion, reduction and - if possible - compensation of all the considerable adverse impacts on the environment

Throughout the project preparation, the technical solution was improved and optimised to eliminate the negative impacts of the project on the environment. Both the constructions were repeatedly consulted with the competent authorities. The authorities might raise their requirements and conditions, after incorporation of which the authorities approved the particular technical solutions of the constructions.

The suggested measures apply virtually to all environmental features and were focused on the project preparation itself and the technical solutions, as well as on the progress of the construction itself and the post-completion stage.

The most important measures included: noise barriers, oil product separators, and storm-water sedimentation tanks with scum boards to eliminate the contamination of the surface and groundwater, fencing of the roads, optimised bridge structures, vegetation and anti-erosion arrangements on the road body. Compensation planting was proposed in the framework of construction 5503.

Conclusion

The project preparation of both the constructions took place in compliance with the applicable legislation. The public was involved in the process directly or indirectly by proxy of the self-governing authorities. Both the projects were gradually approved by all the competent state administration bodies. The benefits of the constructions, in terms of traffic and elimination of negative impacts of the traffic on the resident population, are highly positive, and prevail over negative impacts on the other environmental features.

7. SUMMARY OF ALL DIFFICULTIES (TECHNICAL DEFICIENCIES OR LACK OF KNOW-HOW), ENCOUNTERED BY THE INVESTOR DURING COLLECTION OF THE REQUIRED INFORMATION

Due to a long-term preparation of the present traffic and transport constructions, from approx. 1995 up to the present, when the construction work is in progress, the Investor needs to satisfy the current technical and legislative regulations on a continuous basis, along with the forecasting methods and natural conditions in the area concerned.

Uncertainties which are caused by these changes are minimised at the individual stages of the construction preparation (EIA process, DLP, DBP). Projects and conditions leading to the implementation of the constructions are continuously specified on the basis of the updated and more precise basic data.

The data update concerning the traffic intensities takes place at each stage of the preparation, taking into account the updated forecasts of transport directions, demographic development of the area, economic development of the road transport, finalisation of sections of the traffic network and data from the previous traffic censuses in the Czech Republic, repeated ever 5 years. Uncertainties depend on the degree of accuracy and reliability of the input data.

Apart from the aforementioned uncertainties concerning the traffic intensities which form a basis for all the assessments, the assessment of the noise impact and air pollution load and the assessment of the public health risks are also influenced by the forecasting methods which are given in chapter 4.5 and uncertainties caused by these methods. Update of all these assessments takes place throughout the preparation of construction with gradual improvement the results accuracy on the basis of the current traffic intensities and more accurate technical basic data (detailed land survey).

In general, the degree of uncertainty at both the constructions was average and common for the particular stage of the preparation and implementation of the line constructions, and had no negative impact on the preparation of the road projects.

CONCLUSION

The D1 Motorway, construction 0135 Kroměříž východ - Říkovice is a part of the new section of the D1 Motorway Vyškov - Kroměříž - Hulín - Přerov - Lipník nad Bečvou, and along with the R55 Expressway, construction 5503 Skalka - Hulín, they form a part of the European road network TEN-T which makes them a corridor of multinational importance. Once completed, both the constructions as an integral unit will provide a high-capacity connection of the Central Moravia region, especially the Zlín Region and its capital city of Zlín, to the Czech national motorway network.

Based on the facts mentioned in the PEI (Project Environmental Information) , it can be stated that the preparation of the section of the D1 Motorway, construction 0135 Kroměříž východ - Říkovice and the section of the R55 Expressway, construction 5503 Skalka-Hulín, took place in compliance with the applicable legislation. Environmental protection formed an integral part of the preparation and was implemented in the inter-linked areas:

- In the framework of the strategic conceptual materials at the national level, the part of which was the assessment of the impact on sustainable development and on the Natura 2000 network (SEA)
- Zone planning at the national, regional, and local level, the part of which was the SEA assessment
- The investment preparation of the project, when the construction site was assessed in the framework of the EIA process.

In the framework of the investment preparation of the project, the environmental protection was dealt with in four systematic steps, namely:

- Searching the options in a wider area
- EIA process
- Land permit proceedings
- Building permit proceedings

In the framework of all the proceedings that took place throughout the preparation of the construction, affirmative opinions were issued by the competent state administration bodies. An integral part of the EIA opinions, the land permit and the building permit is the requirements the fulfilment of which condition the validity of these permissions. Requirements originated by these proceedings were gradually solved at the further stages of the preparation and were incorporated in the proposed technical solution.

At all three stages of the project preparation (from the EIA process to the building permit proceedings), the public and the affected municipalities might express their opinions on the project and raise their requirements. All the affected municipalities, as the representatives of the general public, granted their consent with the project.

However, no facts were identified in the process of the environmental impact assessment that would prevent the implementation of the project. The construction will definitely have positive effect primarily on the resident population currently living along the congested and busy routes of I/47, I/55 and others. The elimination of the negative impacts on the resident population cannot be provided by any other method. Although the construction and traffic on the roads will have impacts on the environment, these impacts will be eliminated by the proposed measures.

Amendments to the legislation which took place during the preparation of both the constructions, concerning the Natura 2000 network were properly observed and incorporated herein. Neither of the constructions has negative impact on the Natura 2000 localities.

Construction of the relevant sections of the D1 Motorway and the R55 Expressway commenced in the year 2008.

At present, both constructions are at advanced implementation stage. Completion of both constructions is expected towards the end of 2010.

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Palášková

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