

MOTORWAY D1

FRIČOVCE - SVINIA

The notice about the changes of the proposed activity according to the Supplement 8a of the Act No. 24/2006 Coll. on environmental impacts and amending certain laws

NON TECHNICAL SUMMARY

Prepared by:



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NON TECHNICAL SUMMARY

I. THE PURPOSE OF CONSTRUCTION

The proposed project of the D1 motorway is a section of the Multimodal Transport Corridor V, modified in the territory of Slovakia by branch „A“ on the route Bratislava – Žilina – Košice – SR/Ukraine border, in compliance with the routing of European multimodal transport corridors that are defined by the Pan-European Transport Conference (held in Crete in 1994) and with the territorial plan of the High Territorial Unit of Presov Region (VUC). This project is a section of the D1 motorway, which will form the backbone of the motorway network in the Slovak Republic.

The proposed section Fričovce – Svinia of the D1 motorway, links to section D1Široké – Fričovce (under operation) and will result in the shift of a substantial part of all traffic particularly heavy transit traffic from national road I/18. After completion of motorway D1 Beharovce - tunel Branisko – Široké – Fričovce – Svinia – Prešov west there will be continuous stretch of motorway in length app.31,6 km, that gives to road users more comfort and will improve transport travelling speed and road safety. After the construction of the D1 motorway section the existing road I/18 will mainly serve local regional transport and will connect and serve the communities in the adjacent territory.

II. THE BRIEF DESCRIPTION OF TECHNICAL SOLUTION

The beginning of the section is at km 79,693 of the motorway section D1 Fričovce bypass, which is in operation. The alignment of D1 is continuous into the proposed section. From the beginning of the section to km 84.16 the route of the motorway is designed to the north of road I/18, and outside of the existing building areas of the villages of Hendrichovce and Bertotovce. At km 84,16 there is a further interchange with road I/18 from where it continues on the south side of the road I/18, behind the village Chmiňany. From km 87,4 to a crossing of the stream Svinka the route of the motorway leads across the slope above the stream valley of Svinka. The section ends in the existing interchange Svinia at km 90,900. The new motorway width is designed according to category D 26.5/100. The total length is 11.217 km.

The proposed route of the motorway D1 crosses the ramp of interchange Fričovce (direction to I/18 Prešov - D1 Poprad), road I/18, regional roads III. class (018 189, 5439, 018 190, 018191), the deep valleys of creeks (Libešanský, Štefanovský, Lazny, Hermanovský, Svinka, Jakubovianka) and the ramp of interchange Svinia (direction to I/18 – Poprad – D1 Prešov).

A large part of the motorway objects are 15 bridges on the motorway (total length of bridges is 2 608 m), 12 retaining walls, access roads and noise barriers. Furthermore, part of the construction is the necessary adjustments of road I/18, of local roads III/018 189, III/018 190, III/018 191, and the necessary relocations and modifications of overground and underground utility lines affected by the project. The motorway will be equipped with an information system (emergency call phones, variable traffic signs, camera monitoring system, weather station, and traffic counters) and surface water drains. The total length of the motorway is enclosed with a fence.

The proposed alignment of the D1 does not interfere with the existing urban areas of affected villages Hendrichovce, Bertotovce, Chmiňany, Chminianska Nová Ves, and complies with the territorial planning documentation of village Chminianska Nová Ves. It respects the existing solution of interchange Fričovce at the beginning of the section and the solution of the interchange at the end of the section, designed within the motorway D1 Svinia – Prešov west section.

Localisation of the project :

The project is located in the Prešov region, in the district of Prešov, in cadastral areas Fričovce, Hendrichovce, Bertotovce, Chmiňany, Chminianska Nová Ves, Svinia.

Technical solution

- category of motorway D1 : D 26,5/100
- total length of motorway D1 : 11,217 km
- bridges : on the motorway D1: 15 pcs; in length 2 669,0 m
- roads : rehabilitation of I st class road – in total length 400,0 m

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| | : rehabilitation of III. rd class road – in total length 300,0 m |
| | : access roads in total length 3241,28 m |
| | : rehabilitation of field roads in length 50,0 m |
| – retaining walls | : 12 structures, total area 16 844 m ² |
| – treatment of water flows : | : 4 structures, in total length 572,27 m |
| – noise barriers | : 3 structures, total length 3505,0 m |
| – Other planned objects: | : fencings, |
| | : drainage, water pipeline relocations |
| | : relocations of air conduction lines VN, VVN |
| | : relocation of cable lines ST, VET, ORANGE, SSE, ŽSR |
| | : informative motorway system |
| | : adjustment and relocation of gas pipeline (middle pressure (STL)and high pressure gas pipeline (VTL) |

III. CHARACTERISTICS OF AFFECTED AREA

The route of the motorway D1 Fričovce – Svinia runs through the cadastral area of the municipalities of Fričovce, Hendrichovce, Bertotovce, Chmiňany, Svinia and marginally affects the cadastral area of Chminianska Nová Ves. The route of the motorway is oriented west-east and will run in parallel to road I/18 which the D1 will cross with a bridge in one point located in a rural location, hence it will not affect any urban settlement. The area of interest is bordered on the western edge by the interchange Fričovce and on the eastern edge by the interchange Svinia (these interchanges are already constructed), on the southern edge by the existing road I/18 and by slopes above the villages Chmiňany and Chminianska Nová Ves and on the north by slopes above the villages Hendrichovce and Bertotovce, by the road I/18, and by streams Jakubovianka and Svinka. The use of this area is mainly agricultural, mostly as arable land or pasture. The lower part of the territory consists of forest stands. In the Real Estate cadastres land is recorded as arable land, permanent grassland, forest and other land. On the basis of available information, there are a no mineral deposits, mining activities are not carried out and there are no protective areas or interests, which are necessary to protect in accordance with relevant legislation

IV. THE BASIC CHARACTERISTICS OF THE ENVIRONMENT

In terms of terrain the motorway D1 Fričovce – Svinia is situated in hilly to mountainous territory and also crosses several valleys of local waterways. These valleys are up to 300 m wide and approximately 50 m deep. The slopes are 20 %. In the valley of the “Velka Svinka” stream the motorway continues in slightly undulating territory with slopes of 15%.

The affected area from the geological point of view is part of the Highland Šariš, which belongs to the Furrow Chminianska, to the Median Mass Spiš – Šariš, and to the Foothills Šarišské Podolie. The area has hilly relief. There is mostly flat terrain with smoothly sculpted ridges and hills. The steep slopes have been created by erosion processes. The slopes are furrowed by gully erosion and in some places are eroded by slope deformation – landslides (potential and fossil). There are sliding surfaces on the contact between the paleogene and quaternary rocks. The fossil landslide area is above the village Chmiňany where the paleogene rocks have been affected by landslide, the slopes falling towards the stream Svinka. According to the geological engineering survey (Geohyco, as Bratislava, May 1998) there are:

- The Central – Carpathian Paleogene system, represented mainly by sandy clay, where the sandstones are dominant in the section Bertotovce – Chminianska Nová Ves
- Neogene
- Quaternary, by which is formed the surface of the territory. The surface is formed by diluvia deposits (fine –grained soil, clay with sandstone and clay stone fragments, clay stone), fluvial sediments (clayey gravel, clay, loam) and terrace sediments, which are on the slopes of the valley of the Svinka stream (gravel clay, clayey gravels).

On the basis of The Atlas of SSR (1980) the area of the interest belongs to a moderately warm and humid area, with a cold winter. It is a type of mountain climate, the subtype of warm, with a small inversion of temperature, humid to very humid area. The average annual rainfall is 600-780 mm.

The coldest month of the year is January and the warmest month is July. In the area north-western and northern wind flows are dominant.

According to the map of the seismic zones of the territory of the former Czechoslovak Republic (ČSSR) – (STN 73 0036 and The Atlas of engineering-geological maps SSR) the project is located in a seismic area with an anticipated seismic intensity less than 6° M.C.S.. The tectonic termination in the area of Chminianska Nová Ves on direction WSN – ENV and SSW- NNE are assessed as a faulted zone with expected neotectonic activity.

The area of interest drains into the river basin Hornád by its tributary - Svinka stream with its tributaries Štefanovský, Lazny, Hermanovsky and Jakubovianka creeks. The stream Svinka is considered a significant water flow and is also a significant water management flow.

The proposed motorway crosses the floodplain of the stream "Velka Svinka". The stream Velka Svinka is not treated in this area and has a bed with double-sided bank vegetation, which transfers water flow corresponding to Q5, and at times of high flows, flooding occurs on the surrounding agricultural land. The motorway crosses the flood plain area outside of the urban areas. The bridges are designed to take into account the safe height necessary to avoid a significant barrier to flood water level. There are no recorded water resources in the project area. In the location Suche Hony (rural zone Chminany village) at a distance of approx. 200 m from the road I/18 in the alluvial plain valley of the stream Svinka, Chminany village has three drilled wells which are utilised as a water source for the municipal water supply for Chminany and Chminianska Nova Ves. South of motorway D1 (86.200 km), at a distance of approximately 490 m, is considered the natural reservoir construction, to which will be transported water from water sources. The proposed motorway D1 is likely to pass the sanitary protective zone - PHO 2nd grade of the water source.

The designed field and access roads will ensure the accessibility of the land plots that will be affected by the implementation of the motorway D1. There will be no future construction in the adjacent area of the motorway (protective zone of motorway).

No cultural monument or buildings are situated in the route of the motorway or in its close proximity.

On the basis of available information, there are no mineral deposits, mining activities are not carried out and other issues of interest, which it may be necessary to protect according to relevant legislation in the affected area, are not known.

The designed route of the motorway D1 in the respective section does not directly interfere with any area of nature or landscape protection in accordance with the Act no. 543/2002 Coll of nature and landscape protection. However, the proposed project is located in an area where the first level of protection in accordance with the Act. 543/2002 Coll. applies. The designed route in the respective section of the motorway does not interfere with any area of European importance of Natura 2000 sites (any area of bird protection or European importance).

The site surveys in Jun 2008 carried out by experts from State Conservatory of Nature identified the following types of habitats:

- Lk 1 Lowlands and submontane mowable meadows (NATURA 6510) – biotope of European importance on a total area of approximately 12 098 m²
- Tr 1c Xerophytic herbaceous-grassy and shrubby vegetation on calcic subsoil (NATURA 6210) - biotope of European importance on a total area of approximately 17 930 m²,
- Lk 3 Mesophile pastures and grazed meadow - biotope of national importance on a total area of approximately 14 366 m²
- Ls 5.1 Beech and fir floriferous forests (NATURA 9130)- on a total area of approximately 44615m²

In the cadastral area Chmiňany, south of the motorway in km about 87.6 to 87.7 occurrence of protected species of Lady's slipper orchid (*Cypripedium calceolus* L.) was recorded, but during a site survey in June 2008 it was not confirmed. The proposed route of the motorway is not likely to affect any site of nature conservation importance with protective species.

The territory of the River Torysa with its tributaries is part of a major bird migration route and is classified an important intercontinental bio corridor. The tree (non – forest) and bushes vegetation became a natural bio corridor for animals in these regional and local conditions. According to regional territorial system of ecological stability (R – ÚSES) for the district of Presov, this area is considered as a bio corridor of regional significance, which includes the stream Mala Svinka, from village Kojatice as the stream Svinka with (hygrophyllous) high-stem herbs on fluvial plain (bank vegetation). The Rivers Torysa and Sekcov, and forest complexes Stavenec - Hložie – Vinica are proposed as regional bio

corridors The designed alignment of the motorway and the technical solution for individual structures (mostly bridges) will enable the bio corridors and bio –centres to continue to function.

V. OVERALL ASSESSMENT OF EXPECTED IMPACTS IN THE CASE OF NON IMPLEMENTATION OF THE PROPOSED ACTIVITY

The existing road I/18 in its section Fričovce - Svinia corresponds with a road category of width arrangement to C 11.5. The route of the motorway D1 Fričovce – Svinia runs through the urban area of villages Hendrichovce, Bertotovce and Chminianska Nová Ves. On the basis of traffic-engineering analysis and the traffic forecast it is evident that the capacity on the existing section of road I/18 is already exceeded. Due to this high traffic intensity, with a significant share of freight vehicles (31%), manoeuvrability for the road users is restricted and traffic continuity is limited. In this section there are frequent accidents, often with the tragic consequences. Due to these facts the technical, safety and capacity parameters of the road I/18 are evaluated as not adequate.

In the case of non-implementation of the proposed motorway the routing of traffic would remain in the current situation and traffic intensity will increase. The existing traffic volume and the anticipated traffic increase point to the fact that the capacity of the existing road, with the current width arrangements, is exceeded with a corresponding decrease in the performance of communication. It would be necessary to extend the road to meet requirements for a road category C 22,5/80, or to relocate the road I/18 outside of existing built up areas. This would result not only in significant financing expenditure, but also in the demolition of existing buildings and the occupation of land. It would also be necessary to reconstruct the junctions with the road I/18 and regional roads of III rd class. Such a solution is non – viable in terms of development of the road network and environmental impacts as well.

VI. COMPLIANCE OF THE ACTIVITY WITH THE TERRITORIAL PLAN

The proposed motorway D1 Fričovce – Svinia is consistent with the territorial plan of Higher Territorial Unit Prešov (UPN VÚC, ÚPN VÚC Prešovského kraja – changes and amendments 2009 (SAŽP CKEP Prešov)

Fričovce – based on the information of the Mayor of village it has not developed a territorial plan

Hendrichovce - the village has not developed a territorial plan

Bertotovce – the village has developed and approved a territorial plan (Ing. arch.Kunec, Prešov 2008).In the territorial plan the proposed D1 is included in the designed alignment

Svinia – The Territorial plan of village Svinia (ARCHEKO s.r.o, Prešov, Ing.arch. Vladimír Ligus, 2006). In the territorial plan the proposed D1 is included in the designed alignment.

Kojatice – The Territorial plan (Architektonický ateliér Atyp, 2008). The alignment goes through the northern part of the cadastre; it is consistent with the proposal of the territorial plan (UPN)

Chminianska Nová Ves – has developed and approved a territorial plan of village Chminianska Nová Ves (elaborated by Ing.arch. Polák, Domotvorba Prešov, 1993), the alignment of the motorway does not go through the cadastre of the village

Chmiňany - The Proposal of territorial plan of the village (UPN - Ing. arch. Polák, apríl 2010) According to the ÚPN – O Chmiňany the alignment of the motorway (in the category D 26,5/100) passes to the south of the urban cadastre of the village. There is no direct connection of the adjacent road network and the motorway, with grade separated crossings of local regional roads III/018190 and III/018191 (to Ondrašovce). The solution complies with the territorial plan (UPD)

VII. EXPECTED IMPACT ON THE TERRITORY

The designed motorway is routed through an area where I. level of protection in accordance with the Act. 543/2002 Coll. about Nature and landscape protection applies. There are no areas that require special protection under the law on the protection of nature and landscape.

South of motorway D1 (86.200 km), at a distance of approximately 490 m, is considered the natural reservoir construction, to which will be transported water from water sources. The proposed motorway D1 is likely to pass the sanitary protective zone - PHO 2nd grade of the water source.

The most serious effects of the activity on the environmental and measures for their reduction or elimination

Impacts on air pollution

Air pollution due to automobile traffic has a negative impact on the overall state of the environment. During the operation of the motorway part of the air pollution from traffic will move from the existing I/18 road leading through the urban agglomeration to an area that has not been impacted by direct adverse impacts of transport. There will be a distribution of pollution over a larger area.

According to the results of the air pollution study, the maximum permissible values of pollutants in the assessed time horizon will not be exceeded, even under the adverse dispersion conditions (the values of the allowed limits are for carbon monoxide 2,5%, NO_x (59 %) and Pm₂ (3,3%)). The implementation of the project will result in a reduction of pollution in the municipalities through which the traffic currently passes, as well as reduction of the anticipated specific emissions from vehicles.

In addition to pollutants from the exhaust of vehicles there will be a contribution to air pollution from increased dustiness which is caused by turbulence on the surface of the road and its vicinity. This negative affect will be felt especially during construction. It is assumed that the quality of the surface pavement, the drainage and the maintenance throughout the year will ensure the minimizing of the dustiness during the operation of the motorway. The earthworks will be carried out at the optimum soil moisture content which provides conditions for the minimizing of the dustiness. The access roads will be cleaned regularly during the construction in order to reduce the potential secondary dustiness in the adjacent areas of the construction and on the access roads.

Noise

Noise generated by intensive traffic on the road I/18 in settled areas where levels have now exceeded allowed noise limits, will be reduced as a result of the diversion of a substantial proportion of traffic to the new motorway. At the same time the production of noise will be transferred to locations where it does not occur at the moment. According to results of the noise study based on the traffic forecast volume, this will exceed the allowed noise levels on the D1 during the day and night time in some areas, mainly in Bertotovciach, Chmiňanoch a v Chminianskej Novej Vsi. To eliminate these identified noise levels, anti-noise barriers are proposed in sections:

- km 87.0 - 89.9 D1 left at village Chmiňany
- km 90.2 D1 left at village Chminianska Nová Ves
- km 83.3 - 83.7 D1 right at village Bertotovce

Implementation of noise barriers will ensure that the permitted noise levels in urban area of the municipalities are not exceeded.

Impacts on mineral and soil environment

The dominant effects of motorway construction on the mineral environment can be classified :

- disruption of slope stability caused by earthworks activating landslides
- erosion and weathering
- storage of building material from the cuttings

The rock (mineral) environment influences the implementation activities and methodology, especially in the cutting areas and sections sensitive to landslides. The alignment of the motorway and related parts is designed so that the volume of the earthworks is balanced and as a result there is no need to open borrow pits, or provide sites for the temporary storage or dumping of materials. The geological construction of the territory is formed by fine-grained soils (argillaceous sandstone), which are less suitable, or unsuitable, for the construction of the subgrade of the motorway. Therefore it is proposed to construct the motorway embankments by sandwich construction, i.e. by alternating the layers of the soil with a layer of the gravel material. The gravel material will be imported from an open-cut quarry. Suitable sources appear to be the quarry Maglovec, and eventually the quarry Margecany.

The implementation of the motorway will result in the occupation of agriculture and forest land, and areas of grassy vegetation. It will disrupt the organization of land (the distribution of plots, interruption of existing farm tracks etc.), may influence soil erosion and result in the contamination of soils and agricultural lands along the motorway. The protection of agricultural land (PPF) during construction is necessary to minimize the occupation of land, encroachment of plant depots and sites for the temporary of dumping of materials. Protection against contamination of soil caused by construction equipment is only possible by ensuring proper maintenance of the equipment. The plant depots need to be situated on paved surfaces. The basic measure to protect agricultural lands is to remove topsoil or agricultural soil according to the Methodical instruction of the Ministry of Agriculture no. 2341/2006-910.

Impacts on surface and groundwater.

The construction and operation of the motorway could affect the quality of surface and groundwater and their related water management. From a qualitative point of view the most likely possibility of contamination by oil is caused by accidents or defects in construction equipment. There is also a risk of erosion of the soil into the beds of affected streams, with increasing turbidity, which may cause adverse changes of water flow, and negative possible impacts of surface water related to their accessibility, resulting in an increased possibility of direct contamination during the construction or operational phases. Generally the most vulnerable are the flows of small surface streams, especially during the construction phase.

The degree of vulnerability of surface water depends on permeability and thickness of sub-base, hydrogeological characteristics, the position of water collectors, and groundwater levels.

A higher measure of permeability of water collector generally creates better conditions for relatively rapid migration of contaminants through groundwater flows. In emergency situations and inadequate treatment of the surface, there is a risk of degradation of water quality due to the cumulative effects. Threats and vulnerability of surface water is tied mostly to the sections, where the new road respectively approaches and crosses the surface flows.

A potential risk is also presented by the plant depot and site installations (leak of wastewater and the presence of contaminants in ground water).

There are no recorded water resources in the project area. In the location Suche Hony (rural zone Chminany village) at a distance of approx. 200 m from the road I/18 in the alluvial plain valley of the stream Svinka, Chminany village has three drilled wells, which are utilized as a water source for the municipal water supply for Chminany and Chminianska Nova Ves. South of the motorway D1 (86.200 km), at a distance of approximately 490 m, is considered the natural reservoir construction, to which will be transported water from water sources. The proposed motorway D1 is likely to pass the sanitary protective zone - PHO 2nd grade of the water source. The stream Svinka belongs to a significant water management flow. Rainwater from road drains will be led into oil separators and from there will be discharged into the recipient water bodies. Oil separators will collect and treat rainwater from the motorway. Construction and function of oil separators must comply with Standard STN EN 858-1 and 858-2. To protect the water source paved ditches will be built in the section, where the motorway is likely to pass PHO 2nd grade of the water source.

Impacts on nature and landscape

The proposed route of motorway is in the area where the first level of protection in accordance with the Act. 543/2002 Coll. applies. There are no protective areas of interest which are necessary to protect in accordance with relevant legislative.

Impacts on biota most notably take effect during the construction in open country, namely:

- - direct liquidation of habitats
- - interference and influencing functions of habitats (modification of surface streams)
- - creating, or strengthening, barrier effects in migration corridors
- - impacts of noise, emissions and grit on habitats nearby motorway

The construction of the project requires necessary cutting of trees (woody plants) in the route of the motorway. River bank vegetation will be removed only to the extent necessary in the width of the motorway and its protective zone and in the space of adjustment of water streams. The crossing with streams and creeks is ensured by proposed bridges.

The route of the motorway will destroy the following biotopes of European and national importance:

Lk 1 Lowlands and submontane mowable meadows (NATURA 6510) – biotope of European importance on a total area of approximately 12 098 m²

Tr 1c Xerophytic herbaceous-grassy and shrubby vegetation on calcic subsoil (NATURA 6210) - biotop of European importance on a total area of approximately 17 930 m²,

Lk 3 Mesophile pastures and grazed meadow - biotop of national importance on a total area of approximately 14 366 m²

Ls 5.1 Beech and fir floriferous forests (NATURA 9130), on a total area of approximately 44615m²

In the cadastral area Chmiňany, south of the motorway in km about 87.6 to 87.7 occurrence of protected species of Lady's slipper orchid (*Cypripedium calceolus* L.) was recorded, but during a site survey in June 2008 it was not confirmed. The proposed route of the motorway is not likely to affect any on this type of species.

The encroachment of animals onto the motorway from forest stands on the west of the village of Chminianska Nová Ves will be prevented by a fence, parallel with the motorway, which will guide migration animals towards the stream Velka Svinka and under the motorway bridges. As required by State Conservatory of Nature (ŠOP SR) barriers will be installed to protection birds at pylons (VN 22 - kV).

VIII. COMPENSATION MEASURES

Compensation measures are introduced to offset any damage suffered, mostly to property and economical and environmental damage.

in social impact assessment :

During construction of the D1 motorway, the close cooperation between investors, contractors and the affected municipalities is anticipated in order to minimize the effects of motorway construction on villages and their populations. Agreement will be needed to ensure approval particularly in determining of the traffic route, traffic regime, the method of local road maintenance (cleaning, spraying to reduce dust) and subsequent repair of damaged sections from the passing of heavy machinery. In determining of the traffic route, agreement will be needed to ensure travelling speed and road safety (speed limit, entrance etc.) and to ensure the mitigation of negative impacts on quality of life on the affected population (elimination of the heavy traffic close to homes at night, on holidays, etc.)

A sensitive area is the property losses of the affected population. Mitigation of this impact can only be performed by adequate compensation for losses to the satisfaction of the population in accordance to valid legislation (Regulation of Ministry of Justice no. 492/2004 Coll about determining the value of property), individually in close cooperation with investor, affected people, and city or municipal council.

for occupation of agricultural land

Compensatory measures concern the occupied land resulting from the relevant legislative, namely the Act. 220/2004 Coll on the Protection and use of agricultural land and from the amending Act. 245/2003 Coll concerning integrated prevention and control of environmental pollution, respectively. Law no. 219/2008 Coll, amending and supplementing Law no. 220/2004 Coll.

for occupation of forest land

Compensatory measures concerning the forest resulting from the relevant legislative provisions, namely in accordance with the Act no. 363/2005 Coll. about the forest and amending certain laws

for cutting of wood plants growing outside of forest

Compensatory measures for cutting of trees / wood plants shall be resolved in accordance with the Act no. 543/2002 Coll of nature and landscape protection and with executing Edict of the MoE SR no. 24/2003 Coll, which determines the social value of plants (resp. pursuant to Edict no. 579/2008 Coll , which amends the Edict of MoE SR 24/2003 Coll.) The Nature protection authority (municipality) will specify the conditions for cutting of trees / wood plants and compensation in the form of replacement planting or financial social value of the liquidated wood plants.

for damage, respectively. destroying of habitats

The interference to habitats of European or national importance must be approved by the relevant district office of environment. The District Environmental Office in Presov, in its decision from 25.08.2008 accepts the proposed interference to habitats, but required that other conditions are implemented such as revitalization measures and/ or monitoring of the occurrence of invasive plants.

The District Environmental Office in Presov on 18th July 2008 permitted an exemption to the interference to the habitat of the protected species of Lady's slipper orchid (*Cypripedium calceolus*), which allowed, during construction, damage or destruction of the protected species of Lady's slipper orchid and biotopes but only to the extent necessary.

IX. COMPARISON OF VARIANTS

The beginning of the section is at interchange (MÚK) „Fričovce“, where it is connected to the section Motorway D1 Fričovce bypass , which has been in operation since 2003. The alignment goes through

the left hand side of the bank of stream Velka Svinka above the villages Hendrichovce and Bertotovce. Next the motorway crosses the stream Veľká Svinka on the east of the village Bertotovce, leading on the right side of the bank of the valley of stream Veľká Svinka to the operational section D1 Svinia Prešov west through interchange MUK Svinia, on the east of the village Chminianska Nova Ves. The length of the proposed section is 11.217 km.

Differences between variants recommended by the Final Statement of MoE and the designed solution are :

- The alignment of the motorway was adjusted passing thorough the village Hendrichovce. During the EIA process the D1 motorway was located directly across the village Hendrichovce at a distance of 80 m from the road I/18, between the road I/18 and the church. In documentation for the building permit (DSP) the motorway was shifted about 110 m to the north, away from the residential area
- The alignment of the motorway was adjusted to the north - east by a shift of about 75 m towards the village of Bertotovce in order to avoid any interference to the forest biotope and to preserve the integrity of the forest
- The alignment of motorway was changed between the villages Bertotovce and Chmiňany, by a shift of about 250 m to the north towards the stream Veľká Svinka, in order to ensure an earthworks balance (increasing the embankment and saving the cutting sections)
- Near the village of Chmiňany the D1 was shifted about 120m to the north, to ensure that the last residential building of the village was located outside from the protective zone of motorway and also to have a smaller intervention into the Chminiansky landslide area.

All changes were developed during the preparation of project documentation as a result of optimization based on the comments of representatives of the affected municipalities, institutions and expert organizations, authorized to comment on the technical solutions of the proposed construction. The changes to the alignment of the motorway have resulted in modification of the detailed solutions of bridges, road relocations and reconstruction, relocations and adjustments of water flows, utilities relocations, and to the extent of anti-noise measures.

The designed motorway follows the corridor of the variants recommended in the Final Statement of MoE dated 23.07.1997. The changes of the proposed motorway therefore do not mean the change of principle solutions. The most significant changes are modifications of motorway alignment , the elimination of construction of two interchanges „Bertotovce“ and „Chminianska Nová Ves“, relocations and adjustments of water flows and an increase in the range of noise barriers. Compared with the recommended variant from the EIA process, the impacts on the population and the environment are more favourable in the proposed adjustment variant

In terms of overall occupied land required for the construction of the motorway D1 it has to be noted that the designed project compared with the recommended variant occupies less permanent land than was considered (recommended variant from EIA Report occupies 179 ha of permanent land and the designed variant 140 ha). The EIA Report also considered the necessary demolition of residential houses (34), garden cottages (47) and economically used objects (6). Compared with the original range, demolition has almost completely been eliminated, with only the objects of the midden and cesspit of PD Bertotovce remaining.

Emission load from the transport was calculated in the EIA Report for different traffic intensities and for different time horizons in accordance with the then applicable regulations. Even in the least favourable conditions these were not expected to exceed allowed emission limits for NO_x, CO, C_xH_y. Changes of the proposed activities were elaborated in the updated emissions study (2006), according to which, on the basis of traffic forecast intensity, there will be a minimal concentration of pollutants respective to the relevant emission limits (except NO_x). In the first year of the calculation (in 2015) the allowed limits of the average annual values of NO_x, NO₂ and PM_{2.5} will not be exceeded, but the NO_x reaches 91.3% of the limit.

Compared with the EIA Report during the development of DUR and DSP, documentation was updated for a range of noise measures according to the Noise study, where the impacts of traffic on existing urban areas were evaluated, after putting the D1 motorway into operation. At the time of the processing of DSP, the Regulation of Ministry of Health of the Slovak Republic, on 16th August no. 549/2007, laying down the details on permitted values of noise, infrasound and vibration and about

requirements on objectification of noise, infrasound and vibration in the environment was applied. Under this regulation the noise study and its results were used in the design of noise walls and facade adjustments.

The range of noise barriers was increased from 1,400 m (EIA Report) to 3 105 m (DUR) up to 3,506 m (DSP). In section Fričovce - Svinia, 3 noise barriers on the motorway D1 in the total length of 3 506 were proposed. On the bridges across the valley over built-up areas (bridges 202-00, 203-00, 204.00, 206-00, 207-00) anti noise reflective panels on the bridge parapet and anti noise bridge joints are proposed.

In the EIA Report the following anti noise measures (PHS) were proposed:

Anti noise barrier km 81,1 – 81,35 right (Hendrichovce), height PHS 2,0 m, length 250m

Anti noise barrier km 86,5 – 86,75 left (Chmiňany), height PHS 2,0 m, length 250m

Anti noise barrier km 87,5 – 87,7 left (Chminianska N.Ves), height PHS 2,0 m, length 200m

Anti noise barrier km 88,4 – 89,1 left (Chminianska N.Ves), height PHS 3,0 m, length 700m

In the DSP the following anti noise measures were proposed:

Anti noise barrier in km 87,0 – 89,9 D1 on left at the village Chmiňany

Anti noise barrier in km 90,2 D1 on left at the village Chminianska Nová Ves

Anti noise barrier in km 83,3 – 83,7 D1 right at the village Bertotovce

The proposed technical measures will ensure compliance with the requirements of the Regulation of the Ministry of Health (MZ SR).

In the EIA Report interference with water flows in each of the proposed options was considered, but its extent was not quantified. The designed changes will require interventions with water flows in the affected area in the following range: adjustment of Libešanského stream over a length of 40 m, adjustment of Hermanovského stream over a length of 72,5 m, adjustment of Lazného stream over a length of 76 m, adjustment of stream Veľká Svinka over a length of 384 m. During the construction phase some qualitative changes are expected (turbidity of water, removal of riverbank vegetation, etc.). These changes will only have a temporary effect.

In terms of water sources, implementation of activities does not have any influence on qualitative or quantitative parameters.

The proposed route of motorway is in the area where the first level of protection in accordance with the Act on the Protection of nature and landscape. There are no large or small protective areas of interest which are necessary to protect in accordance with relevant legislative. At the time of the EIA (in 1996) there was no consideration of the impact on the Natura 2000 sites. The recommended option and the proposed modifications are located in areas where there are no Natura 2000 sites (the nearest NATURA 2000 site is the protective birds area of European importance, located approximately 3.8 km in a north-westerly direction (SKUEV0321 Salvátorské lúky - meadows). The assessment of the potential effect of the D1 Fričovce – Svinia on NATURA 2000 sites confirmed that the project D1 Fričovce – Svinia will have no significant effects on Natura 2000 sites, having regard to the proposed measures.

In the EIA Report there was no quantification of interference with each habitat. The proposed modification was performed in accordance with the amended legislation inventories of habitats of European and national importance, which were identified as follows:

- Ls 5.1 Beech and fir floriferous forests
- Ls 1.3 Ash - alder alluvial forests (prioritized biotope)
- Lk 1 Lowlands and submontane mowable meadows
- Tr 1c Xerophytic herbaceous-grassy and shrubby vegetation on calcic subsoil
- Lk 3 Mesophile pastures and grazed meadow
- Lk6 Water flooded meadows of mountain areas
- Kr9 Willow bushes on the flooded banks

Based on the inventory of habitats of European and national importance, the value for compensation of destroyed habitat was 48,467,880, - Sk, which is 1 608 839 €. The shifting of the alignment of the motorway outside of the forest can be assessed as positive.

In the cadastral Chmiňany, south from the motorway in km about 87.6 to 87.7, an occurrence of the protected species of Lady's slipper orchid (*Cypripedium calceolus* L.) was recorded. The District Environmental Office in Presov, as the relevant body of state administration, on 18th July 2008 permitted an exemption to the interference to the habitat of the protected species of Lady's slipper orchid (*Cypripedium calceolus*), which allowed, during the construction, damage or destruction of the protected species of Lady's slipper orchid and biotope, but only to the extent necessary.

In the EIA Report there was no quantification of cutting of trees. Under the Act no. 543/2001 Coll. and based on the performed inventory of plants growing outside of forests and on the route of the designed motorway D1, the calculated overall social value of the cutting of trees amounted to 110 651 202, - Sk, which is 3 672 947 €. Within this construction, a replacement of planting in areas outside of the site is not considered.

Modifications of the proposed activity can be assessed positively, because it will improve the traffic situation in the area and will significantly increase traffic safety and impact on the population. The most positive impacts will be felt by residents of municipalities, through which all transit traffic currently passes. Implementation of vegetation adjustment incorporates this technical structure into the country, which will positively influence the image of landscape of this area.

Air pollution and noise due to automobile traffic has an indirect negative impact on population during the operation of the project. Construction of noise barriers will ensure that noise limits are not exceeded. Waste management during the operation will be ensured by the administrator of the motorway in collaboration with operators of recovery and disposal of waste on a contract basis.

The project will be implemented on the basis of the building permit. All conditions for implementation have been taken into account to meet all applicable legislative provisions aimed at eliminating negative effects on the population.