

EVERNIA s.r.o.

**DOCUMENTATION OF CONSTRUCTION'S
ENVIRONMENTAL IMPACT ASSESSMENT**

R6 JENIŠOV – KAMENNÝ DVŮR

Responsible researcher:

Illegible signature

RNDr. Petr Anděl, CSc.

Professional Competence Certificate Ref. No. 7248/1155/OPV/93

Liberec 1997

C.IX. NON-TECHNICAL SUMMARY

EXPRESSWAY R6 JENIŠOV – KAMENNÝ DVŮR

(non-technical summary of documentation pursuant to Act No. 244/1992 Coll.)

1. CONSTRUCTION IDENTIFICATION

- Name: R6 Jenišov – Kamenný Dvůr
- Construction type: New construction, reconstruction
- Location: Karlovy Vary, Sokolov, Cheb districts
- Investor: Road & Motorway Directorate Prague, Na Pankráci 56, 145 05 Prague 4
workpace Praha 8 – Čimická 319
- Responsible ministry: Ministry of Transport and Communications of the CR
- Design: R6 Karlovy Vary – Sokolov, August 1995
Pragoprojekt a.s., K. Vary Design Studio
Vítězná 26, 360 01 Karlovy Vary
Chief Designer: Ing. Olga Havlíková
R6 Sokolov – Cheb, study revision, May 1996
Valbek a spol. v.o.s.
Vaňurova 505/17, 460 02 Liberec 1
Responsible of project: Ing. Milan Koloušek
- Documentation prepared pursuant to Act No. 244/1992 Coll. by:
EVERNIA s.r.o.
Tř. 1. máje 97, 460 01 Liberec 1
Authorized person: RNDr. Petr Anděl, CSc.
- Competent governmental agency pursuant to Act No. 244/1992 Coll.:
Ministry of the Environment of the CR
- Communities involved: Karlovy Vary, Jenišov, Sokolov, Březová, Dolní Rychnov, Kynšperk nad Ohří, Nové Sedlo, Staré Sedlo, Šabina, Odrava, Tuřany

2. APPLICATION OF ACT NO. 244/1992 COLL.

Act No. 244/1992 Coll. on environmental impact assessment stipulates that extensive constructions with a potentially great impact on the environment must be assessed in a way guaranteeing evaluation completeness and optional involvement of the public. The first step of this process is preparing the DOCUMENTATION of construction's environmental impact assessment. This documentation is subject to comments by relevant governmental agencies, communities involved and the public. The contents of all of the comments and opinions are then summarized and evaluated in the APPRAISAL that must be discussed in the presence of the public. Based on the whole process, the competent governmental agency issues the final OPINION stating either their consent to or dissent from the construction, and under what conditions.

Motorways and highways are among those constructions that must be assessed under the cited law. Therefore, the technical study and the documentation of construction's environmental impact assessment have been prepared. This material is an extract from this document. The public may consult the complete documentation at the municipalities of the communities involved.

3. PURPOSE OF CONSTRUCTION

In connection with the motorway and expressway development approved by the government, possible variants of the today unsatisfactory Road I/6 reconstruction to a four-lane expressway of the category R24.5/100 is being reviewed. The route is a very important road link in the Prague – Karlovy Vary – Sokolov – Cheb – CR/FRG state border direction, and is one of the busiest road sections. The greater part of the existing road has a two-lane layout with unsatisfactory directional and gradient parameters, and the existing route collides in some places with the environmental and urban aspects of the area.

The section under our review is situated between Karlovy Vary and Cheb, starts at Jenišov and ends behind Kamenný Dvůr. For the most part, the proposed route extends the existing road, and the new four-lane road construction is only designed in several sections. The section under review is about 26 km long.

The road of this category is intended for motor vehicle transport with the design speed over 50 km/hr and for a fast, safe and high-capacity connection of all big residential areas along the route. Access is enabled through fly-over junctions only. To transfer the traffic excluded from the expressway, and to ensure local links within the area, support roads in the new routes of the existing road network have been designed together with the expressway design. The support road category is mostly S7.5/60.

The purpose of the road is to increase the capacity of the existing Road I/6 safely and fast to take in the traffic whose intensity increased considerably when the West border with the Federal Republic of Germany opened, which resulted in the growth of passenger and truck transport.

4. DESCRIPTION OF CONSTRUCTION

For the greater part, the construction is situated in the Sokolov district. The section starts in the Karlovy Vary district and ends in the Cheb district.

The start of the construction section under review is on the existing Road I/20 south of Jenišov, between Jenišov and Tašovice. The construction about 26.2 km long (depending on the variant) leads northeast to southwest in a band along the existing highway No. 6 that crosses Jenišov, Hory, Loučky, Nové Sedlo, Staré Sedlo, Sokolov, Březová, Dolní Rychnov, Šabina, Kynšperk nad Ohří and Odava. This construction starts at the Jenišov fly-over junction. For the most part, the proposed route extends the existing Road I/6. Sub-variants have been designed in sections A, B, C and D. The section under review ends behind Kamenný Dvůr where sub-variants D1, D2 and D3 also end. The road route is assessed for category R24.5/100 that corresponds to a four-lane divided expressway with the central separator 3.0 m wide and the lanes 3.75 m wide. All crossings with the existing roads and local roads have been designed as level crossings. The route includes seven fly-over junctions: Jenišov, Nové Sedlo, Sokolov-North, Sokolov-South, Březová, Tisová, and Kamenný Dvůr.

The expressway has been designed in accordance with the applicable technical standards comparable with the European standard. Technologies and materials usually applied for similar constructions in the most developed countries will be used for the construction.

- Basic technical data:
- Overall section length 26.15 – 26.55 km
- Number of fly-over junctions 7
- Number of bridges on the route 28 – 30 (depending on sub-variant)
- Number of big bridges 8
- Overall permanent acquisition of Agricultural Land Resource area 53 – 55 ha (depending on sub-variant)
- Overall permanent acquisition of Forest Land Resource area 16 – 19 ha (depending on sub-variant)
- Total earthwork quantity – excavations 1,567,800 m³
- Total earthwork quantity – embankments 1,360,530 m³

5. ENVIRONMENTAL IMPACT ASSESSMENT

The submitted documentation assesses environmental impacts during the construction and operation of the expressway under review. The existing road is also assessed in some chapters as the “zero variant”, mainly in order to compare the conditions. The documentation assesses both direct impacts of the designed expressway, and the indirect impacts caused in the surroundings. The aim of the documentation is to optimize the route based on the technical studies, and propose precautions to minimize the environmental impacts.

The assessment procedure and content follow the outline contained in Annex No. 3 to Act No. 244/1992 Coll., which is fully respected in the documentation.

6. CONSTRUCTION’S IMPACT ON ENVIRONMENT ELEMENTS

Population

The designed expressway route bypasses the cities and villages. It is evident from the preliminary noise study in the appendix to the EIA Documentation that the designed noise barriers will result in a considerable equivalent noise level reduction. There are three buildings near Nové Sedlo in close vicinity of the designed road leading in this section in the existing Road I/6 route, where the noise levels increased by 10 dB(A) cannot be maintained. We therefore propose to change the purpose of the buildings to non-residential buildings, or buy them up. The basic levels of traffic noise at the nearest Sokolov and Březová residential buildings will be kept. There will be a significant noise reduction in Kamenný Dvůr. To sum it up, the expressway construction will be beneficial in terms of the population’s exposure to noise.

Air

The main pollutant from the motor car traffic is NO_x. In the vicinity of the designed expressway between Jenišov and Kamenný Dvůr, concentrations slightly exceeding the emission limits will occur under unfavourable dispersion conditions in the busiest section between Nové Sedlo and Sokolov where the road goes uphill. The time of the excess concentration occurrence does not exceed 20 hours a year. The band along the road where the above-limit NO_x concentrations can be expected will be 100 – 150 m or less wide on both road sides. The other sanitary limits for air pollutants from expressway traffic will be kept in all locations along the route. On the existing road, and if the expressway is not built, there would be a considerably higher excess of emission limits due to the worse traffic flow.

Water

At the beginning of the section (about km 0.00 - 8.80), the route lies in the 3rd grade zone of natural curative spring protection of the Karlovy Vary spa town. At the end, from about km 25.0, the route lies in the 3rd grade zone of natural curative spring protection of the Františkovy Lázně spa town. In this end section, the road crosses the 2nd grade sanitary water resource protection zone of Jesenice. Neither the natural curative spring protection zones nor the Jesenice sanitary water protection zone will be affected. The effect on individual wells, which can be assumed in several places only, will be reviewed by a detailed hydrogeological survey in the next stage of technical documentation, and an reserve source will be ensured in the case of an impact.

Surface water protection is also ensured in the area of interest. All drained water that could be polluted, namely water from the designed high-capacity road crest, will go to retention and settling tanks where undissolved and oil products will be captured. They have an important protection function in the event of a crash. From there they go to specific recipients. The draining in the second half of the designed route is designed to avoid drainage of the polluted water and sedimentation tank water into the Velká and Malá Libava water supply course. This will improve protection of this water supply course against the present state.

Soil

The scope of land resource acquisition is given by the selected expressway category 24.5/100 and excludes the sections where the existing road will only be widened. The permanent agricultural land resource (ALR) acquisition is about 53 – 55 ha (depending on the variant), and the permanent forest land resource (FLR) acquisition about 16 – 19 ha (depending on the variant). Temporary FLR acquisition will not take place and all construction work will be done from the route.

Contamination of soil around the route will be at an ordinary level typical of high-capacity roads, and will not threaten the way of adjacent land cultivation. In addition, before the route construction and operation, the use of leaded fuel as a source of one of the worst pollutants, lead, will further decrease.

Geology, mineral resources

Many mineral resource deposits, protected mineral estates, face working places and areas directly or indirectly affected by the intense extraction of minerals are located in the area of interest, mainly in the road section touching the Sokolov field edge. Mining in this area was so strong that individual face working places are directly or indirectly connected, and the undermined areas overlap. The designed expressway route will not affect most mineral resource localities. The route at km 15.5 - 17.0 touches the edge of an active landslide subject to redevelopment.

Nature preservation; territorial systems of ecological stability

Where the route follows the existing road, there are no major conflicts of nature preservation interests. The only doubtful point is the road capacity enhancement at the bridge over the Ohře River near Sokolov, where a supraregional ecological corridor passes through the valley, and the Ohře Valley natural monument with pseudo-karstic phenomena can be found. The technical variants were reviewed by Valbek v.o.s. Liberec when the documentation was prepared. The recommended solution consists in extending the existing bridge with the road width reduction to 18.80 m on the bridge, keeping the four-lane layout.

The new bridge construction next to the existing one is acceptable from the environmental point of view, but as an utmost possibility.

The ecological stability system elements along the entire route are crossed by the bridges so the situation will improve in comparison with the present state that does not tackle these collisions.

Archaeological and cultural relics, buildings

None of the immovable cultural and archaeological relics registered in the National List of Preserved Monuments is situated on or near the route. Archaeological supervision will be ensured during the construction in places where archaeological discoveries are anticipated (near Jenišov and Kamenný Dvůr).

- The expressway route bypasses or touches the periphery of residential areas, so its impact on buildings is minimal. The distance of the route from buildings is such that there will be no vibrations that might affect their stability. Some houses will be affected by the traffic noise, which has been described earlier in this document.

Area development

The route will improve the economic and social development of the area of interest by its inclusion in the nation-wide high-capacity road network on the one hand, and by making the entire region attractive for investors due to the good road access on the other hand.

Conformity with the land-use planning documentation

Institut regionálního a územního plánování s.r.o. in Karlovy Vary prepared the Land Use Plan of the Big Territory (LUPBT) of the Karlovy Vary – Sokolov agglomeration. For the most part, the area involved covers the valid LUPBT of the Karlovy Vary - Cheb agglomeration approved by the CSSR government on 10 November 1987 (Government Decree No. 256/87 Coll.). The proposed expressway conforms to the LUPBT of the Karlovy Vary - Sokolov agglomeration. It is also in accordance with the land-use plans of municipalities, except for the unresolved situation near the Kynšperk nad Ohří town. Out of the three proposed variants, only Variant D1 complies with the needs of the town in relation to the General Development Plan (GDP).

7. CONCLUSION

It is to state in general that the proposed solution complies with the requirements for environmental protection, and the negative impacts of the construction and operation will be at an under-limit level. The basic proposed route with variants in 4 sections has been recommended for the construction. The following conclusions have been drawn from them:

- Both Variants A1 and A2 of Section A are acceptable, and differ in partial impacts on the important botanical locality, noise control solution and the landscape. It is therefore recommended to leave both sub-variants for the next stage of the project documentation, and decide when a more detailed noise study is available based on the geodesic survey and route specification.
- As regards Section B, we recommend the technical solution that utilizes the existing longitudinal road incline of 6 % to minimize the effects on the landscape. The Ministry of Transport has granted an exemption for this instance. We recommend extending the road to the left (in the direction of kilometre spacing), although the direction of extension is not decisive from the environmental point of view. We propose building a bridge of a similar design as the existing one, with the same pillar spacing and shape.
- From the environmental point of view, both sub-variants C1 and C2 are acceptable. Generally compared, sub-variant C1 is slightly more expedient, and we therefore recommend it.
- Three sub-variants have been designed for Section D, all of which are acceptable from the environmental point of view provided all the proposed precautions are respected. Generally compared, the recommended Variant D2 seems as the best, then D1 and D3 as the last one.
- Section with the bridge over the Ohře River – we recommend building Variant III, which means extending the existing bridge with the road width reduction on the bridge (preliminary width 18.80 m). This will avoid the intervention in the supra-regional ecological corridor and the natural monument. Variant II, involving the building of a new bridge left of the existing one in the direction of the kilometre spacing, is regarded as acceptable from the environmental point of view, but only in an extreme case, if Variant III cannot be built based on new findings. Variant I – leaving the existing bridge as is – is considered unacceptable.